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Clinical Practice Guideline for the Management of Borderline Personality Disorder

APPENDIX H: Evidence Tables

WORKING TO BUILD A HEALTHY AUSTRALIA

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Disclaimer

This document is a general guide to appropriate practice, to be followed subject to the clinician's judgement and patient's preference in each individual case. The guideline is designed to provide information to assist decision-making and is based on the best available evidence at the time of development of this publication.

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Australian Government
National Health and Medical Research Council

CLINICAL PRACTICE GUIDELINE FOR THE MANAGEMENT OF BORDERLINE PERSONALITY DISORDER

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Presentation of the evidence

Guideline adaption

This guideline is an adaptation of the UK National Institute of Clinical Excellence (NICE) Guideline. Where the NHMRC BPD Guideline Development Committee agreed to update the clinical questions included in the NICE guideline, all papers retrieved by NICE were used as the evidence base from 2001 – 2008. The systematic search was used to update the body of evidence for the NICE questions from 2008 – 2011. The updated searches for the NICE questions were based upon new search strings developed using a combination of:

a) The searches undertaken in the NICE Guideline
b) The aims and scope of the NHMRC guideline
c) The clinical questions and inclusion and exclusion criteria developed by the NHMRC BPD Guideline Development Committee in February 2011, and those of the NICE guideline.

For the 5 new clinical questions (Qu 3, 4, 10, 11, 14) not previously included in the NICE guideline but developed by the NHMRC BPD Guideline Development Committee, a new strategy was undertaken with a search period from 2001 – 2011.

The included papers retrieved from the different search strategies are differentiated in this document using the following terms:

- **Updated search** - used to describe the process of the systematic search of the literature used to update the body of evidence for the NICE questions.
- **NICE Guideline summary** – the summary of evidence from the NICE findings as developed by the NICE guideline group.
- **Summary** – summary of evidence from the updated search or the new strategy as developed by the NHMRC BPD Guideline Development Committee.

How to read the evidence summaries, evidence tables and forest plots

Evidence summaries

An evidence summary is provided for each clinical question including what evidence was available. For some clinical questions, no evidence was identified.

Evidence summaries provide a snapshot of studies addressing each clinical question. For a detailed assessment of each paper's outcomes, quality and relevance, it is essential to read the evidence tables.

Evidence tables

Evidence summaries are accompanied by evidence tables which provide an analysis of each study that met the inclusion criteria, including assessment of study quality.

When reading an evidence table it is common to refer to the highest level of evidence to answer each question and move through the hierarchy of evidence as required. Studies are presented in the tables in order of level of evidence. When two or more studies were classified at the same level of evidence they are ordered by publication date from most recent to least recent.

Each study was assessed using quality checklists appropriate to the type of study design used. Specific Quality Checklists (QC) used and their criteria are outlined in Appendix B (page 19). The results of these assessments have been included against each study in the comments section of the evidence tables.

Two reviewers extracted the data and assessed it using the Quality Checklist (QC) included in Appendix B (page 19).

Evidence statement forms

The committee used the NHMRC Evidence Statement Form to review the body of available evidence with regard to the volume of evidence and its consistency, clinical impact, generalisability and applicability. The evidence was graded according to NHMRC grading criteria. Evidence tables are accompanied by evidence statement forms to provide information on how the committee made judgements on the basis of the body of evidence relevant to specific research questions.

Meta-analysis

In the instance of clinical questions 6, 7 and 9, data from the included studies have been combined statistically to produce summary estimates of effect using the statistical meta-analysis program Comprehensive Meta-Analysis (CMA) 2.0.

Through statistically pooling (meta-analysing), more precise estimates of the effect of the intervention on the important outcomes can be obtained and compared with individual studies considered in isolation. Meta-analysis increases the statistical power of the analysis and may find a statistically significant result where none of the individual studies included in the analysis were found statistically significant when considered in isolation.

Forest plots

The results of the meta-analysis are displayed graphically in forest plots which show the individual results of each study together with the combined meta-analysis result. Forest plots also include the overall risk ratio for that outcome. The results of individual studies are shown as squares centred on each study's point estimate. A horizontal line runs through each square to show each study's 95% confidence interval. The overall estimate from the meta-analysis and its confidence interval are shown at the bottom, represented as a diamond. The centre of the diamond represents the pooled point estimate, and its horizontal tips represent the confidence interval.

Forest plots usually include a "line of 1" (for dichotomous outcomes) and are labelled at the bottom with 'favours *the intervention*' or 'favours *the comparator*' which assist users to interpret the findings. If the lines showing 95% confidence intervals for individual studies, or the diamond showing the confidence intervals of the pooled relative risk, cross the "line of 1", then the result is not statistically significant.

The forest plot also allows readers to see the heterogeneity among the results of the studies. This can be assessed informally by considering the spread of results and the direction of outcomes for the included studies (i.e. by looking at the square box and line plots). The results or estimates of effects of treatment from separate studies may seem to be very different – in terms of the size of treatment effects or even to the extent that some indicate beneficial and others suggest adverse treatment effects. Such results may occur because of differences between studies (e.g. the patient populations, outcome measures, definition of variables or duration of follow-up).

NHMRC Evidence hierarchy: designations of 'levels of evidence' according to type of research question

Level	Intervention	Diagnostic accuracy	Prognosis	Aetiology	Screening Intervention
I	A systematic review of level II studies	A systematic review of level II studies	A systematic review of level II studies	A systematic review of level II studies	A systematic review of level II studies
II	A randomised controlled trial	A study of test accuracy with: an independent, blinded comparison with a valid reference standard, among consecutive persons with a defined clinical presentation	A prospective cohort study	A prospective cohort study	A randomised controlled trial
III-1	A pseudorandomised controlled trial (i.e. alternate allocation or some other method)	A study of test accuracy with: an independent, blinded comparison with a valid reference standard, among non-consecutive persons with a defined clinical presentation	All or none	All or none	A pseudorandomised controlled trial (i.e. alternate allocation or some other method)
III-2	A comparative study with concurrent controls: ▪ Non-randomised, experimental trial ▪ Cohort study ▪ Case-control study ▪ Interrupted time series with a control group	A comparison with reference standard that does not meet the criteria required for Level II and III-1 evidence	Analysis of prognostic factors amongst persons in a single arm of a randomised controlled trial	A retrospective cohort study	A comparative study with concurrent controls: ▪ Non-randomised, experimental trial ▪ Cohort study ▪ Case-control study
III-3	A comparative study without concurrent controls: ▪ Historical control study ▪ Two or more single arm study ▪ Interrupted time series without a parallel control group	Diagnostic case-control study	A retrospective cohort study	A case-control study	A comparative study without concurrent controls: ▪ Historical control study ▪ Two or more single arm study
IV	Case series with either post-test or pre-test/post-test outcomes	Study of diagnostic yield (no reference standard)	Case series, or cohort study of persons at different stages of disease	A cross-sectional study or case series	Case series

Source: NHMRC Levels of evidence and grades for recommendations for developers of guidelines 2009

Clinical Question 1. What can help clinicians identify features of BPD in young people?

NICE Guideline summary

Notes: NICE did not do a systematic search on this clinical question but the question was addressed by a team of special advisors who identified a number of clinical features from Chanen (2007):

- Frequent suicidal/self harming behaviours
- Marked emotional instability
- Increasing intensity of symptoms
- Multiple comorbidities
- Non response to established treatments for current systems
- High level of functional impairment
- Chanen et al. (2008)[1] also note a range of symptoms associated with early detection: Disruptive behaviour disorders in childhood or adolescence, depressive symptoms predict young adult personality disorders; substance use disorders during adolescence predict young adult BPD. Symptoms of BPD in youth are as reliable and valid as those in adults and most likely predictors of adult BPD

Updated search

No further papers that met the inclusion criteria were identified in an updated search.

[1] Screening for borderline personality disorder in outpatient youth. Journal of Personality Disorders, 22(4), 353-364.

Clinical Question 2. Are there tools/assessments that could be used?

NICE Guideline summary

Notes: NICE did not do a systematic search on this clinical question but the question was addressed by a team of special advisors who refer to Chanen (2008) outlined below for ease of reference.

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Chanen at al (2008). Screening for borderline personality disorder in outpatient youth. Journal of Personality Disorders, 22(4), 353-364. Australia	Validity study – Level II or Level III-2	101	Mean age 18.8 (15-25yo) 73% female 22% met criteria for BPD Most common Axis I: 55% mood disorders, 51% anxiety disorders, 21% substance dependence, 19% eating disorders. Outpatients in a youth mental health facility.	MSI-BPD BPQ BPD items from IPDESQ BPD items from SCID-II-PQ-BPD	SCID-II (full)	All 4 instruments performed similarly. BPQ significantly outperformed MSI BPQ preferred overall for best balance of sensitivity, specificity, negative and positive predictive value, diagnostic accuracy (0.85), kappa, internal consistency and test-retest reliability but is lengthy to administer (15 mins) SCID-II-PQ-BPD best of the shorter instruments.	NA	NA	NA	Authors conclude in abstract (but not clearly evidenced in body of paper) that screening is effective, but not a replacement for clinical diagnosis Blinding not fully described.

Updated search

No further papers that met the inclusion criteria were identified in an updated search.

Clinical Question 3. *What are the risk factors for BPD?*

NICE Guideline summary

This was a new question – No NICE summary is available

Updated search

Summary

The study of risk factors is methodologically complex. In this search only prospective population cohort studies, or prospective or retrospective cohort studies with matched control groups, were included. Three studies were identified that met the criteria and specifically examined risk factors for the development of BPD. The three studies show that a number of early childhood variables increase risk of developing BPD including parental socio-economic status, a history of trauma or stressful life events, poor or inconsistent parenting and psychiatric comorbidity.

Reference	Summary	Comments
Cohen 2008	The main finding was that low SES (low income, low education level, low-status occupation) showed robust modest predictive effects of BPD even when other predictive risk factors were taken into account. Other substantial cumulative effects included: being female, cumulative trauma history (history of child abuse or neglect, parental alcohol or substance abuse or dependence, parental arrest/imprisonment, parental death, death of a spouse, death of a child, army combat experience, close personal exposure to violent death, or family suicide), stressful life events, IQ, poor parenting and comorbidity.	Large prospective sample, but most measures were mother-reported, although standardised, and some subjective and collected retrospectively.
Fischer 2002	A significantly greater percentage of hyperactive children than control children were diagnosed with BPD at follow-up (3% of 14%) suggesting that hyperactivity in childhood is a risk factor for BPD in early adulthood.	Small prospective cohort study with matched control originally assessed when they were between 4-12 yo and reassessed in this paper when they were 19-25 yo.
Widom 2009	Abused or neglected children were matched with non-victimised children on age, sex, ethnicity and social class and followed up into young adulthood. Rates of BPD in the controls were higher than in the community. Last finding about parents divorced or separated not clear from the paper but stated in the conclusions.	Large prospective cohort study with two waves of follow-up. First interview 1989-95 (29 yo). Second interview 2000-2002 (40 yo) data analysis on 2nd interview.

Notes: Review of the stability of BPD on page 349-355 of the NICE guidelines is also recommended.

Evidence table

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Cohen, P., Chen, H., Gordon, K., Johnson, J., Brook, J., & Kasen, S. (2008). Socioeconomic background and the developmental course of schizotypal and borderline personality disorder symptoms. Development and Psychopathology, 20(2), 633-650. USA	Prospective Cohort Study Level 3	N=787	CIC study participants were members of a cohort of children born between 1965 and 1974 and first assessed for mental disorders in 1983. The sample was based on a random residence-based cohort of children between the ages of 1 and 10 originally drawn from 100 neighbourhoods in two upstate New York counties in 1975. In the first follow-up in 1983 the located sample was supplemented with a newly drawn sample in urban poverty areas in the same	In the analyses reported here we examine the direct effects of family SES on the level of schizotypal and borderline PD symptoms as they change over four assessments beginning as young as age 9 and ending as old as age 38. Effects of SES mediated by offspring IQ, cumulative trauma, problematic parenting,	4 waves : 1983: Age 13.74 (2.56) Cumulative trauma 0.71 (1.24) Borderline symptoms 26.02 (11.89) Depressive symptoms 5.44 (3.39) 1986: Age 16.14 (2.76) Cumulative trauma 0.90 (1.42) Borderline symptoms 24.96 (10.52) Depressive symptoms 5.23 (3.26) 1992: Age 22.04 (2.72) Cumulative trauma 1.07 (1.55) Borderline symptoms 23.45	Summary: Low family SES had robust modest independent effects on development of BPD despite substantial effects of trauma history, stressful recent life events, IQ, poor parenting, and comorbid symptoms.	Cumulative trauma Schizotypal symptoms Borderline symptoms Depressive symptoms	1983 – 1986 4 waves over 4 years		Strengths of the study include the stability of sample participation, its diversity in terms of SES and urban, suburban, and rural residence, as well as the extensive period over which these repeated assessments were made. Large prospective sample, but most measures were mother-reported, although standardised, and some subjective and collected retrospectively. QC 1.1=A 1.2=A 1.3=A 1.4=YES 1.5=E 1.6=E 1.7=A 1.8=F

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			counties to replace those lost to follow-up because of neighbourhood obliteration following urban renewal. Mothers and children were interviewed in their homes by trained lay interviewers in 1983 (778 families), 1986 (776 families, including 34 newly located families from the 1975 cohort), and 1991–1994 (776 families), at mean offspring ages 13.7 (SD ¼ 2.6), 16.1 (SD ¼ 2.8), and 22.0 (SD ¼ 2.7), respectively.	and recent SLEs are also reported.	(11.11) Depressive symptoms 5.47 (3.57) 2003: Age 33.14 (2.90) Cumulative trauma 1.28 (1.72) Borderline symptoms 18.82 (11.22) Depressive symptoms 5.11 (5.93)					1.9= A 1.10=F 1.11=A 1.12=A 1.13=A 1.14=NO 2.1 = (+)
Fischer, M., Barkley, R.A., Smallish, L., & Fletcher, K. (2002). Young	Prospective Cohort Study Level 3	N= 158 n=81	Evaluation 1-1979-80 when they were 4 – 12 years old.	NA	Control V Hyperactive (H group)	**S**ummary: Results suggest that hyperactive children are at significant risk for at least 1 non-drug	Structured Clinical Interview for DSM-III-R Disorders	The participation rate at this follow-up was 93%	Problems may also exist with the nature of	Small prospective cohort study with matched control originally assessed when they were

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
adult follow-up of hyperactive children: Self-reported psychiatric disorders, comorbidity, and the role of childhood conduct problems and teen CD. Journal of Abnormal Child Psychology, 30(5), 463-475. USA			Evaluation 2 - 1987-88 when they were 12 – 20 years old. Evaluation 3 – 1992 when they were 19 – 25 years old. At childhood entry into the study, all participants were required to have an IQ greater than 80 on the Peabody Picture Vocabulary Test be free of gross sensory or motor abnormalities, and be the biological offspring of their current mothers or have been adopted by them shortly after birth. All parents signed statements of informed consent			disorder in young adulthood, principally major depression and several personality disorders, and that this risk is largely mediated by severity of CD at adolescence Detail: The H group had a significantly higher risk for any non-drug psychiatric disorders than the CC group (59% vs. 36%). More of the H group met criteria for ADHD (5%); major depressive disorder (26%); and histrionic (12%), antisocial (21%), passive–aggressive (18%), and borderline personality disorders (14%) at follow-up than the CC group. Severity of childhood conduct problems contributed to the risk for passive–aggressive, borderline, and antisocial personality disorders. But it only affected risk for antisocial personality after	Structured Interview of ADHD and ODD Symptoms in Young Adulthood Structured Interview of Antisocial Behaviour Conners Parent Rating Scale—Revised (CPRS-R) Werry–Weiss–Peters Activity Rating Scale	(147 of 158) for the hyperactive group and 90% (73 of 81) for controls. One control participant died of a sudden cardiac arrest before the adolescent follow-up, and another died in a car accident prior to this follow-up. One hyperactive participant committed suicide prior to this follow-up.	the control group used here. Its relatively small size may have led to limitations on statistical power for detecting small to moderate effect sizes.	between 4-12 yo and reassessed in this paper when they were 19-25 yo. QC 1.1=A 1.2=A 1.3=A 1.4=YES 1.5= 93% AND 90% 1.6=A 1.7=A 1.8=A 1.9= B 1.10=B 1.11=A 1.12=B 1.13=A 1.14=YES 2.1 = (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			for their own and their child's participation in the study. The gender composition was 91% male and 9% female. The racial composition was 94% White, 5% Black, and 1% Hispanic.			controlling for severity of teen conduct disorder (CD), which also contributed to the risk for these same 3 disorders. Examination for comorbidity among these disorders indicated that presence of either borderline or antisocial personality disorder significantly increased the risk for major depression and the other significant personality disorders. More of the hyperactive group had received various forms of mental health treatment during and since leaving high school than the control group.				
Widom, C.S., Czaja, S.J., & Paris, J. (2009). A prospective investigation of borderline personality disorder in abused and neglected	Prospective Cohort Study Level 3 Abused or neglected children were matched	N=1037 76% (n=1196) completed first interview 75% (n=896) completed	Documented cases of childhood physical and sexual abuse before the age of 11. Cases were drawn from the court system to	NA	NA	Summary: Significantly more abused children met criteria for BPD as adults (14.9% v 9.6%) (OR 1.65). Physical abuse and neglect elevated risk (2.09, 1.68). Sexual abuse did not elevate risk (OR 1.46). There was a significant	Structured interview adapted from DIPD-R (not clinical interview). Other psychiatric disorders DIS-III-R	First interview 1989-95 (29 yo) Second interview 2000-2002 (40 yo) data analysis on 2nd interview.	See outcomes column	Rates of BPD in the controls were higher than in the community. Last finding about parents divorced or separated not clear from the paper but stated in the conclusions.

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
children followed up into adulthood. Journal of Personality Disorders, 23(5), 433-446. Australia	with non-victimised children on age, sex, ethnicity and social class and followed up into young adulthood	second interview	include only serious cases.			increased risk in men (OR 2.14) but not women (OR 1.31). Family characteristics such as parent arrest (OR 1.74) and parent AOD problems (OR 2.67) mediated the relationship. Growing up in a family on welfare (OR 1.43) or where parents were divorced or separated was not influential.				QC 1.1=A 1.2=A 1.3=A 1.4= YES 1.5= 76% - 75% 1.6=B 1.7=B 1.8=D 1.9= E 1.10=E 1.11=E 1.12=E 1.13=B 1.14=YES 2.1=(-)

Clinical Question 4. *What preventative interventions are available to reduce the incidence of BPD? (as a primary or secondary outcome)*

NICE Guideline summary

This was a new question – No NICE summary is available

Updated search

No papers that met the inclusion criteria were identified in the search.

Clinical Question 5. What interventions and care processes are effective in improving outcomes or altering the developmental course for people aged under 18 years with borderline symptoms or putative BPD? (that is, would meet diagnosis if over 18)

NICE Guideline summary

In relation to treatment for young people, the NICE guideline development committee asked the following clinical question: What interventions and care processes are effective in improving outcomes or altering the developmental course for people under the age of 18 years with borderline personality disorder or borderline symptoms? To address this question, the literature of adults with borderline personality disorder was scanned to ascertain whether any studies had been conducted with young people. One study was identified, of Cognitive Analytic Therapy (CAT) (Chanen, 2008), but there was no effect for CAT compared with manualised 'good practice' other than for reducing self-harm and general functioning. No study of a pharmacological intervention was identified in young people aged under 18 years. This is not surprising because not only does no drug have marketing authorisation for the treatment of people with borderline personality disorder, but also few psychotropic drugs have marketing authorisation for young people aged under 18 for any indication. In the absence of high-quality evidence, the NICE guideline development committee and its special advisors agreed that both the general principles and the recommendations for treatment for adults described elsewhere in this guideline could be applied to young people. Section 9 in the NICE guidelines outlines its findings on young people.

Updated search

Summary

Two papers were identified, one examining Cognitive Analytic Therapy (CAT) and one examining emotional regulation training. CAT showed some improvement over treatment as usual but emotional regulation training did not.

Evidence table

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Chanen, A.M., Jackson, H.J., McCutcheon, L.K., Jovev, M., Dudgeon, P., Yuen, H.P., Germano, D., Nistico, H., McDougall, E., Weinstein, C., Clarkson, V., McGorry, P.D. (2009). Early intervention for adolescents with borderline personality disorder: Quasi-experimental comparison with treatment as usual. Australian & New Zealand Journal of Psychiatry, 43(5), 397-408.	Partial quasi-experimental design with historical cohort control Level III-1	N=110 TAU=32 CAT=41 GCC=37	CAT participants same as Chanen et al. 2008 Fulfilled two to nine DSM–IV criteria for borderline personality disorder Age CAT=16.3yo GCC=16.6yo TAU=16.2yo Gender CAT 82.9% FM GCC 67.6% FM TAU 71.9% FM	Cognitive Analytic Therapy (CAT)	GCC as in Chanen et al 2008 Historical TAU	Summary: At 24 month follow up: (i) HYPE + CAT had lower standardized levels of, and a significantly faster standardized rate of improvement in, internalizing and externalizing psychopathology, compared with H-TAU; and (ii) HYPE + GCC had lower standardized levels of internalizing psychopathology and a faster rate of improvement in global functioning than H-TAU. HYPE + CAT yielded the greatest median improvement on the four continuous outcome measures over 24 months. No adverse effects were shown with any of the treatments.	Psychopathology (SCID–II borderline personality disorder dimensional score) Internalising and externalising psychopathology scores were derived from the Youth Self-Report (YSR) questionnaire or the Young Adult Self-Report (YASR) Parasuicidal behaviour was assessed by semi-structured interview Global functioning was assessed using the widely used	24 months		Dropouts not analysed in this study cf to 2008. TAU not randomised QC[2] 1.1=A 1.2=B 1.3=D 1.4=no 1.5=not stated 1.6=D 1.7=A 1.8=B 1.9= F 1.10=E 1.11=A 1.12=A 1.13: E 1.14=no confidence intervals IQR only 2.1 = (-) although this is a

[2] The cohort study checklist was used to assess this paper even though it was partially randomised

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
							Social and Occupational Functioning Assessment Scale (SOFAS).			reasonably well reported study, the design introduces significant bias
Schuppert, H.M., Giesen-Bloo, J., van Gemert, T.G., Wiersema, H.M., Minderaa, R.B., Emmelkamp, P.M.G., & Nauta, M.H. (2009). Effectiveness of an emotion regulation group training for adolescents--a randomized controlled pilot study. Psychology & Psychotherapy, 16(6), 467-478.	RCT Level II 4 block randomisation	N=43 ERT+TAU = 23 TAU=20	Age ERT+TAU=16 .23yo TAU=15.9 Gender ERT+TAU=95 .6% FM TAU=80% FM	Emotion Regulation Training: 17 sessions, one systems meeting and two booster sessions. The main goal of the training is to introduce alternative ways of coping with affective instability, daily stressors and psychological vulnerability. Reducing self-harm or harm to others is another important issue. The adolescents learn that they can take more	Treatment as usual (TAU): medication, individual psychotherapy, system-based therapy, inpatient psychiatric care and emergency services in case of self-harm or suicidal behaviour.	Summary: Repeated measure ANOVAs indicate improvement over time, measured by the total score of the BPDSI-IV. The other primary outcome measures demonstrated no significant improvement over time. Detail: Repeated measure ANOVAs on the BPDSI-IV showed that there was no significant level of change between groups for both the total and the subscale affective stability of the BPDSI-IV (BPDSI-IV total score F [1,29] = 0.07; p = 0.79; BPDSI-IV subscale affect regulation F [1,29] = 0.24; p = 0.63). With regard to our other primary outcome	BPDSI-IV to assess current severity and frequency of DSM-IV BPD symptoms. The Multidimensional Emotion Regulation Locus of Control (MERLC) The Youth Self Report (YSR)	Post treatment	BPDSI-IV total score = 0.27 BPDSI-IV affective stability=0.33 MERLC subscale internal locus of control= -.49 YSR subscale internalizing =0.04 YSR subscale externalizing = 0.15	Small sample size QC 1.1=A 1.2=A 1.3=A 1.4=A 1.5=A 1.6=A 1.7=A 1.8= 46 patients entered the study, 3 dropped out after assessment but before randomisation, 7 completed less than 7 sessions and 3 in TAU dropped out before second assessment. 1.9= C –

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
				responsibility for their behaviour and realize they have a choice in how to (re)act when emotionally distressed.		measure, we found a significant interaction effect on the adolescents' MERLC subscale internal locus of control (F [1, 24] = 9.16; p = 0.006). Adolescents in the ERT group reported an improvement in their feeling of having control over their emotions, whereas the adolescents in the TAU alone group reported a decrease of internal locus of control. The secondary outcome measures for the adolescents showed no significant effect between groups, measured by the YSR, internalizing and externalizing subscales (YSRintern F [1, 23] = 0.32; p = 0.58; YSRextern F [1, 24] = 0.06; p = 0.82).				completers only 1.10=E 2.1 = (+)

Clinical Question 6. For people with BPD, which treatments are associated with improvement in mental state and quality of life, reduction in self-harm, service use, and risk-related behaviour, and/or improved social and personal functioning while minimising harms?

NICE Guideline summary

The NICE guideline did not match questions with recommendations specifically. This question appears to be an umbrella question for NICE Questions 4a-c, so there is no specific NICE guideline summary.

Updated search

The findings for Q7, Q9, Q10 and Q11/13 were used to develop the summary for this question.

Summary

Caution is required in interpreting this summary as:

a) there is a mix of pharmacotherapy and psychological therapy studies to answer this question
b) there were only a few studies for each specific treatment, often multiple studies of the same treatment from the same research group
c) these data are from the updated search from 2008-2011 only and the summary does not take into account previous work in the area. Some therapies that have been subject to RCT work earlier than others and the summary does not reflect that.

Mental state

In general psychotherapy appeared to have a positive effect on mental state, including anger, depression and anxiety. In many cases the treatment condition did only as well as the control condition, which was most commonly treatment as usual. Psychodynamic/analytic therapies, especially mentalisation, appeared more consistently to have a moderate to large impact on these measures than other therapies. A range of pharmacotherapies had moderate to large impacts on mental state measures, in particular mood stabilisers/anticonvulsants showed the most consistent responses. Antipsychotics showed mixed effects. Antidepressants had little effect on mental state except in the short term.

QoL

Relatively few studies specifically measured quality of life. Where QoL was measured, most psychological treatments improved quality of life, even those that did not have an impact on clinical measures. QoL was not generally reported in pharmacotherapy studies.

Self-harm and risk behaviours

Most treatments had an impact on suicide and self-harming behaviours, including treatment as usual or general psychiatric management. Mentalisation-based treatment appeared to have the greatest impact on these measures compared to control conditions. Many studies measured suicide and self-harm within measures of overall BPD symptoms and were not always reported separately. There is some evidence that olanzapine can increase self-harming behaviours.

Service utilisation

Relatively few studies specifically measured service utilisation. In general psychological treatments had an impact on hospital utilisation, reducing crisis utilisation and increasing use of/engagement in therapy.

Personal & social functioning

Studies measured included a number of different measures that might fit into this broad category. Most psychological therapies showed improved personal and social functioning, including treatment as usual- type conditions. Effects of pharmacotherapy on personal and social functioning were mixed and not consistent enough to draw conclusions.

Summary table

Reference	Quality	Mental state	QoL	Self-harm & risk behaviours	Service utilisation	Personal/social functioning
Bateman, A., & Fonagy, P. (2008). 8-year follow-up of patients treated for borderline personality disorder: Mentalization-based treatment versus treatment as usual. American Journal of Psychiatry, 165(5), 631-638. RCT Mentalization-based treatment (MBT) v. treatment as usual (TAU)	+	Fewer in MBT met BPD diagnostic criteria		Significant reduction in suicide attempts in MBT compared to TAU	Significant reduction in hospital visits compared to TAU Significant increase in receiving therapy in MBT group compared to control Significant reduction in antipsychotic medication and a similar but smaller effect for antidepressant and mood stabiliser	MBT superior in impulsivity and interpersonal functioning and showed greater improvements on employment and vocational measures
Bateman, A., & Fonagy, P. (2009). Randomized controlled trial of outpatient mentalization-based treatment versus structured clinical management for borderline personality disorder. American Journal of Psychiatry, 166(12), 1355-1364. RCT Mentalization-based treatment v. structured clinical management (SCM)	+	There was a large difference between groups for reduction in interpersonal distress, a moderate effect for symptom distress and more modest for depression		Frequency of self-harm behaviours had significantly steeper reduction in the MBT group compared with SCM Six-month periods free of suicidal behaviours, severe self-injurious behaviours, and hospitalization improved from 0% to 43% in the SCM group and to 73% in the mentalisation-based treatment (MBT) group. Data showed reduced suicidal	Number of episodes of hospital admissions also declined in both MBT and SCM groups but a substantially greater reduction in the MBT than the SCM group	GAF increased substan-tially for both MBT and SCM groups over the 18-month period from 41 (95% CI=39.7–42.7) to 57 (95% CI=54.9–60.0) but the increase was rated as greater in the MBT group. There was a moderate effect for social adjustment problems

Reference	Quality	Mental state	QoL	Self-harm & risk behaviours	Service utilisation	Personal/social functioning
				behaviour in both groups. The rate of improvement was significantly greater in the MBT group		
Bellino, S., Rinaldi, C., Bogetto, F. (2010). Adaptation of interpersonal psychotherapy to borderline personality disorder: A comparison of combined therapy and single pharmacotherapy. Canadian Journal of Psychiatry, 55(2), 74-81. RCT Flueoxetine +/- interpersonal psychotherapy	-	Fluoxetine and Fl + clinical management both alleviated symptoms of depression and improved global functioning Combined therapy was superior to medication-only in alleviating anxiety symptoms Combined therapy had significant effects on impulsivity, and affective instability which increased over time	Combined therapy was significantly superior to medication-only in improving social and psychologica l functioning (measured on QoL scale)			Fluoxetine and Fl + clinical management both improved global functioning Combined therapy was significantly superior to medication-only in improving social and psychological functioning (measured on QoL scale) Combined therapy had significant effects on interpersonal relationships which increased over time
Bellino, S., Paradiso, E., Bogetto, F. (2008). Efficacy and tolerability of pharmacotherapies for borderline personality disorder. CNS Drugs. 22(8), 671-92. SR	-	MAOIs - may help with atypical depression, anger and impulsivity independent of antidepressant effects SSRIs - may help with affective instability and emotional dyscontrol Lithium - some effect on core pathology but can be toxic and potentially fatal in overdose Carbamazepine may have some effect on wide range of symptoms including		Tiotixene, Trifluoperazine, Haloperidol, Olanzapine and Aripiprazole showed some effect on suicidal attempts		

Reference	Quality	Mental state	QoL	Self-harm & risk behaviours	Service utilisation	Personal/social functioning
		impulsive aggressive behaviour and effective dysregulation Lamotrigine[3] showed highly significant improvement in anger was observed after 8 weeks of one trial Tiotixene, Trifluoperazine, Haloperidol, Olanzapine and Aripiprazole showed some effects on a range of symptoms: global symptoms, depression, anxiety, paranoid ideation, psychotic symptoms, obsessive symptoms, rejection sensitivity, impulsive aggression, chronic dysphoria Risperidone showed no effect on mental state measures.				
Bos, E.H., Van Wel, E.B., Appelo, M.T., & Verbraak, M.J. (2010). A randomized controlled trial of a Dutch version of systems training for emotional predictability and problem solving for borderline personality disorder. Journal of Nervous and Mental Disease, 198(4), 299-304 RCT	+	SCL-90 and BPD-40 symptom scores generally decreased from T1 to T3, and more so in the STEPPS group than in the TAU group	Overall Quality of Life and General Health, Physical Health, and Psychological Health showed	No difference between groups on suicide	STEPPS group received 15 STEPPS group sessions on average, and had a mean of 8 contacts with their individual therapist. TAU-patients had a mean of 9 individual contacts with their main therapist. In addition to these study treatment contacts, TAU-patients reported to have had 31 ambulatory therapy contacts on average with other mental health care workers (e.g.,	✓

[3] Lamotrigine and topiramate are anticonvulsants but also used as a mood stabiliser. They are reported under the category reported by the authors of the studies

Reference	Quality	Mental state	QoL	Self-harm & risk behaviours	Service utilisation	Personal/social functioning
STEPPS (Dutch version) v. Treatment as usual			greater improvement in STEPPS than TAU		psychiatrists, psychologists, psychiatric nurses, social workers). Patients in the STEPPS condition had a mean of 21 additional ambulatory therapy contacts	
Carter, G.L., Willcox, C.H., Lewin, T.J., Conrad, A.M., & Bendit, N. (2010). Hunter DBT project: Randomized controlled trial of dialectical behaviour therapy in women with borderline personality disorder. The Australian and New Zealand journal of psychiatry, (2), 162-173. RCT DBT v waitlist/ treatment as usual	++	No statistically significant differences between modified DBT and waitlist control/TAU on mental state measures	Benefit of modified DBT on 3 of 4 quality of life domains	No benefit of modified DBT for self-harm	Trends towards modified DBT in reductions in hospitalisations, shorter lengths of stay, days in bed	
Cottraux, J., Note, I.D., Boutitie, F., Milliery, M., Genouihlac, V., Yao, S.N., Note, B., Mollard, E., Bonasse, F., Gaillard, S., Djamoussian, D., De Mey Guillard, C., Culem, A. & Gueyffier, F. (2009). Cognitive Therapy versus Rogerian Supportive Therapy in Borderline Personality Disorder. Psychotherapy and Psychosomatics, 78, 307-316. Cognitive Therapy Rogerian Supportive Therapy	+	For measures of hopelessness and impulsivity, CT group were improved compared to the control group at the 24 week follow-up, and for general psychopathology CT was improved compared to the control group at 104 weeks.			'Treatment retention was better in the CT group than the control group.'	
Davidson, K. M., Tyrer, P., Norrie, J., Palmer, S. J., & Tyrer, H. (2010). Cognitive therapy v. Usual treatment for borderline personality disorder: Prospective 6-year follow-up. British Journal of Psychiatry, 197(6), 456-462. RCT Cognitive therapy v treatment as usual	++	For measures of depression, anxiety, general psychopathology there were no statistically significant differences between the groups during follow-up	For measures of social functioning, quality of life and dysfunctional attitudes, there were no statistically	The original positive treatment effect is maintained over an average of 6 yrs follow-up: a difference of 1.26 suicide attempts over the following 5 yrs	Use of hospital services remained high in both groups with about 54% of all individuals having received in-patient treatment and almost two-thirds having utilised accident and emergency (A&E) treatment during the follow-up period. With the exception of in-patient and A&E utilisation, no particularly large differences were observed between the treatment groups. However, the mean length of hospitalisation was markedly	For measures of social functioning, dysfunctional attitudes, there were no statistically significant differences between the groups during follow-up

Reference	Quality	Mental state	QoL	Self-harm & risk behaviours	Service utilisation	Personal/social functioning
			significant differences between the groups during follow-up		lower in the CBT–PD group than for the TAU group (10.81 v. 60.97 days respectively). Although a similar proportion of patients in both groups attended A&E, both the mean and median number of attendances were higher in the TAU group.	
Doering, S., Horz, S., Rentrop, M., Fischer-Kern, M., Schuster, P., Benecke, C., Buchheim, A., Martius, P., Buchheim, P. (2010). Transference-focused psychotherapy v. Treatment by community psychotherapists for borderline personality disorder: Randomised controlled trial. British Journal of Psychiatry, 196(5), 389-395 RCT Transference-focused psychotherapy v. Treatment by community psychotherapists	+	The manualised transference-focused psychotherapy group showed a significantly higher proportion of participants that fulfilled less than five DSM–IV diagnostic borderline criteria after 1 year and were not diagnosed BPD any more than treatment by experienced community psychotherapist The transference-focused psychotherapy group had significantly fewer DSM–IV diagnostic criteria and superior personality organisation		The transference-focused psychotherapy group showed significant reduction in suicide and self-harm attempts compared to control	The transference-focused psychotherapy group had significantly fewer and lower duration of psychiatric in-patient treatments	The transference-focused psychotherapy group had better psychosocial functioning
Duggan, C., Huband, N., Smailagic, N., Ferriter, M., Adams, C. (2008). The use of pharmacological treatments for people with personality disorder: A systematic review of randomized controlled trials. Personality and Mental Health, Jul; 2(3), 119-70. SR	++	Antipsychotics -reduction in cognitive perceptual and mental state disturbance Anticonvulsants - Reduction in aggression				
Farrell, J.M., Shaw, I.A., & Webber, M.A. (2009). A schema-focused approach to group psychotherapy for	+	On measures of general psychopathology and general functioning the ST				Social and personal functioning was significantly improved

Reference	Quality	Mental state	QoL	Self-harm & risk behaviours	Service utilisation	Personal/social functioning
outpatients with borderline personality disorder: a randomized controlled trial. Journal of behaviour therapy and experimental psychiatry, 40(2), 317-328. RCT Schema-focused Group psychotherapy		group improved significantly but the control group did not.				in the control group but not in the control group.
Ingenhoven, T., Lafay, P., Rinne, T., Passchier, J., Duivenvoorden, H. (2010) Effectiveness of pharmacotherapy for severe personality disorders: Meta-analyses of randomized controlled trials. Journal of Clinical Psychiatry. 71(1), 14-25. SR	++	No evidence for effect on impulse control, depressed mood. Small effect on anxiety and anger Very large effect on impulsive behavioural dyscontrol, anger, anxiety. Moderate effect on depressed mood.				No evidence for effect on global functioning. Mood stabilisers - More pronounced effect than antipsychotics on global functioning
Kramer, U., Berger, T., Kolly, S., Marquet, P., Preisig, M., De Roten, Y., Despland, J.N., Caspar, F. (2011). Effects of motive-oriented therapeutic relationship in early-phase treatment of borderline personality disorder: A pilot study of a randomized trial. Journal of Nervous and Mental Disease, 199(4), 244-250. RCT TAU +/- motive-oriented therapeutic relationship	+					Reduction of interpersonal problems was larger in the Motive-oriented therapeutic relationship (MOTR) condition than in the TAU condition
Lieb, K., Vollm, B., Rucker, G., Timmer, A., Stoffers, J.M. (2010). Pharmacotherapy for borderline personality disorder: Cochrane systematic review of randomised trials. British Journal of Psychiatry, 196(1), 4-12. SR	+	Little evidence for effectiveness of antidepressants Aripiprizole reduced BPD pathology Effects for valproate, lamotrigine and topiramate but not carbamazepine for		Flupenthixol reduced suicidal behaviour		Effects for valproate, lamotrigine and topiramate but not carbamazepine for interpersonal problems and impulsivity

Reference	Quality	Mental state	QoL	Self-harm & risk behaviours	Service utilisation	Personal/social functioning
		depression, anger Haloperidol reduced anger Omega 3 fatty acids may reduce depressive symptoms but few studies				
Leiberich, P., Nickel, M.K., Tritt, K., & Gil, F.P. (2008). Lamotrigine treatment of aggression in female borderline patients, part ii: An 18-month follow-up. Journal of Psychopharmacology, 22(7), 805-808. RCT Lamotrigine v. placebo	+	Lamotrigine - significant reduction in anger and aggression measured by the STAXI than placebo		No serious side effects but some adverse events during the trial: self-mutilation (LG), attempted suicide (placebo) and weight loss (both)		
Loew, T.H., & Nickel, M.K. (2008). Topiramate treatment of women with borderline personality disorder, part ii: An open 18-month follow-up. Journal of Clinical Psychopharmacology, 28(3), 355-357. RCT Topiramate v. placebo	+	Topiramate - reduction in aggressive behaviour, anxiety and phobias, obsessiveness, depression, paranoia, interpersonal problems, pain Improved affective instability No effect on psychoticism				Improved health and activity related measures
McMain, S.F., Links, P.S., Gnam, W.H., Guimond, T., Cardish, R.J., Korman, L., & Streiner, D.L. (2009). A randomized trial of dialectical behaviour therapy versus general psychiatric management for borderline personality disorder. The American journal of psychiatry, (12), 1365-1374 RCT DBT v general psychiatric management	++	Both groups reduced in BPD symptom severity, symptom distress and depression. There was a trend to reduction of anger in both groups	No differences in health related quality of life but both groups improved significantly	Both groups reduced suicide responses and medical risk significantly	The utilization of non-study treatments decreased significantly more in the DBT group than in the general psychiatric management group Both groups showed significant reductions in ED use and days in psychiatric hospital	There was a significant reduction in interpersonal problems in both groups

Reference	Quality	Mental state	QoL	Self-harm & risk behaviours	Service utilisation	Personal/social functioning
Mercer, D., Douglass, A.B., Links, P.S. (2009) Meta-analyses of mood stabilizers, antidepressants and antipsychotics in the treatment of borderline personality disorder: Effectiveness for depression and anger symptoms. J Personal Disord. 23(2), 156-74. SR	+	Antidepressants moderately effective for short term reduction of depression Mood stabilisers highly effective for anger, moderately effective for depressed mood Antipsychotics moderate effect on anger, depression. Some evidence that haloperidol may worsen depression				
Morey, L.C., Lowmaster, S.E., & Hopwood, C.J. (2010). A pilot study of manual-assisted cognitive therapy with a therapeutic assessment augmentation for borderline personality disorder. Psychiatry Research, 178(3), 531-535. RCT Cognitive therapy +/- therapeutic assessment	+	Reduction in both conditions on BPD symptoms among those that completed treatment, especially affective instability		Reduction in both conditions on suicide and self-harm among those that completed treatment		
Schuppert, H., Giesen-Bloo, J., van Gemert, T.G., Wiersema, H.M., Minderaa, R.B., Emmelkamp, P.M., & Nauta, M.H. (2009). Effectiveness of an emotion regulation group training for adolescents--A randomized controlled pilot study. Clinical Psychology & Psychotherapy, 16(6), 467-478. RCT Emotion regulation group training v. Treatment as usual	-	BPD symptoms improved over time in emotional regulation training group				Improvement in internal locus of control in ERT group

Reference	Quality	Mental state	QoL	Self-harm & risk behaviours	Service utilisation	Personal/social functioning
Shafti, S.S., & Shahveisi, B. (2010). Olanzapine versus haloperidol in the management of borderline personality disorder: A randomized double-blind trial. Journal of Clinical Psychopharmacology, 30(1): 44-7 RCT Olanzapine v. haloperidol	+	Both olanzapine and haloperidol improved but no difference between them (no placebo control group) on anxiety, tension, depressive mood, and hostility.				
Soler, J., Pascual, J.C., Tiana, T., Cebria, A., Barrachina, J., Campins, M.J., Perez, V. (2009). Dialectical behaviour therapy skills training compared to standard group therapy in borderline personality disorder: A 3-month randomised controlled clinical trial. Behaviour Research and Therapy, 47(5), 353-358. RCT DBT skills training v standard group therapy	+	DBT-ST group showed a greater decrease in depression, anxiety and general psychiatric symptoms compared with the SGT group, significant improvement in the psychoticism subscale, and in the BDI irritability subscale in DBT group. Both treatment conditions showed significant reductions in CGI-BPD global severity scores but no difference between groups and specific subscales significantly favoured DBT group (anger, emptiness, and affect instability)		No difference between groups on self-harm or suicide attempts measures	No difference between groups in emergency department visits	
Stoffers, J., Völlm, B.A., Rücker, G., Timmer, A., Huband, N., Lieb, K. (2010) Pharmacological interventions for borderline personality disorder. Cochrane Database of Systematic Reviews. 16(6) SR	++	Little evidence for effectiveness. May help for comorbidity		Olanzapine may increase self-harming		Olanzapine may increase weight gain
Varghese, B.S., Rajeev, A., Norrish, M., Khusaiby, S.B. (2010) Topiramate for anger control: A systematic review.	+	Topiramate resulted in reduction in state anger, anger out, hostility, anger in				

Reference	Quality	Mental state	QoL	Self-harm & risk behaviours	Service utilisation	Personal/social functioning
Indian Journal of Pharmacology 42(3), 135-41. SR		but not trait anger				
Zanarini, M.C., & Frankenburg, R. (2008). A preliminary, randomized trial of psychoeducation for women with borderline personality disorder. Journal of Personality Disorders, 22(3), 284-290 RCT Psychoeducation v. waitlist control	+	Declines in general impulsivity were found to be significantly greater among those in the immediate treatment group than the waitlist				Declines in interpersonal storminess were found to be significantly greater among those in the immediate treatment group than the waitlist

Summary Table: Question 6 Checklist

Reference	Quality	Mental state	QoL	Self-harm & risk behaviours	Service utilisation	Personal/social functioning
Bateman, A. (2008).	+	✓		✓	✓	✓
Bateman, A. (2009).	+	✓		✓	✓	✓
Bellino, S. (2010).	-	✓	✓			✓
Bellino, S. (2008).	-	✓		✓		
Bos, E. H. (2010).	+	✓	✓	✓	✓	✓
Carter, G.L. (2010).	++	✓	✓	✓	✓	
Cottraux, J. (2009).	+	✓			✓	
Davidson, K.M. (2010).	++	✓	✓	✓	✓	✓

Reference	Quality	Mental state	QoL	Self-harm & risk behaviours	Service utilisation	Personal/social functioning
Doering, S. (2008).	+	✓		✓	✓	✓
Duggan, C. (2008).	++	✓				
Farrell, J.M. (2009).		✓				✓
Ingenhoven, T. (2010).	++	✓				✓
Kramer, U. (2011).	+					✓
Lieb, K. (2010).	+	✓		✓		✓
Leiberich, P. (2008).	+	✓		✓		
Loew, T.H. (2008).	+	✓				✓
McMain, S.F. (2009).	++	✓	✓	✓	✓	✓
Mercer, D. (2009).	+	✓				
Morey, L.C. (2010).	+	✓		✓		
Schuppert, H. (2009).	-	✓				✓
Shafti, S. (2010).	+	✓				
Soler, J. (2009).	+	✓		✓	✓	
Stoffers, J. (2010).	++	✓		✓		✓
Varghese, B.S. (2010).	+	✓				✓
Zanarini, M.C. (2008).	+	✓				✓

Updated search

Notes: Studies that address this question are included in Q7-9 and repeated here by outcome. Studies that potentially answer this question but are related to specific populations (i.e., those with co-occurring conditions) are detailed in Q11 and 13 evidence tables. A summary of the evidence for this table is available in a separate document.

Evidence tables

Mental State

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Bateman, A. & Fonagy, P. (2008). 8-year follow-up of patients treated for borderline personality disorder: Mentalization-based treatment versus treatment as usual. American Journal of Psychiatry, 165(5), 631-638. (follow up from Bateman, A. & Fonagy, P. (1999). Effectiveness of partial	RCT Level II RCT (8 yrs since intervention follow-up – reporting occurrences since the 3 year follow-up).	N=41 T=22 C= 19	Age and gender not reported. Diagnosis: BPD on both Structured Clinical Interview for DSM-III-R and Diagnostic Interview for Borderline Patients. Exclusion: If they met criteria for schizophrenia, bipolar, substance misuse or mental impairment or had evidence of organics brain disorder.	Partial hospitalisation consisting of a long-term psychoanalytically orientated treatment for 18 months. Metalization based treatment (MBT) individual and group therapy. MBT by partial hospitalization consists of 18-month individual and group psychotherapy in a partial hospital setting offered within a structured and integrated	Treatment as usual (TAU) consists of general psychiatric outpatient care with medication prescribed by the consultant psychiatrist, community support from mental health nurses, and periods of partial hospital and inpatient treatment as necessary but no specialist psychotherapy.	Summary: MBT had a greater effect than TAU on clinical symptoms, suicide and risk behaviours, service utilisation and general functioning Detail: 23% made suicide attempts in the MBT group (mean attempts 0.5±0.9), contrasted with 74% of the TAU group (mean attempts 0.52 ± 0.48), which was significant. Mean number of emergency room visits and hospital days highly significantly favoured the MBT group, as did the continuing treatment profile. During MBT group therapy, all of the	Primary: Number of suicide attempts over the whole of the 5 year post-discharge follow-up period. Associated outcomes were service use, including emergency room visits; the length and frequency of hospitalization; continuing outpatient psychiatric care; and use of medication, psychological therapies, and community support. Secondary: 1) symptom	2 yrs	Suicide attempts total, d= 1.4 (0.3, 1.5) Zanarini Rating Scale (ZRS) for BPD: total: d = 1.8 (0.14, 3.5), affect: d = 1.1 (0.41, 1.7), cognitive: d=0.84 (0.3, 1.4), impulsivity: d = 1.2 (0.59, 1.9), interpersonal: d = 1.6 (1, 2.3), GAF, d = 0.75 (-1.9, 3.4). No. of days of hospitalisation, d =1.5 (0.36, 2.7). No. of emergency room visits, d =1.4 (0.21, 2.63). No. of yrs of employment, d = 0.94 (0.29, 1.6). No. of yrs psychiatric outpatient	QC 1.1=A 1.2=B 1.3=B 1.4=B 1.5=B 1.6=A 1.7=A 1.8= 0% and 18% 1.9= C 1.10=F 2.1 = (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
hospitalization in the treatment of borderline personality disorder: a randomized controlled trial. Am J Psychiatry. 156:1563–1569)				program provided by a supervised team. Expressive therapy using art and writing groups is included. Crises are managed within the team; medication is prescribed according to protocol by a psychiatrist working in the therapy program. The focus of therapy is on the patient's moment-to-moment state of mind. The patient and therapist collaboratively try to generate alternative perspectives to the patient's subjective		experimental group but only 31% of the treatment as usual group received therapy. Over the 5-year post discharge period, both groups received around 6 months of psychological therapy (n.s.). For all other treatments, the TAU group received significantly more input post discharge—3.6 yrs of psychiatric outpatient treatment and 2.7 yrs of assertive community support, compared with 2 yrs and 5 months, respectively, for the MBT group. The TAU group had an average of over 3 yrs taking antipsychotic medication, whereas the MBT group had less than 2 months. Smaller but still substantial differences were apparent in antidepressant and	status as assessed at a follow-up interview using the Zanarini Rating Scale for DSM-IV borderline personality disorder 2) global functioning as measured by the Global Assessment of Functioning Scale (GAF) at 6-month intervals after 18 months of MBT by partial hospitalization: TX profiles (emergency room visits, hospitalization, psychiatric outpatients, community support, psychotherapy, medication) and suicidality and self-harm using criteria defined in the original trial for each		treatment, d = 0.93 (-4, 1.5). No. of yrs further therapy 36 months post-intake, d = 0.07 (-0.23, 0.37). No. of yrs further assertive outreach treatment, d=1.8 (1.4, 2.2). Medication (yrs) antidepressants, d= 1.1 (0.45, 1.7). Medication (yrs) antipsychotics, d= 2.04 (1.6, 2.5). Medication (yrs) mood stabilisers, d=1.17 (0.73, 1.6). Medication (yrs) three or more drugs, d= 1.45 (1.1, 1.8).	

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				experience of himself or herself and others by moving from validating and supportive interventions to exploring the therapy relationship itself as it suggests alternative understanding .		mood stabilizer use. The TAU group spent nearly 2 yrs taking three or more psychoactive medications, compared to an average of 2 months for the MBT group. At the end of the follow-up period, 13% of the MBT patients met diagnostic criteria for BPD, compared with 87% of the TAU group. The contrast between mean total scores for the Zanarini Rating Scale for BPD yielded a large effect size favouring the MBT group, albeit with a wide confidence interval. Multivariate analysis of variance across the four symptom clusters also reflected the better outcome for the MBT group (Wilks's lambda=0.55, F=6.4, df=4, 32, p=0.001). The largest	patient by interview and scrutiny of medical records. Collected data twice yearly on vocational status, calculating the number of 6-month periods in which the patient was employed or attended an educational program for more than 3 months. Patients recall for self-harm was unreliable and could not be independently corroborated from medical records and so is not reported. The authors consider the frequency of emergency room visits to be a reasonable proxy of severe			

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						differences favouring MBT were in terms of impulsivity and interpersonal functioning. There was over a 6-point difference in the GAF scores between the two groups, yielding a clinically significant moderate effect size of 0.8 (95% CI=–1.9 to 3.4). 46% of MBT group compared to 11% of the TAU group had GAF scores above 60. Vocational status favoured the MBT group, who were employed for nearly three times as long as the TAU group. There was increase in the % of MBT groups employment or education in the three post discharge periods.	self-harm in this population.			
Bateman, A. & Fonagy, P. (2009). Randomized controlled trial of outpatient	RCT Level II	N=134 MBT n= 71 SCM n= 63	Age mean (SD) TX= 31.3 (7.6) C=30.9 (7.9) Female (n, %) TX= 57, 80.3% C= 50, 79.4%	Mentalization-based treatment (MBT) is manualized, consisting of 18 months of	Protocol-driven treatment, structured clinical management (SCM), in an outpatient	Summary: This study suggests that structured, integrated psychological and psychiatric treatment offering coordinated	Primary outcome: proportion of each group without severe parasuicidal behaviour as	18 months Assessed at entry and over the course of an 18-month treatment at	Life-threatening suicide attempts, d = 0.65 (0.58, 0.73) Severe self-harm attempts, d =	Very good description of factors similar between groups and randomisati

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
mentalizatio n-based treatment versus structured clinical managemen t for borderline personality disorder. American Journal of Psychiatry, 166(12), 1355-1364. UK			Diagnosis - All participants were assessed using the Structured Clinical Interview for DSM-IV (SCID-I and SCID-II). Ethnicity - White British/Europe an MBT: 76.1%, SCM: 68.3%; Black African/Afro-Caribbean MBT: 15.5%, 20.6% Other Chinese/Turki sh Pakistani 8.5%, 11.1% Inclusion criteria were 1) diagnosis of BPD, 2) suicide attempt or episode of life-threaten-ing self-harm within last 6 months, and	weekly com-bined individual and group psychotherapy provided by two different therapists. MBT is a psychodynami c treatment rooted in at-tachment and cognitive theory. It requires limited train-ing with moderate levels of supervision for implemen-tation by generic mental health professionals. It aims to strengthen patients' capacity to understand their own and others' mental states in attachment contexts in order to	context representing best current clinical practice. Practitioners received equivalent supervision. Crisis plans were developed collaboratively within each treatment team for all patients. SCM therapists focused on support and problem solving.	clinical management recommended by NICE significantly benefits patients with BPD. Both conditions were associated with substantially reduced suicidality, self-harm, and hospitalization and improvement on measures of symptoms and social and interpersonal functioning by the end of treatment. The rate of improvement in both groups was higher than spontaneous remission of symptoms of BPD. Although patients in both groups made statistically significant improvements, MBT was associated with greater improvements than SCM for most outcomes. Detail: Suicidal behaviour: Six-month periods free of suicidal	indicated by 1) suicide attempt, 2) life-threatening self-harm, or 3) hospital admission. Hospital admission was included because patients are primarily offered inpatient care in anticipation of suicide attempts and severe self-harm Secondary outcome: were independently rated Global Assessment of Functioning (GAF) scores at the beginning and end of treatment and self-reported psychiatric symptoms, social and interpersonal functioning, and	6, 12, and 18 months.	0.62 (0.28, 0.97) Interpersonal distress, d = 0.95 (0.59, 1.3) Social adjustment problems, d = 0.72 (0.37, 1.06) Symptom distress, d = 0.67 (0.33, 1.02) Depression, d = 0.45 (0.1, 0.79) Hospital admissions, suicidal and self-injurious episodes, d = -0.72 (-1.07, -0.37) Length of hospitalisation, d = -0.43, (-0.78, -0.09) Medication use, d= -0.58, (-0.93, -0.24) Psychiatric hospitalisation, d= -0.53, (-0.88,	on procedures. QC 1.1=A 1.2=A 1.3=B 1.4=F 1.5=A 1.6=A 1.7=A 1.8= 0% 1.9= A 1.10=F 2.1 = (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			3) age 18–65. Exclusion criteria were kept to a minimum. Patients were excluded if they currently 1) were in long-term psychotherapeutic treatment, 2) met DSM-IV criteria for psychotic disorder or bipolar I disorder, 3) had opiate dependence requiring specialist treatment, or 4) had mental impairment or evidence of organic brain disorder. Current psychiatric inpatient treatment, temporary residence,	address their difficulties with affect, impulse regulation, and interpersonal functioning, which act as triggers for acts of suicide and self-harm. Crisis plans were developed collaboratively within each treatment team for all patients. MBT therapists focused on helping patients reinstate mentalising during a crisis via telephone contact.		behaviours, severe self-injurious behaviours, and hospitalization improved from 0% to 43% in the SCM group and to 73% in the MBT group; behaviour increased in patients assigned to MBT more than for patients in the SCM group, however, differences only became statistically significant after 12 months of treatment. Number of episodes of hospital admissions, suicide attempts, and severe self-injuries) also declined in both groups but a substantially greater reduction in the MBT than the SCM group. Data were relatively consistent and showed reduced suicidal behaviour in both groups. The rate of improvement was significantly greater in the MBT group both in terms of any	medication use assessed at baseline and at 6-month intervals until the end of treatment at 18 months. Patients' subjective experience of symptoms was measured using the SCL-90-R, and depression was assessed by using the Beck Depression Inventory. Social adjustment and interpersonal functioning were measured using the modified Social Adjustment Scale–self-report and the Inventory of Interpersonal Problems–circumflex version.		-0.19)	

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			drug/alcohol misuse, and comorbid personality disorder were not exclusion criteria.			suicide attempt and the count data associated with it. Differences between groups only became marked in the last 6 months of treatment; at 12 months, groups were not significantly different. Self-harm: Frequency of self-harm behaviours had significantly steeper reduction in the MBT group compared with SCM. During the 6 months before end of treatment fewer patients in the MBT group severely self-harmed (24% vs 43%, c2=4.6, p<0.05; relative risk=0.55, 95% CI=0.33–0.92). However, during the first 6 months of tx, comparison of the proportion of individuals manifesting self-injurious behaviour favoured the SCM group (75% versus 59%, c2=3.1, p<0.08; relative risk=1.27,				

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						95% CI=0.99–1.63). From 6 to 18 months the proportion of these patients in the MBT group who self-harmed showed a steeper decline when compared with the SCM group. The more consistent reduction in the counts of self-injurious behaviour and the difference in incidence rate ratios favouring MBT was highly statistically significant. Hospitalisation: Before treatment about 25% of each group had had at least one hospital admission. During the first 6 months of treatment patients in the MBT group had significantly fewer days in hospital (Kruskal-Wallis c2=4.25, p<0.04), and the difference increased by 12 months (Kruskal-Wallis c2=6.54, p<0.02) and 18 months (Kruskal-				

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						Wallis c2=9.01, p<0.003). The decline in number of admissions over the whole period of treatment was significantly steeper in the MBT group. The number of patients hospitalized reduced in the MBT group relative to the SCM group and was markedly lower in the MBT group in the last 6 months of treatment (c2=7.7, p<0.005; relative risk=0.14, 95% CI=0.3–0.64). Secondary outcomes: GAF increased substantially for both groups over the 18-month period from 41 (95% CI=39.7–42.7) to 57 (95% CI=54.9–60.0) (t=15.5, df=125, p<0.0001) but the increase was rated as greater in the MBT group. There was				

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						improvement on all self-rated measures for both groups. This was particularly notable for symptoms of depres-sion and social adjustment. The slope of decline in self-reported symptoms and relationship and social adjustment problems was significantly greater in the MBT group across all four measures. The size of difference between the two groups at the end of treatment was substantial for reduction in interpersonal distress (d=0.95, 95% CI=0.59–1.3), moderate for social adjustment problems (d=0.72, 95% CI=0.37–1.06) and symptom distress (d=0.67, 95% CI=0.33–1.02), and more modest for depression (d=0.45, 95% CI=0.10–0.79).				

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						Medication: use of medication reduced significantly in both groups. The proportion of patients not receiving medication increased from 27% to 57%. The increase was greater for the MBT group. Counting the number of classes of psychotropic medication also showed a decline across both groups with the incidence rate ratio suggesting a significant difference in favour of the MBT group. The number of people receiving two or more different classes of medication substantially reduced in both groups from 30% at the beginning of treatment to 8% at the end of treatment.				
Bellino, S., Paradiso, E., Bogetto, F. (2008) Efficacy and tolerability of	SR Level I	N = 27 These are reviewed for three TX interventio	1) Efficacy and Tolerability of Antidepressant Agents ADs - MAOIs, Tricyclic and Heterocyclic	1)Efficacy and Tolerability of Antidepressant Agents MAOIs - 3 studies Tricyclic and	Varied by study	Summary: MAOIs - may help with atypical depression, anger and impulsivity independent of antidepressant effects	No outcome measures stated	Not stated	Not reported	Not very clear SR, methods are vague and little detail is given

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
pharmacotherapies for borderline personality disorder. CNS Drugs. 22(8), 671-92. Italy		ns: 1) ADs, 2) Mood stabilizers 3) APs	ADs and SSRIs – 8 studies were included: TX length ranged from 5 – 14 weeks, number of participants ranged from 10 – 108. 2) Efficacy and Tolerability of Mood Stabilizers MS – Lithium, Carbamazepine, Valproate semisodium and Lamotrigine – 7 studies were included: TX length ranged from 6– 12 weeks, number of participants ranged from 10 – 52. Some inpatients and outpatients. 3) Efficacy and Tolerability of Antipsychotics APs – First generation	Heterocyclic Ads – 2 studies SSRIs – 4 studies 2) Efficacy and Tolerability of Mood Stabilizers Lithium – 1 study Carbamazepine – 2 studies Oxcarbazepine – 0 studies Valproate semisodium – 3 studies Lamotrigine – 1 study 3) Efficacy and Tolerability of Antipsychotics First generation antipsychotics Tiotixene – 2 studies Trifluoperazine – 1 study Haloperidol – 2 studies Atypical antipsychotics Risperidone – 1 study Olanzapine – 4		Tricyclics - modest effect and high potential for harm SSRIs - may help with affective instability and emotional dyscontrol Lithium - some effect on core pathology but can be toxic and potentially fatal in overdose Carbamazepine - Some effect on wide range of symptoms including impulsive aggressive behaviour and effective dysregulation Lamotrigine - highly significant improvement in anger was observed after 8 weeks of one trial Tiotixene, Trifluoperazine, Haloperidol, Olanzapine, Aripiprazole showed some effects on global symptoms, depression, anxiety, paranoid ideation, psychotic symptoms, obsessive symptoms, rejection sensitivity,				clearly in results, the tables lack detail, the review is more descriptive. Studies have small sample sizes and short durations and high drop outs. Heterogeneity of selection criteria and outcome measures (no detail). QC 1.1 =A 1.2 =D 1.3 =C 1.4 =D 1.5 =B 2.1 (-)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			and atypical AP – 11 studies were included: TX length ranged from 6 – 12 weeks, number of participants ranged from 16 -108.	studies Ariprazole – 1 study		suicidal attempts, impulsive aggression, chronic dysphoria Risperidone – no effect Detail: Antidepressant Agents MAOIs - can useful in treating BPD with main effective on symptoms of atypical depression, anger and impulsivity. The effects are considered to be independent of the anti-depressive action of these drugs. Tricyclic and Heterocyclic Ads – response to TCAs in patients with BPD appears modest. The risk of behavioural toxicity and potential lethality of TCAs in overdose support the use of SSRIs or other ADs. SSRIs – (in particular fluoxetine and fluvoxamine) were found to be efficacious in treating BPD. The effectivess				

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						of the drugs concerned symptoms of effective instability (depression, anxiety and anger), impulsive dyscontrol (verbal aggression and aggression against objects). Risk of toxicity is lower. Mood Stabilizers Lithium – one crossover study showed efficacy of lithium on core features of BPD but was small study, 10 participants for 6 weeks. Lithium can be toxic. Can be fatal in overdose so caution with suicide risk is advised. Carbamazepine – Limited data – Suggestion of effectiveness of carbamazepine on wide range of symptoms, including impulsive aggressive behaviour and effective dysregulation. One study reported link to melancholic depression.				

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						Oxcarbazepine – No RCTs reported. Valproate semisodium – Limited data – only open label studies. Some success with impulse aggression. Potential dose related effects. Lamotrigine – Limited data – A highly significant improvement in anger was observed after 8 weeks of one trial. Antipsychotics - First generation antipsychotics Tiotixene – 2 studies - Reduction in global symptomatology, depression, anxiety and paranoid ideation, reduction in psychotic symptoms, obsessive symptoms Trifluoperazine – reduction in depression, anxiety, and rejection sensitivity and reduction in suicidal attempts vs. placebo Haloperidol – Reduction in global				

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						symptomatology, depression, anxiety and paranoid ideation, reduction in psychotic symptoms, obsessive symptoms Antipsychotics-Atypical antipsychotics Risperidone – no significant difference Olanzapine – reduction in impulsive aggression, chronic dysphoria, reduction in anxiety, paranoia and global symptomatology. Aripiprazole – reduction in global psychopathology, depression and anxiety.				
Bellino, S., Rinaldi, C., Bogetto, F. (2010) Adaptation of interpersonal psychotherapy to borderline personality disorder: A comparison	RCT Level II	N= 55 enrolled n=44 analysed	Participants = 55 (18 male, 37 female) with DSM-IV-TR diagnosis of BPD were recruited from patients attending the Service for Personality Disorder of the Unit of Psychiatry,	28 patients received fluoxetine 20 mg to 40 mg daily (see control group for schedule) plus IPT-BPD. IPT-DBT consisted of weekly, manualised sessions lasting 1 hour.	27 patients received fluoxetine 20 mg to 40 mg daily plus clinical management consisting of a fortnightly clinical review of 15-20 minutes duration. Initially,	Summary: Small sample size limits ability to draw strong conclusions but results suggest that combined therapy was superior to monotherapy in relieving anxiety, improving functioning and alleviating the severity of some symptoms of BPD	Depression (Hamilton Depression Rating Scale) Anxiety (Hamilton Anxiety Rating Scale) Quality of life (SAT-P satisfaction profile)	Treatment lasted 32 weeks.	Not reported	No Intention to treat analysis – only analysed data for completers (i.e. 44 of 55 enrolled) and potential attrition

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
of combined therapy and single pharmacotherapy. Canadian Journal of Psychiatry. 55(2), 74-81. Italy			Dept. of Neuroscience, University of Turin. Mean age of 25.8 yrs in medication-only group and 26.2 yrs in combined therapy group; 62% previous hospitalizations; 27% employed; 31% married. Excluded were those with a lifetime diagnosis of delirium, dementia, amnestic or other cognitive disorders, schizophrenia or other psychotic disorders, and bipolar disorder. Concomitant Axis I or II	Patients in the combined therapy group were treated by a psychotherapist who was not the psychiatrist prescribing the medication and who had 5 yrs of experience practising IPT. The psychotherapy and the pharmacotherapy started at the same time.	fluoxetine was prescribed at a fixed dosage of 20 mg daily with the opportunity to increase the dosage to 40 mg daily beginning in week 2, depending on clinical judgment. Treatment lasted 32 weeks.	during the 32 weeks of the trial. Detail: Of 55 subjects, 11 (20%) dropped out (6 in medication-only, 5 in combined therapy). Only treatment completers (n=44) were included in the analysis. Using a univariate General Linear Model to calculate the effects of 1) duration of treatment and 2) the type of treatment on each assessment scale score, only duration of treatment had a statistically significant effect on global functioning, depressive symptoms and social and occupational functioning (p=<0.001), while both treatments alleviated symptoms of depression and improved global functioning. Combined therapy was superior to medication-only in	Global functioning (CGI Clinical Global Impression Scale) Social and occupational functioning (SOFAS) BPD symptoms severity and frequency (BPD-SI)			bias due to lack of compliance was not addressed. Combined therapy was not compared with IPT alone. QC 1.1=A 1.2=C 1.3=B 1.4=D 1.5=B 1.6=B 1.7=B 1.8= 20% 1.9=D 1.10=F 2.1 = (-)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			disorders were also excluded. Female patients of childbearing age were excluded if they were not using an adequate method of birth control, as were those who had recently received psychotherapy or pharmacotherapy, and current substance abusers.			alleviating anxiety symptoms (p=<0.001). Combined therapy was significantly superior to medication-only in improving psychological functioning (p=0.003). The interaction between combined therapy and treatment duration was superior to medication-only in improving social functioning as measured by the SAT-P for subjective quality of life (p=0.03). Only duration of therapy had an effect on the BPD-SI total score (p=<0.001), and duration also had an effect on the following factors from the BPD-SI: outbursts of anger (p=<00.1) and emptiness (p=<.001). Combined therapy had significant effects on				

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						interpersonal relationships (p=<.009), impulsivity (p=<0.01), and affective instability (p=0.02) which increased over time (p=<0.001 for all domains). Neither type of therapy nor duration of therapy had effects on: abandonment, parasuicidal behaviour, paranoid ideation, and identity.				
Bos, E.H., Van Wel, E.B., Appelo, M.T., & Verbraak, M.J. (2010). A randomized controlled trial of a Dutch version of systems training for emotional predictability and problem	RCT Level II Randomization was done separately at each location.	N=79 TX (n = 42) C (n = 37)	Between 8 and 12 subjects were included in each group for the Treatment group. If at the time of randomisation, an insufficient number of participants were assigned to a group, the remaining spots were randomly assigned to	Systems Training for Emotional Predictability and Problem Solving (STEPPS) + individual treatment Group treatment; it combines skills training with general CBT elements and has a strong systems component;	Treatment as usual (TAU) The STEPPS groups began simultaneously with a group of patients that started TAU. The control condition was TAU, i.e., the standard treatment for BPD offered at the participating sites. This treatment	Summary: Moderate to large effect sizes were seen for symptom variables and psychological quality of life at T2. At T3, moderate effects on symptoms were still present, while also moderate effects on physical, social and overall quality of life could be observed. More than TAU, STEPPS plus limited adjunctive individual therapy reduced symptomatology and	Primary efficacy measures included general psychiatric and BPD-specific symptoms, measured with the Symptom Checklist-90 total score (SCL-90) and the Borderline Personality Disorder checklist-40 total score (BPD-40) respectively.	Pre-treatment assessments (T1) took place following randomization, just before the start of the intervention. Post-treatment assessments (T2) were done after the final weekly session of	Effect sizes (non-standardised): Primary outcomes: Estimated mean differences at the end of treatment (T2), adjusted for differences at T1, were: SCL-90, -47.0 (95% CI, -78.2 to -15.9, p = 0.003); BPD-40, -18.7 (95% CI, -31.6 to -5.8, p = 0.005). At 6 mth follow-up (T3), the differences	Raters were not blind and interrater reliability was not assessed for the BPDSI-IV. Intention to treat analysis was completed but yielded similar results to the per-protocol

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
solving for borderline personality disorder. Journal of Nervous and Mental Disease, 198(4), 299-304. The Netherlands			subjects who did not meet full BPD criteria (these participants were not included in this analysis). Age mean (SD) Treatment 32.9 (5.6) Control 31.8 (9.2) Gender – female (n, %) Treatment 35, 83.3% Control 33, 89.2% Diagnosis BPD confirmed by administering the BPD modules from the Dutch versions of the Personality Diagnostic Questionnaire and the Structured Clinical Interview for	family members and significant others are actively involved in the program. The Dutch version of the STEPPS group program involves 18 weekly sessions and a single follow-up session 3 to 6 months after the conclusion of the program. The program has 3 main components: (1) psychoeducation about BPD; (2) emotion management skills training; and (3) behaviour management skills training. STEPPS is system-based in that friends	consisted of individual therapy from a psychotherapist, psychologist, or psychiatric nurse, offered every 1 to 4 weeks. STEPPS-related treatments like DBT or family groups for family members of the patients were not allowed. In both conditions, the main treatment could be supplemented with (medication) contacts with a psychiatrist, social worker, or other health care professional.	improved quality of life, also in the longer run. STEPPS was not superior to TAU in reducing impulsive and parasuicidal behaviours, but this may be explained by the low base rate of these behaviours in our sample. It may also be that a more intensive treatment, such as DBT, is required to find differential effects on these behaviours. The merit of the STEPPS program is that it is relatively easily learned and implemented, and nevertheless improves BPD treatment in a number of ways. Further research to compare this treatment with other effective treatments is warranted. Importantly, this RCT on STEPPS is the first done by others than its developers. Detail: Scores on the	Secondary outcome measures included impulsive and parasuicidal behaviour, and quality of life. Impulsive and parasuicidal behaviour were assessed using 2 subscales of the Borderline Personality Disorder Severity Index-IV (BPDSI-IV). The impulsivity subscale contains 11 items reflecting potentially harmful impulsive behaviours (e.g., gambling, reckless driving, binge eating). The parasuicide subscale contains 13 items reflecting self-mutilating Parasuicidal behaviours and suicidal	the STEPPS program (mean 23.9 ±3.6 weeks after T1). Follow- up assessments (T3) took place approximately 6 months after T2 (mean 25.7 ±4.2 weeks after T2). Outcome measures were assessed on all 3 occasions	were smaller but still significant: SCL-90, -38.4 (95% CI, -67.1 to -9.6, p =0.009); BPD-40, -14.7 (95% CI, -26.6 to -2.8, p =0.016). Secondary outcomes: In the domain of Psychological Health, STEPPS scores were higher than TAU scores particularly at T2 (estimated mean difference adjusted for T1 score: 2.08 [95% CI, 0.76 –3.41, p =0.002]); at T3, this difference was reduced to 0.91 (95% CI, -0.32–2.15, p =0.146). With respect to Overall Quality of Life and General Health, Physical Health and Social Relationships, STEPPS scores were significantly higher than TAU	analysis so only the per-protocol analysis was presented. The comparability of treatment between sites and the comparability between different therapists was not assessed. QC 1.1=A 1.2=A 1.3=B 1.4=F 1.5=A 1.6=A 1.7=B 1.8=28.9% (TX) and 13.2% (C) 1.9= 3 1.10=4 2.1 = (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			DSM-IV Axis II Disorders. Participants had to be above threshold on either impulsivity and/or parasuicide subscales of the BPD Severity Index-IV Exclusion Subjects were excluded if they did not speak Dutch; were cognitively impaired (IQ < 70); younger than 18 yrs; treated involuntary; or presented an imminent danger to themselves or others.	and relatives of the patients are explicitly involved in the program for support and reinforcement of the newly learned skills (the "support group"). They receive education about BPD and are instructed how to interact with the person with the disorder. STEPPS is administered by 2 mental health professionals, of who at least one is a psychotherapist. Subjects assigned to STEPPS also received limited individual therapy. This		primary efficacy measures. SCL-90 and BPD-40 symptom scores generally decreased from T1 to T3, and more so in the STEPPS group than in the TAU group. Quality of life scores (WHOQOL-Bref) generally increased from T1 to T3. Overall treatment effects were found for Overall Quality of Life and General Health, Physical Health, and Psychological Health. For Social Relationships the overall treatment effect was a trend, for Environment the overall treatment effect was not significant. In both conditions, the number of patients scoring above the cut-off for ratings for the parasuicide and impulsivity subscales of the BPDSI-IV decreased from T1 to	thoughts and attempts. Quality of life was measured with the World Health Organization Quality of Life Assessment-Bref (WHOQOL-Bref)		scores only at T3 (estimated differences 1.80 [95% CI, 0.30 – 3.30, p =0.019]; 1.41 [95% CI, 0.15– 2.66, p =0.028]; and 1.86 [95% CI, 0.14 –3.57, p =0.035], respectively), but not at T2 (estimated differences 1.58 [95% CI, -0.07– 3.22, p =0.060]; 0.96 [95% CI, -0.40 –2.32, p = 0.164]; and 0.77 [95% CI, -1.08 – 2.61, p =0.431, respectively). Odds ratios for impulsivity were (T2): 0.81 (95% CI, 0.26 –2.53, p = 0.716); and (T3): 0.68 (95% CI, 0.22–2.09, p =0.501). Odds ratios for parasuicide were (T2): 2.05 (95% CI, 0.66–6.35, p = 0.211); and (T3): 1.02 (95% CI,	

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				therapy was developed as an adjunct to STEPPS to help consolidate the newly acquired skills and to stimulate their use. It had a structured format, in which the previous STEPPS session was discussed as well as the use of the learned skills in everyday life. The therapy was offered every 2 weeks during the entire study period.		T3. There were no significant differences between the conditions (overall treatment effects). Medication was similar between the groups at baseline and remained stable during follow-up assessment. Over the entire study period, patients in the STEPPS group received 15 STEPPS group sessions on average, and had a mean of 8 contacts with their individual therapist. TAU-patients had a mean of 9 individual contacts with their main therapist. In addition to these study treatment contacts, TAU-patients reported to have had 31 ambulatory therapy contacts on average with other mental health care workers (e.g., psychiatrists, psychologists, psychiatric nurses,			0.35–2.97, p = 0.974). Effect sizes (standardised): Effect sizes for the differences between the treatments at T2: SCL-90, 0.68; BPD-40, 0.68; Psychological Health, 0.96. At T3 effect sizes were: SCL-90, 0.56; BPD-40, 0.53; Overall Quality of life & General Health, 0.61; Physical Health, 0.56; Social Relationships, 0.61.	

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						social workers). Patients in the STEPPS condition had a mean of 21 additional ambulatory therapy contacts.				
Carter, G.L., Willcox, C.H., Lewin, T.J., Conrad, A.M., & Bendit, N. (2010). Hunter DBT project: Randomized controlled trial of dialectical behaviour therapy in women with borderline personality disorder. The Australian and New Zealand journal of psychiatry, (2), 162-173.	RCT Level II The purpose of the present study was to compare dialectical behaviour therapy (DBT) and the control condition of treatment as usual plus weight list (WL) for DBT (TAU+WL).	N=60 Treatment n= 27 Control n= 33	Age mean (SD): Treatment 24.5 ± 6.12; Control 24.7 ± 6.15 Gender: all female Diagnosis: BPD via clinical interview by a psychiatrist using DSM-IV criteria. To be in the study, needed a history of multiple episodes of deliberate self-harm, at least three self-reported episodes in the preceding 12 months.	Modified DBT: team-based approach including individual therapy, group-based skills training, telephone access to an individual therapist and therapist supervision groups following the model of treatment developed by Linehan et al. The main change to the Linehan et al. model was the telephone access to individual therapists. In the present study	WL + TAU The control condition was a 6-month WL for DBT while receiving TAU (TAU+WL). Subjects, both in the initial DBT group and in the TAU+WL group who came to DBT after 6 months were offered 12 months DBT treatment, although the comparison between groups was restricted to the first 6 months of DBT versus TAU+WL.	Summary: The study found no statistically significant differences between modified DBT and waitlist control/TAU except for some quality of life measures. There were trends towards modified DBT in reductions in hospitalisations, shorter lengths of stay, and days in bed. Authors state: There are several possible explanations given to as to why DBT was not effective in this study: regression to background (pre-baseline) levels, the Hawthorne effect whereby both groups improved because of the effect of being in a study, the potentially powerful effect of being in a 6	The primary outcomes (differences in proportions and event rates) of any deliberate self-harm (DSH) event; general hospital admission for DSH and psychiatric admission for any reason; and mean difference in length of stay for any hospitalization. Secondary outcomes were disability and quality of life measures. Specific measures: Composite International Diagnostic Interview modules:	3 and 6 month follow-up	BDQ days in bed, d=-0.66 (-1.25, -0.07) BDQ days out of role, d= -0.43 (-1.01, 0.15) Days in hospital, d= -0.16 (-0.62, 0.30) No. hospital admissions, d= -0.22 (-0.68, 0.24) No. hospital presentations without admission, d= 0.03 (-0.43, 0.49) No. self-harm episodes in previous 3 mths, d= -0.18 (-0.64, 0.28) WHOQOL-BREF Environmental domain, d= 0.43 (-0.14, 0.99) WHOQOL-BREF Physical domain, d= 0.69 (0.11, 1.27)	Very clear on methods of randomisation and concealment (sealed envelopes). Randomization occurred after baseline assessment. Hospitalisation data was intention to treat but rest was per-protocol. Large discrepancy in drop outs between groups.

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			Exclusion: Exclusion criteria were presence of a disabling organic condition, schizophrenia, bipolar affective disorder, psychotic depression, florid antisocial behaviour, or developmental disability	telephone access was delivered using a group roster of DBT individual therapists (not contact with each participant's individual therapist) between 8:30 a.m. and 10 p.m., and telephone contact with the local psychiatric hospital between 10 p.m. and 8:30 a.m. Treatment subjects were also assigned to the relevant skills training group, meeting weekly with the modules running in the following order: Interpersonal		month TAU+WL group for DBT for the control condition, beneficial effects of the TAU condition available in the Hunter region, modifications to standard DBT, the possible inferiority of training of DBT therapists to that of those in other studies or inferior adherence to the DBT methods despite adequate training, and methodological differences. Detail: The present study found reductions in psychiatric hospitalization for both DBT and WL+TAU over time but no significant benefit in favour of DBT for the binary outcome, the mean event rate or the mean length of stay for those with an admission at the end-point of the trial. There were no significant	anxiety, depression, bipolar disorders, alcohol abuse and dependence, substance abuse and dependence International Personality Disorder Examination Questionnaire Brief Disability Questionnaire Lifetime Parasuicidal Count-2 Parasuicidal History Interview-3 month period WHO Quality of Life-BREF version		WHOQOL-BREF Psychological domain, d= 0.65 (0.07, 1.23) WHOQOL-BREF Social domain, d= -0.04 (-0.60, 0.53)	QC 1.1=A 1.2=A 1.3=A 1.4=F 1.5=A 1.6=B 1.7=A 1.8=47.4% (TX) and 11.4(C) 1.9= B 1.10= 2.1 = (+)

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				Effectiveness, Emotion Regulation and Distress Tolerance. Each module ran for 8 weeks. Groups had a minimum of 4 members before commencement and a maximum of 8. Entry to the skills group occurred only at the commencement of the next skills module.		differences in proportions for general hospital admission for DSH or for any psychiatric admission. The length of stay overall, or the length of stay for those with either type of admission was not significantly different, although the DBT group tended to have shorter lengths of stay. For the per-protocol analyses, there were no significant differences for the proportion of patients with any DSH episode in 6 months, or for the number of self-harm episodes for the baseline–3 months and 3–6 months periods. There was a significant benefit in favour of DBT for days spent in bed but no significant effect for days out of role. There was a significant beneficial				

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						effect in favour of DBT, for three of the four domains of quality of life: Physical, Psychological and Environmental.				
Cottraux, J., Note, I.D., Boutitie, F., Milliery, M., Genouihlac, V., Yao, S.N., Note, B., Mollard, E., Bonasse, F., Gaillard, S., Djamoussian, D., De Mey Guillard, C., Culem, A. & Gueyffier, F. 2009. Cognitive Therapy versus Rogerian Supportive Therapy in Borderline Personality Disorder. Psychotherapy and Psychosomatics, 78,	RCT (pilot study) Level II	N = 65 n=33 (CT) n=32 (RST) Eighty-eight patients were screened: 13 did not meet the inclusion criteria, 10 refused to enter the study and 65 were randomised, 51 followed up post treatment.	CT Male n=9 Female n=24 Mean age 34.3 SD 10.2 RST Male n=6 Female n=26 Mean age 32.6 SD 8.3 Diagnosis using MINI and confirmed by the Interview for Borderline Personality Disorder-Revised (DIBR), with a score of at least 8, according to the threshold of the scale. Exclusion criteria were:	Cognitive therapy 10 sessions of individual 1-hour sessions, over 1 year.	Rogerian supportive therapy 10 sessions of individual 1-hour sessions, over 1 year.	Summary: CT retained the patients in therapy for longer than RST. At week 24, CT was better than RST on the Hopelessness Scale, IVE scale and regarding the therapeutic relationship. At week 104, the CGI improvement (patient and evaluator) was significantly better in CT than in RST. High baseline depression and impulsivity predicted dropouts. High baseline depression and impulsivity predicted dropouts. Detail: A between-group comparison of the time spent in therapy showed that dropouts left the	Clinical Global Impression (CGI) Scale Hamilton Depression Scale Beck Depression Inventory Beck Anxiety Inventory Hopelessness Scale Young Schema Questionnaire II Eysenck Impulsivity Venturesomeness Empathy (IVE) Inventory	51 patients were evaluated at weeks 24, 38, and 52 and 21 at week 104. 21.5% drop out 6 months of intensive care with 1 session per week (24 sessions) and a maintenance phase with a session every fortnight over 6 mths (12 sessions)	Not Reported	Same therapists in both groups QC 1.1 = A 1.2 = B 1.3 = B 1.4 = B 1.5 = A 1.6 = A 1.7 =A 1.8 = 21.5% 1.9= B 1.10 C 2.1 (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
307-316. France			age under 18 or over 60 years, patients living too far from the centres, psychotic disorders with current delusions, significant drug or alcohol addiction in the foreground or antisocial behaviours.			study later in CT (CT: mean = 51 days, SD = 37.4; RST: mean = 29 days, SD = 32.4; Wilcoxon-Mann-Whitney = –2.05; p = 0.040). In the whole sample, the average time before ending therapy was 82 days in CT vs. 60 in RST (Wilcoxon-Mann-Whitney = –1.5; p = 0.13). Using all available information on the response criterion, the odds of success were estimated to be 61% higher in the CT group than in the RST group, a large but non-significant effect (OR: 1.61, 95% CI: 0.62–4.16, p = 0.32). When missing outcomes were considered as failures, the estimated treatment effect was reduced to an OR of 1.33 (95% CI: 0.60–2.96, p = 0.48).				

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						Change from baseline was significant for the IVE scale: CT mean = 0.85 (SD 1.74); RST mean = –0.67 (SD 2.87); Wilcoxon-Mann-Whitney: –2.086, p = 0.03. The Hopelessness Scale also changed more in CT: mean –3.31 (SD 4.64); RST mean = –0.50 (SD 3.73); Wilcoxon-Mann- Whitney: –2.27, p = 0.02. The therapeutic relationship was also better in CT: the therapists rated the patients more favourably in CT than in RST (p = 0.04).				
Davidson, K. M., Tyrer, P., Norrie, J., Palmer, S.J., & Tyrer, H. (2010). Cognitive therapy v. Usual treatment for	RCT Level II	N= 106 n= 76 T=43 C= 33	Age mean (SD) T= 32.4 ± 9.0 C= 31.4 ± 9.4 Gender – Female (n, %) T= (45, 83.3%) C= (44, 84.6%) Diagnosis: BPD, met	30 x 1 hr sessions of individual cognitive–behavioural therapy for personality disorders (CBT–PD) over 1 year in addition to	TAU	Summary: The original positive treatment effect is maintained over an average of 6 yrs follow-up: a difference of 1.26 suicide attempts over the following 5 yrs. Detail: Over the 6-year period, 73% (n =	Structured Clinical Interview for DSM–IV Axis II Personality Disorders. Acts of Deliberate Self-Harm Inventory.	6 year follow-up. Of the people who originally took part n = 76/106 (72%) were interviewed at 6 year	BDI, d = 0.02 (-0.44, 0.47) BSI, d = 0.07 (-0.39, 0.52) EQ-5D thermometer, d = -0.11 (-0.57, 0.34) EQ-5D weighted	No info. on comorbidity and prescribed drug use was obtained across the trial and follow-up, and no

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borderline personality disorder: Prospective 6-year follow-up. British Journal of Psychiatry, 197(6), 456-462. UK			criteria for at least 5 items of BPD using the Structured Clinical Interview for DSM IV Axis II Personality Disorders. Inclusion: to enter the study, participants had received either in-patient psychiatric services or an assessment at accident and emergency services or an episode of deliberate self-harm (either suicidal act or self-mutilation) in the previous 12 months. Exclusion: those who had evidence of an organic illness, mental	their usual treatment		24/33) in the TAU group had made at least one suicide attempt compared with 56% (n = 24/43) in the CBT–PD group (adjusted odds ratio 0.37, 95% CI 0.10–1.38, P= 0.13). In terms of self-harm (non-suicidal) there was little evidence of a difference between the groups. However, it was clear that the overall rate of self-harm declined in both groups. For measures of depression, anxiety, general psychopathology, social functioning, quality of life and dysfunctional attitudes, there were no statistically significant differences between the groups during follow-up. At 6 yrs, 54% of the sample no longer met diagnostic criteria for BPD: 56% (n = 24/43) of the CBT–PD group and	Beck Depression Inventory (BDI). Spielberger State–Trait Anxiety Inventory (STAI). Brief Symptom Inventory (BSI). Participant's beliefs thought to be related to personality disorder were measured using the Young Schema Questionnaire (YSQ). Social Functioning Questionnaire (SFQ). Inventory of Interpersonal Problems – Short form 32 (IIP–32). Cost effectiveness via quality-	follow-up.	HSV, d = -0.24 (-0.69, 0.22) IIP-32, d = 0.18 (-0.27, 0.64) SFQ, d =-0.18 (-0.63, 0.27) State-Anxiety, d = -0.19 (-0.64, 0.27) Suicide attempts, d = -0.32 (-0.77, 0.14) Trait-Anxiety, d = -0.10 (-0.56, 0.35) Youth Schema Questionnaire, d = -0.07 (-0.52, 0.39)	formal assessment of interrater agreement was carried out on SCID–II diagnosis. Randomization was stratified by high (presence of suicidal acts in past 12 months) or low (presence of self-mutilation only in past 12 months) episodes of self-harm, using randomized permuted blocks of size 4. It was completed confidentially at a separate centre. Therapy

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			impairment, alcohol or drug dependence, schizophrenia or bipolar affective disorder. Did not exclude those who were abusing drugs or alcohol providing they did not meet criteria for dependence			52% (n = 17/33) of the TAU group. There was no difference between the groups in terms of those who continued to meet diagnostic criteria (P = 0.44). Defined poor outcome as any suicide attempt in the follow-up period and examined the baseline predictors of good and poor outcome. From all the variables known to be of prognostic importance pre-randomisation, only having special needs at school was specifically associated with the presence of any suicide attempts during the 6-year follow-up. Overall quality of life scores for the entire group remained poor and continued to lie within a similar range to values reported for other severe mental health	adjusted life-year (QALY), assessed using the EuroQol (EQ–5D), and the Client Service Receipt Inventory (CSRI) for the 6 months before follow-up interview.			adherence measures were completed. QC 1.1=A 1.2=A 1.3=A 1.4=F 1.5=A 1.6=A 1.7=A 1.8= 20% (TX) and 36% (C) 1.9= A 1.10=A 2.1 = (++)

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						populations such as severe schizophrenia. Use of hospital services remained high in both groups with about 54% of all individuals having received in-patient treatment and almost two-thirds having utilised accident and emergency (A&E) treatment during the follow-up period. With the exception of in-patient and A&E utilisation, no particularly large differences were observed between the treatment groups. However, the mean length of hospitalisation was markedly lower in the CBT–PD group than for the TAU group (10.81 v. 60.97 days respectively). Although a similar proportion of patients in both groups attended A&E, both the mean and median number of attendances were				

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						higher in the TAU group.				
Doering, S., Horz, S., Rentrop, M., Fischer-Kern, M., Schuster, P., Benecke, C., Buchheim, A., Martius, P, Buchheim, P. (2010). Transference-focused psychotherapy v. Treatment by community psychotherapists for borderline personality disorder: Randomised controlled trial. British Journal of Psychiatry, 196(5), 389-395. Germany	RCT Level II	Treatment n=52 Control n= 52	Age mean (SD): Treatment 27.46 ±6.8; Control 27.19 ± 7.5 Gender – all females Diagnosis: DSM-IV BPD via Structured Clinical Interview for DSM and Structured Interview for Personality Organisation Exclusion: Exclusion criteria were diagnosis of antisocial personality disorder, schizophrenia, bipolar I and II disorder with a major depressive, manic or hypomanic episode	Transference-focused psychotherapy (TFP): Two 50-minute sessions are delivered per week. Before treatment starts, a treatment contract is negotiated orally with the individual, covering general aspects like duration and payment as well as potential threats to the treatment specific to each patient (e.g. suicide attempts, drug misuse or anorectic behaviour). The treatment focuses on the integration of internalised		Summary: TFP group had fewer DSM features at 1 year, fewer self-harm and suicide attempts, lower duration and less time as an inpatient and better psychosocial functioning than control group. The drop-out rate was significantly higher in the experienced community psychotherapists group Detail: There were no significant differences between the groups with regard to medication at baseline and during the 1-year treatment period. The TFP group showed a significantly higher proportion of participants that fulfilled less than five DSM–IV diagnostic borderline criteria after 1 year and were	Primary: Drop-outs Suicide attempts and self-harming behaviour: Cornell Interview for Suicidal and Self-Harming Behaviour- Self Report (CISSB), adapted from the Parasuicidal History Interview Secondary: DSM-IV diagnostic criteria for BPD via SCID GAF Beck Depression Inventory State-Trait Anxiety Inventory Brief Symptom Inventory Psychiatric inpatient admissions - Cornell Revised Treatment History	Follow-up: 1 year	Any suicide attempts during psychotherapy, d = -0.08 (-0.47, 0.30). BDI, d=0.12 (-0.26, 0.51). Brief symptom inventory, d= 0.08 (-0.31, 0.46). GAF, d=0.34 (-0.04, 0.73). Level of personality organisation, d= -0.26 (-0.65, 0.12). No. of days in psychiatric inpatient during psychotherapy, d = -0.23 (-0.61, 0.16). No. of DSM-IV diagnostic criteria for BPD, d= -0.56 (-0.95, -0.17). No. of psychiatric inpatient admissions during psychotherapy, d= -0.47 (-0.86, -0.08). Self-harming during	High, differential drop out QC 1.1=A 1.2=A 1.3=A 1.4=F 1.5=A 1.6=C 1.7=A 1.8= Treatment 17% not assessed at follow-up; Control 44% not assessed at follow-up 1.9= A 1.10=C 2.1 = (-)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			during the previous 6 months, substance dependency (including alcohol) during the previous 6 months, organic pathology or mental retardation.	experiences of dysfunctional early relationships. For this purpose, the actual relationship between the individual and the therapist ('transference relationship') is examined as much as possible. Additional psychotherapy not allowed		not diagnosed BPD any more (42.3% v. 15.4%, P= 0.002). The transference-focused psychotherapy group was significantly superior with regard to the number of DSM–IV diagnostic criteria, psychosocial functioning, personality organisation, suicide attempts and number and duration of psychiatric in-patient treatments. To rule out a mere dose effect of TFP, completer analyses were conducted, controlling for the number of therapy sessions delivered. The group differences remained significant for GAF Score, number of DSM–IV borderline criteria, and level of personality organisation. In both groups all but one of the individuals who attempted suicide dropped out of	Inventory (CRTHI) Personality organisation: STIPO		psychotherapy, d= -0.12 (-0.50, 0.27). State-Trait Anxiety X1, d= 0.18 (-0.20, 0.57). State-Trait Anxiety X2, d= 0.04 (-0.35, 0.42).	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						treatment. Those who dropped out were not included in the completer analysis. The results demonstrate the significant superiority of TFP with regard to the primary outcome criteria of drop-out rate and suicide attempts during the treatment year. The same was true for the secondary outcome criteria reduction of DSM–IV diagnostic borderline criteria, psychosocial functioning, level of personality organisation and psychiatric in-patient admissions. Participants in the transference-focused psychotherapy group received 48.5 (s.d. = 34.2) sessions and those in the experienced community psychotherapists group 18.6 (s.d. = 24.0) sessions of individual				

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						psychotherapy within the 1-year study period. Future research should look at long-term follow-up, since effects of psychotherapy seem to take yrs to develop and to continue after termination of treatment Transference-therapists received more supervision and had assessment of treatment adherence. Large difference between dropout rates between groups. Control group participants attended fewer sessions than the intervention group.				
Duggan, C., Huband, N., Smailagic, N., Ferriter, M., Adams, C. (2008) The use of pharmacological treatments for people	SR Level 1	N=35 A total of 35 studies described pharmacological interventions for people with a	AGE RANGE (18 - 62) = 18 studies No Age Range = 11 studies GENDER Male and Females = 18 studies Females = 12	Olanzapine vs. placebo = 2 studies Carbamazepine vs. placebo = 1 study Divalproex sodium vs. placebo =4 studies Thiothixene	Placebo + others listed under intervention.	Summary: This review identifies a very limited evidence base to justify intervening with drugs in this group. The main positive findings were those favouring the use of anticonvulsants to reduce aggression,	Quality of Life (SF36) = 1 study BDI = 2 studies BIS = 1 study IMPS = 2 studies SCL-90 = 2 studies SSI = 2 studies Stic = 2 studies WSIAP = 2 studies	12 wks = 2 studies, 32 days + washout = 1 study, 6 mths = 3 studies, 12 wks + washout = 2 studies, 10 wks = 2	Mean differences (MD, 95% CI) provided for individual studies and weighted mean differences (WMD, 95% CI) provided for >1 study. Cognitive-perceptual thinking:	Search only up to 31 Dec 2006, plus DBT. QC 1.1 =A 1.2 =A 1.3 =A 1.4 =A 1.5 =A

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
with personality disorder: A systematic review of randomized controlled trials. Personality and Mental Health. Jul 2(3), 119-70. UK		variety of personality disorders. Studies reviewed included diagnostic category for BPD	study Males = 1 study SETTING Outpatient = 16 studies Outpatient and community = 1 study Community = 8 studies Inpatient = 3 studies Multicentre = 1 study Not stated = 1 study	hydrochloride vs. placebo = 1 Fluoxetine vs. Nortriptylyne = 1 study Loxapine succinate vs. Chlorpromazine = 1 study Topiramate vs. placebo = 3 studies Mianserin vs. placebo = 1 study Aripiprazole vs. placebo = 1 study Naloxone vs. placebo = 1 study clonidine vs. clonidine = 1 study Fluvoxamine vs. placebo = 1 study Fluoxetine vs. placebo = 1 study Thiothixene hydrochloride vs. Haloperidol = 1 study Fluoxetine +		and of anti-psychotics to reduce cognitive perceptual and mental state disturbance. However, there were major methodological deficiencies in the trial designs, including small numbers of participants and limited duration of treatment and follow-up. Detail: see effect sizes	HDQ = 1 study STAXI = 2 studies HAM (VARIOUS) = 8 studies Behaviour (BPD SI) = 1 study Behaviours (VARIOUS AGGRESSION) = 4 studies Behaviour – suicide attempt = 2 studies Behaviour (impulsivity) = 2 studies Behavioural dyscontrol (acting out, AOS) = 1 study Behaviour (self-injury) = 2 studies	studies, 12 wks + tapering = 1 study, 12 wks + placebo run-in = 1 study, 6 wks + 6 mth follow up = 1 study, 6 wks = 1 study, 8 wks = 6 studies, 6 – 35 days = 1 study, 4 – 16 days = 1 study, 24 wks = 1 study, 3 mths + washout = 1 study, 5 wks + washout = 2 studies, 52 wks + placebo washout = 1 study.	Paranoid thinking (aripiprazole) MD: -8.10 (-12.21, -3.99). Psychoticism (aripiprazole) MD: -6.20 (-8.94, -3.46). Somatization (topiramate) MD -6.80 (-9.97, -3.63). Depression: SCL-90 (anticonvulsant) WMD -0.57 (-1.27, 0.13); HAM-D (atypical antipsychotic) WMD -3.98 (-5.70, -2.26), SCL-90-R (aripiprazole) MD -16.40 (-20.88, -11.9); POMS (fluoxetine) risk ratio 0.26 (0.09, 0.72); HAM-D (phenelzine vs. haloperidol) MD -7.86 (-10.51, -5.21) favours phenelzine. Anger: STAXI State anger (anticonvulsants)	2.1 (++)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
				DBT vs. placebo +DBT = 1 study Olanzapine + adapted DBT vs. placebo + adapted DBT= 1 study Haloperidol vs. Phenelzine sulphate vs. placebo = 1 study Lamotrigine vs. placebo = 1 study Omega 3 fatty acid vs. placebo =1 study Olanzapine vs. Fluoxetine vs. Olanzapine + fluoxetine = 1 study Paroxetine vs. placebo = 1 study Haloperidol vs. Amitriptyline vs. placebo = 1 study Nortriptyline vs. Bromocriptine vs. placebo = 1					WMD -6.66 (-7.63, -5.68), (aripiprazole) MD -7.70 (-10.1, -5.39); STAXI Trait anger (anticonvulsant) WMD -3.89 (-4.84, -2.93), (aripiprazole) MD -5.90 (-8.04, -3.76); STAXI Anger in (anticonvulsant) WMD -1.11 (-1.64, -0.57), (aripiprazole) MD -4.20 (-5.79, -2.61); STAXI Anger out (anticonvulsant) WMD -5.09 (-5.75, -4.43), (aripiprazole) MD -6.40 (8.27, -4.53); STAXI Anger control (anticonvulsant) WMD 2.64 (2.22, 3.07), (aripiprazole) MD 2.70 (0.53, 4.87); SCL-90 Anger/hostility (anticonvulsant) WMD -0.91	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
				study CBT vs. Moclobemide vs. placebo = 1 study Amantadine + Std. care vs. Desipramine + Std. care vs. placebo + Std. care = 1 study Risperidone vs. placebo = 1 study Fluoxetine hydrochloride vs. placebo = 1 study Fluphenazine decanoate vs. Fluphenazine decanoate = 1 study Desipramine + Std. Methadone treatment vs. placebo + Std. Methadone treatment = 1 study Two studies (Simpson et al., 2004; Soler et al., 2005) used a					(-1.37, -0.45), (aripiprazole) MD -8.50 (-12.48, -4.52); POMS Anger (fluoxetine) risk ratio 0.30 (0.10, 0.85) BDHI Hostility (phenelzine) MD -9.19 (-16.12, -2.26); Anxiety IMPS intropunitiveness (conventional anti-psychotic) WMD -0.36 (-3.30, 2.58), (phenelzine) MD -3.88 (-7.51, -0.25), HAM-A general anxiety (atypical anxipsychotic) WMD -2.62 (-4.52, -0.72), SCL-90-R general anxiety (topiramate), MD -6.30 (-8.63, -3.97), (aripiprazole) MD -9.10 (-12.55, -5.65), SCL-90-R phobic anxiety, (topiramate) MD	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
				drug plus DBT in the active treatment arm, but in both cases compared it with a placebo					-4.10 (-6.72, -1.48), (aripiprazole) MD -5.70 (-10.33, -1.07), SCL-90-R interpersonal sensitivity (divalproex sodium) MD -0.70 (-1.30, -0.10), SCL-90-R insecurity in social contact (topiramate) MD -6.80 (-10.63, -2.92), (aripiprazole) MD -4.50 (-7.64, -1.36) Impulsiveness BIS (conventional anti-psychotic) WMD 1.38 (-7.51, 10.27), STIC (conventional anti-psychotic) WMD 1.12 (-0.82, 3.07), Global functioning GAS (conventional anti-psychotic) WMD 1.75 (-2.37, 5.86), CGI (divalproex	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
									sodium) risk ratio 0.58 (0.36, 0.94), GAS (phenelzine vs. haloperidol) MD 5.15 (0.29, 10.01) favours phenelzine Social functioning SF-36 (topiramate) MD 7.70 (4.44, 10.96) Overall symptoms/mental health IMPS (conventional anti-psychotic) WMD -1.86 (-10.85, 7.14), SCL-90-R global severity (aripiprazole) MD -9.30 (-13.22, -5.38), (topiramate) MD -5.90 (-8.47, -3.33), SF-36 (topiramate) MD 4.50 (1.27, 7.73), Interpersonal symptoms (IIP-D) Overly autocratic/ dominant (topiramate) MD -5.30 (-6.15, -4.45) Overly	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
									quarrelsome/ competitive (topiramate) MD -5.80 (-6.56, -5.04), Overly introverted/ social avoiding (topiramate) MD -2.60 (-3.38, -1.82) Overly expressive/ importunate (topiramate) MD -3.80 (-4.36, -3.24) Overall physical functioning SF-36 physical functioning (topiramate) MD 3.90 (0.99, 6.81), SF-36 Role limitation (topiramate) MD 4.00 (0.02, 7.98) Adverse effects Menstrual problems (anticonvulsants) risk ratio 1.31 (0.41, 4.16) Any adverse effects in 2 weeks (fluvoxamine) risk	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
									ratio 1.62 (1.05, 2.51) favours placebo Mild sedation (olanzapine) risk ratio 3.50 (1.23, 9.92) favours fluoxetine SF-36 vitality (topiramate) MD 6.60 (3.71, 9.49) favours topiramate Nausea (fluvoxamine) risk ratio 4.05 (1.01, 16.32) favours placebo	
Farrell, J. M., Shaw, I. A., & Webber, M. A. (2009). A schema-focused approach to group psychotherapy for outpatients with borderline personality disorder: a randomized controlled trial. Journal	RCT Level II Patients (N = 32) were randomly assigned to SFT-TAU and TAU alone.	N=28 n=16 (intervention) n=12 (TAU)	Age mean: 22-52 Gender: all female Inclusion criteria were: females between the ages of 18 and 65, who met criteria for a BPD diagnosis confirmed by the Diagnostic Interview for Personality Disorders-	Eight-month, thirty-session schema-focused therapy (SFT) group to added to treatment-as-usual (TAU) individual psychotherapy for borderline personality disorder (BPD). The group-SFT program consists of	TAU (individual psychotherapy of at least six-months duration)	Summary: When baseline scores were compared to post-treatment scores, the improvement on all measures was significant for the SFT-group, but not for the TAU control group. The improvement was maintained or strengthened for the treatment group and lack of improvement maintained for the control group from post to six-month follow-up	Primary Measures: Borderline Syndrome Index (BSI) a 52 item true or false self-report measure of BPD symptoms that allows measurement of change by specifying a time period for the subject to base answers on.	Post-treatment and six-month follow-up.	BSI (BL/Post/FUp) .22/1.97*/2.81* DIB_R (BL/Post/FUp) .46/2.22*/2.42* SCL-90 (BL/Post/FUp) .13/1.35/2.2* GAF (BL/Post/FUp) 0.06/1.39/3.13 * indicates significant between group differences in	No Intention to treat analysis was undertaken, only treatment completed analysis, but there was only dropout from treatment in the control group.

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
of behaviour therapy and experimental psychiatry, 40(2), 317-328. USA			Revised and the Borderline Syndrome Index and were in individual psychotherapy of at least six-months duration and would agree to continue that treatment for the course of the study. Exclusion criteria were: an Axis I diagnosis of a psychotic disorder or a below average IQ (89), as measured by the Shipley Institute of Living Scale. IQ was made an exclusion criterion because of the cognitive and reading demands of the program.	thirty weekly sessions, each lasting 90 min, over an eight-month period, with 6 patients and 2 therapists and manual based.		The TAU group showed little improvement, or even some deterioration, over the fourteen months of the study. Detail: Significant reductions in BPD symptoms and global severity of psychiatric symptoms, and improved global functioning with large treatment effect sizes were found in the SFT-TAU group. At the end of treatment, 94% of SFT-TAU compared to 16% of TAU no longer met BPD diagnosis criteria ($p < .001$). There was a significant overall effect on DIB-R and specifically for impulses and interpersonal subscales.	Symptom Check List-90 (SCL-90) the global severity score was used as a measure of subjective experience of general symptoms. Diagnostic Interview for Borderline Personality Disorders-Revised (DIB-R) a structured interview that assesses four putative aspects of BPD psychopathology (affect, cognition, impulse, interpersonal) and assigns scaled severity scores. Global Assessment of Function Scale (GAFS) ratings by patients' individual		effect at that time point.	QC 1.1 = A 1.2 = A 1.3 = B 1.4 = B 1.5 = A 1.6 = A 1.7 =A 1.8 = There was no drop out from the TX group but 25% drop out from the control group. 1.9= A 1.10=F 2.1 (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			Attendance at weekly individual psychotherapy sessions was a condition of remaining in the study.				therapists was used as a measure of global functioning since it includes symptom, social and occupational functioning.			
Ingenhoven, T., Lafay, P., Rinne, T., Passchier, J., Duivenvoorden, H. (2010) Effectiveness of pharmacotherapy for severe personality disorders: Meta-analyses of randomized controlled trials. Journal of Clinical Psychiatry. 71(1),14-25. The Netherlands	SR Level 1	N = 32 included studies of which n = 21 were subject to meta-analysis.	Adults from inpatient/outpatient settings (6 studies), inpatient only (5 studies) and outpatient settings (21 studies).	Flupentixol IM – 1 study, Thiotixene – 1 study, Trifluoperazine -1 study, Haloperidol – 3 studies, Olanzapine – 3 studies, Risperidone – 1 study, Aripiprazole – 1 study, Mianserine – 1 study, Tranylcypromine- 1 study, Amitriptyline- 1 study, Desipramine- 1 study, Phenelzine – 2 studies, Fluoxetine – 4 studies, Fluvoxamine-	Varied by study	Summary: No evidence for effect of antidepressants on impulse control, depressed mood, global functioning. Small effect on anxiety and anger. Mood stabilisers had a very large effect on impulsive behavioural dyscontrol, anger, anxiety. Moderate effect on depressed mood. More pronounced effect than antipsychotics on global functioning Use is not supported nor is the combined use with antipsychotics Atypical antipsychotics do not outperform classic	Three symptom domains: cognitive perceptual symptoms impulsive-behavioural dyscontrol affective dysregulation: (4 subdomains) depressed mood, anxiety, anger, mood lability Global functioning	5 – 26 weeks	Antipsychotics have a moderate effect on cognitive-perceptual symptoms (5 PC-RCTs; standardized mean difference [SMD] = 0.56) and a moderate to large effect on anger (4 PC-RCTs; SMD = 0.69) Antidepressants have a small but significant effect on anxiety (5 PC-RCTs; SMD = 0.30) and anger (4 PC-RCTs; SMD = 0.34). The effect of antidepressants on global functioning is negligible.	QC 1.1 =A 1.2= A 1.3 =A 1.4 =A 1.5 =A 2.1 (++)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
				1 study, Carbamazepine -2 studies, Lithium – 1 study, Valproate – 3 studies, Lamotrigine- 1 study, Topiramate - 3 studies		neuroleptics Detail: Antipsychotics have a moderate effect on cognitive-perceptual symptoms. Antipsychotics have a moderate to large effect on anger. Antidepressants have no significant effect on impulsive-behavioural dyscontrol and depressed mood. Antidepressants have a small but significant effect on anxiety and anger. Mood stabilizers have a very large effect on impulsive behavioural dyscontrol. Mood stabilizers have a very large effect on anger. Mood stabilizers have a very large effect on anxiety. Mood stabilizers have a moderate effect on depressed mood. Mood lability as an outcome measure was seldom assessed.			Mood stabilizers have a very large effect on impulsive-behavioural dyscontrol (6 PC-RCTs; SMD = 1.51) and anger (7 PC-RCTs; SMD = 1.33), a large effect on anxiety (3 PC-RCTs; SMD = 0.80), but a moderate effect on depressed mood (5 PC-RCTs; SMD =0.55. Mood stabilisers have a more pronounced effect on global functioning (3 PCRCTs; SMD = 0.79) than antipsychotics have (5 PC-RCTs; SMD = 0.37).	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						Mood stabilizers have a more pronounced effect on global functioning than have antipsychotics. The effect of antidepressants on global functioning is negligible. The review suggests that atypical antipsychotics do not outperform the classic neuroleptics. With respect to impulsive-behavioural dyscontrol, the prevalent use of antidepressants (SSRIs) is not validated by this meta-analysis, nor is the second step of adding a traditional antipsychotic drug. Modern mood stabilizers seem to deserve a more prominent position. Prescribing SSRIs as first and second steps in the treatment of affective dysregulation seems out-dated since				

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						mood stabilizers have a more pronounced effect. Evidence-based pharmacologic treatment guidelines for severe personality disorders are still in their infancy.				
Lieb, K., Vollm, B., Rucker, G., Timmer, A., Stoffers, J.M. (2010) Pharmacotherapy for borderline personality disorder: Cochrane systematic review of randomised trials. British Journal of Psychiatry. 196(1), 4-12. UK	SR Level I	N= 27 studies Twenty-seven trials were included in which first and second generation antipsychotics, mood stabilisers, antidepressants and omega-3 fatty acids were tested	Participants were adults from mostly outpatient settings. There was a mix of male and female participants ranging from 16 – 314 with 1714 participants in total.	Olanzapine vs placebo – 6 studies, Carbamazepine vs placebo – 1 study, Valproate semisodium vs placebo – 2 studies, Thiothixene vs placebo – 1 study, Omega 3 fatty acids vs placebo – 2 studies, Loxapine Chlorpromazine vs placebo - 1 study, Topiramate vs placebo – 3 studies, Aripiprazole vs placebo – 1 study, Ziprasidone vs placebo - 1	Varied by study	Summary: Little evidence for effectiveness of antidepressants. There were positive effects for valproate, lamotrigine and topiramate but not carbamazepine. Haloperidol reduced anger, flupenthixol reduced suicidal behaviour, aripiprizole reduced pathology. Omega 3 fatty acids may reduce depressive symptoms but few studies Detail: First generation antipsychotics – The comparisons of first-generation antipsychotics (FGAs) with placebo yielded significant effects for haloperidol in the	Primary outcomes were overall disorder severity as well as specific core symptoms. Secondary outcomes comprised associated psychiatric pathology and drug tolerability	Study durations ranged from 5 weeks to 24 weeks, with a mean duration of approximately 84 days (s.d. = 54.7).	Standardised mean difference (SMD 95% CI), standardised mean change (SMC) or risk ratio (RR, 95% CI) Effect sizes vs. placebo: First generation antipsychotics Haloperiodol for anger SMD -0.46 (-0.84, -0.09) Flupentixol decanoate for suicidal behaviour RR 0.49 (0.29, 0.92) No proof of efficacy for thiothixene. Second-generation antipsychotics Aripiprazole for anger SMD -1.14	Authors state that the robustness of findings is low, since they are based mostly on single, small studies. QC 1.1 =A 1.2 =A 1.3 =A 1.4 =A 1.5 =B 2.1 (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
				study, Fluvoxamine vs placebo - 1 study, Fluoxetine vs placebo – 2 studies, Haloperidol Phenelzine sulphate vs placebo – 1 study, Haloperidol Amitriptyline vs placebo – 1 study, Lamotrigine vs placebo – 1 study, Olanzapine, Fluoxetine Olanzapine + fluoxetine – 1 study, Flupentixol decanoate vs placebo - 1 study, Mianserin vs placebo – 1 study.	reduction of anger and flupentixol decanoate in the reduction of suicidal behaviour. No proof of efficacy was found for thiothixene for any outcome. Tolerability between active and placebo treatment did not differ in any comparison. Second generation antipsychotics – Among second-generation antipsychotics (SGAs), aripiprazole was found to have both significant effects in the reduction of the core pathological symptoms of BPD, as investigated by one trial with 52 participants. Six trials compared olanzapine with placebo; among these were two large studies including approximately 300 participants each. Unfortunately, the different formats of result reporting (end-			(-1.73, -0.55), for psychotic symptoms SMD -1.05 (-1.64, -0.47), for impulsivity SMD -1.84 (-2.49, -1.18), for interpersonal problems SMD -0.77 (-1.33, -0.20), for depression SMD -1.25 (-1.85, -0.65), for anxiety SMD -0.73 (-1.29, -0.17), for general severity of psychiatric pathology SMD -1.27 (-1.87, -0.67). Olanzapine for affective instability SMC -0.16 (-0.32, -0.01), for anger SMC -0.27 (-0.43, -0.12), for psychotic symptoms SMC -0.18 (-0.34, -0.03), for anxiety mean change difference -0.22 (-0.41, -0.03), for suicide	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						point v. change data) did not allow pooling of all study estimates for the majority of outcomes. There were also statistically significant benefits for the reduction of anxiety. However, results for suicidal ideation were inconsistent Mood stabilisers – Beneficial effects were found for the mood stabilisers valproate semisodium (divalproex sodium), lamotrigine and topiramate, but not for carbamazepine. Antidepressants - There was little evidence of effectiveness for antidepressant treatment. Other drugs – For supplementary omega-3 fatty acids, significant effects were found in one study for the reduction of suicidality and depressive			ideation SMC 0.29 (0.07, 0.50), for suicidality SMD 0.15 (-0.36, 0.65), self-harm RR 1.20 (0.50, 2.88). No significant effects for ziprasidone. Mood stabilisers Valproate semisodium for interpersonal problems SMD-1.04 (-1.85, -0.23), for depression SMD -0.66 (-1.31, -1.01), for two studies of anger SMD -1.83 (-3.17, -0.48) and SMD -0.15 (-0.91, 0.61). Lamotrigine for impulsivity SMD -1.62, (-2.54, -0.69) Topiramate for interpersonal problems SMD -0.91 (-1.36, -0.35), for impulsivity SMD – 3.36 (-4.44, -2.27), for anger	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						symptoms. There was also an effect estimate of a second study for depressive symptoms, but because of different formats of reporting it could not be pooled with the first one. However, these findings also tended towards better results in participants given omega-3 fatty acids. Tolerability and safety – Tolerability did not differ for any drug–placebo comparison, i.e. drug treatment was not associated with a higher ratio of non-completers than was placebo treatment. Detailed data on adverse effects were available for olanzapine treatment. Participants treated with this drug were,			in males SMD -0.65 (-1.27, -0.03), for anger in females SMD -3.00 (-3.64, -2.36), for anxiety SMD -1.40 (-1.99, -0.81), for general psychiatric pathology SMD -1.19 (-1.76, -0.61) Antidepressants Amitriptyline for depression SMD -0.59 (-1.12, -0.06). No significant effects for miansein, fluoxetine, fluvoxamine or phenelzine sulphate. Other drugs Omega-3 fatty acids for sucidality RR 0.52 (0.27, 0.95), for depression RR 0.48 (0.28, 0.81) and SMD -0.34	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						overall, no more likely to experience any adverse effect than were members of the control group. Adverse effects were also reported in detail for topiramate treatment. Data on the frequency of memory problems, trouble in concentrating, headache, fatigue, dizziness, menstrual pain and paraesthesia were also available for one RCT, with no significant difference in frequency between the topiramate and placebo groups comparison. Drug vs drug - Two FGAs, loxapine and chlorpromazine, were compared in one study with 80 participants.			(-1.15, 0.46). Tolerability and safety[4] Olanzapine for adverse events RR 1.13 (1.00, 1.28), for weight gain RR 1.05 (0.90, 1.20), increased appetite RR 2.78 (1.75, 4.34), somnolence RR 2.97 (1.75, 5.03), dry mouth RR 2.24 (1.08, 4.67), sedation RR 9.23 (2.18, 39.12) and RR 1.26 (0.44, 3.66). Topiramate on weight loss SMD -0.55 (-0.91, -0.19). Haloperidol on weight gain SMD -0.18 (-0.70, 0.34) Phenelzine sulphate on weight gain SMD 0.11 (-0.39, 0.61) Effect sizes drug	

[4] Please note blood measures are available but not reported here

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						Tolerability did not differ significantly. However, there was no usable information on any pathology-related outcome. Two antidepressants were compared with the FGA haloperidol. The tricyclic antidepressant amitriptyline did not differ significantly from haloperidol treatment for any outcome. The monoamine oxidase inhibitor phenelzine sulphate, however, proved to be superior to haloperidol in the reduction of depression and general psychiatric pathology, and in improving mental health status as investigated in one study. No significant effect was found for the comparison of the SGA olanzapine with the antidepressant fluoxetine for any pathology related			vs. drug comparisons Phenelzine sulphate superior to haloperidol for depression SMD -0.68 (-1.19, -0.17), anxiety SMD -0.66 (-1.16, -0.15), general psychiatric pathology SMD -0.53 (-1.03, -0.03), improving mental health status SMD 0.51 (0.01, 1.01). Olanzapine had more weight gain than fluoxetine SMD 0.98 (0.20, 1.76), and more mild sedation RR 3.50 (1.23, 9.92). No significant effect sizes reported for any other drug vs. drug comparisons.	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						outcome. Drug vs combination of drugs - One trial tested the effects of olanzapine and fluoxetine separately against their combination. There was no significant difference indicating any benefits from combined treatment v. treatment with olanzapine or fluoxetine alone. Tolerability did not differ significantly. Detailed data were available for body weight change, the frequency of restlessness and mild sedation. There was no significant difference.				
Leiberich, P., Nickel, M.K., Tritt, K., & Gil, F.P. (2008). Lamotrigine treatment of aggression in female borderline patients,	RCT Level 2 Double blind RCT, which was broken after the conclusion of final testing in the initial	LG Group n = 18 PG Group n=9	Diagnosis of BPD had to be confirmed by means of an interview with SCID II. Sample was All women. LG Group - mean age 29 PG Group - mean age 28	In the initial 8 week study: Lamotrigine was titrated from 50 mg in the first 2 weeks, to 100 mg in the third week, then to 150 mg in the fourth and	Placebo initially provided for 8 weeks. After 8 weeks, blind was broken and participants randomised to placebo took neither lamotrigine or placebo.	Summary: Lamotrigine - significant reduction in anger and aggression measured by the STAXI than placebo. No serious side effects but some adverse events during the trial: self-mutilation (LG),	State-Trait Anger Expression Inventory (STAXI)	8 weeks for initial blinded treatment period. 18 month long-term follow-up observations were reported, after	Standardised change scores between baseline and follow-up for lamotrigine group: STAXI Anger-In d = -1.41 (95% CI -2.15, -0.67) STAXI Anger-Out d = -2.95 (95% CI -4.16, -1.74)	The study was limited in sample size with particularly high drop out in the former control group and also limited due to the

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
part ii: An 18-month follow-up. Journal of Psychopharmacology, 22(7), 805-808 Germany	trial (8 weeks) 2:1 randomisation		Participants were outpatients referred through "family doctors".	fifth weeks, and finally to a dose of 200 mg/day in the sixth, seventh and eighth weeks. 200 mg/day lamotrigine continued to be taken up to 18 months.		attempted suicide (placebo) and weight loss (both) Detail: The LG experienced significantly greater changes than the placebo/Ex-PG on all STAXI scales. No serious side effects were observed. In isolated cases, relatively mild rash, dizziness, headache and nausea were reported. Two subjects from the Ex-PG and one from the LG engaged in self-mutilation and one from the Ex-PG attempted suicide during the study. In addition, weight loss was observed after eighteen months treatment. In the LG, weight loss was no more significant than in the PG.		blinding was discontinued.	STAXI State Anger d = -4.08 (95% CI -5.68, -2.42) STAXI Trait Anger d = -3.98 (95% CI -5.55, -2.42) Weight d = -0.12 (95% CI -0.65, 0.41) Standardised change scores between baseline and follow-up for placebo group: STAXI Anger-In d = 1, (95% CI -0.38, 2.39) STAXI Anger-Out d = 0.10 (95% CI -1.04, 1.23) STAXI State Anger d = -0.03 (95% CI -1.16, 1.10) STAXI Trait Anger d = 0.22 (95% CI -0.93, 1.36) Weight d = 0.09 (95% CI -1.04, 1.23) Standardised mean difference between treatment and control at follow-up: STAXI Anger-In d = -3.29 (95% CI	discontinuation of blinding after 8 weeks of treatment. QC 1.1=A 1.2=B 1.3=B 1.4=A 1.5=A 1.6=C 1.7=A 1.8=22.2% and 66.7% 1.9= A 1.10=F 2.1 = (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
									–4.95, -1.62) STAXI Anger-Out d = -3.45 (95% CI -5.16, -1.75) STAXI State Anger d = -3.94 (95% CI -5.76, -2.12) STAXI Trait Anger d = -5.87 (95% CI –8.20, -3.53) Weight d = -2.06 (95% CI -2.71, -1.41)	
Loew, T.H., & Nickel, M.K. (2008). Topiramate treatment of women with borderline personality disorder, part ii: An open 18-month follow-up. Journal of Clinical Psychopharmacology, 28(3), 355-357. Austria/Germany	RCT Level II	N=56 Topiramate n = 28 Placebo n = 28	TG (Topiramate Group) vs PG (placebo group) Age [in yrs]: TG, 24.9 ± 5.3; PG, 25.6 ± 5.7 Ever been treated with psychotherapy: TG, n = 15 [53.6%]; PG, n = 13 [46.4%] Ever been treated with psychopharmacological therapy: TG, n = 26 [92.8%]; PG, n = 27 [96.4%] Ever been hospitalized	100mg topiramate daily. After blind was broken, participants in the intervention group continued to take topiramate.	Initially placebo controlled but after blind was broken, former placebo group received no intervention.	Summary: Topiramate - reduction in aggressive behaviour, anxiety and phobias, obsessiveness, depression, paranoia, interpersonal problems, pain, improved health and activity related measures, and affective instability. No effect on psychoticism. Mild-moderate side-effects usually with initiating or increasing dose No significant change occurred on the scale that depicts relatively borderline symptomology.	SCL-90-R SF-36 Inventory of Interpersonal Problems	10 weeks for initial blinded treatment period. 18 month long-term follow-up observations were reported, after blinding was discontinued.	Accurate effect sizes cannot be calculated (except for changes in weight) because no means were provided. Estimate of the standardised mean difference between intervention and control group for psychological variables using p value: d = -0.71 (95% CI -0.76, -0.17) Standardised change in weight between baseline and follow-up for topiramate group: d= -0.59	QC 1.1=A 1.2=B 1.3=B 1.4=A 1.5=A 1.6=A 1.7=A 1.8=21.4% and 25% 1.9= A 1.10=F 2.1 = (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			for psychiatric disorders: TG, n = 6 [21.4%]; PG, n = 7 [25.0%]) Depressive disorders: TG, n = 20 [71.4%]; PG, n = 21 [75.0%] Anxiety disorders: TG, n = 15 [53.6%]; PG, n = 14 [50.0%] Obsessive-compulsive disorders: TG, n = 3 [10.7%]; PG, n = 4 [14.3%] Somatoform disorders: TG, n = 17 [60.7%]; PG, n = 18 [64.3%]) BPD diagnosed by SCID.			It is possible that topiramate exerts a merely modulating effect on aggressive expansive traits. Detail: Topiramate si gnificantly reduced health-related impediments to physical activities, increased the ability to engage in specific activities, reduced physical pain, improved personal assessment of one's own health, increased vitality, reduced restrictions in social and vocational activities, and significantly improved the emotional state of health. The increased affective stability and reduction of pain also conform to the findings of previous studies. Significant changes were seen on all scales of the SCL-90-R (P < 0.01), except psychoticism, and on			(95% CI -0.99, -0.19); and for placebo group d = 0.25, (95% CI -0.13, 0.62). Standardised mean difference between intervention and control group for weight: d = -2.06 (95% CI -2.71, -1.41)	

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						the Global Severity Index ($P < 0.01$). These findings conform to previous reports of clear improvements not only in aggressive behaviour but also in anxiety and phobias. They also corroborate and expand findings from the initial study on obsessiveness, depression, and paranoid ideation. On the other hand, topiramate does not seem to be effective in treating psychoticism. In comparison to the placebo, topiramate resulted in significant improvement on 5 scales of the German Language Version of the Inventory of Interpersonal Problems. Some side effects: but are are mild to moderate, often occurring only when topiramate is initiated or increased in dose.				

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McMain, S.F., Links, P.S., Gnam, W.H., Guimond, T., Cardish, R.J., Korman, L., & Streiner, D.L. (2009). A randomized trial of dialectical behaviour therapy versus general psychiatric management for borderline personality disorder. The American journal of psychiatry, (12), 1365-1374 Canada	RCT Level II	Treatment n=90 Control n= 90 The primary goal to eliminate behavioural dyscontrol by helping patients to develop more effective coping strategies.	Age mean (SD) T=29.4±9.2 C= 31.3±10.6 Gender Female (n, %) T= (81, 90%) C= (84, 82.2%) DSM-IV criteria for BPD via Structured Clinical Interview Inclusion: Patients had to meet DSM-IV criteria for BPD, be 18–60 yrs of age, and have had at least two episodes of suicidal or nonsuicidal self-injurious episodes in the past 5 yrs, at least one of which was in the 3 months preceding enrolment. Exclusion:	Dialectical behaviour therapy. Multimodal: Individual sessions (1 hour weekly); skills group (2 hours weekly); phone coaching (2 hours weekly). Consultation team for therapists mandated (2 hours weekly). Organized according to a hierarchy of targets: suicidal, treatment-interfering, and quality-of-life-interfering behaviours. Explicit focus on self-harm and suicidal behaviour. Treatment	General psychiatric management. Consisted of case management, dynamically informed psychotherapy, and symptom-targeted medication management. Individual sessions (1 hour weekly) including medication management based on structured drug algorithm. Therapist supervision meeting mandated (90 minutes weekly). Focus is expanded away from self-harm and suicidal behaviours.	Summary: both groups improved on most measures, except the utilization of non-study treatments decreased significantly more in the DBT group than in the general psychiatric management group Detail: The utilization of non-study treatments decreased significantly more in the DBT group than in the general psychiatric management group (odds ratio=0.52, p=0.002). The mean adherence scores for essential interventions were significantly greater than the mean adherence score for proscribed dialectical behaviour therapy items across all time points. Both groups showed	Structured Clinical Interview for DSM-IV Axis I Disorders–Patient Edition International Personality Disorder Examination Treatment fidelity: modality specific adherence scales Frequency and severity of suicidal and non-suicidal self-injurious behaviour episodes: Suicide Attempt Self-Injury Interview Borderline symptoms: Zanarini Rating Scale for BPD General symptoms: Symptom	Assessed at baseline and every 4 months over the 1-year active treatment phase	Risk of suicide and self-injurious episodes rpb=0.89 Symptom severity (ZRSBPD) rpb =1.13 Depression (BDI) rpb =1.07 Anger (State-Trait Anger Expression Inventory - Anger out) rpb =0.32 Health-related QoL (EQ-5D) rpb =0.24 Symptom distress (SCL-90-R) rpb =0.68 Interpersonal functioning (Inventory of Interpersonal Problems-64) rpb =0.45	QC 1.1=A 1.2=A 1.3=A 1.4=F 1.5=A 1.6=A 1.7=A 1.8=Treatment 39%; Control 38% 1.9= A 1.10=F 2.1 = (+)

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			Were limited to having a DSM-IV diagnosis of a psychotic disorder, bipolar disorder, delirium, dementia, or mental retardation or a diagnosis of substance dependence in the preceding 30 days; having a medical condition that precluded psychiatric medications; living outside a 40-mile radius of Toronto; having any serious medical condition likely to require hospitalization within the next year (e.g., cancer);	involves: dialectical strategies, irreverent and reciprocal communicatio n style, formal skills training. Behavioural strategies: exposure, contingency management, diary cards, behavioural analysis. Patients encouraged to rely on skills over pills where appropriate (e.g., anxiolytics). Tapering from medications was a treatment goal.	Psychodynamic approach emphasized the relational aspects and early attachment relationships. Disturbed attachment relationships related to emotion dysregulation as a primary deficit. Involves attention to signs of negative transference. Patients were encouraged to use medications concurrently.	statistically significant decreases in the frequency of suicidal episodes (odds ratio= 0.23, p=0.01) and nonsuicidal self-injurious episodes (odds ratio = 0.52, p=0.03). There were no between group differences in the frequency of suicidal episodes or nonsuicidal self-injurious episodes. Those with any suicidal or nonsuicidal self-injurious episodes experienced a significant decrease in the medical risk over time, but there was no between-group difference. Using mixed-effects linear growth curve analyses, significant decreases over the 1-year treatment period (but no between-group	Checklist–90–Revised State-Trait Anger Expression Inventory Beck Depression Inventory Inventory of Interpersonal Problems, 64-item version Health-related quality of life: EQ-5D thermometer Treatment History Interview: self-reported counts of the number of hospital admissions, days in hospital, emergency department visits, medications, and outpatient psychosocial treatments. Reasons for			

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			and having plans to leave the province in the next 2 yrs			differences) were found for the following variables: borderline symptoms, depression, interpersonal functioning, symptom distress, and anger. On health-related quality of life (based on the EQ-5D thermometer), both groups reported improvements, but these changes were not statistically significant. Based on generalized-estimating-equation analysis, participants in both groups showed statistically significant decreases in the total number of emergency department visits (odds ratio=0.43, p<0.0001), with no statistically significant differences between groups.	Early Termination From Treatment Questionnaire			

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						Both groups demonstrated statistically significant reductions in the number of emergency department visits for suicidal behaviour (odds ratio= 0.35, p<0.0001), with no between-group differences.				
Mercer, D., Douglass, A.B., Links, P.S. (2009) Meta-analyses of mood stabilizers, antidepressants and antipsychotics in the treatment of borderline personality disorder: Effectiveness for depression and anger symptoms. J Personal Disord. 23(2), 156-	SR Level 1	N = 18 studies were included in the final meta analyses	Adults with more female than males (73% female). Number of participants ranged from 16 – 96. Range of treatment is detailed under interventions. 61% included subject with dysthymia or major depression. 9 of the studies include concurrent TX. 5 studies excluded if concurrent treatment in	Olanzapine vs placebo - 3 studies Fluoxetine vs placebo – 3 studies Tranylcypromine trifluoperazine carbamazepine vs placebo – 1 study? Divalproic acid vs placebo – 3 studies Topiramate – 3 studies Aripiprazole vs placebo – 1 study	Varied by study	Summary: Antidepressants moderately effective for short-term reduction of depression. Mood stabilisers highly effective for anger, moderately effective for depressed mood Antipsychotics moderately effective for anger, depression. Some evidence that haloperidol may worsen depression. Detail: Studies assessing anger Mood Stabilizers – MA showed that as class mood stabilizers are highly effective for management of	Depression Hamilton Rating Scale for Depression (HDRS) – 7 studies Variable Symptom Checklist – 90 (SCL-90) Depression – 3 studies Beck Depression Inventory (BDI) – 2 studies Anger SCL-90 Hostility – 5 studies Overt Aggression Scale –	5 – 24 weeks	Whilst there were large variations between studies of anger reduction, significant pooled effect sizes were found for all three drug types Two longer term studies with divalproic acid (12 and 24 weeks) had negligible effect sizes Mood stabilizers gave the largest reduction in anger/aggression compared to the other drug types, with an effect size d = -1.75 (95% CI -2.77, -0.74). Antidepressant	Limitations – small numbers of studies in each class – 8 mood, 7 ADs and 6 APs. QC 1.1 =A 1.2 =A 1.3 =B 1.4 =B 1.5 =A 2.1 (+)

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74. Canada			psychotherapy. None of the studies included patient with substance abuse and most excluded patients with suicidal ideation. 33% of included participants in the meta-analysis were selected for difficulty with aggression, prominent behavioural dyscontrol or anger.	Fluvoxamine vs placebo- 1 study Amitriptyline haloperidol vs placebo – 1 study Phenelzine haloperidol vs placebo – 1 study lamotrigine vs placebo – 1 study		anger in BPD – studies with largest effective sizes were short in length Antipsychotics – MA suggest that as a class, APs have medium effect on anger in BPD in short and medium terms. Further studies on efficacy of olanzapine in BPD are needed. Antidepressants – MA suggests that ADs as a class with exception of tricyclics are moderately effective for short term. All studies in this group included some patients with depression and other concurrent TX. Caution required as only short term measured. Studies of depression mood: Mood stabilizers – MA suggests mood stabilizers were moderately effective for depression in BPD. Effect size was overestimated and only 4/8 studies	Modified (OAS-M) – 3 studies State-Trait Anger Expression Inventory (STAXI) – 5 studies Profile of Mood States (POMS) – 1 study Note: Two other measures developed by researchers were included		d = -0.74 (-1.27, -0.21), antipsychotic d = -0.59 (-1.04, -0.15). For depressed mood symptoms, mood stabilisers again gave greatest reduction d=-0.63 (-0.99, -0.27); antidepressants d = -0.37 (-0.69, -0.05), antipsychotic d = -0.46 (-0.94, 0.03).	

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						included measures for depression. Antidepressants – MA of all 7 studies included measures of depression but only small effect of AD was shown. Antipsychotics - MA showed a medium effect on symptoms of depression. However CI crossed zero. One study suggestion that haloperidol had effect on anger but could worsen depression.				
Morey, L.C., Lowmaster, S.E., & Hopwood, C.J. (2010). A pilot study of manual-assisted cognitive therapy with a therapeutic assessment augmentation for borderline personality disorder.	RCT Level II	Treatment n=8 Control n= 8	Age mean (SD): Treatment 32.5±9.41; Control 29.63±8.72 Gender – female (n, %): Treatment 7 (87.5%), Control 6 (75%) Diagnosis: BPD via Diagnostic Interview for	Manual-Assisted Cognitive behaviour Therapy (MACT) + Therapeutic Assessment (TA) 6 sessions MACT is a 6-session, manualized therapy that targets deliberate self-harm,	MACT alone 6 sessions	Summary: Reduction in both conditions on BPD symptoms, suicide and self-harm among those that completed treatment, especially affective instability Detail: No significant retention rate differences between conditions were observed, with four MACT condition (50%) and five TA+MACT condition (63%) participants failing to complete all	Borderline measures: Diagnostic Interview for DSM-IV Personality Disorders DIPD-IV Personality Assessment Inventory (PAI) Borderline Features scale (BOR) with four subscales		Effect sizes between groups: Number of sessions attended: d = -0.16. Standardised mean difference for treatment completers: in MACT+TA: PAI-BOR d=0.95 BOR-A d=4.35 BOR-I d=0.57 BOR-N d=0.82 BOR-S d=0.52 PAI-SUI d=1.72 SPS d=1.37	6 of 7 completers were concurrently being treated with medications whereas only 3 of 9 non-completers were being treated with medications, suggesting

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Psychiatry Research, 178(3), 531-535. USA			DSM-IV Personality Disorders DIPD-IV. 56% of these individuals were currently taking psychotropic medication but no individuals were receiving other psychosocial interventions. Exclusion: Inclusion criteria were scores a) N70 on PAI BOR and SUI, b) z5 on the PDQ-4 BPD, c) N70 on the SPS total and d) N5 BPD symptoms on the DIPD-IV. Participants were excluded if they exhibited an active psychosis, a history of schizophrenia,	incorporating elements of other cognitive-based interventions for BPD. In addition to the standard MACT orientation material, the first session also included an individualized collaborative assessment. This procedure included developing questions that the client would like to "ask the test data" about themselves and the articulation of specific, individualized treatment goals. During the second session, the therapist and		six sessions of treatment. Among those who did complete treatment, significant improvements were observed in both conditions with respect to reducing both borderline symptomatology and suicidal ideation. For those who completed treatment there was a substantial and significant main effect for change in PAI-BOR from baseline to post-treatment. Analyses of BOR subscales suggest a significant change in affective instability and a moderately significant change in self-harm. No significant differences in treatment response across study groups were found for borderline features, although large differential changes in BOR-A were	(Affective Instability, Identity Disturbance, Negative Relationships, and Self-Harm) Personality Diagnostic Questionnaire (PDQ-4) — Borderline scale Suicidal ideation: Personality Assessment Inventory Suicidal Ideation (SUI) Suicide Probability Scale (SPS) with four subscale scores: Hopelessness, Suicidal Ideation, Negative Self-Evaluation, and Hostility.		SPS-S d=1.75 Standardised mean difference for treatment completers: in MACT: PAI-BOR d=1.22 BOR-A d=0.85 BOR-I d=0.93 BOR-N d=0.31 BOR-S d=0.56 PAI-SUI d=2.27 SPS d=0.56 SPS-SI d=0.77 Carry-forward effect sizes are also available in the paper. They are more conservative than those presented.	that concurrent psychiatric care may promote retention in MACT QC 1.1=A 1.2=B 1.3=C 1.4=F 1.5=A 1.6=A 1.7=A 1.8=MACT + TA: 63% failed to completed all 6 sessions of treatment; MACT: 50% failed to completed all 6 sessions of treatment 1.9= B 1.10=F 2.1 = (+)

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			or substance intoxication or withdrawal	client discussed the assessment results and motivational feedback was provided, in addition to implementing the second MACT session. Aside from these augmentations to the first two sessions, the manual for the remainder of the treatment was identical for both conditions.		observed that approached significance, suggesting superior treatment response in the TA+MACT group. With regard to suicidal ideation, participants reported substantial and significant decreases on both the PAI-SUI and SPS-SI. Again, a trend for a group-by-time interaction was found for SPS-SI, also suggesting a larger improvement over time in the TA+MACT group. To examine client improvement at the individual level, reliable change indices (RC) were computed to determine whether the MACT treatment significantly improved borderline symptomatology and suicidal ideation. Of the 7 participants who completed treatment, 5 (71%) showed significant				

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						reductions on PAI-BOR. With regard to suicidal symptoms, 3 of the 7 participants (43%) demonstrated significant improvement on the SPS and 6 out of 7 (86%) had significant decrement in suicidal ideation as measured by the PAI-SUI. For all participants: Using carry-forward methodology to provide a more conservative estimate of changes observed, there was significant main effect for change in PAI-BOR from baseline to post-treatment. With respect to suicidal ideation, significant decreases were observed on the PAI-SUI and SPS-SI. No significant differences in treatment response across groups were found for borderline features or suicidal ideation using this more conservative				

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						carry-forward approach.				
Schuppert, H., Giesen-Bloo, J., van Gemert, T.G., Wiersema, H.M., Minderaa, R.B., Emmelkamp, P.M., & Nauta, M.H. (2009). Effectiveness of an emotion regulation group training for adolescents--A randomized controlled pilot study. Clinical Psychology & Psychotherapy, 16(6), 467-478. The Netherlands	RCT Level II 4 block randomisation	N=43 ERT+TAU = 23 TAU=20	Age: ERT+TAU=16.23yo; TAU=15.9 Gender: ERT+TAU=95.6 % FM; TAU=80% FM	Emotion Regulation Training (ERT): 17 sessions, one systems meeting and two booster sessions. The main goal of the training is to introduce alternative ways of coping with affective instability, daily stressors and psychological vulnerability. Reducing self-harm or harm to others is another important issue. The adolescents learn that they can take more responsibility for their behaviour and	Treatment as usual (TAU): medication, individual psychotherapy, system-based therapy, inpatient psychiatric care and emergency services in case of self-harm or suicidal behaviour.	Summary: BPD symptoms and internal locus of control improved over time in ERT group Detail: Repeated measure ANOVAs indicated improvement over time, measured by the total score of the BPDSI-IV (F [1,29] = 6.39; p = 0.02) The other primary outcome measures demonstrated no significant improvement over time (BPDSI-IV subscale affect regulation (F [1,29] = 2.06; p = 0.16) and internal locus of control as measured by the MERLC (F [1,24] = 0.49; p = 0.49)). According to the secondary outcome measures, a trend over time was found on the internalizing	BPDSI-IV to assess current severity and frequency of DSM-IV BPD symptoms. The Multidimensional Emotion Regulation Locus of Control (MERLC) The Youth Self Report (YSR)	Post treatment	BPDSI-IV total score = 0.27 BPDSI-IV affective stability = 0.33 MERLC subscale internal locus of control = -0.49 YSR subscale internalizing = 0.04 YSR subscale externalizing = 0.15	QC 1.1=A 1.2=A 1.3=E 1.4=B 1.5=B 1.6=B 1.7=B 1.8=6.5% drop from assessment to randomisation; 39% loss to second assessment ERT & 15% in TAU; 1.9= D 1.10=E 2.1 = (-)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
				realize they have a choice in how to (re)act when emotionally distressed.		subscale of the YSR (F [1,23] = 4.10; p = 0.06), but no significant effect on the externalizing subscale of the YSR (F [1,24] = 2.61; p = 0.12). Repeated measure ANOVAs on the BPDSI-IV showed that there was no significant level of change between groups for both the total and the subscale affective stability of the BPDSI-IV (BPDSI-IV total score F [1,29] = 0.07; p = 0.79; BPDSI-IV subscale affect regulation F [1,29] = 0.24; p = 0.63). Other primary outcome measures: significant interaction effect on the adolescents' MERLC subscale internal locus of control (F [1,24] = 9.16; p = 0.006). Adolescents in the ERT group reported an improvement in				

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						their feeling of having control over their emotions, whereas the adolescents in the TAU alone group reported a decrease of internal locus of control. The secondary outcome measures for the adolescents showed no significant effect between groups, measured by the YSR, internalizing and externalizing subscales (YSRintern F [1,23] = 0.32; p = 0.58; YSRextern F [1,24] = 0.06; p = 0.82).				
Shafti, S.S., & Shahveisi, B. (2010). Olanzapine versus haloperidol in the management of borderline personality disorder: A randomized	RCT Level 2 8 week, parallel group, comparative double-blind RCT (olanzapine vs. haloperidol)	N=28	All females Age: Olzanzapine Group: 30.09 (±8.71) Haloperidol Group: 28.88 (±7.66). The patients were excluded if comorbid	Olanzapine The drugs were started at 2.5 mg daily and then individually increased weekly by 2.5-mg increments, as needed or tolerated, to a maximum of	Haloperidol (used identical looking capsules).	Summary: Both olanzapine and haloperidol improved but no difference between them – no placebo control group Detail: All of the patients from within both groups completed the study. Intragroup analysis at the eighth week	Brief Psychiatric Rating Scale (BPRS) Clinical Global Impression-Severity (CGI-S) Buss-Durkee Hostility Inventory (BDHI) (has 8 subscales:	Measured at baseline and after 8 weeks.	The effect size was calculated for changes on the BPRS, BDHI, and CGI-S at the end of treatment, which indicated a large (d ≥ 0.8), readily observable improvement with both olanzapine	QC 1.1=B 1.2=B 1.3=B 1.4=A 1.5=A 1.6=B 1.7=A 1.8= 0% both groups 1.9=B 1.10=F

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
double-blind trial. Journal of Clinical Psychopharmacology, 30(1), 44-47. Iran			MH was present, including major depressive disorder, bipolar disorder, psychosis or substance dependency in Axis I, mental retardation in Axis II, or identifiable neurological morbidity in Axis III. No other concurrent psychotropic medication or psychosocial interventions were allowed during the trial. Inpatients	10 mg by week 4. The dose established by week 4 was held constant throughout the remainder of the study.		interval revealed significant positive response by both olanzapine and haloperidol in comparison with the baseline ($P < 0.05$); however, between-group analysis showed no significant difference, among the patients. The analysis of specific Brief Psychiatric Rating Scale subscales in both groups revealed considerable and comparable improvements in anxiety, tension, depressive mood, and hostility. There was a significant positive response with both olanzapine and haloperidol at the end of the trial in comparison with the baseline on the BPRD, BDHI and CGI-S. Although olanzapine caused more decrement, the	Assault, Indirect Hostility, Irritability, Negativity, Resentment, Suspicion, Verbal Hostility, and Guilt.)		(Cohen d = 1.40, effect-size r = 0.574; Cohen d = 1.56, effect-size r =0.615; and Cohen d = 0.759, effect-size r = 0.354, respectively) and haloperidol (Cohen d = 2.67, effect-size r = 0.801; Cohen d = 1.06, effect-size r = 0.471; and Cohen d = 0.749, effect-size r = 0.350). Standardised mean difference between haloperidol and olanzapine at follow-up: BPRS d = 0.22 (95% CI -0.53, 0.96) BDHI d = -0.02 (95% CI -0.76, 0.72) CGI-S d = -0.32 (95% CI -1.07, 0.42)	2.1 = (+)

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						between group analysis showed no significant difference. Analysis of specific BPRS subscales in both groups revealed similar and significantly lower scores in anxiety, tension, depressive mood, and hostility. In this respect, olanzapine showed appreciably better results on suspiciousness and excitement. A similar pattern was seen by haloperidol on uncooperativeness and unusual thought content. Side effects were mild and well tolerated, no subject failed to complete the study.				
Soler, J., Pascual, J.C., Tiana, T., Cebria, A., Barrachina, J., Campins, M.J., Perez,	RCT Level II	Treatment n=29 Control n= 30	Age mean (SD) T= 28.45 ±6.55 C=29.98±5.63 Gender Female (n, %) T= (23, 79.3%) C= (26, 86.7%)	Dialectical behaviour therapy - Skills training (DBT-ST) DBT-ST and SGT, consisted	Standard group therapy (SGT) The SGT format was oriented to provide a relational experience,	Summary: mental state and psychopathology scales showed significant difference favouring DBT-ST.	BPD core symptoms: Clinical Global Impression-BPD (CGI-BPD) Hamilton Rating	13 weekly sessions	Between group standardised mean differences d (95% CI) No. of medications, d= -0.16 (-0.45, 0.13)	QC 1.1=A 1.2=A 1.3=E 1.4=B 1.5=B 1.6=A

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
V. (2009). Dialectical behaviour therapy skills training compared to standard group therapy in borderline personality disorder: A 3-month randomised controlled clinical trial. Behaviour Research and Therapy, 47(5), 353-358. Spain			Diagnosis: BPD via Structured Clinical Interview for DSM-IV Axis II Disorders (SCID-II) and the Revised Diagnostic Interview for Borderlines (DIB-R). Exclusion: Inclusion criteria consisted of: 1) meeting the DSM-IV diagnostic criteria for BPD; 2) age between 18 and 45 yrs; 3) no comorbidity with schizophrenia, drug-induced psychosis, organic brain syndrome, alcohol or	of thirteen psychotherapy sessions of 120 min each, 2 therapists (a male and a female) for each group, in groups of 9–11 participants. The DBT format used was adapted from the standard version, applying one of the four modes of intervention: skills training. DBT-ST included all the original skills. These skills can be divided into those that promote change, interpersonal effectiveness and emotional regulation	allowing people with BPD to share their characteristic difficulties. Prominent techniques used were interpretation (although this was not used systematically), highlighting, exploration, clarification and confrontation. The therapists mainly played a role of conductor in group interactions, and targeted specially nihilistic or destructive interactions, characteristic BPD interactions and those that could interfere with group functioning. SGT interventions	Detail: No significant differences of mean number of attended sessions between the two groups. DBT-ST group showed a significant improvement in more psycho-pathology scales. DBT-ST group showed a greater decrease in depression, anxiety and general psychiatric symptoms compared with the SGT group. Regarding the SCL90-R, HLM analysis showed statistically significant differences in the psychoticism subscale, and in the BDI irritability subscale. A greater decrease was detected in the DBT-ST condition. Both treatment conditions showed significant reductions in CGI-BPD global severity scores. However, no	Scale-Depression (HRSD-17) Hamilton Rating Scale-Anxiety (HRSA) Psychotic symptoms: Brief Psychiatric Rating Scale (BPRS) Psychiatric symptoms: Symptom Checklist, Revised (SCL90-R) Hostility/irritability: Buss–Durkee Inventory (BDI). Impulsivity: Barrat Inventory (BI). In addition to clinical scales, they rated self-injury, suicide attempts, and visits to		No. of non-study tre, d = -0.39 (-0.690, -0.10) HRSD-17, d= -0.98 (-1.52, -0.44) HRSA, d = -0.68 (-1.21, -0.16) BPRS, d =-0.67 (-1.19, -0.14) BDI Irritability, d = -0.61 (-1.13, -0.09) BDI Indirect Hostility, d=0.51 (-1.03, 0.01) SCL-90-R GSI, d = -0.42 (-0.95, 0.09) SCL-90-R Interperson, d = -0.81 (-1.34, -0.28) SCL-90-R Hostility, d = -0.34 (-0.85, 0.17) SCL-90-R Psychoticism, d = -0.58 (-1.10, -0.06) CGI-BPD Global, d = -1.02, (-1.57, -0.48) CGI-BPD Unstable rel, d = -0.29 (-0.80, 0.22) CGI-BPD Impulsivity, d =	1.7=A 1.8=Treatment: 34% drop out; Control: 63% drop out; Intention to treat analysis 1.9= A 1.10=F 2.1 = (+) Large differences in retention

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			other psychoactive substance dependence, bipolar disorder, mental retardation, or major depressive episode in course; 4) Clinical Global Impression of Severity (CGI-S) score ≥ 4; 5) no current psychotherapy.	skills, and those that promote acceptance, mindfulness and distress tolerance skills. Similar to other skills training in behavioural treatments, DBT-ST includes teaching, in-session practice of new skills and homework assignments to practice each skill every week. DBT-ST intervention was led by two cognitive behavioural psychotherapists with prior experience in BPD group therapy	were led by two experienced psychodynamic-oriented psychotherapists.	significant differences were displayed between groups in HLM analysis. In this measure, several specific sub-scales, such as: anger, emptiness, and affect instability, had a significantly greater reduction in DBT-ST compared to SGT. No differences were seen in the other scales (impulsivity) or behavioural reports (number of self-harm behaviours, suicides or emergency visits) used in the study.	psychiatric emergency services.		-0.62 (-1.15, -0.10) CGI-BPD Suicide, d = -0.10 (-0.61, 0.41) CGI-BPD Affect Instability, d = -1.08 (-1.63, -0.53) CGI-BPD Anger, d = -0.85 (-1.38, -0.32) CGI-BPD Emptiness, d= -0.44 (-0.95, 0.08) CGI-Global Improv-Patient, d = 0.68 (0.16, 1.21)	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Stoffers, J., Völlm, B.A., Rücker, G., Timmer, A., Huband, N., Lieb, K. (2010) Pharmacological interventions for borderline personality disorder. Cochrane Database of Systematic Reviews. 16(6) Germany.	Cochrane Systematic Review Level 1	Study samples ranged from n = 16 to 314 in size. In total, the included studies provided data from 1742 patients.	Adult patients with a formal diagnosis of BPD according to DSM criteria. The studies were conducted in either the USA (14 studies) or in Western European countries (12 studies) 5 in Germany and/or Austria, two each in the UK and Spain, and one each in Belgium, Ireland and the Netherlands. There were two international multicentre trials. One took place in 13 study centres in the USA, South America, and Eastern	Any drug or a defined combination of drugs administered on a long-term basis (i.e. not only in case of crisis only) with the intention to treat BPD pathology.	Comparison treatments were classified in four categories: • placebo; • active comparator drug; • combination of drugs; • combined treatment, i.e. drug plus concomitant psychotherapeutic treatment or counselling.	Summary: Total BPD severity was not significantly influenced by any drug. There was little evidence for effectiveness of antidepressants. There was little effect of antipsychotics but olanzapine may increase self-harming, weight gain Detail: First-generation antipsychotics (flupenthixol decanoate, haloperidol, thiothixene); second-generation antipsychotics (aripirazole, olanzapine, ziprasidone), mood stabilisers (carbamazepine, valproate semisodium, lamotrigine, topiramate), antidepressants (amitriptyline, fluoxetine, fluvoxamine,	Primary outcomes Overall BPD severity Severity of single BPD criteria according to DSM (avoidance of abandonment, dysfunctional interpersonal patterns, identity disturbance, impulsivity, suicidal ideation, suicidal behaviour, self-mutilating behaviour, affective instability, feelings of emptiness, anger, psychotic paranoid symptoms, dissociative symptoms) Secondary outcomes Depression	Variable	Altogether, 28 RCTs have been included, covering 22 different comparisons in ten comparison categories. In the presence of the multitude of different comparisons and outcome variables, most results are based on single study findings only. The study sample sizes were rather small, and ranged, with exception of two large trials (Schulz 2007; N= 314; Zanarini 2007; N of patient data used here: 301), between 16 (Hollander 2001) and 108 (Soloff 1993; divided into three groups). Therefore, the	Results are mostly based on single study effect estimates. Long-term use of these drugs has not been assessed. Conclusions have to be drawn carefully in the light of several limitations of the RCT evidence that constrain applicability to everyday clinical settings (among others, patients' characteristics and duration of

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			Europe.			phenelzine sulfate, mianserin), and dietary supplementation (omega-3 fatty acid) were tested. First-generation antipsychotics were subject to older trials, whereas recent studies focussed on second-generation antipsychotics and mood stabilisers. Data were sparse for individual comparisons, indicating marginal effects for first-generation antipsychotics and antidepressants. Adverse event data were scarce, except for olanzapine. There was a possible increase in self-harming behaviour, significant weight gain, sedation and changes in haemogram parameters with olanzapine. A significant decrease in body weight was	Anxiety General psychiatric pathology: comprehensive measures Mental health status Attrition Adverse effects		power to detect significant effects was quite low. In addition, the overall robustness of findings must be considered low for the majority of comparisons.	interventions and observation periods). QC 1.1 =A 1.2 =A 1.3 =A 1.4 =A 1.5 =A 2.1 = (++)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						observed with topiramate treatment. All drugs were well tolerated in terms of attrition. Direct drug comparisons comprised two first-generation antipsychotics (loxapine vs. chlorpromazine), first-generation antipsychotic against antidepressant (haloperidol vs. amitriptyline; haloperidol vs. phenelzine sulfate), and second-generation antipsychotic against antidepressant (olanzapine vs. fluoxetine). Data indicated better outcomes for phenelzine sulfate but no significant differences in the other comparisons, except olanzapine which showed more weight gain and sedation than				

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						fluoxetine. The only trial testing single versus combined drug treatment (olanzapine vs. olanzapine plus fluoxetine; fluxetine vs. fluoxetine plus olanzapine) yielded no significant differences in outcomes.				
Varghese, B.S., Rajeev, A., Norrish, M.A.l., Khusaiby, S.B.M., (2010) Topiramate for anger control: A systematic review. Indian Journal of Pharmacology 42(3), 135-41. India	SR Level 1	n = 24 included topirmate. n=5 were included in final analysis.	Study participants were required to be aggressive adults. Studies included participants below 18 yrs of age provided that the mean age of participants clearly indicated that the majority of participants were adults. Age range 16-61 yrs, with a mean age of	Included studies were required to have at least one arm in which topiramate was used as intervention. BPD diagnosis = 3 studies Depression diagnosis = 1 study Chronic Backache diagnosis = 1 study Study 1 - The study dealt with women	Placebo	Summary: With a fairly good quality of studies in the analysis, the study came to a conclusion that there is sufficient evidence to suggest that topiramate is significantly effective in stabilizing trait anger but appears to reduce state anger, anger-out anger-in and hostility. Detail: The reduction in the scores was highest in BPD patients as compared to those with low back ache. Trait Anger dropped	(a) Four STAXI scales - State Anger, Trait Anger, Anger Out, Anger Control - or any equivalent measure of component or global response. The State Anger scale assesses the intensity of anger as an emotional state at a particular time. The Trait Anger scale measures how often angry feelings are experienced	8 – 10 weeks.	CALCULATED weighted mean difference -3.16 (-3.64 to -2.68) in State Anger. Limited detail to allow for effect size calculation.	Primary search was Medline only, also did additional screening of Cochrane and PubMed The sample size was relatively small and the percentage of males included is less compared to that of

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			41 yrs. Studies were conducted among patients who suffered from other types of aggression, including that in BPDs.	aged between 20 and 35 yrs who were more susceptible to BPD than men and STAXI was used as the primary outcome measure. Study 2 – This study conducted a directed study for BPD in males wherein the same standards (above) as the previous study in females were applied. There were 22 subjects each in the topiramate and placebo arms. Study 3 – This was a 10-week study, which enrolled 64 subjects, and		by -2.93 (-3.49 to -2.37), especially in female BPD patients. 'Anger In' reduced more or less uniformly across the studies by -1.43 (-1.84 to -1.03). 'Anger Out' decreased by -2.8 (-3.19 to -2.42). This effect was minimal among the male BPD patients. Anger Control uniformly increased across the four studies by 2.32 (2.00-2.64). There is sufficient evidence to suggest that topiramate is significantly effective in stabilizing the "trait anger" while reducing the "state anger." "Anger Out" and "hostility" were significantly reduced. "Anger In" was the feature that was the least affected, although this was significant. This suggests that topiramate is	over time. The Anger Expression and Anger Control scales assess relatively independent anger-related traits: (i) expression of anger toward other persons or objects in the environment (Anger-Out), (ii) holding in or suppressing angry feelings (Anger-In) and (iii) controlling angry feelings by preventing the expression of anger toward other persons or objects in the environment or controlling suppressed angry feelings by calming down or cooling off (Anger Control). Individuals rate themselves on			females. The study duration was generally only 8-10 weeks, which reduced the incidence of adverse effects and the dropout rate. QC 1.1 =B 1.2 =B 1.3 =B 1.4 =B 1.5 =C 2.1 (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
				grouped them into topiramate and placebo arms in a 1:1 ratio. Study 4 – This study on an unrelated condition, i.e. chronic low back pain, topiramate was titrated from 50 mg/day to 300 mg/day in 48 subjects. The effect was compared with a placebo group. Study 5 - In this study 56 females with BPD were randomized to receive topiramate 50-200 mg/day or placebo in a 1:1 ratio		effective in controlling anger. There was no suggestion of topiramate precipitating psychomorbidity. The studies varied in terms of inclusion criteria such as BPD, depression and even low back ache. There were separate studies for men and women.	the scales that assess both the intensity of their anger at a particular time and the frequency at which anger is experienced, expressed and controlled. (b) Symptoms: a change in self-reported feelings of anger and impulsiveness, either an increase or decrease in the frequency and severity. (c) Behaviour: a reduction in aggression, either to self or others; a reduction in impulsiveness.			

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Zanarini, M.C., & Frankenburg, R. (2008). A preliminary, randomized trial of psychoeducation for women with borderline personality disorder. Journal of Personality Disorders, 22(3), 284-290 USA	RCT Level II	N= 50 Treatment n=30 Control n= 20	Age mean (SD) in total sample 19.3 ± 1.4 Gender – all female Diagnosis - BPD diagnosed with Diagnostic Interview for DSM-IV Personality Disorders and Revised Diagnostic Interview for Borderlines. These participants were being diagnosed for the first time. Additionally in terms of lifetime disorders, 78% met criteria for a mood disorder, 40% met criteria for a substance use	Psychoeducation on BPD aetiology, phenomenology, co-occurring disorders, treatment options and longitudinal course	Waitlist (took part in workshop at the end of the 12 week study)	Summary: Immediate psychoeducation after diagnosis can lead to reductions in interpersonal storminess and general impulsivity. This may be because increased knowledge may be more useful in helping people control behaviour rather than affects or cognition Detail: No significant difference in BPD symptoms on ZAN-BPD between groups over time. The mean scores of the groups as a whole declined significantly over time. Declines in interpersonal storminess and general impulsivity (not counting self-mutualisation or suicide) were found to be significantly greater among those in the immediate treatment group than the waitlist. There was no significant difference	Structured Clinical Interview for DSM-IV Axis I disorders Zanarini Rating Scale for DSM-IV BPD (ZAN-BPD) Sheehan Disability Scale (SDS) Knowledge of aspects of BPD	12 weeks	Between group standardised mean differences, d (95% CI): Two forms of impulsivity, d = -0.40 (-0.97, 0.174) Stormy relationships, d = -0.381 (-0.952, 0.190) Other details not reported to calculate effect sizes	QC 1.1=B 1.2=B 1.3=C 1.4=F 1.5=A 1.6=A 1.7=A 1.8=no drop out 1.9= A 1.10=F 2.1 = (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			disorder, 28% met criteria for an anxiety disorder and 50% met criteria for an eating disorder. Exclusion: current psychiatric treatment, met criteria for lifetime/ current schizophrenia, schizoaffective disorder or bipolar 1 or current substance dependence (except nicotine)			in SDS impairment ratings between groups. In vocational or social functioning over time. There was a trend for vocational but not social functioning to improve over time for the group taken as a whole. Knowledge of BPD increased (6% answered 6+ questions at baseline but 78% answered 6+ correctly after)				

Quality of Life

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Bellino, S., Rinaldi, C., Bogetto, F. (2010) Adaptation of interpersonal psychotherapy to borderline personality disorder: A comparison of combined therapy and single pharmacotherapy. Canadian Journal of Psychiatry. 55(2), 74-81. Italy	RCT Level II	N= 55 enrolled n=44 analysed	55 participants (18 males and 37 females) with DSM-IV-TR diagnosis of BPD were recruited from patients attending the Service for Personality Disorder of the Unit of Psychiatry, Department of Neuroscience, University of Turin. Mean age of 25.8 yrs in medication-only group and 26.2 yrs in combined therapy group; 62% previous hospitalizations; 27%	28 patients received fluoxetine 20 mg to 40 mg daily (see control group for schedule) plus IPT-BPD. IPT-DBT consisted of weekly, manualised sessions lasting 1 hour. Patients in the combined therapy group were treated by a psychotherapist who was not the psychiatrist prescribing the medication and who had 5 yrs of experience practicing IPT. The	27 patients received fluoxetine 20 mg to 40 mg daily plus clinical management consisting of a fortnightly clinical review of 15-20 minutes duration. Initially, fluoxetine was prescribed at a fixed dosage of 20 mg daily with the opportunity to increase the dosage to 40 mg daily beginning in week 2, depending on clinical judgment. Treatment lasted 32 weeks.	Summary: Small sample size limits ability to draw strong conclusions but results suggest that combined therapy was superior to monotherapy in relieving anxiety, improving functioning and alleviating the severity of some symptoms of BPD during the 32 weeks of the trial. Detail: Of 55 subjects, 11 (20%) dropped out (6 in medication-only, 5 in combined therapy). Only treatment completers (n=44) were included in the analysis. Using a univariate General Linear Model to calculate the effects of 1) duration of treatment and 2) the type of treatment on each assessment scale score, only duration of treatment had a statistically significant effect on global functioning, depressive symptoms and social and occupational functioning (p=<0.001), while both treatments alleviated symptoms of depression and improved global functioning. Combined therapy was superior to medication-only in alleviating anxiety symptoms (p=<0.001). Combined therapy was significantly superior to	Depression (Hamilton Depression Rating Scale) Anxiety (Hamilton Anxiety Rating Scale) Quality of life (SAT-P satisfaction profile) Global functioning (CGI Clinical Global Impression Scale) Social and occupational functioning (SOFAS) BPD symptoms severity and frequency (BPD-SI)	Treatment lasted 32 weeks.	Not reported	No Intention to treat analysis – only analysed data for completers (i.e. 44 of 55 enrolled) and potential attrition bias due to lack of compliance was not addressed. Combined therapy was not compared with IPT alone. QC 1.1=A 1.2=C 1.3=B 1.4=D 1.5=B 1.6=B 1.7=B 1.8= 20% 1.9=D

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			employed; 31% married. Excluded were those with a lifetime diagnosis of delirium, dementia, amnestic or other cognitive disorders, schizophrenia or other psychotic disorders, and bipolar disorder. Concomitant Axis I or II disorders were also excluded. Female patients of childbearing age were excluded if they were not using an adequate method of birth control, as	psychotherapy and the pharmacotherapy started at the same time.		medication-only in improving psychological functioning (p=0.003). The interaction between combined therapy and treatment duration was superior to medication-only in improving social functioning as measured by the SAT-P for subjective quality of life (p=0.03). Only duration of therapy had an effect on the BPD-SI total score (p=<0.001), and duration also had an effect on the following factors from the BPD-SI: outbursts of anger (p=<00.1) and emptiness (p=<.001). Combined therapy had significant effects on interpersonal relationships (p=<.009), impulsivity (p=<0.01), and affective instability (p=0.02) which increased over time (p=<0.001 for all domains). Neither type of therapy nor duration of therapy had effects on: abandonment, parasuicidal behavior, paranoid ideation, and identity.				1.10=F 2.1 = (-)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			were those who had recently received psychotherapy or pharmacotherapy, and current substance abusers.							
Bos, E.H., Van Wel, E.B., Appelo, M.T., & Verbraak, M.J. (2010). A randomized controlled trial of a Dutch version of systems training for emotional predictability and problem solving for borderline personality disorder. Journal of Nervous and Mental	RCT Level II Randomization was done separately at each location.	N=79 TX (n = 42) C (n = 37)	Between 8 and 12 subjects were included in each group for the Treatment group. If at the time of randomisation, an insufficient number of participants were assigned to a group, the remaining spots were randomly assigned to subjects who did not meet full BPD criteria	Systems Training for Emotional Predictability and Problem Solving (STEPPS) + individual treatment Group treatment; it combines skills training with general CBT elements and has a strong systems component; family members and significant others are	Treatment as usual (TAU) The STEPPS groups began simultaneously with a group of patients that started TAU. The control condition was TAU, i.e., the standard treatment for BPD offered at the participating sites. This treatment consisted of individual	Summary: Moderate to large effect sizes were seen for symptom variables and psychological quality of life at T2. At T3, moderate effects on symptoms were still present, while also moderate effects on physical, social and overall quality of life could be observed. More than TAU, STEPPS plus limited adjunctive individual therapy reduced symptomatology and improved quality of life, also in the longer run. STEPPS was not superior to TAU in reducing impulsive and parasuicidal behaviours, but this may be explained by the low base rate of these behaviours in our sample. It may also be that a more intensive treatment, such as DBT, is required to find differential effects on these behaviours. The merit of the	Primary efficacy measures included general psychiatric and BPD-specific symptoms, measured with the Symptom Checklist-90 total score (SCL-90) and the Borderline Personality Disorder checklist-40 total score (BPD-40) respectively. Secondary outcome measures included impulsive and parasuicidal behaviour, and quality of life. Impulsive and parasuicidal behaviour were assessed using 2 subscales of the	Pre-treatment assessments (T1) took place following randomization, just before the start of the intervention. Post-treatment assessments (T2) were done after the final weekly session of the STEPPS program (mean 23.9 ±3.6 weeks after T1).	Effect sizes (non-standardised): Primary outcomes: Estimated mean differences at the end of treatment (T2), adjusted for differences at T1, were: SCL-90, -47.0 (95% CI, -78.2 to -15.9, p = 0.003); BPD-40, -18.7 (95% CI, -31.6 to -5.8, p = 0.005). At 6-month follow-up	Raters were not blind and interrater reliability was not assessed for the BPDSI-IV. Intention to treat analysis was completed but yielded similar results to the per-protocol analysis so only the per-protocol analysis was presented.

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Disease, 198(4), 299-304. The Netherlands			(these participants were not included in this analysis). Age mean (SD) Treatment 32.9 (5.6) Control 31.8 (9.2) Gender – female (n, %) Treatment 35, 83.3% Control 33, 89.2% Diagnosis BPD confirmed by administering the BPD modules from the Dutch versions of the Personality Diagnostic Questionnaire and the	actively involved in the program. The Dutch version of the STEPPS group program involves 18 weekly sessions and a single follow-up session 3 to 6 months after the conclusion of the program. The program has 3 main components: (1) psychoeducation about BPD; (2) emotion management skills training; and (3) behaviour management skills training.	therapy from a psychotherapist, psychologist, or psychiatric nurse, offered every 1 to 4 weeks. STEPPS-related treatments like DBT or family groups for family members of the patients were not allowed. In both conditions, the main treatment could be supplemented with (medication) contacts with a psychiatrist, social worker, or other health care	STEPPS program is that it is relatively easily learned and implemented, and nevertheless improves BPD treatment in a number of ways. Further research to compare this treatment with other effective treatments is warranted. Importantly, this RCT on STEPPS is the first done by others than its developers. Detail: Scores on the primary efficacy measures. SCL-90 and BPD-40 symptom scores generally decreased from T1 to T3, and more so in the STEPPS group than in the TAU group. Quality of life scores (WHOQOL-Bref) generally increased from T1 to T3. Overall treatment effects were found for Overall Quality of Life and General Health, Physical Health, and Psychological Health. For Social Relationships the overall treatment effect was a trend, for Environment the overall treatment effect was not significant. In both conditions, the number of patients scoring above the cut-off for ratings for the parasuicide and impulsivity subscales of the BPDSI-IV decreased from T1 to T3. There were no significant differences between the conditions (overall	Borderline Personality Disorder Severity Index-IV (BPDSI-IV). The impulsivity subscale contains 11 items reflecting potentially harmful impulsive behaviours (e.g., gambling, reckless driving, binge eating). The parasuicide subscale contains 13 items reflecting self-mutilating Parasuicidal behaviours and suicidal thoughts and attempts. Quality of life was measured with the World Health Organization Quality of Life Assessment-Bref (WHOQOL-Bref)	Follow- up assessments (T3) took place approximately 6 months after T2 (mean 25.7 ±4.2 weeks after T2). Outcome measures were assessed on all 3 occasions	(T3), the differences were smaller but still significant: SCL-90, -38.4 (95% CI, -67.1 to -9.6, p = 0.009); BPD-40, -14.7 (95% CI, -26.6 to -2.8, p=0.016). Secondary outcomes: In the domain of Psychological Health, STEPPS scores were higher than TAU scores particularly at T2 (estimated mean difference adjusted for T1 score: 2.08 [95% CI, 0.76 – 3.41, p = 0.002]); at T3, this	The comparability of treatment between sites and the comparability between different therapists was not assessed. QC 1.1=A 1.2=A 1.3=B 1.4=F 1.5=A 1.6=A 1.7=B 1.8=28.9% (TX) and 13.2% (C) 1.9= 3 1.10=4 2.1 = (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			Structured Clinical Interview for DSM-IV Axis II Disorders. Participants had to be above threshold on either impulsivity and/or parasuicide subscales of the BPD Severity Index-IV Exclusion Subjects were excluded if they did not speak Dutch; were cognitively impaired (IQ < 70); younger than 18 yrs; treated involuntary; or presented an imminent danger to themselves or others.	STEPPS is system-based, in that friends and relatives of the patients are explicitly involved in the program for support and reinforcement of the newly learned skills (the "support group"). They receive education about BPD and are instructed how to interact with the person with the disorder. STEPPS is administered by 2 mental health professionals, of who at least one is a	professional.	treatment effects). Medication was similar between the groups at baseline and remained stable during follow-up assessment. Over the entire study period, patients in the STEPPS group received 15 STEPPS group sessions on average, and had a mean of 8 contacts with their individual therapist. TAU-patients had a mean of 9 individual contacts with their main therapist. In addition to these study treatment contacts, TAU-patients reported to have had 31 ambulatory therapy contacts on average with other mental health care workers (e.g., psychiatrists, psychologists, psychiatric nurses, social workers). Patients in the STEPPS condition had a mean of 21 additional ambulatory therapy contacts.			difference was reduced to 0.91 (95% CI, -0.32–2.15, p = 0.146). With respect to Overall Quality of Life and General Health, Physical Health and Social Relationships, STEPPS scores were significantly higher than TAU scores only at T3 (estimated differences 1.80 [95% CI, 0.30 – 3.30, p = 0.019]; 1.41 [95% CI, 0.15 – 2.66, p = 0.028]; and 1.86 [95% CI, 0.14 –3.57, p = 0.035], respectively), but not at	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
				psychotherapist. Subjects assigned to STEPPS also received limited individual therapy. This therapy was developed as an adjunct to STEPPS to help consolidate the newly acquired skills and to stimulate their use. It had a structured format, in which the previous STEPPS session was discussed as well as the use of the learned skills in everyday life. The therapy was offered every 2					T2 (estimated differences 1.58 [95% CI, -0.07–3.22, p = 0.060]; 0.96 [95% CI, -0.40 –2.32, p = 0.164]; and 0.77 [95% CI, -1.08 –2.61, p = 0.431, respectively). Odds ratios for impulsivity were (T2): 0.81 (95% CI, 0.26 – 2.53, p = 0.716); and (T3): 0.68 (95% CI, 0.22–2.09, p = 0.501). Odds ratios for parasuicide were (T2): 2.05 (95% CI, 0.66 – 6.35, p = 0.211); and (T3): 1.02	

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				weeks during the entire study period.					(95% CI, 0.35–2.97, p = 0.974). Effect sizes (standardised): Effect sizes for the differences between the treatments at T2: SCL-90, 0.68; BPD-40, 0.68; Psychological Health, 0.96. At T3 effect sizes were: SCL-90, 0.56; BPD-40, 0.53; Overall Quality of life & General Health, 0.61; Physical Health, 0.56; Social Relationships, 0.61.	
Carter, G.L., Willcox, C.H., Lewin, T.J., Conrad,	RCT Level II The	N=60 Treatment n= 27	Age mean (SD): Treatment 24.5 ± 6.12;	Modified DBT: team-based approach	WL + TAU The control condition was a 6-	Summary: The study found no statistically significant differences between modified DBT and waitlist control/TAU	The primary outcomes (differences in proportions and	3 and 6 month follow-up	BDQ days in bed, d=-0.66 (-1.25, -0.07) BDQ days	Very clear on methods of randomisati

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
A.M., & Bendit, N. (2010). Hunter DBT project: Randomized controlled trial of dialectical behaviour therapy in women with borderline personality disorder. The Australian and New Zealand journal of psychiatry, (2), 162-173.	purpose of the present study was to compare dialectical behaviour therapy (DBT) and the control condition of treatment as usual (TAU) plus weight list (WL) for DBT (TAU+WL).	Control n= 33	Control 24.7 ± 6.15 Gender: all female Diagnosis: BPD via clinical interview by a psychiatrist using DSM-IV criteria. To be in the study, needed a history of multiple episodes of deliberate self-harm, at least three self-reported episodes in the preceding 12 months. Exclusion: Exclusion criteria were presence of a disabling organic condition,	including individual therapy, group-based skills training, telephone access to an individual therapist and therapist supervision groups following the model of treatment developed by Linehan et al. The main change to the Linehan et al. model was the telephone access to individual therapists. In the present study telephone access was delivered using a group roster	month WL for DBT while receiving TAU (TAU+WL). Subjects, both in the initial DBT group and in the TAU+WL group who came to DBT after 6 months were offered 12 months DBT treatment, although the comparison between groups was restricted to the first 6 months of DBT versus TAU+WL.	except for some quality of life measures. There were trends towards modified DBT in reductions in hospitalisations, shorter lengths of stay, days in bed. Authors state: There are several possible explanations given to as to why DBT was not effective in this study: regression to background (pre-baseline) levels, the Hawthorne effect whereby both groups improved because of the effect of being in a study, the potentially powerful effect of being in a 6 month TAU+WL group for DBT for the control condition, beneficial effects of the TAU condition available in the Hunter region, modifications to standard DBT, the possible inferiority of training of DBT therapists to that of those in other studies or inferior adherence to the DBT methods despite adequate training, and methodological differences. Detail: The present study found reductions in psychiatric hospitalization for both DBT and WL+TAU over time but no significant benefit in favour of DBT for the binary outcome, the mean event rate or the mean length of stay for those with an admission at the end-point of	event rates) of any deliberate self-harm (DSH) event; general hospital admission for DSH and psychiatric admission for any reason; and mean difference in length of stay for any hospitalization. Secondary outcomes were disability and quality of life measures. Specific measures: Composite International Diagnostic Interview modules: anxiety, depression, bipolar disorders, alcohol abuse and dependence, substance abuse and dependence International Personality Disorder Examination Questionnaire Brief Disability Questionnaire Lifetime Parasuicidal Count-2		out of role, d= -0.43 (-1.01, 0.15) Days in hospital, d = -0.16 (-0.62, 0.30) No. hospital admissions, d= -0.22 (-0.68, 0.24) No. hospital presentations without admission, d= 0.03 (-0.43, 0.49) No. self-harm episodes in previous 3 mths, d = -0.18 (-0.64, 0.28) WHOQOL-BREF Environmental domain, d= 0.43 (-0.14, 0.99) WHOQOL-BREF Physical domain, d = 0.69 (0.11, 1.27) WHOQOL-	on and concealment (sealed envelopes). Randomization occurred after baseline assessment. Hospitalisation data was intention to treat but rest was per-protocol. Large discrepancy in drop outs between groups. QC 1.1=A 1.2=A 1.3=A 1.4=F 1.5=A 1.6=B 1.7=A 1.8=47.4% (TX) and 11.4(C)

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			schizophrenia, bipolar affective disorder, psychotic depression, florid antisocial behaviour, or developmental disability	of DBT individual therapists (not contact with each participant's individual therapist) between 8:30 a.m. and 10 p.m., and telephone contact with the local psychiatric hospital between 10 p.m. and 8:30 a.m. Treatment subjects were also assigned to the relevant skills training group, meeting weekly with the modules running in the following order: Interpersonal		the trial. There were no significant differences in proportions for general hospital admission for DSH or for any psychiatric admission. The length of stay overall, or the length of stay for those with either type of admission was not significantly different, although the DBT group tended to have shorter lengths of stay. For the per-protocol analyses, there were no significant differences for the proportion of patients with any DSH episode in 6 months, or for the number of self-harm episodes for the baseline–3 months and 3–6 months periods. There was a significant benefit in favour of DBT for days spent in bed but no significant effect for days out of role. There was a significant beneficial effect in favour of DBT, for three of the four domains of quality of life: Physical, Psychological and Environmental.	Parasuicidal History Interview-3 month period WHO Quality of Life-BREF version		BREF Psychological domain, d = 0.65 (0.07, 1.23) WHOQOL-BREF Social domain, d = -0.04 (-0.60, 0.53)	1.9= B 1.10= 2.1 = (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
				Effectiveness, Emotion Regulation and Distress Tolerance. Each module ran for 8 weeks. Groups had a minimum of 4 members before commencement and a maximum of 8 members. Entry to the skills group occurred only at the commencement of the next skills module.						
Davidson, K. M., Tyrer, P., Norrie, J., Palmer, S.J., & Tyrer, H. (2010). Cognitive therapy v. Usual treatment for borderline	RCT Level II	N= 106 n= 76 T=43 C= 33	Age mean (SD) T= 32.4 ± 9.0 C= 31.4 ± 9.4 Gender – Female (n, %) T= (45, 83.3%) C= (44, 84.6%)	30 x 1 hr sessions of individual cognitive–behavioural therapy for personality disorders (CBT–PD) over 1 year in addition to their	TAU	Summary: The original positive treatment effect is maintained over an average of 6 yrs follow-up: a difference of 1.26 suicide attempts over the following 5 yrs. Detail: Over the 6-year period, 73% (n = 24/33) in the TAU group had made at least one suicide attempt compared with 56% (n = 24/43) in the CBT–PD group (adjusted odds ratio 0.37,	Structured Clinical Interview for DSM–IV Axis II Personality Disorders. Acts of Deliberate Self-Harm Inventory. Beck Depression Inventory (BDI).	6 year follow-up Of the people who originally took part n = 76/106 (72%) were interviewe	BDI, d=0.02 (-0.44, 0.47) BSI, d= 0.07 (-0.39, 0.52) EQ-5D thermometer, d = -0.11 (-0.57, 0.34) EQ-5D weighted HSV, d=-0.24 (-0.69, 0.22)	No information on comorbidity and prescribed drug use was obtained across the trial and follow-up,

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
personality disorder: Prospective 6-year follow-up. British Journal of Psychiatry, 197(6), 456-462. UK			Diagnosis: BPD, met criteria for at least 5 items of BPD using the Structured Clinical Interview for DSM IV Axis II Personality Disorders. Inclusion: to enter the study, participants had received either in-patient psychiatric services or an assessment at accident and emergency services or an episode of deliberate self-harm (either suicidal act or self-mutilation) in the previous 12	usual treatment		95% CI 0.10–1.38, P= 0.13). In terms of self-harm (non-suicidal) there was little evidence of a difference between the groups. However, it was clear that the overall rate of self-harm declined in both groups. For measures of depression, anxiety, general psychopathology, social functioning, quality of life and dysfunctional attitudes, there were no statistically significant differences between the groups during follow-up. At 6 yrs, 54% of the sample no longer met diagnostic criteria for BPD: 56% (n = 24/43) of the CBT–PD group and 52% (n = 17/33) of the TAU group. There was no difference between the groups in terms of those who continued to meet diagnostic criteria (P = 0.44). Defined poor outcome as any suicide attempt in the follow-up period and examined the baseline predictors of good and poor outcome. From all the variables known to be of prognostic importance pre-randomisation, only having special needs at school was specifically associated with the presence of any suicide attempts during the 6-year	Spielberger State–Trait Anxiety Inventory (STAI). Brief Symptom Inventory (BSI). Participant's beliefs thought to be related to personality disorder were measured using the Young Schema Questionnaire (YSQ). Social Functioning Questionnaire (SFQ). Inventory of Interpersonal Problems – Short form 32 (IIP–32). Cost effectiveness via quality-adjusted life-year (QALY), assessed using the EuroQol (EQ–5D), and the Client Service Receipt Inventory (CSRI) for the 6 months before follow-up interview.	d at 6 year follow-up.	IIP-32, d= 0.18 (-0.27, 0.64) SFQ, d=-0.18 (-0.63, 0.27) State-Anxiety, d= -0.19 (-0.64, 0.27) Suicide attempts, d= -0.32 (-0.77, 0.14) Trait-Anxiety, d= -0.10 (-0.56, 0.35) Youth Schema Questionnaire, d=-0.07 (-0.52, 0.39)	and no formal assessment of interrater agreement was carried out on SCID–II diagnosis. Randomization was stratified by high (presence of suicidal acts in past 12 months) or low (presence of self-mutilation only in past 12 months) episodes of self-harm, using randomized permuted blocks of size 4. It was completed confidentially at a separate centre.

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			months. Exclusion: those who had evidence of an organic illness, mental impairment, alcohol or drug dependence , schizophrenia or bipolar affective disorder. Did not exclude those who were abusing drugs or alcohol providing they did not meet criteria for dependence			follow-up. Overall quality of life scores for the entire group remained poor and continued to lie within a similar range to values reported for other severe mental health populations such as severe schizophrenia. Use of hospital services remained high in both groups with about 54% of all individuals having received in-patient treatment and almost two-thirds having utilised accident and emergency (A&E) treatment during the follow-up period. With the exception of in-patient and A&E utilisation, no particularly large differences were observed between the treatment groups. However, the mean length of hospitalisation was markedly lower in the CBT–PD group than for the TAU group (10.81 v. 60.97 days respectively). Although a similar proportion of patients in both groups attended A&E, both the mean and median number of attendances were higher in the TAU group.				Therapy adherence measures were completed. QC 1.1=A 1.2=A 1.3=A 1.4=F 1.5=A 1.6=A 1.7=A 1.8= 20% (TX) and 36% (C) 1.9= A 1.10=A 2.1 = (++)
McMain, S.F., Links, P.S., Gnam, W.H., Guimond, T., Cardish,	RCT Level II	Treatment n=90 Control n= 90 The	Age mean (SD) T=29.4±9.2 C= 31.3±10.6 Gender	Dialectical behaviour therapy. Multimodal: Individual	General psychiatric management. Consisted of	Summary: both groups improved on most measures, except the utilization of non-study treatments decreased significantly more in the DBT group than in the general	Structured Clinical Interview for DSM-IV Axis I Disorders–Patient Edition International Personality	Assessed at baseline and every 4 months over the 1-year active	Risk of suicide and self-injurious episodes rpb=0.89	QC 1.1=A 1.2=A 1.3=A 1.4=F 1.5=A

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
R.J., Korman, L., & Streiner, D.L. (2009). A randomized trial of dialectical behaviour therapy versus general psychiatric management for borderline personality disorder. The American journal of psychiatry, (12), 1365-1374 Canada		primary goal: to eliminate behavioural dyscontrol by helping patients develop more effective coping strategies.	Female (n, %) T= (81,90%) C= (84,82.2%) DSM-IV criteria for BPD via Structured Clinical Interview Inclusion: Patients had to meet DSM-IV criteria for BPD, be 18–60 yrs of age, and have had at least two episodes of suicidal or nonsuicidal self-injurious episodes in the past 5 yrs, at least one of which was in the 3 months preceding enrolment. Exclusion:	sessions (1 hour weekly); skills group (2 hours weekly); phone coaching (2 hours weekly). Consultation team for therapists mandated (2 hours weekly). Organized according to a hierarchy of targets: suicidal, treatment-interfering, and quality-of-life-interfering behaviours. Explicit focus on self-harm and suicidal behaviour. Treatment	case management, dynamically informed psychotherapy, and symptom-targeted medication management. Individual sessions (1 hour weekly) including medication management based on structured drug algorithm. Therapist supervision meeting mandated (90 minutes weekly). Focus is expanded away from self-harm and suicidal behaviours.	psychiatric management group Detail: The utilization of non-study treatments decreased significantly more in the DBT group than in the general psychiatric management group (odds ratio=0.52, p=0.002). The mean adherence scores for essential interventions were significantly greater than the mean adherence score for proscribed DBT items across all time points. Both groups showed statistically significant decreases in the frequency of suicidal episodes (odds ratio= 0.23, p=0.01) and nonsuicidal self-injurious episodes (odds ratio = 0.52, p=0.03). There were no between group differences in the frequency of suicidal episodes or nonsuicidal self-injurious episodes. Those with any suicidal or nonsuicidal self-injurious episodes experienced a significant decrease in the medical risk over time, but there was no between-group difference. Using mixed-effects linear	Disorder Examination Treatment fidelity: modality specific adherence scales Frequency and severity of suicidal and non-suicidal self-injurious behaviour episodes: Suicide Attempt Self-Injury Interview Borderline symptoms: Zanarini Rating Scale for BPD General symptoms: Symptom Checklist–90–Revised State-Trait Anger Expression Inventory Beck Depression Inventory Inventory of Interpersonal Problems, 64-item version	treatment phase	Symptom severity (ZRSBPD) rpb =1.13 Depression (BDI) rpb =1.07 Anger (State-Trait Anger Expression Inventory - Anger out) rpb =0.32 Health-related QoL (EQ-5D) rpb =0.24 Symptom distress (SCL-90-R) rpb =0.68 Interpersonal functioning (Inventory of Interpersonal Problems-64) rpb =0.45	1.6=A 1.7=A 1.8=Treatment 39%; Control 38% 1.9= A 1.10=F 2.1 = (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			Were limited to having a DSM-IV diagnosis of a psychotic disorder, bipolar I disorder, delirium, dementia, or mental retardation or a diagnosis of substance dependence in the preceding 30 days; having a medical condition that precluded psychiatric medications; living outside a 40-mile radius of Toronto; having any serious medical condition likely to	involves: dialectical strategies, irreverent and reciprocal communication style, formal skills training. Behavioural strategies: exposure, contingency management, diary cards, behavioural analysis. Patients encouraged to rely on skills over pills where appropriate (e.g., anxiolytics). Tapering from medications was a treatment goal.	Psychodynamic approach emphasized the relational aspects and early attachment relationships. Disturbed attachment relationships related to emotion dysregulation as a primary deficit. Involves attention to signs of negative transference. Patients were encouraged to use medications concurrently.	growth curve analyses, significant decreases over the 1-year treatment period (but no between-group differences) were found for the following variables: borderline symptoms, depression, interpersonal functioning, symptom distress, and anger. On health-related quality of life (based on the EQ-5D thermometer), both groups reported improvements, but these changes were not statistically significant. Based on generalized-estimating-equation analysis, participants in both groups showed statistically significant decreases in the total number of emergency department visits (odds ratio=0.43, p<0.0001), with no statistically significant differences between groups. Both groups demonstrated statistically significant reductions in the number of emergency department visits for suicidal behaviour (odds ratio = 0.35, p<0.0001), with no between-group differences.	Health-related quality of life: EQ-5D thermometer Treatment History Interview: self-reported counts of the number of hospital admissions, days in hospital, emergency department visits, medications, and outpatient psychosocial treatments. Reasons for Early Termination From Treatment Questionnaire			

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			require hospitalization within the next year (e.g., cancer); and having plans to leave the province in the next 2 yrs.							

Self-harm and risk behaviours

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Bateman, A., & Fonagy, P. (2008). 8-year follow-up of patients treated for borderline personality disorder: Mentalization-based treatment versus treatment as usual. American Journal of Psychiatry, 165(5), 631-638. (Follow up from Bateman A, Fonagy P (1999): Effectiveness of partial hospitalization in the treatment of borderline	RCT Level II RCT (8 yrs since intervention follow-up – reporting occurrences since the 3 year follow-up).	N=41 T=22 C= 19	Age and gender not reported. Diagnosis: BPD on both Structured Clinical Interview for DSM-III-R and Diagnostic Interview for Borderline Patients. Exclusion: If they met criteria for schizophrenia, bipolar, substance misuse or mental impairment or had evidence of organics brain disorder.	Partial hospitalisation consisting of a long-term psychoanalytically orientated treatment for 18 months. Metallization based treatment (MBT) individual and group therapy. MBT by partial hospitalization consists of 18-month individual and group psychotherapy in a partial hospital setting offered within a structured and integrated program provided by a supervised team. Expressive therapy using art and writing groups is included. Crises are	Treatment as usual (TAU) consists of general psychiatric outpatient care with medication prescribed by the consultant psychiatrist, community support from mental health nurses, and periods of partial hospital and inpatient treatment as necessary but no specialist psychotherapy.	Summary: MBT had a greater effect than TAU on clinical symptoms, suicide and risk behaviours, service utilisation and general functioning Detail: 23% made suicide attempts in the MBT group (mean attempts 0.5±0.9), contrasted with 74% of the TAU group (mean attempts 0.52±0.48), which was significant. Mean number of emergency room visits and hospital days highly significantly favoured the MBT group, as did the continuing treatment profile. During MBT group therapy, all of the experimental group but only 31% of the TAU group received therapy. Over the 5-year postdischarge period, both groups received around 6 months of psychological therapy (n.s.). For all other treatments, the TAU group received significantly more input postdischarge—3.6 yrs of psychiatric outpatient treatment and 2.7 yrs of assertive community support, compared with 2	Primary: number of suicide attempts over the whole of the 5 year post-discharge follow-up period. Associated outcomes were service use, including emergency room visits; the length and frequency of hospitalization; continuing outpatient psychiatric care; and use of medication, psychological therapies, and community support. Secondary: 1) symptom status as assessed at a follow-up interview using the Zanarini Rating Scale for DSM-IV borderline personality disorder 2) global	2 yrs	Suicide attempts total, d=1.4 (0.3, 1.5), Zanarini Rating Scale (ZRS) for BPD: total: d=1.8 (0.14, 3.5), affect: d=1.1 (0.41, 1.7), cognitive: d=0.84 (0.3, 1.4), impulsivity: d=1.2 (0.59, 1.9), interpersonal: d=1.6 (1, 2.3) GAF, d=0.75 (-1.9, 3.4), No. of days of hospitalisation, d=1.5 (0.36, 2.7), No. of emergency room visits, d=1.4 (0.21, 2.63), No. of yrs of employment, d=0.94 (0.29, 1.6), No. of yrs psychiatric outpatient treatment, d= 0.93 (-4, 1.5), No. of yrs further therapy 36 months post-intake, d= 0.07 (-0.23, 0.37),	QC 1.1=A 1.2=B 1.3=B 1.4=B 1.5=B 1.6=A 1.7=A 1.8= 0% and 18% 1.9= C 1.10=F 2.1 = (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
personality disorder: a randomized controlled trial. Am J Psychiatry 156:1563–1569)				managed within the team; medication is prescribed according to protocol by a psychiatrist working in the therapy program. The focus of therapy is on the patient's moment-to-moment state of mind. The patient and therapist collaboratively try to generate alternative perspectives to the patient's subjective experience of himself or herself and others by moving from validating and supportive interventions to exploring the therapy relationship itself as it suggests		yrs and 5 months, respectively, for the MBT group. The TAU group had an average of over 3 yrs taking antipsychotic medication, whereas the MBT group had less than 2 months. Smaller but still substantial differences were apparent in antidepressant and mood stabilizer use. The TAU group spent nearly 2 yrs taking three or more psychoactive medications, compared to an average of 2 months for the MBT group. At the end of the follow-up period, 13% of the MBT patients met diagnostic criteria for BPD, compared with 87% of the TAU group. The contrast between mean total scores for the Zanarini Rating Scale for BPD yielded a large effect size favouring the MBT group, albeit with a wide confidence interval. Multivariate analysis of variance across the four symptom clusters also reflected the better outcome for the MBT group (Wilks's lambda=0.55, F=6.4, df=4, 32, p=0.001). The largest differences	functioning as measured by the Global Assessment of Functioning Scale (GAF) at 6-month intervals after 18 months of MBT by partial hospitalization: TX profiles (emergency room visits, hospitalization, psychiatric outpatients, community support, psychotherapy, medication) and suicidality and self-harm using criteria defined in the original trial for each patient by interview and scrutiny of medical records. Collected data twice yearly on vocational status, calculating the number of 6-month periods in which the patient was employed or attended an		No. of yrs further assertive outreach treatment, d=1.8 (1.4, 2.2), Medication (yrs) antidepressants, d= 1.1 (0.45, 1.7), Medication (yrs) antipsychotics, d= 2.04 (1.6, 2.5), Medication (yrs) mood stabilisers, d=1.17 (0.73, 1.6), Medication (yrs) three or more drugs, d= 1.45 (1.1, 1.8).	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
				alternative understanding.		favouring MBT were in terms of impulsivity and interpersonal functioning. There was over a 6-point difference in the GAF scores between the two groups, yielding a clinically significant moderate effect size of 0.8 (95% CI=–1.9 to 3.4). 46% of MBT group compared to 11% of the TAU group had GAF scores above 60. Vocational status favoured the MBT group, who were employed for nearly three times as long as the TAU group. There was increase in the % of MBT groups employment or education in the three post discharge periods.	educational program for more than 3 months. Patient recall for self-harm was unreliable and could not be independently corroborated from medical records and so is not reported. The authors consider the frequency of emergency room visits to be a reasonable proxy of severe self-harm in this population.			
Bateman, A., & Fonagy, P. (2009). Randomized controlled trial of outpatient mentalization-based treatment versus structured	RCT Level II	N=134 MBT (T) n= 71 SCM (C) n= 63 MBT = mentalization-based treatment	Age mean (SD) TX= 31.3 (7.6) C=30.9 (7.9) Female (n, %) TX= 57, 80.3% C= 50, 79.4% Diagnosis - All	MBT is manualized, consisting of 18 months of weekly combined individual and group psychotherapy provided by two different therapists. MBT is a psychodynamic treatment	Protocol-driven treatment, SCM, in an outpatient context representing best current clinical practice. Practitioners received equivalent supervision.	Summary: This study suggests that structured, integrated psychological and psychiatric treatment offering coordinated clinical management recommended by NICE significantly benefits patients with BPD. Both conditions were associated with substantially reduced suicidality, self-harm, and hospitalization and improvement on measures of symptoms and	Primary outcome: proportion of each group without severe parasuicidal behaviour as indicated by 1) suicide attempt, 2) life-threatening self-harm, or 3) hospital admission. Hospital admission was	18mths Assessed at entry and over the course of an 18-mnth treatment at 6, 12, and 18 months.	Life-threatening suicide attempts, d = 0.65 (0.58, 0.73) Severe self-harm attempts, d = 0.62 (0.28, 0.97) Interpersonal distress, d = 0.95 (0.59, 1.3) Social adjustment problems, d = 0.72 (0.37, 1.06) Symptom	Very good description of factors similar between groups and randomisation procedures. QC 1.1=A 1.2=A

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
clinical management for borderline personality disorder. American Journal of Psychiatry, 166(12), 1355-1364. UK		SCM = structured clinical management	participants were assessed using the Structured Clinical Interview for DSM-IV (SCID-I and SCID-II). Ethnicity - White British/European MBT: 76.1%, SCM: 68.3%; Black African/Afro-Caribbean MBT: 15.5%, 20.6% Other Chinese/Turkish Pakistani 8.5%, 11.1% Exclusion Inclusion criteria were 1) diagnosis of BPD, 2) suicide attempt or episode of life-threatening	rooted in attachment and cognitive theory. It requires limited training with moderate levels of supervision for implementation by generic mental health professionals. It aims to strengthen patients' capacity to understand their own and others' mental states in attachment contexts in order to address their difficulties with affect, impulse regulation, and interpersonal functioning, which act as triggers for acts of suicide and self-harm. Crisis plans were developed collaboratively	Crisis plans were developed collaboratively within each treatment team for all patients. SCM therapists focused on support and problem solving.	social and interpersonal functioning by the end of treatment. The rate of improvement in both groups was higher than spontaneous remission of symptoms of BPD. Although patients in both groups made statistically significant improvements, MBT was associated with greater improvements than SCM for most outcomes. Detail: Suicidal behaviour: 6 mth periods free of suicidal behaviours, severe self-injurious behaviours, and hospitalization improved from 0% to 43% in the SCM group and to 73% in the MBT group; behaviour increased in patients assigned to MBT more than for patients in the SCM group, however, differences only became statistically significant after 12 mths of treatment. Number of episodes of hospital admissions, suicide attempts, and severe self-injuries) also declined in both groups but a substantially greater reduction in the MBT than	included because patients are primarily offered inpatient care in anticipation of suicide attempts and severe self-harm Secondary outcome: were independently rated Global Assessment of Functioning (GAF) scores at the beginning and end of treatment and self-reported psychiatric symptoms, social and interpersonal functioning, and medication use assessed at baseline and at 6-month intervals until the end of treatment at 18 months. Patients' subjective experience of symptoms was measured using the SCL-90-R, and depression was		distress, d = 0.67 (0.33, 1.02) Depression, d=0.45 (0.1, 0.79) Hospital admissions, suicidal and self-injurious episodes, d=-0.72 (-1.07, -0.37) Length of hospitalisation, d = -0.43, (-0.78, -0.09) Medication use, d= -0.58, (-0.93, -0.24) Psychiatric hospitalisation, d= -0.53, (-0.88, -0.19)	1.3=B 1.4=F 1.5=A 1.6=A 1.7=A 1.8= 0% 1.9= A 1.10=F 2.1 = (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			self-harm within last 6 months, and 3) age 18–65. Exclusion criteria were kept to a minimum. Patients were excluded if they currently 1) were in long-term psychotherapeutic treatment, 2) met DSM-IV criteria for psychotic disorder or bipolar I disorder, 3) had opiate dependence requiring specialist treatment, or 4) had mental impairment or evidence of organic brain disorder. Current	within each treatment team for all patients. MBT therapists focused on helping patients reinstate mentalising during a crisis via telephone contact. SCM therapists focused on support and problem solving		the SCM group. Data were relatively consistent and showed reduced suicidal behaviour in both groups. The rate of improvement was significantly greater in the MBT group both in terms of any suicide attempt and the count data associated with it. Differences between groups only became marked in the last 6 mths of treatment; at 12 mths, groups were not significantly different. Self-harm: Frequency of self-harm behaviours had significantly steeper reduction in the MBT group compared with SCM. During the 6 months before end of treatment fewer patients in the MBT group severely self-harmed (24% versus 43%, c2=4.6, p<0.05; relative risk=0.55, 95% CI=0.33–0.92). However, during the first 6 months of tx, comparison of the proportion of individuals manifesting self-injurious behaviour favoured the SCM group (75% vs. 59%, c2=3.1, p<0.08; relative risk=1.27, 95% CI=0.99–1.63). From 6 to 18 mths the	assessed by using the Beck Depression Inventory. Social adjustment and interpersonal functioning were measured using the modified Social Adjustment Scale–self-report and the Inventory of Interpersonal Problems–circumflex version.			

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			psychiatric inpatient treatment, temporary residence, drug/alcohol misuse, and comorbid personality disorder were not exclusion criteria.			proportion of these patients in the MBT group who self-harmed showed a steeper decline when compared with the SCM group. The more consistent reduction in the counts of self-injurious behaviour and the difference in incidence rate ratios favouring MBT was highly statistically significant. Hospitalisation: Before treatment about 25% of each group had had at least one hospital admission. During the first 6 mths of treatment patients in the MBT group had significantly fewer days in hospital (Kruskal-Wallis c2=4.25, p<0.04), and the difference increased by 12 mths (Kruskal-Wallis c2=6.54, p<0.02) and 18 mths (Kruskal-Wallis c2=9.01, p<0.003). The decline in number of admissions over the whole period of treatment was significantly steeper in the MBT group. The number of patients hospitalized reduced in the MBT group relative to the SCM group and was markedly lower in				

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						the MBT group in the last 6 mths of treatment (c2=7.7, p<0.005; relative risk=0.14, 95% CI=0.3–0.64). Secondary outcomes: GAF increased substantially for both groups over the 18-mth period from 41 (95% CI=39.7–42.7) to 57 (95% CI=54.9–60.0) (t=15.5, df= 125, p<0.0001) but the increase was rated as greater in the MBT group. There was improvement on all self-rated measures for both groups. This was particularly notable for symptoms of depression and social adjustment. The slope of decline in self-reported symptoms and relationship and social adjustment problems was significantly greater in the MBT group across all four measures. The size of difference between the two groups at the end of treatment was substantial for reduction in interpersonal distress (d=0.95, 95% CI=0.59–1.3), moderate for social adjustment problems (d=0.72, 95% CI=0.37–1.06) and symptom distress				

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						(d=0.67, 95% CI=0.33–1.02), and more modest for depression (d=0.45, 95% CI=0.10–0.79). Medication: use of medication reduced significantly in both groups. The proportion of patients not receiving medication increased from 27% to 57%. The increase was greater for the MBT group. Counting the number of classes of psychotropic medication also showed a decline across both groups with the incidence rate ratio suggesting a significant difference in favour of the MBT group. The number of people receiving two or more different classes of medication substantially reduced in both groups from 30% at the beginning of treatment to 8% at the end of treatment.				
Bellino, S., Paradiso, E., Bogetto, F. (2008) Efficacy and tolerability of	SR Level I	N = 27 These are reviewed for 3 TX interventions: 1) ADs,	1) Efficacy and Tolerability of Antidepressant Agents ADs - MAOIs, Tricyclic and	1)Efficacy and Tolerability of Antidepressant Agents MAOIs - 3 studies Tricyclic and Heterocyclic Ads – 2 studies	Varied by study	Summary: MAOIs - may help with atypical depression, anger and impulsivity independent of antidepressant effects Tricyclics - modest effect and high potential for harm SSRIs - may help with affective instability and	No outcome measures stated	Not stated	Not reported	Not very clear SR, methods are vague and little detail is given clearly in results, the

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
pharmaco therapies for borderline personality disorder. CNS Drugs. 22(8), 671-92. Italy		2) Mood stabilizers and 3) APs	Heterocyclic ADs and SSRIs – 8 studies were included: TX length ranged from 5 – 14 weeks, number of participants ranged from 10 – 108. 2) Efficacy and Tolerability of Mood Stabilizers MS – Lithium, Carbamazepine, Valproate semisodium and Lamotrigine – 7 studies were included: TX length ranged from 6– 12 weeks, number of participants ranged from 10 – 52. Some	SSRIs – 4 studies 2) Efficacy and Tolerability of Mood Stabilizers Lithium – 1 study Carbamazepine – 2 studies Oxcarbazepine – 0 studies Valproate semisodium – 3 studies Lamotrigine – 1 study 3) Efficacy and Tolerability of Antipsychotics First generation antipsychotics Tiotixene – 2 studies Trifluoperazine – 1 study Haloperidol – 2 studies Atypical antipsychotics Risperidone – 1 study Olanzapine – 4 studies Ariprazole – 1 study		emotional dyscontrol Lithium - some effect on core pathology but can be toxic and potentially fatal in overdose Carbamazepine - Some effect on wide range of symptoms including impulsive aggressive behaviour and effective dysregulation Lamotrigine - highly significant improvement in anger was observed after 8 weeks of one trial Tiotixene, Trifluoperazine, Haloperidol, Olanzapine, Aripiprazole showed some effects on global symptoms, depression, anxiety, paranoid ideation, psychotic symptoms, obsessive symptoms, rejection sensitivity, suicidal attempts, impulsive aggression, chronic dysphoria Risperidone – no effect Detail: Antidepressant Agents MAOIs - can be useful in treating BPD with main effectiveness on symptoms of atypical depression, anger and impulsivity. The effects are considered to be				tables lack detail, the review is more descriptive. Studies have small sample sizes and short durations and high drop outs. Heterogeneity of selection criteria and outcome measures (no detail). QC 1.1 =A 1.2 =D 1.3 =C 1.4 =D 1.5 =B 2.1 (-)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			inpatients and outpatients. 3) Efficacy and Tolerability of Antipsychotics APs – First generation and atypical AP – 11 studies were included: TX length ranged from 6 – 12 weeks, number of participants ranged from 16 -108.			independent of the anti depressive action of these drugs. Tricyclic and Heterocyclic Ads – response to TCAs in patients with BPD appears modest. The risk of behavioural toxicity and potential lethality of TCAs in overdose support the use of SSRIs or other ADs. SSRIs – (in particular fluoxetine and fluvoxamine) were found to be efficacious in treating BPD. The effectiveness of the drugs concerned symptoms of effective instability (depression, anxiety and anger), impulsive dyscontrol (verbal aggression and aggression against objects). Risk of toxicity is lower. Mood Stabilizers Lithium – one crossover study showed efficacy of lithium on core features of BPD but was small study, 10 participants for 6 weeks. Lithium can be toxic. Can be fatal in overdose so caution with suicide risk is advised. Carbamazepine – – Limited data – Suggestion of effectiveness of carbamazepine on wide range of symptoms,				

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						including impulsive aggressive behaviour and effective dysregulation. One study reported link to melancholic depression. Oxcarbazepine – No RCTs reported. Valproate semisodium – Limited data – only open label studies. Some success with impulse aggression. Potential dose related effects. Lamotrigine – – Limited data – A highly significant improvement in anger was observed after 8 weeks of one trial. Antipsychotics - First generation antipsychotics Tiotixene – 2 studies - Reduction in global symptomatology, depression, anxiety and paranoid ideation, reduction in psychotic symptoms, obsessive symptoms Trifluoperazine – reduction in depression, anxiety, and rejection sensitivity and reduction in suicidal attempts vs. placebo Haloperidol – Reduction in global symptomatology, depression, anxiety and paranoid ideation, reduction in psychotic symptoms,				

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						obsessive symptoms Antipsychotics - Atypical antipsychotics Risperidone– no significant difference Olanzapine – reduction in impulsive aggression, chronic dysphoria, reduction in anxiety, paranoia and global symptomatology. Aripiprazole– reduction in global psychopathology, depression and anxiety.				
Bos, E.H., Van Wel, E.B., Appelo, M.T., & Verbraak, M J. (2010). A randomized controlled trial of a Dutch version of systems training for emotional predictability and problem solving for borderline personalit	RCT Level II Randomization was done separately at each location.	N=79 TX (n = 42) C (n = 37)	Between 8 and 12 subjects were included in each group for the Treatment group. If at the time of randomisation, an insufficient number of participants were assigned to a group, the remaining spots were randomly assigned to subjects who did not	Systems Training for Emotional Predictability and Problem Solving (STEPPS) + individual treatment Group treatment; it combines skills training with general CBT elements and has a strong systems component; family members and significant others are actively involved in the program.	Treatment as usual (TAU) The STEPPS groups began simultaneously with a group of patients that started TAU. The control condition was TAU, i.e., the standard treatment for BPD offered at the participating sites. This treatment consisted of individual therapy from a	Summary: Moderate to large effect sizes were seen for symptom variables and psychological quality of life at T2. At T3, moderate effects on symptoms were still present, while also moderate effects on physical, social and overall quality of life could be observed. More than TAU, STEPPS plus limited adjunctive individual therapy reduced symptomatology and improved quality of life, also in the longer run. STEPPS was not superior to TAU in reducing impulsive and parasuicidal behaviours, but this may be explained by the low base rate of these behaviours in our sample. It may also be that a more	Primary efficacy measures included general psychiatric and BPD-specific symptoms, measured with the Symptom Checklist-90 total score (SCL-90) and the Borderline Personality Disorder checklist-40 total score (BPD-40) respectively. Secondary outcome measures included impulsive and parasuicidal	Pre-treatment assessments (T1) took place following randomization, just before the start of the intervention. Post-treatment assessments (T2) were done after the final weekly session of the STEPPS program (mean	Effect sizes (non-standardised): Primary outcomes: Estimated mean differences at the end of treatment (T2), adjusted for differences at T1, were: SCL-90, -47.0 (95% CI, -78.2 to -15.9, p = 0.003); BPD-40, -18.7 (95% CI, -31.6 to -5.8, p = 0.005). At 6-month follow-up (T3), the differences were smaller but still significant: SCL-90, -38.4 (95% CI, -67.1 to -9.6, p	Raters were not blind and interrater reliability was not assessed for the BPDSI-IV. Intention to treat analysis was completed but yielded similar results to the per-protocol analysis so only the per-protocol analysis

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
y disorder. Journal of Nervous and Mental Disease, 198(4), 299-304. The Netherlands			meet full BPD criteria (these participants were not included in this analysis). Age mean (SD) Treatment 32.9 (5.6) Control 31.8 (9.2) Gender – female (n, %) Treatment 35, 83.3% Control 33, 89.2% Diagnosis BPD confirmed by administering the BPD modules from the Dutch versions of the Personality Diagnostic	The Dutch version of the STEPPS group program involves 18 weekly sessions and a single follow-up session 3 to 6 months after the conclusion of the program. The program has 3 main components: (1) psychoeducation about BPD; (2) emotion management skills training; and (3) behaviour management skills training. STEPPS is system-based in that friends and relatives of the patients are explicitly involved in the program for support and reinforcement of the newly learned skills (the "support	psychotherapist, psychologist, or psychiatric nurse, offered every 1 to 4 weeks. STEPPS-related treatments like DBT or family groups for family members of the patients were not allowed. In both conditions, the main treatment could be supplemented with (medication) contacts with a psychiatrist, social worker, or other health care professional.	intensive treatment, such as DBT, is required to find differential effects on these behaviours. The merit of the STEPPS program is that it is relatively easily learned and implemented, and nevertheless improves BPD treatment in a number of ways. Further research to compare this treatment with other effective treatments is warranted. Importantly, this RCT on STEPPS is the first done by others than its developers. Detail: Scores on the primary efficacy measures. SCL-90 and BPD-40 symptom scores generally decreased from T1 to T3, and more so in the STEPPS group than in the TAU group. Quality of life scores (WHOQOL-Bref) generally increased from T1 to T3. Overall treatment effects were found for Overall Quality of Life and General Health, Physical Health, and Psychological Health. For Social Relationships the overall treatment effect was a trend, for Environment the overall treatment effect was not significant.	behaviour, and quality of life. Impulsive and parasuicidal behaviour were assessed using 2 subscales of the Borderline Personality Disorder Severity Index-IV (BPDSI-IV). The impulsivity subscale contains 11 items reflecting potentially harmful impulsive behaviours (e.g., gambling, reckless driving, binge eating). The parasuicide subscale contains 13 items reflecting self-mutilating, parasuicidal behaviours and suicidal thoughts and attempts. Quality of life was measured with the World Health Organization Quality of Life Assessment-Bref	23.9 ±3.6 weeks after T1). Follow- up assessments (T3) took place approximately 6 mths after T2 (mean 25.7 ±4.2 weeks after T2). Outcome measures were assessed on all 3 occasions	=0.009); BPD-40, -14.7 (95% CI, -26.6 to -2.8, p =0.016). Secondary outcomes: In the domain of Psychological Health, STEPPS scores were higher than TAU scores particularly at T2 (estimated mean difference adjusted for T1 score: 2.08 [95% CI, 0.76 –3.41, p =0.002]); at T3, this difference was reduced to 0.91 (95% CI, -0.32–2.15, p =0.146). With respect to Overall Quality of Life and General Health, Physical Health and Social Relationships, STEPPS scores were significantly higher than TAU scores only at T3 (estimated differences 1.80 [95% CI, 0.30 –	was presented. The comparability of treatment between sites and the comparability between different therapists was not assessed. QC 1.1=A 1.2=A 1.3=B 1.4=F 1.5=A 1.6=A 1.7=B 1.8=28.9% (TX) and 13.2% (C) 1.9= 3 1.10=4 2.1 = (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			Questionnaire and the Structured Clinical Interview for DSM-IV Axis II Disorders. Participants had to be above threshold on either impulsivity and/or parasuicide subscales of the BPD Severity Index-IV Exclusion Subjects were excluded if they did not speak Dutch; were cognitively impaired (IQ < 70); younger than 18 yrs; treated involuntarily ; or presented an imminent	group"). They receive education about BPD and are instructed how to interact with the person with the disorder. STEPPS is administered by 2 mental health professionals, of who at least one is a psychotherapist . Subjects assigned to STEPPS also received limited individual therapy. This therapy was developed as an adjunct to STEPPS to help consolidate the newly acquired skills and to stimulate their use. It had a structured format, in which the previous STEPPS session was discussed as well as the		In both conditions, the number of patients scoring above the cut-off for ratings for the parasuicide and impulsivity subscales of the BPDSI-IV decreased from T1 to T3. There were no significant differences between the conditions (overall treatment effects). Medication was similar between the groups at baseline and remained stable during follow-up assessment. Over the entire study period, patients in the STEPPS group received 15 STEPPS group sessions on average, and had a mean of 8 contacts with their individual therapist. TAU-patients had a mean of 9 individual contacts with their main therapist. In addition to these study treatment contacts, TAU-patients reported to have had 31 ambulatory therapy contacts on average with other mental health care workers (e.g., psychiatrists, psychologists, psychiatric nurses, social workers). Patients in the STEPPS condition had a mean of 21 additional ambulatory	(WHOQOL-Bref)		3.30, p =0.019]; 1.41 [95% CI, 0.15–2.66, p =0.028]; and 1.86 [95% CI, 0.14 – 3.57, p =0.035], respectively), but not at T2 (estimated differences 1.58 [95% CI, -0.07– 3.22, p =0.060]; 0.96 [95% CI, -0.40 –2.32, p = 0.164]; and 0.77 [95% CI, -1.08 – 2.61, p =0.431, respectively). Odds ratios for impulsivity were (T2): 0.81 (95% CI, 0.26 –2.53, p = 0.716); and (T3): 0.68 (95% CI, 0.22–2.09, p = 0.501). Odds ratios for parasuicide were (T2): 2.05 (95% CI, 0.66–6.35, p = 0.211); and (T3): 1.02 (95% CI, 0.35 –2.97, p =0.974). Effect sizes (standardised): Effect sizes for	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			danger to themselves or others.	use of the learned skills in everyday life. The therapy was offered every 2 weeks during the entire study period.		therapy contacts.			the differences between the treatments at T2: SCL-90, 0.68; BPD-40, 0.68; Psychological Health, 0.96. At T3 effect sizes were: SCL-90, 0.56; BPD-40, 0.53; Overall Quality of life & General Health, 0.61; Physical Health, 0.56; Social Relationships, 0.61.	
Carter, G.L., Willcox, C.H., Lewin, T.J., Conrad, A.M., & Bendit, N. (2010). Hunter DBT project: Randomized controlled trial of dialectical behaviour therapy in	RCT Level II The purpose of the present study was to compare dialectical behaviour therapy (DBT) and the control condition of	N=60 Treatment n= 27 Control n= 33	Age mean (SD): Treatment 24.5 ± 6.12; Control 24.7 ± 6.15 Gender: all female Diagnosis: BPD via clinical interview by a psychiatrist using DSM-IV criteria. To be in the	Modified DBT: team-based approach including individual therapy, group-based skills training, telephone access to an individual therapist and therapist supervision groups following the model of treatment developed by	WL + TAU The control condition was a 6-month WL for DBT while receiving TAU (TAU+WL). Subjects, both in the initial DBT group and in the TAU+WL group who came to DBT after 6 months were offered 12 months DBT treatment,	Summary: The study found no statistically significant differences between modified DBT and waitlist control/TAU except for some quality of life measures. There were trends towards modified DBT in reductions in hospitalisations, shorter lengths of stay, days in bed. Authors state: There are several possible explanations given to as to why DBT was not effective in this study: regression to background (pre-baseline) levels, the Hawthorne effect whereby both groups	The primary outcomes (differences in proportions and event rates) of any deliberate self-harm (DSH) event; general hospital admission for DSH and psychiatric admission for any reason; and mean difference in length of stay for any hospitalization. Secondary outcomes were	3 and 6 month follow-up	BDQ days in bed, d=-0.66 (-1.25, -0.07), BDQ days out of role, d= -0.43 (-1.01, 0.15), Days in hospital, d= -0.16 (-0.62, 0.30), No. hospital admissions, d= -0.22 (-0.68, 0.24), No. hospital presentations without admission, d= 0.03 (-0.43, 0.49), No. self-harm	Very clear on methods of randomisation and concealment (sealed envelopes). Randomization occurred after baseline assessment. Hospitalisation data was intention to

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
women with borderline personality disorder. The Australian and New Zealand journal of psychiatry, (2), 162-173.	treatment as usual plus weight list (WL) for DBT (TAU+WL).		study, needed a history of multiple episodes of deliberate self-harm, at least three self-reported episodes in the preceding 12 months. Exclusion: Exclusion criteria were presence of a disabling organic condition, schizophrenia, bipolar affective disorder, psychotic depression, florid antisocial behaviour, or developmental disability	Linehan et al. The main change to the Linehan et al. model was the telephone access to individual therapists. In the present study telephone access was delivered using a group roster of DBT individual therapists (not contact with each participant's individual therapist) between 8:30 a.m. and 10 p.m., and telephone contact with the local psychiatric hospital between 10 p.m. and 8:30 a.m. Treatment subjects were also assigned to the relevant skills training group, meeting	although the comparison between groups was restricted to the first 6 months of DBT versus TAU+WL.	improved because of the effect of being in a study, the potentially powerful effect of being in a 6 month TAU+WL group for DBT for the control condition, beneficial effects of the TAU condition available in the Hunter region, modifications to standard DBT, the possible inferiority of training of DBT therapists to that of those in other studies or inferior adherence to the DBT methods despite adequate training, and methodological differences. Detail: The present study found reductions in psychiatric hospitalization for both DBT and WL+TAU over time but no significant benefit in favour of DBT for the binary outcome, the mean event rate or the mean length of stay for those with an admission at the end-point of the trial. There were no significant differences in proportions for general hospital admission for DSH or for any psychiatric admission. The length of stay overall, or the length of stay for those with either type of admission was	disability and quality of life measures. Specific measures: Composite International Diagnostic Interview modules: anxiety, depression, bipolar disorders, alcohol abuse and dependence, substance abuse and dependence International Personality Disorder Examination Questionnaire Brief Disability Questionnaire Lifetime Parasuicidal Count-2 Parasuicidal History Interview-3 month period WHO Quality of Life-BREF version		episodes in previous 3 mths, d= -0.18 (-0.64, 0.28), WHOQOL-BREF Environmental domain, d= 0.43 (-0.14, 0.99), WHOQOL-BREF Physical domain, d= 0.69 (0.11, 1.27), WHOQOL-BREF Psychological domain, d= 0.65 (0.07, 1.23), WHOQOL-BREF Social domain, d= -0.04 (-0.60, 0.53).	treat but rest was per-protocol. Large discrepancy in drop outs between groups. QC 1.1=A 1.2=A 1.3=A 1.4=F 1.5=A 1.6=B 1.7=A 1.8=47.4% (TX) and 11.4(C) 1.9= B 1.10= 2.1 = (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
				weekly with the modules running in the following order: Interpersonal Effectiveness, Emotion Regulation and Distress Tolerance. Each module ran for 8 weeks. Groups had a minimum of 4 members before commencement and a maximum of 8 members. Entry to the skills group occurred only at the commencement of the next skills module.		not significantly different, although the DBT group tended to have shorter lengths of stay. For the per-protocol analyses, there were no significant differences for the proportion of patients with any DSH episode in 6 months, or for the number of self-harm episodes for the baseline–3 months and 3–6 months periods. There was a significant benefit in favour of DBT for days spent in bed but no significant effect for days out of role. There was a significant beneficial effect in favour of DBT, for three of the four domains of quality of life: Physical, Psychological and Environmental.				
Davidson, K. M., Tyrer, P., Norrie, J., Palmer, S.J., & Tyrer, H. (2010). Cognitive therapy v. Usual	RCT Level II	N= 106 n= 76 T=43 C= 33	Age mean (SD) T= 32.4 ± 9.0 C= 31.4 ± 9.4 Gender – Female (n, %) T = (45, 83.3%) C = (44,	30 x 1 hr sessions of individual cognitive–behavioural therapy for personality disorders (CBT–PD) over 1 year in addition to their usual	TAU	Summary: The original positive treatment effect is maintained over an average of 6 yrs follow-up: a difference of 1.26 suicide attempts over the following 5 yrs. Detail: Over the 6-year period, 73% (n = 24/33) in the TAU group had made at	Structured Clinical Interview for DSM–IV Axis II Personality Disorders. Acts of Deliberate Self-Harm Inventory. Beck Depression	6 year follow-up Of the people who originally took part n = 76/106 (72%) were	BDI, d=0.02 (-0.44, 0.47), BSI, d= 0.07 (-0.39, 0.52), EQ-5D thermometer, d= -0.11 (-0.57, 0.34), EQ-5D weighted HSV, d= -0.24 (-0.69, 0.22),	No information on comorbidity and prescribed drug use was obtained across the trial and

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
treatment for borderline personality disorder: Prospective 6-year follow-up. British Journal of Psychiatry, 197(6), 456-462. UK			84.6%) Diagnosis: BPD, met criteria for at least 5 items of BPD using the Structured Clinical Interview for DSM IV Axis II Personality Disorders. Inclusion: to enter the study, participants had received either in-patient psychiatric services or an assessment at accident and emergency services or an episode of deliberate self-harm (either suicidal act or self-mutilation)	treatment		least one suicide attempt compared with 56% (n = 24/43) in the CBT–PD group (adjusted odds ratio 0.37, 95% CI 0.10–1.38, P= 0.13). In terms of self-harm (non-suicidal) there was little evidence of a difference between the groups. However, it was clear that the overall rate of self-harm declined in both groups. For measures of depression, anxiety, general psychopathology, social functioning, quality of life and dysfunctional attitudes, there were no statistically significant differences between the groups during follow-up. At 6 yrs, 54% of the sample no longer met diagnostic criteria for BPD: 56% (n = 24/43) of the CBT–PD group and 52% (n = 17/33) of the TAU group. There was no difference between the groups in terms of those who continued to meet diagnostic criteria (P = 0.44). Defined poor outcome as any suicide attempt in the follow-up period and examined the baseline predictors of good and poor outcome.	Inventory (BDI). Spielberger State–Trait Anxiety Inventory (STAI). Brief Symptom Inventory (BSI). Participant's beliefs thought to be related to personality disorder were measured using the Young Schema Questionnaire (YSQ). Social Functioning Questionnaire (SFQ). Inventory of Interpersonal Problems – Short form 32 (IIP–32). Cost effectiveness via quality-adjusted life-year (QALY), assessed using the EuroQol (EQ–5D), and the	interviewed at 6 year follow-up.	IIP-32, d=0.18 (-0.27, 0.64), SFQ, d=-0.18 (-0.63, 0.27), State-Anxiety, d= -0.19 (-0.64, 0.27), Suicide attempts, d= -0.32 (-0.77, 0.14), Trait-Anxiety, d= -0.10 (-0.56, 0.35), Youth Schema Questionnaire, d=-0.07 (-0.52, 0.39).	follow-up, and no formal assessment of interrater agreement was carried out on SCID–II diagnosis. Randomization was stratified by high (presence of suicidal acts in past 12 months) or low (presence of self mutilation only in past 12 months) episodes of self-harm, using randomized permuted blocks of size 4. It was completed confidentially at a separate

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			in the previous 12 months. Exclusion: those who had evidence of an organic illness, mental impairment, alcohol or drug dependence, schizophrenia or bipolar affective disorder. Did not exclude those who were abusing drugs or alcohol providing they did not meet criteria for dependence			From all the variables known to be of prognostic importance pre-randomisation, only having special needs at school was specifically associated with the presence of any suicide attempts during the 6-year follow-up. Overall quality of life scores for the entire group remained poor and continued to lie within a similar range to values reported for other severe mental health populations such as severe schizophrenia. Use of hospital services remained high in both groups with about 54% of all individuals having received in-patient treatment and almost two-thirds having utilised accident and emergency (A&E) treatment during the follow-up period. With the exception of in-patient and A&E utilisation, no particularly large differences were observed between the treatment groups. However, the mean length of hospitalisation was markedly lower in the CBT–PD group than for the TAU group (10.81 v. 60.97 days	Client Service Receipt Inventory (CSRI) for the 6 months before follow-up interview.			centre. Therapy adherence measures were completed. QC 1.1=A 1.2=A 1.3=A 1.4=F 1.5=A 1.6=A 1.7=A 1.8= 20% (TX) and 36% (C) 1.9= A 1.10=A 2.1 = (++)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						respectively). Although a similar proportion of patients in both groups attended A&E, both the mean and median number of attendances were higher in the TAU group.				
Doering, S., Horz, S., Rentrop, M., Fischer-Kern, M., Schuster, P., Benecke, C., Buchheim, A., Martius, P., Buchheim, P. (2010). Transference-focused psychotherapy v. Treatment by community psychotherapists for borderline personality disorder:	RCT Level II	Treatment n=52 Control n= 52	Age mean (SD): Treatment 27.46 ±6.8; Control 27.19 ± 7.5 Gender – all females Diagnosis: DSM-IV BPD via Structured Clinical Interview for DSM and Structured Interview for Personality Organisation Exclusion: Exclusion criteria were diagnosis of antisocial personality disorder, schizophreni	Transference-focused psychotherapy: Two 50-minute sessions are delivered per week. Before treatment starts, a treatment contract is negotiated orally with the individual, covering general aspects like duration and payment as well as potential threats to the treatment specific to each patient (e.g. suicide attempts, drug misuse or anorectic behaviour). The treatment focuses on the		Summary: Transference focused psychotherapy group had fewer DSM features at 1 year, fewer self-harm and suicide attempts, lower duration and less time as an inpatient and better psychosocial functioning than control group. The drop-out rate was significantly higher in the experienced community psychotherapists group Detail: There were no significant differences between the groups with regard to medication at baseline and during the 1-year treatment period. The transference-focused psychotherapy group showed a significantly higher proportion of participants that fulfilled less than five DSM–IV diagnostic borderline criteria after 1 year and were not diagnosed BPD any more (42.3% v. 15.4%, P=	Primary: Drop-outs Suicide attempts and self-harming behaviour: Cornell Interview for Suicidal and Self-Harming Behaviour- Self Report (CISSB), adapted from the Parasuicidal History Interview Secondary: DSM-IV diagnostic criteria for BPD via SCID GAF Beck Depression Inventory State-Trait Anxiety Inventory Brief Symptom Inventory Psychiatric inpatient admissions - Cornell Revised Treatment	Follow-up: 1 year	Any suicide attempts during psychotherapy, d = -0.08 (-0.47, 0.30) BDI, d = 0.12 (-0.26, 0.51) Brief symptom inventory, d = 0.08 (-0.31, 0.46) GAF, d = 0.34 (-0.04, 0.73) Level of personality organisation, d = -0.26 (-0.65, 0.12) No. of days in psychiatric inpatient during psychotherapy, d= -0.23 (-0.61, 0.16) No. of DSM-IV diagnostic criteria for BPD, d = -0.56 (-0.95, -0.17) No. of psychiatric inpatient admissions during psychotherapy,	High, differential drop out QC 1.1=A 1.2=A 1.3=A 1.4=F 1.5=A 1.6=C 1.7=A 1.8= Treatment 17% not assessed at follow-up; Control 44% not assessed at follow-up 1.9= A 1.10=C 2.1 = (-)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Randomised controlled trial. British Journal of Psychiatry, 196(5), 389-395 Germany			a, bipolar I and II disorder with a major depressive, manic or hypomanic episode during the previous 6 months, substance dependency (including alcohol) during the previous 6 months, organic pathology or mental retardation.	integration of internalised experiences of dysfunctional early relationships. For this purpose, the actual relationship between the individual and the therapist ('transference relationship') is examined as much as possible. Additional psychotherapy not allowed		0.002). The transference-focused psychotherapy group was significantly superior with regard to the number of DSM–IV diagnostic criteria, psychosocial functioning, personality organisation, suicide attempts and number and duration of psychiatric in-patient treatments. To rule out a mere dose effect of transference-focused psychotherapy, completer analyses were conducted, controlling for the number of therapy sessions delivered. The group differences remained significant for GAF Score, number of DSM–IV borderline criteria, and level of personality organisation. In both groups all but one of the individuals who attempted suicide dropped out of treatment. Those who dropped out were not included in the completer analysis. The results demonstrate the significant superiority of transference-focused psychotherapy with regard to the primary outcome criteria of drop-out rate and	History Inventory (CRTHI) Personality organisation: STIPO		d= -0.47 (-0.86, -0.08) Self-harming during psychotherapy, d= -0.12 (-0.50, 0.27) State-Trait Anxiety X1, d = 0.18 (-0.20, 0.57) State-Trait Anxiety X2, d = 0.04 (-0.35, 0.42)	

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						suicide attempts during the treatment year. The same was true for the secondary outcome criteria reduction of DSM–IV diagnostic borderline criteria, psychosocial functioning, level of personality organisation and psychiatric in-patient admissions. Participants in the transference-focused psychotherapy group received 48.5 (s.d. = 34.2) sessions and those in the experienced community psychotherapists group 18.6 (s.d. = 24.0) sessions of individual psychotherapy within the 1-year study period. Future research should look at long-term follow-up, since effects of psychotherapy seem to take yrs to develop and to continue after termination of treatment Transference-therapists received more supervision and had assessment of treatment adherence. Large difference between dropout rates between groups. Control group participants attended fewer sessions than the intervention group.				

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Lieb, K., Vollm, B., Rucker, G., Timmer, A., Stoffers, J.M. (2010) Pharmaco therapy for borderline personalit y disorder: Cochrane systematic review of randomise d trials. British Journal of Psychiatry. 196(1), 4-12. UK	SR Level I	N= 27 studies Twenty-seven trials were included in which first and second generati on antipsyc hotics, mood stabiliser s, antidepr essants and omega-3 fatty acids were tested	Participants were adults from mostly outpatient settings. There was a mix of male and female participants ranging from 16 – 314 with 1714 participants in total.	Olanzapine vs placebo – 6 studies, Carbamazepine vs placebo – 1 study, Valproate semisodium vs placebo – 2 studies, Thiothixene vs placebo – 1 study, Omega 3 fatty acids vs placebo – 2 studies, Loxapine Chlorpromazine vs placebo - 1 study, Topiramate vs placebo – 3 studies, Aripiprazole vs placebo – 1 study, Ziprasidone vs placebo - 1 study, Fluvoxamine vs placebo - 1 study, Fluoxetine vs placebo – 2 studies, Haloperidol Phenelzine	Varied by study	Summary: Little evidence for effectiveness of antidepressants. There were positive effects for valproate, lamotrigine and topiramate but not carbamazepine. Haloperidol reduced anger, flupenthixol reduced suicidal behaviour, aripiprizole reduced pathology. Omega 3 fatty acids may reduce depressive symptoms but few studies Detail: First generation antipsychotics – The comparisons of first-generation antipsychotics (FGAs) with placebo yielded significant effects for haloperidol in the reduction of anger and flupentixol decanoate in the reduction of suicidal behaviour. No proof of efficacy was found for thiothixene for any outcome. Tolerability between active and placebo treatment did not differ in any comparison. Second generation antipsychotics – Among second-generation antipsychotics (SGAs), aripiprazole was found to have both significant effects in the reduction of the core	Primary outcomes were overall disorder severity as well as specific core symptoms. Secondary outcomes comprised associated psychiatric pathology and drug tolerability	Study durations ranged from 5 to 24 weeks, with a mean duration of approxima tely 84 days (s.d. = 54.7).	Standardised mean difference (SMD 95% CI), standardised mean change (SMC) or risk ratio (RR, 95% CI) Effect sizes vs. placebo: First generation antipsychotics Haloperiodol for anger SMD -0.46 (-0.84, -0.09) Flupentixol decanoate for suicidal behaviour RR 0.49 (0.29, 0.92) No proof of efficacy for thiothixene. Second-generation antipsychotics Aripiprazole for anger SMD -1.14 (-1.73, -0.55), for psychotic symptoms SMD -1.05 (-1.64, -0.47), for impulsivity SMD -1.84 (-2.49, -1.18), for interpersonal problems SMD	Authors state that the robustness of findings is low, since they are based mostly on single, small studies. QC 1.1 =A 1.2 =A 1.3 =A 1.4 =A 1.5 =B 2.1 (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
				sulphate vs placebo – 1 study, Haloperidol Amitriptyline vs placebo – 1 study, Lamotrigine vs placebo – 1 study, Olanzapine, Fluoxetine Olanzapine + fluoxetine – 1 study, Flupentixol decanoate vs placebo - 1 study, Mianserin vs placebo – 1 study.		pathological symptoms of BPD, as investigated by one trial with 52 participants. Six trials compared olanzapine with placebo; among these were two large studies including approximately 300 participants each. Unfortunately, the different formats of result reporting (end-point v. change data) did not allow pooling of all study estimates for the majority of outcomes. There were also statistically significant benefits for the reduction of anxiety. However, results for suicidal ideation were inconsistent Mood stabilisers – Beneficial effects were found for the mood stabilisers valproate semisodium (divalproex sodium), lamotrigine and topiramate, but not for carbamazepine. Antidepressants - There was little evidence of effectiveness for antidepressant treatment. Other drugs – For supplementary omega-3 fatty acids, significant effects were found in one study for the reduction of suicidality and depressive symptoms. There was also			-0.77 (-1.33, -0.20), for depression SMD -1.25 (-1.85, -0.65), for anxiety SMD -0.73 (-1.29, -0.17), for general severity of psychiatric pathology SMD -1.27 (-1.87, -0.67). Olanzapine for affective instability SMC -0.16 (-0.32, -0.01), for anger SMC -0.27 (-0.43, -0.12), for psychotic symptoms SMC -0.18 (-0.34, -0.03), for anxiety mean change difference -0.22 (-0.41, -0.03), for suicide ideation SMC 0.29 (0.07, 0.50), for suicidality SMD 0.15 (-0.36, 0.65), self-harm RR 1.20 (0.50, 2.88). No significant effects for ziprasidone. Mood stabilisers	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						an effect estimate of a second study for depressive symptoms, but because of different formats of reporting it could not be pooled with the first one. However, these findings also tended towards better results in participants given omega-3 fatty acids. Tolerability and safety – Tolerability did not differ for any drug–placebo comparison, i.e. drug treatment was not associated with a higher ratio of non-completers than was placebo treatment. Detailed data on adverse effects were available for olanzapine treatment. Participants treated with this drug were, overall, no more likely to experience any adverse effect than were members of the control group. Adverse effects were also reported in detail for topiramate treatment. Data on the frequency of memory problems, trouble in concentrating, headache, fatigue, dizziness, menstrual pain and paraesthesia were also available for one RCT, with no significant			Valproate semisodium for interpersonal problems SMD -1.04 (-1.85, -0.23), for depression SMD -0.66 (-1.31, -1.01), for two studies of anger SMD -1.83 (-3.17, -0.48) and SMD -0.15 (-0.91, 0.61). Lamotrigine for impulsivity SMD -1.62, (-2.54, -0.69) Topiramate for interpersonal problems SMD -0.91 (-1.36, -0.35), for impulsivity SMD – 3.36 (-4.44, -2.27), for anger in males SMD -0.65 (-1.27, -0.03), for anger in females SMD -3.00 (-3.64, -2.36), for anxiety SMD -1.40 (-1.99, -0.81), for general psychiatric pathology SMD -1.19 (-1.76,	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						difference in frequency between the topiramate and placebo groups comparison. Drug vs drug - Two FGAs, loxapine and chlorpromazine, were compared in one study with 80 participants. Tolerability did not differ significantly. However, there was no usable information on any pathology-related outcome. Two antidepressants were compared with the FGA haloperidol. The tricyclic antidepressant amitriptyline did not differ significantly from haloperidol treatment for any outcome. The monoamine oxidase inhibitor phenelzine sulphate, however, proved to be superior to haloperidol in the reduction of depression and general psychiatric pathology, and in improving mental health status as investigated in one study. No significant effect was found for the			-0.61) Antidepressants Amitriptyline for depression SMD -0.59 (-1.12, -0.06). No significant effects for miansein, fluoxetine, fluvoxamine or phenelzine sulphate. Other drugs Omega-3 fatty acids for sucidality RR 0.52 (0.27, 0.95), for depression RR 0.48 (0.28, 0.81) and SMD -0.34 (-1.15, 0.46). Tolerability and safety[5] Olanzapine for adverse events RR 1.13 (1.00, 1.28), for weight gain RR 1.05 (0.90, 1.20), increased appetite RR 2.78 (1.75, 4.34),	

[5] Please note blood measures are available but not reported here

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						comparison of the SGA olanzapine with the antidepressant fluoxetine for any pathology related outcome. Drug vs combination of drugs - One trial tested the effects of olanzapine and fluoxetine separately against their combination. There was no significant difference indicating any benefits from combined treatment v. treatment with olanzapine or fluoxetine alone. Tolerability did not differ significantly. Detailed data were available for body weight change, the frequency of restlessness and mild sedation. There was no significant difference.			somnolence RR 2.97 (1.75, 5.03), dry mouth RR 2.24 (1.08, 4.67), sedation RR 9.23 (2.18, 39.12) and RR 1.26 (0.44, 3.66). Topiramate on weight loss SMD -0.55 (-0.91, -0.19). Haloperidol on weight gain SMD -0.18 (-0.70, 0.34) Phenelzine sulphate on weight gain SMD 0.11 (-0.39, 0.61) Effect sizes drug vs. drug comparisons Phenelzine sulphate superior to haloperidol for depression SMD -0.68 (-1.19, -0.17), anxiety SMD -0.66 (-1.16, -0.15), general psychiatric pathology SMD -0.53 (-1.03, -0.03), improving mental health status SMD 0.51 (0.01, 1.01).	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
									Olanzapine had more weight gain than fluoxetine SMD 0.98 (0.20, 1.76), and more mild sedation RR 3.50 (1.23, 9.92). No significant effect sizes reported for any other drug vs. drug comparisons	
Leiberich, P., Nickel, M.K., Tritt, K., & Gil, F.P. (2008). Lamotrigine treatment of aggression in female borderline patients, part ii: An 18-month follow-up. Journal of Psychopharmacology, 22(7), 805-808 Germany	RCT Level 2 Double blind RCT, which was broken after the conclusion of final testing in the initial trial (8 weeks) 2:1 randomisation	LG Group n = 18 PG Group n=9	Diagnosis of BPD had to be confirmed by means of an interview with SCID II. Sample was All women. LG Group - mean age 29 PG Group - mean age 28 Participants were outpatients referred through "family doctors".	In the initial 8 week study: Lamotrigine was titrated from 50 mg in the first 2 weeks, to 100 mg in the third week, then to 150 mg in the fourth and fifth weeks and finally to a dose of 200 mg/day in the sixth, seventh and eighth weeks. 200 mg/day lamotrigine continued to be taken up to 18 months.	Placebo initially provided for 8 weeks. After 8 weeks, blind was broken and participants randomised to placebo took neither lamotrigine or placebo.	Summary: Lamotrigine - significant reduction in anger and aggression measured by the STAXI than placebo. No serious side effects but some adverse events during the trial: self-mutilation (LG), attempted suicide (placebo) and weight loss (both) Detail: The LG experienced significantly greater changes than the placebo/Ex-PG on all STAXI scales. No serious side effects were observed. In isolated cases, relatively mild rash, dizziness, headache and nausea were reported. Two subjects from the Ex-PG and one from the LG engaged in self-mutilation and one from the Ex-PG attempted suicide during	State-Trait Anger Expression Inventory (STAXI)	8 wks for initial blinded treatment period. 18 mth long-term follow-up observations were reported, after blinding was discontinued.	Standardised change scores between baseline and follow-up for lamotrigine group: STAXI Anger-In d = -1.41 (95% CI -2.15, -0.67) STAXI Anger-Out d = -2.95 (95% CI -4.16, -1.74) STAXI State Anger d = -4.08 (95% CI -5.68, -2.42) STAXI Trait Anger d = -3.98 (95% CI -5.55, -2.42) Weight d = -0.12 (95% CI -0.65, 0.41) Standardised change scores between baseline and follow-up for	The study was limited in sample size with particularly high drop out in the former control group and also limited due to the discontinuation of blinding after 8 weeks of treatment. QC 1.1=A 1.2=B 1.3=B 1.4=A 1.5=A

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						the study. In addition, weight loss was observed after eighteen months treatment. In the LG, weight loss was no more significant than in the PG.			placebo group: STAXI Anger-In d = 1, (95% CI -0.38, 2.39) STAXI Anger-Out d = 0.10 (95% CI -1.04, 1.23) STAXI State Anger d = -0.03 (95% CI -1.16, 1.10) STAXI Trait Anger d = 0.22 (95% CI -0.93, 1.36) Weight d = 0.09 (95% CI -1.04, 1.23) Standardised mean difference between treatment and control at follow-up: STAXI Anger-In d = -3.29 (95% CI –4.95, -1.62) STAXI Anger-Out d = -3.45 (95% CI -5.16, -1.75) STAXI State Anger d = -3.94(95% CI -5.76, -2.12) STAXI Trait Anger d = -5.87 (95% CI –8.20, -3.53) Weight d = -2.06(95% CI -2.71, -1.41)	1.6=C 1.7=A 1.8=22.2% and 66.7% 1.9= A 1.10=F 2.1 = (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
McMain, S.F., Links, P.S., Gnam, W.H., Guimond, T., Cardish, R.J., Korman, L., & Streiner, D.L. (2009). A randomized trial of dialectical behaviour therapy versus general psychiatric management for borderline personality disorder. The American journal of psychiatry, (12), 1365-1374. Canada	RCT Level II	Treatment n=90 Control n= 90 The primary goal: to eliminate behavioural dyscontrol by helping patients develop more effective coping strategies.	Age mean (SD) T=29.4±9.2 C= 31.3±10.6 Gender Female (n,%) T= (81, 90%) C= (84, 82.2%) DSM-IV criteria for BPD via Structured Clinical Interview Inclusion: Patients had to meet DSM-IV criteria for BPD, be 18–60 yrs of age, and have had at least two episodes of suicidal or nonsuicidal self-injurious episodes in the past 5 yrs, at least one of which was in the 3	Dialectical behaviour therapy. Multimodal: Individual sessions (1 hour weekly); skills group (2 hours weekly); phone coaching (2 hours weekly). Consultation team for therapists mandated (2 hours weekly). Organized according to a hierarchy of targets: suicidal, treatment-interfering, and quality-of-life-interfering behaviours. Explicit focus on self-harm and suicidal behaviour. Treatment involves: dialectical	General psychiatric management. Consisted of case management, dynamically informed psychotherapy, and symptom-targeted medication management. Individual sessions (1 hour weekly) including medication management based on structured drug algorithm. Therapist supervision meeting mandated (90 minutes weekly). Focus is expanded away from self-harm and suicidal	Summary: both groups improved on most measures, except the utilization of non-study treatments decreased significantly more in the DBT group than in the general psychiatric management group Detail: The utilization of non-study treatments decreased significantly more in the DBT group than in the general psychiatric management group (odds ratio = 0.52, p =0.002). The mean adherence scores for essential interventions were significantly greater than the mean adherence score for proscribed dialectical behaviour therapy items across all time points. Both groups showed statistically significant decreases in the frequency of suicidal episodes (odds ratio = 0.23, p = 0.01) and nonsuicidal self-injurious episodes (odds ratio = 0.52, p =0.03). There were no b/w group	Structured Clinical Interview for DSM-IV Axis I Disorders–Patient Edition International Personality Disorder Examination Treatment fidelity: modality specific adherence scales Frequency and severity of suicidal and non-suicidal self-injurious behaviour episodes: Suicide Attempt Self-Injury Interview Borderline symptoms: Zanarini Rating Scale for BPD General symptoms: Symptom Checklist–90–Revised State-Trait Anger	Assessed at baseline and every 4 months over the 1-year active treatment phase	Risk of suicide and self-injurious episodes rpb=0.89 Symptom severity (ZRSBPD) rpb =1.13 Depression (BDI) rpb =1.07 Anger (State-Trait Anger Expression Inventory - Anger out) rpb =0.32 Health-related QoL (EQ-5D) rpb =0.24 Symptom distress (SCL-90-R) rpb =0.68 Interpersonal functioning (Inventory of Interpersonal Problems-64) rpb =0.45	QC 1.1=A 1.2=A 1.3=A 1.4=F 1.5=A 1.6=A 1.7=A 1.8=Treatment 39%; Control 38% 1.9= A 1.10=F 2.1 = (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			months preceding enrolment. Exclusion: Were limited to having a DSM-IV diagnosis of a psychotic disorder, bipolar I disorder, delirium, dementia, or mental retardation or a diagnosis of substance dependence in the preceding 30 days; having a medical condition that precluded psychiatric medications; living outside a 40-mile radius of Toronto; having any serious medical	strategies, irreverent and reciprocal communication style, formal skills training. Behavioural strategies: exposure, contingency management, diary cards, behavioural analysis. Patients encouraged to rely on skills over pills where appropriate (e.g., anxiolytics). Tapering from medications was a treatment goal.	behaviours. Psychodynamic approach emphasized the relational aspects and early attachment relationships. Disturbed attachment relationships related to emotion dysregulation as a primary deficit. Involves attention to signs of negative transference. Patients were encouraged to use medications concurrently.	differences in the frequency of suicidal episodes or nonsuicidal self-injurious episodes. Those with any suicidal or nonsuicidal self-injurious episodes experienced a significant decrease in the medical risk over time, but there was no between-group difference. Using mixed-effects linear growth curve analyses, significant decreases over the 1-year treatment period (but no between-group differences) were found for the following variables: borderline symptoms, depression, interpersonal functioning, symptom distress, and anger. On health-related quality of life (based on the EQ-5D thermometer), both groups reported improvements, but these changes were not statistically significant. Based on generalized-estimating-equation analysis, participants in both groups showed statistically significant decreases in the total number of emergency	Expression Inventory Beck Depression Inventory Inventory of Interpersonal Problems, 64-item version Health-related quality of life: EQ-5D thermometer Treatment History Interview: self-reported counts of the number of hospital admissions, days in hospital, emergency department visits, medications, and outpatient psychosocial treatments. Reasons for Early Termination From Treatment Questionnaire			

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			condition likely to require hospitalization within the next year (e.g., cancer); and having plans to leave the province in the next 2 yrs			department visits (odds ratio = 0.43, p<0.0001), with no statistically significant differences between groups. Both groups demonstrated statistically significant reductions in the number of emergency department visits for suicidal behaviour (odds ratio = 0.35, p<0.0001), with no between-group differences.				
Morey, L.C., Lowmaster, S.E., & Hopwood, C.J. (2010). A pilot study of manual-assisted cognitive therapy with a therapeutic assessment augmentation for borderline personality disorder. Psychiatry Research,	RCT Level II	Treatment n=8 Control n= 8	Age mean (SD): Treatment 32.5±9.41; Control 29.63±8.72 Gender – female (n, %): Treatment 7 (87.5%), Control 6 (75%) Diagnosis: BPD via Diagnostic Interview for DSM-IV Personality Disorders DIPD-IV. 56% of these	Manual-Assisted Cognitive behaviour Therapy (MACT) + Therapeutic Assessment (TA) 6 sessions MACT is a 6-session, manualized therapy that targets deliberate self-harm, incorporating elements of other cognitive-based interventions for BPD. In addition to the standard	MACT alone 6 sessions	Summary: Reduction in both conditions on BPD symptoms, suicide and self-harm among those that completed treatment, especially affective instability Detail: No significant retention rate differences between conditions were observed, with four MACT condition (50%) and five TA+MACT condition (63%) participants failing to complete all 6 sessions of treatment. Among those who did complete treatment, significant improvements were observed in both conditions with respect to reducing both borderline symptomatology and suicidal ideation.	Borderline measures Diagnostic Interview for DSM-IV Personality Disorders DIPD-IV Personality Assessment Inventory (PAI) Borderline Features scale (BOR) with four subscales (Affective Instability, Identity Disturbance, Negative Relationships, and Self-Harm)		Effect sizes between groups: Number of sessions attended: d = -0.16. Standardised mean difference for treatment completers: in MACT+TA: PAI-BOR d=0.95 BOR-A d=4.35 BOR-I d=0.57 BOR-N d=0.82 BOR-S d=0.52 PAI-SUI d=1.72 SPS d=1.37 SPS-S d=1.75 Standardised mean difference for treatment completers: in MACT:	6 of 7 completers were concurrently being treated with medications whereas only 3 of 9 non-completers were being treated with medications, suggesting that concurrent psychiatric care may promote retention in

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178(3), 531-535. USA			individuals were currently taking psychotropic medication but no individuals were receiving other psychosocial interventions. Exclusion: Inclusion criteria were scores a) N70 on PAI BOR and SUI, b) z5 on the PDQ-4 BPD, c) N70 on the SPS total and d) N5 BPD symptoms on the DIPD-IV. Participants were excluded if they exhibited an active psychosis, a	MACT orientation material, the first session also included an individualized collaborative assessment. This procedure included developing questions that the client would like to "ask the test data" about themselves and the articulation of specific, individualized treatment goals. During the second session, the therapist and client discussed the assessment results and motivational feedback was provided, in addition to implementing the second MACT session. Aside from these augmentations		For those who completed treatment there was a substantial and significant main effect for change in PAI-BOR from baseline to post-treatment. Analyses of BOR subscales suggest a significant change in affective instability and a moderately significant change in self-harm. No significant differences in treatment response across study groups were found for borderline features, although large differential changes in BOR-A were observed that approached significance, suggesting superior treatment response in the TA+MACT group. With regard to suicidal ideation, participants reported substantial and significant decreases on both the PAI-SUI and SPS-SI. Again, a trend for a group-by-time interaction was found for SPS-SI, also suggesting a larger improvement over time in the TA+MACT group. To examine client improvement at the individual level, reliable change indices (RC) were	Personality Diagnostic Questionnaire (PDQ-4) — Borderline scale Suicidal ideation: Personality Assessment Inventory Suicidal Ideation (SUI) Suicide Probability Scale (SPS) with four subscale scores: Hopelessness, Suicidal Ideation, Negative Self-Evaluation, and Hostility.		PAI-BOR d=1.22 BOR-A d=0.85 BOR-I d=0.93 BOR-N d=0.31 BOR-S d=0.56 PAI-SUI d=2.27 SPS d=0.56 SPS-SI d=0.77 Carry-forward effect sizes are also available in the paper. They are more conservative than those presented.	MACT QC 1.1=A 1.2=B 1.3=C 1.4=F 1.5=A 1.6=A 1.7=A 1.8=MACT + TA: 63% failed to completed all 6 sessions of treatment; MACT: 50% failed to completed all 6 sessions of treatment 1.9= B 1.10=F 2.1 = (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			history of schizophrenia, or substance intoxication or withdrawal	to the first two sessions, the manual for the remainder of the treatment was identical for both conditions.		computed to determine whether the MACT treatment significantly improved borderline symptomatology and suicidal ideation. Of the 7 participants who completed treatment, 5 (71%) showed significant reductions on PAI-BOR. With regard to suicidal symptoms, 3 of the 7 participants (43%) demonstrated significant improvement on the SPS and 6 out of 7 (86%) had significant decrement in suicidal ideation as measured by the PAI-SUI. For all participants: Using carry-forward methodology to provide a more conservative estimate of changes observed, there was significant main effect for change in PAI-BOR from baseline to post-treatment. With respect to suicidal ideation, significant decreases were observed on the PAI-SUI and SPS-SI. No significant differences in treatment response across groups were found for borderline features or suicidal ideation using this more conservative carry-forward approach.				

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Soler, J., Pascual, J.C., Tiana, T., Cebria, A., Barrachina, J., Campins, M.J., Perez, V. (2009). Dialectical behaviour therapy skills training compared to standard group therapy in borderline personality disorder: A 3-month randomised controlled clinical trial. Behaviour Research and Therapy, 47(5), 353-358.	RCT Level II	Treatment n=29 Control n= 30	Age mean (SD) T= 28.45 ± 6.55 C=29.98 ± 5.63 Gender Female (n, %) T= (23, 79.3%) C= (26, 86.7%) Diagnosis: BPD via Structured Clinical Interview for DSM-IV Axis II Disorders (SCID-II) and the Revised Diagnostic Interview for Borderlines (DIB-R). Exclusion: Inclusion criteria consisted of: 1) meeting the DSM-IV diagnostic criteria for	Dialectical behaviour therapy - Skills training (DBT-ST) DBT-ST and SGT, consisted of thirteen psychotherapy sessions of 120 min each, 2 therapists (a male and a female) for each group, in groups of 9–11 participants. The DBT format used was adapted from the standard version, applying one of the four modes of intervention: skills training. DBT-ST included all the original skills. These skills can be divided into those that promote change, interpersonal effectiveness	Standard group therapy (SGT) The SGT format was oriented to provide a relational experience, allowing people with BPD to share their characteristic difficulties. Prominent techniques used were interpretation (although this was not used systematically), highlighting, exploration, clarification and confrontation. The therapists mainly played a role of conductor in group interactions, and targeted specially nihilistic or destructive	Summary: mental state and psychopathology scales showed significant difference favouring DBT-ST. Detail: No significant differences of mean number of attended sessions between the two groups. DBT-ST group showed a significant improvement in more psycho- pathology scales. DBT-ST group showed a greater decrease in depression, anxiety and general psychiatric symptoms compared with the SGT group. Regarding the SCL90-R, HLM analysis showed statistically significant differences in the psychoticism subscale, and in the BDI irritability subscale. A greater decrease was detected in the DBT-ST condition. Both treatment conditions showed significant reductions in CGI-BPD global severity scores. However, no significant differences were displayed between groups in HLM analysis. In this measure, several	BPD core symptoms: Clinical Global Impression-BPD (CGI-BPD) Hamilton Rating Scale-Depression (HRSD-17) Hamilton Rating Scale-Anxiety (HRSA) Psychotic symptoms: Brief Psychiatric Rating Scale (BPRS) Psychiatric symptoms: Symptom Checklist, Revised (SCL90-R) Hostility/irritability: Buss–Durkee Inventory (BDI). Impulsivity: Barrat Inventory (BI). In addition to clinical scales, they rated self-	13 weekly sessions	Between group standardised mean differences d(95% CI) No. of medications, d= -0.16 (-0.45, 0.13) No. of non-study tre, d= -0.39 (-0.690, -0.10) HRSD-17, d= -0.98 (-1.52, -0.44) HRSA, d= -0.68 (-1.21, -0.16) BPRS, d=-0.67 (-1.19, -0.14) BDI Irritability, d= -0.61 (-1.13, -0.09) BDI Indirect Hostility, d=0.51 (-1.03, 0.01) SCL-90-R GSI, d= -0.42 (-0.95, 0.09) SCL-90-R Interperson, d= -0.81 (-1.34,-0.28) SCL-90-R Hostility, d= -0.34 (-0.85, 0.17) SCL-90-R Psychoticism, d= -0.58 (-1.10, -0.06) CGI-BPD Global, d=-1.02, (-1.57, -0.48)	QC 1.1=A 1.2=A 1.3=E 1.4=B 1.5=B 1.6=A 1.7=A 1.8=Treatment: 34% drop out; Control: 63% drop out; Intention to treat analysis 1.9= A 1.10=F 2.1 = (+) Large differences in retention

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Spain			BPD; 2) age between 18 and 45 yrs; 3) no comorbidity with schizophrenia, drug-induced psychosis, organic brain syndrome, alcohol or other psychoactive substance dependence, bipolar disorder, mental retardation, or major depressive episode in course; 4) Clinical Global Impression of Severity (CGI-S) score ≥ 4; 5) no current psychotherapy.	and emotional regulation skills, and those that promote acceptance, mindfulness and distress tolerance skills. Similar to other skills training in behavioural treatments, DBT-ST includes teaching, in-session practice of new skills and homework assignments to practice each skill every week. DBT-ST intervention was led by two cognitive behavioural psychotherapists with prior experience in BPD group therapy	interactions, characteristic BPD interactions and those that could interfere with group functioning. SGT interventions were led by two experienced psychodynamic-oriented psychotherapists.	specific sub-scales, such as: anger, emptiness, and affect instability, had a significantly greater reduction in DBT-ST compared to SGT. No differences were seen in the other scales (impulsivity) or behavioural reports (number of self-harm behaviours, suicides or emergency visits) used in the study.	injury, suicide attempts, and visits to psychiatric emergency services		CGI-BPD Unstable rel, d= -0.29 (-0.80, 0.22) CGI-BPD Impulsivity, d= -0.62 (-1.15,-0.10) CGI-BPD Suicide, d= -0.10 (-0.61, 0.41) CGI-BPD Affect Instability, d= -1.08 (-1.63, -0.53) CGI-BPD Anger, d= -0.85 (-1.38, -0.32) CGI-BPD Emptiness, d= -0.44 (-0.95, 0.08) CGI-Global Improv-Patient, d=0.68 (0.16,1.21)	

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Stoffers, J., Völlm, B.A., Rücker, G., Timmer, A., Huband, N., Lieb, K. (2010) Pharmacological interventions for borderline personality disorder. Cochrane Database of Systematic Reviews. 16(6) Germany.	Cochrane Systematic Review Level 1	Study samples ranged from n = 16 to n = 314 in size. In total, the included studies provided data from 1742 patients.	Adult patients with a formal diagnosis of BPD according to DSM criteria. The studies were conducted in either the USA (14 studies) or in Western European countries (12 studies) 5 in Germany and/or Austria, two each in the UK and Spain, and one each in Belgium, Ireland and the Netherlands. There were two international multicentre trials. One took place in	Any drug or a defined combination of drugs administered on a long-term basis (i.e. not only in case of crisis only) with the intention to treat BPD pathology.	Comparison treatments were classified in four categories: • placebo; • active comparator drug; • combination of drugs; • combined treatment, i.e. drug plus concomitant psychotherapeutic treatment or counselling.	Summary: Total BPD severity was not significantly influenced by any drug. There was little evidence for effectiveness of antidepressants. There was little effect of antipsychotics but olanzapine may increase self-harming, weight gain. Detail: First-generation antipsychotics (flupenthixol decanoate, haloperidol, thiothixene); second-generation antipsychotics (aripirazole, olanzapine, ziprasidone), mood stabilisers (carbamazepine, valproate semisodium, lamotrigine, topiramate), antidepressants (amitriptyline, fluoxetine, fluvoxamine, phenelzine sulfate, mianserin), and dietary supplementation (omega-3 fatty acid) were tested. First-generation antipsychotics were subject to older trials, whereas recent studies focussed on second-generation antipsychotics and mood stabilisers. Data were sparse for individual comparisons, indicating	Primary outcomes: Overall BPD severity Severity of single BPD criteria according to DSM (avoidance of abandonment, dysfunctional interpersonal patterns, identity disturbance, impulsivity, suicidal ideation, suicidal behaviour, self-mutilating behaviour, affective instability, feelings of emptiness, anger, psychotic paranoid symptoms, dissociative symptoms) Secondary outcomes: Depression Anxiety General psychiatric pathology: comprehensive	Variable	Altogether, 28 RCTs have been included, covering 22 different comparisons in ten comparison categories. In the presence of the multitude of different comparisons and outcome variables, most results are based on single study findings only. The study sample sizes were rather small, and ranged, with exception of two large trials (Schulz 2007; N= 314; Zanarini 2007; N of patient data used here: 301), between 16 (Hollander 2001) and 108 (Soloff 1993; divided into three groups). Therefore, the power to detect	Results are mostly based on single study effect estimates. Long-term use of these drugs has not been assessed. Conclusions have to be drawn carefully in the light of several limitations of the RCT evidence that constrain applicability to everyday clinical settings (among others, patients' characteristics and duration of interventio

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			13 study centres in the USA, South America, and Eastern Europe.			marginal effects for first-generation antipsychotics and antidepressants. Adverse event data were scarce, except for olanzapine. There was a possible increase in self-harming behaviour, significant weight gain, sedation and changes in haemogram parameters with olanzapine. A significant decrease in body weight was observed with topiramate treatment. All drugs were well tolerated in terms of attrition. Direct drug comparisons comprised two first-generation antipsychotics (loxapine vs. chlorpromazine), first-generation antipsychotic against antidepressant (haloperidol vs. amitriptyline; haloperidol vs. phenelzine sulfate), and second-generation antipsychotic against antidepressant (olanzapine vs. fluoxetine). Data indicated better outcomes for phenelzine sulfate but no significant differences in the other comparisons, except	measures Mental health status Attrition Adverse effects		significant effects was quite low. In addition, the overall robustness of findings must be considered low for the majority of comparisons.	ns and observation periods). QC 1.1 =A 1.2 =A 1.3 =A 1.4 =A 1.5 =A 2.1 = (++)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						olanzapine which showed more weight gain and sedation than fluoxetine. The only trial testing single vs. combined drug treatment (olanzapine vs. olanzapine + fluoxetine; fluxetine vs. fluoxetine + olanzapine) yielded no significant differences in outcomes.				

Service Utilisation

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Bateman, A., & Fonagy, P. (2008). 8-year follow-up of patients treated for borderline personality disorder: Mentalization-based treatment versus treatment as usual. American Journal of Psychiatry, 165(5), 631-638. (follow up from Bateman A, Fonagy P (1999). Effectiveness of partial hospitalization in the treatment of borderline personality	RCT Level II RCT (8 yrs since intervention follow-up – reporting occurrences since the 3 year follow-up).	N=41 T=22 C= 19	Age and gender not reported. Diagnosis: BPD on both Structured Clinical Interview for DSM-III-R and Diagnostic Interview for Borderline Patients. Exclusion: If they met criteria for schizophrenia, bipolar, substance misuse or mental impairment or had evidence of organics brain disorder.	Partial hospitalisation consisting of a long-term psychoanalytically orientated treatment for 18 mths. Metallization based treatment (MBT) individual and group therapy. MBT by partial hospitalization consists of 18-mth individual and group psychotherapy in a partial hospital setting offered within a structured and integrated program provided by a supervised team. Expressive therapy using art and writing groups is included.	Treatment as usual (TAU) consists of general psychiatric outpatient care with medication prescribed by the consultant psychiatrist, community support from mental health nurses, and periods of partial hospital and inpatient treatment as necessary but no specialist psychotherapy.	Summary: MBT had a greater effect than TAU on clinical symptoms, suicide and risk behaviours, service utilisation and general functioning Detail: 23% made suicide attempts in the MBT group (mean attempts 0.5±0.9), contrasted with 74% of the TAU group (mean attempts 0.52±0.48), which was significant. Mean number of emergency room visits and hospital days highly significantly favoured the MBT group, as did the continuing treatment profile. During MBT group therapy, all of the experimental group but only 31% of the TAU group received therapy. Over the 5-year postdischarge period, both groups received around 6 mths of psychological therapy (n.s.). For all other treatments, the TAU group received significantly more input postdischarge—3.6 yrs of psychiatric outpatient	Primary: number of suicide attempts over the whole of the 5 year post-discharge follow-up period. Associated outcomes were service use, including emergency room visits; the length and frequency of hospitalization; continuing outpatient psychiatric care; and use of medication, psychological therapies, and community support. Secondary: 1) symptom status as assessed at a follow-up interview using the Zanarini Rating Scale for DSM-IV borderline personality disorder	2 yrs	Suicide attempts total, d=1.4 (0.3, 1.5) Zanarini Rating Scale (ZRS) for BPD: total: d=1.8 (0.14, 3.5), affect: d=1.1 (0.41, 1.7), cognitive: d=0.84 (0.3, 1.4), impulsivity: d=1.2 (0.59, 1.9), interpersonal: d=1.6 (1, 2.3) GAF, d=0.75 (-1.9, 3.4) No. of days of hospitalisation, d=1.5 (0.36, 2.7) No. of emergency room visits, d=1.4 (0.21, 2.63) No. of yrs of employment, d=0.94 (0.29, 1.6) No. of yrs psychiatric outpatient treatment, d= 0.93 (-4, 1.5)	QC 1.1=A 1.2=B 1.3=B 1.4=B 1.5=B 1.6=A 1.7=A 1.8= 0% and 18% 1.9= C 1.10=F 2.1 = (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
disorder: a randomized controlled trial. Am J Psychiatry, 156, 1563–1569)				Crises are managed within the team; medication is prescribed according to protocol by a psychiatrist working in the therapy program. The focus of therapy is on the patient's moment-to-moment state of mind. The patient and therapist collaboratively try to generate alternative perspectives to the patient's subjective experience of himself or herself and others by moving from validating and supportive interventions to exploring		treatment and 2.7 yrs of assertive community support, compared with 2 yrs and 5 mths, respectively, for the MBT group. The TAU group had an average of over 3 yrs taking antipsychotic medication, whereas the MBT group had less than 2 mths. Smaller but still substantial differences were apparent in antidepressant and mood stabilizer use. The TAU group spent nearly 2 yrs taking three or more psychoactive medications, compared to an average of 2 mths for the MBT group. At the end of the follow-up period, 13% of the MBT patients met diagnostic criteria for BPD, compared with 87% of the TAU group. The contrast between mean total scores for the Zanarini Rating Scale for BPD yielded a large effect size favouring the MBT group, albeit with a wide confidence interval. Multivariate analysis of variance across the four	2) global functioning as measured by the Global Assessment of Functioning Scale (GAF) at 6-month intervals after 18 months of MBT by partial hospitalization: TX profiles (emergency room visits, hospitalization, psychiatric outpatients, community support, psychotherapy, medication) and suicidality and self-harm using criteria defined in the original trial for each patient by interview and scrutiny of medical records. Collected data twice yearly on vocational status, calculating the number of 6-month periods in which the patient was employed or		No. of yrs further therapy 36 months post-intake, d=0.07 (-0.23, 0.37) No. of yrs further assertive outreach treatment, d=1.8 (1.4,2.2) Medication (yrs) antidepressants , d= 1.1 (0.45, 1.7) Medication (yrs) antipsychotics, d= 2.04 (1.6, 2.5) Medication (yrs) mood stabilisers, d=1.17 (0.73, 1.6) Medication (yrs) three or more drugs, d= 1.45 (1.1, 1.8)	

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				the therapy relationship itself as it suggests alternative understanding .		symptom clusters also reflected the better outcome for the MBT group (Wilks's lambda =0.55, F=6.4, df=4, 32, p=0.001). The largest differences favouring MBT were in terms of impulsivity and interpersonal functioning. There was over a 6-point difference in the GAF scores between the two groups, yielding a clinically significant moderate effect size of 0.8 (95% CI= –1.9 to 3.4). 46% of MBT group compared to 11% of the TAU group had GAF scores above 60. Vocational status favoured the MBT group, who were employed for nearly three times as long as the TAU group. There was increase in the % of MBT groups employment or education in the three post discharge periods.	attended an educational program for more than 3 months. Patient recall for self-harm was unreliable and could not be independently corroborated from medical records and so is not reported. The authors consider the frequency of emergency room visits to be a reasonable proxy of severe self-harm in this population.			
Bateman, A., & Fonagy, P. (2009). Randomized controlled	RCT Level II	N=134 MBT (T) n= 71 SCM (C) n= 63	Age mean (SD) TX= 31.3 (7.6) C=30.9 (7.9)	MBT is manualized, consisting of 18 months of weekly com-bined	Protocol-driven treatment, SCM, in an outpatient context	Summary: This study suggests that structured, integrated psychological and psychiatric treatment offering coordinated clinical management	Primary outcome: proportion of each group without severe parasuicidal behaviour as	18 months Assessed at entry and over the course of an 18-month	Life-threatening suicide attempts, d = 0.65 (0.58, 0.73) Severe self-harm attempts,	Very good description of factors similar between groups and

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
trial of outpatient mentalization-based treatment versus structured clinical management for borderline personality disorder. American Journal of Psychiatry, 166(12), 1355-1364. UK		MBT = mentalization-based treatment SCM = structured clinical management	Female (n, %) TX= 57, 80.3% C= 50, 79.4% Diagnosis - All participants were assessed using the Structured Clinical Interview for DSM-IV (SCID-I and SCID-II). Ethnicity - White British/European MBT: 76.1%, SCM: 68.3%; Black African/Afro-Caribbean MBT: 15.5%, 20.6% Other Chinese/Turkish Pakistani 8.5%, 11.1% Exclusion Inclusion	individual and group psychotherapy provided by two different therapists. MBT is a psychodynamic treatment rooted in attachment and cognitive theory. It requires limited training with moderate levels of supervision for implementation by generic mental health professionals. It aims to strengthen patients' capacity to understand their own and others' mental states in attachment contexts in order to address their difficulties	representing best current clinical practice. Practitioners received equivalent supervision. Crisis plans were developed collaboratively within each treatment team for all patients. SCM therapists focused on support and problem solving.	recommended by NICE significantly benefits patients with BPD. Both conditions were associated with substantially reduced suicidality, self-harm, and hospitalization and improvement on measures of symptoms and social and interpersonal functioning by the end of treatment. The rate of improvement in both groups was higher than spontaneous remission of symptoms of BPD. Although patients in both groups made statistically significant improvements, MBT was associated with greater improvements than SCM for most outcomes. Detail: Suicidal behaviour: 6 mth periods free of suicidal behaviours, severe self-injurious behaviours, and hospitalization improved from 0% to 43% in the SCM group and to 73% in the MBT group; behaviour increased in patients assigned to MBT more than for patients in the	indicated by 1) suicide attempt, 2) life-threatening self-harm, or 3) hospital admission. Hospital admission was included because patients are primarily offered inpatient care in anticipation of suicide attempts and severe self-harm Secondary outcome: were independently rated Global Assessment of Functioning (GAF) scores at the beginning and end of treatment and self-reported psychiatric symptoms, social and interpersonal functioning, and medication use assessed at baseline and at 6-month intervals until the end of treatment at 18	treatment at 6, 12, and 18 months.	d = 0.62 (0.28, 0.97) Interpersonal distress, d = 0.95 (0.59, 1.3) Social adjustment problems, d = 0.72 (0.37, 1.06) Symptom distress, d = 0.67 (0.33, 1.02) Depression, d=0.45 (0.1, 0.79) Hospital admissions, suicidal and self-injurious episodes, d = -0.72 (-1.07, -0.37) Length of hospitalisation , d = -0.43, (-0.78, -0.09) Medication use, d= -0.58, (-0.93, -0.24) Psychiatric hospitalisation, d= -0.53, (-0.88, -0.19)	randomisation procedures. QC 1.1=A 1.2=A 1.3=B 1.4=F 1.5=A 1.6=A 1.7=A 1.8= 0% 1.9= A 1.10=F 2.1 = (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			criteria were 1) diagnosis of BPD, 2) suicide attempt or episode of life-threatening self-harm within last 6 months, and 3) age 18–65. Exclusion criteria were kept to a minimum. Patients were excluded if they currently 1) were in long-term psychotherapeutic treatment, 2) met DSM-IV criteria for psychotic disorder or bipolar I disorder, 3) had opiate dependence requiring specialist treatment,	with affect, impulse regulation, and interpersonal functioning, which act as triggers for acts of suicide and self-harm. Crisis plans were developed collaboratively within each treatment team for all patients. MBT therapists focused on helping patients reinstate mentalising during a crisis via telephone contact. SCM therapists focused on support and problem solving		SCM group, however, differences only became statistically significant after 12 mths of treatment. Number of episodes of hospital admissions, suicide attempts, and severe self-injuries) also declined in both groups but a substantially greater reduction in the MBT than the SCM group. Data were relatively consistent and showed reduced suicidal behaviour in both groups. The rate of improvement was significantly greater in the MBT group both in terms of any suicide attempt and the count data associated with it. Differences between groups only became marked in the last 6 mths of treatment; at 12 mths, groups were not significantly different. Self-harm: Frequency of self-harm behaviours had significantly steeper reduction in the MBT group compared with SCM.	months. Patients' subjective experience of symptoms was measured using the SCL-90-R, and depression was assessed by using the Beck Depression Inventory. Social adjustment and interpersonal functioning were measured using the modified Social Adjustment Scale–self-report and the Inventory of Interpersonal Problems–circumflex version.			

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			or 4) had mental impairment or evidence of organic brain disorder. Current psychiatric inpatient treatment, temporary residence, drug/alcohol misuse, and comorbid personality disorder were not exclusion criteria.			During the 6 mths before end of treatment fewer patients in the MBT group severely self-harmed (24% vs. 43%, c2=4.6, p<0.05; relative risk = 0.55, 95% CI = 0.33–0.92). However, during the first 6 mths of tx, comparison of the proportion of individuals manifesting self-injurious behaviour favoured the SCM group (75% vs. 59%, c2=3.1, p<0.08; relative risk = 1.27, 95% CI = 0.99–1.63). From 6 to 18 mths the proportion of these patients in the MBT group who self-harmed showed a steeper decline when compared with the SCM group. The more consistent reduction in the counts of self-injurious behaviour and the difference in incidence rate ratios favouring MBT was highly statistically significant. Hospitalisation: Before treatment about 25% of each group had had at least one hospital admission. During the first 6 mths of treatment patients in the MBT group				

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						had significantly fewer days in hospital (Kruskal-Wallis c2 = 4.25, p<0.04), and the difference increased by 12 mths (Kruskal-Wallis c2 = 6.54, p<0.02) and 18 months (Kruskal-Wallis c2 = 9.01, p<0.003). The decline in number of admissions over the whole period of treatment was significantly steeper in the MBT group. The number of patients hospitalized reduced in the MBT group relative to the SCM group and was markedly lower in the MBT group in the last 6 months of treatment (c2 =7.7, p<0.005; relative risk = 0.14, 95% CI = 0.3–0.64). Secondary outcomes: GAF increased substantially for both groups over the 18-month period from 41 (95% CI = 39.7–42.7) to 57 (95% CI = 54.9–60.0) (t = 15.5, df = 125, p<0.0001) but the increase was rated as greater in the MBT group. There was improvement on all self-				

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						rated measures for both groups. This was particularly notable for symptoms of depression and social adjustment. The slope of decline in self-reported symptoms and relationship and social adjustment problems was significantly greater in the MBT group across all four measures. The size of difference between the two groups at the end of treatment was substantial for reduction in interpersonal distress (d = 0.95, 95% CI = 0.59–1.3), moderate for social adjustment problems (d = 0.72, 95% CI = 0.37–1.06) and symptom distress (d = 0.67, 95% CI = 0.33–1.02), and more modest for depression (d = 0.45, 95% CI =0.10–0.79). Medication: use of med-ication reduced significantly in both groups. The proportion of patients not receiving medication increased from 27% to 57%. The increase was greater for the MBT group. Counting the number of classes of psychotropic medication				

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						also showed a decline across both groups with the incidence rate ratio suggesting a significant difference in favour of the MBT group. The number of people receiving two or more different classes of medication substantially reduced in both groups from 30% at the beginning of treatment to 8% at the end of treatment.				
Bos, E.H., Van Wel, E.B., Appelo, M.T., & Verbraak, M.J. (2010). A randomized controlled trial of a Dutch version of systems training for emotional predictability and problem solving for borderline personality disorder.	RCT Level II Randomization was done separately at each location.	N=79 TX (n = 42) C (n = 37)	Between 8 and 12 subjects were included in each group for the Treatment group. If at the time of randomisation, an insufficient number of participants were assigned to a group, the remaining spots were randomly assigned to subjects	Systems Training for Emotional Predictability and Problem Solving (STEPPS) + individual treatment group treatment; it combines skills training with general CBT elements and has a strong systems component; family members and significant others are	Treatment as usual (TAU) The STEPPS groups began simultaneously with a group of patients that started TAU. The control condition was TAU, i.e., the standard treatment for BPD offered at the participating sites. This treatment consisted of individual therapy from	Summary: Moderate to large effect sizes were seen for symptom variables and psychological quality of life at T2. At T3, moderate effects on symptoms were still present, while also moderate effects on physical, social and overall quality of life could be observed. More than TAU, STEPPS plus limited adjunctive individual therapy reduced symptomatology and improved quality of life, also in the longer run. STEPPS was not superior to TAU in reducing impulsive and parasuicidal behaviours, but this may be explained by the low	Primary efficacy measures included general psychiatric and BPD-specific symptoms, measured with the Symptom Checklist-90 total score (SCL-90) and the Borderline Personality Disorder checklist-40 total score (BPD-40) respectively. Secondary outcome measures included impulsive and	Pre-treatment assessments (T1) took place following randomization, just before the start of the intervention. Post-treatment assessments (T2) were done after the final weekly session of the STEPPS program (mean 23.9 ±3.6 weeks	Effect sizes (non-standardised): Primary outcomes: Estimated mean differences at the end of treatment (T2), adjusted for differences at T1, were: SCL-90, -47.0 (95% CI, -78.2 to -15.9, p = 0.003); BPD-40, -18.7 (95% CI, -31.6 to -5.8, p=0.005). At 6-month follow-up (T3), the differences were smaller	Raters were not blind and interrater reliability was not assessed for the BPDSI-IV. Intention to treat analysis was completed but yielded similar results to the per-protocol analysis so only the per-protocol

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Journal of Nervous and Mental Disease, 198(4), 299-304. The Netherlands			who did not meet full BPD criteria (these participants were not included in this analysis). Age mean (SD) Treatment 32.9 (5.6) Control 31.8 (9.2) Gender – female (n, %) Treatment 35, 83.3% Control 33, 89.2% Diagnosis BPD confirmed by administering the BPD modules from the Dutch versions of the Personality	actively involved in the program. The Dutch version of the STEPPS group program involves 18 weekly sessions and a single follow-up session 3 to 6 months after the conclusion of the program. The program has 3 main components: (1) psychoeducation about BPD; (2) emotion management skills training; and (3) behaviour management skills training. STEPPS is system-based in that friends and relatives of the patients are explicitly involved in the	a psychotherapist, psychologist, or psychiatric nurse, offered every 1 to 4 weeks. STEPPS-related treatments like DBT or family groups for family members of the patients were not allowed. In both conditions, the main treatment could be supplemented with (medication) contacts with a psychiatrist, social worker, or other health care professional.	base rate of these behaviours in our sample. It may also be that a more intensive treatment, such as DBT, is required to find differential effects on these behaviours. The merit of the STEPPS program is that it is relatively easily learned and implemented, and nevertheless improves BPD treatment in a number of ways. Further research to compare this treatment with other effective treatments is warranted. Importantly, this RCT on STEPPS is the first done by others than its developers. Detail: Scores on the primary efficacy measures. SCL-90 and BPD-40 symptom scores generally decreased from T1 to T3, and more so in the STEPPS group than in the TAU group. Quality of life scores (WHOQOL-Bref) generally increased from T1 to T3. Overall treatment effects were found for Overall Quality of Life and General Health, Physical Health, and Psychological Health.	parasuicidal behaviour, and quality of life. Impulsive and parasuicidal behaviour were assessed using 2 subscales of the Borderline Personality Disorder Severity Index-IV (BPDSI-IV). The impulsivity subscale contains 11 items reflecting potentially harmful impulsive behaviours (e.g., gambling, reckless driving, binge eating). The parasuicide subscale contains 13 items reflecting self-mutilating Parasuicidal behaviours and suicidal thoughts and attempts. Quality of life was measured with the World Health Organization Quality of Life	after T1). Follow- up assessments (T3) took place approximately 6 months after T2 (mean 25.7 ±4.2 weeks after T2). Outcome measures were assessed on all 3 occasions	but still significant: SCL-90, -38.4 (95% CI, -67.1 to -9.6, p =0.009); BPD-40, -14.7 (95% CI, -26.6 to -2.8, p=0.016). Secondary outcomes: In the domain of Psychological Health, STEPPS scores were higher than TAU scores particularly at T2 (estimated mean difference adjusted for T1 score: 2.08 [95% CI, 0.76 –3.41, p =0.002]); at T3, this difference was reduced to 0.91 (95% CI, -0.32–2.15, p =0.146). With respect to Overall Quality of Life and General Health, Physical Health and Social Relationships, STEPPS scores	analysis was presented. The comparability of treatment between sites and the comparability between different therapists was not assessed. QC 1.1=A 1.2=A 1.3=B 1.4=F 1.5=A 1.6=A 1.7=B 1.8=28.9% (TX) and 13.2% (C) 1.9= 3 1.10=4 2.1 = (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			Diagnostic Questionnaire and the Structured Clinical Interview for DSM-IV Axis II Disorders. Participants had to be above threshold on either impulsivity and/or parasuicide subscales of the BPD Severity Index-IV Exclusion Subjects were excluded if they did not speak Dutch; were cognitively impaired (IQ < 70); younger than 18 yrs; treated involuntary; or presented an imminent	program for support and reinforcement of the newly learned skills (the "support group"). They receive education about BPD and are instructed how to interact with the person with the disorder. STEPPS is administered by 2 mental health professionals, of who at least one is a psychotherapist. Subjects assigned to STEPPS also received limited individual therapy. This therapy was developed as an adjunct to STEPPS to		For Social Relationships the overall treatment effect was a trend, for Environment the overall treatment effect was not significant. In both conditions, the number of patients scoring above the cut-off for ratings for the parasuicide and impulsivity subscales of the BPDSI-IV decreased from T1 to T3. There were no significant differences between the conditions (overall treatment effects). Medication was similar between the groups at baseline and remained stable during follow-up assessment. Over the entire study period, patients in the STEPPS group received 15 STEPPS group sessions on average, and had a mean of 8 contacts with their individual therapist. TAU-patients had a mean of 9 individual contacts with their main therapist. In addition to these study treatment contacts, TAU-patients reported to have had 31 ambulatory therapy contacts on	Assessment-Bref (WHOQOL-Bref)		were significantly higher than TAU scores only at T3 (estimated differences 1.80 [95% CI, 0.30 – 3.30, p =0.019]; 1.41 [95% CI, 0.15–2.66, p =0.028]; and 1.86 [95% CI, 0.14 –3.57, p =0.035], respectively), but not at T2 (estimated differences 1.58 [95% CI, -0.07–3.22, p =0.060]; 0.96 [95% CI, -0.40 – 2.32, p = 0.164]; and 0.77 [95% CI, -1.08 –2.61, p =0.431, respectively). Odds ratios for impulsivity were (T2): 0.81 (95% CI, 0.26 –2.53, p = 0.716); and (T3): 0.68 (95% CI, 0.22–2.09, p =0.501). Odds ratios for parasuicide	

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			danger to themselves or others.	help consolidate the newly acquired skills and to stimulate their use. It had a structured format, in which the previous STEPPS session was discussed as well as the use of the learned skills in everyday life. The therapy was offered every 2 weeks during the entire study period.		average with other mental health care workers (e.g., psychiatrists, psychologists, psychiatric nurses, social workers). Patients in the STEPPS condition had a mean of 21 additional ambulatory therapy contacts.			were (T2): 2.05 (95% CI, 0.66–6.35, p = 0.211); and (T3): 1.02 (95% CI, 0.35–2.97, p =0.974). Effect sizes (standardised): Effect sizes for the differences between the treatments at T2: SCL-90, 0.68; BPD-40, 0.68; Psychological Health, 0.96. At T3 effect sizes were: SCL-90, 0.56; BPD-40, 0.53; Overall Quality of life & General Health, 0.61; Physical Health, 0.56; Social Relationships, 0.61.	
Carter, G.L., Willcox, C.H., Lewin, T.J., Conrad, A.M., & Bendit, N. (2010). Hunter DBT	RCT Level II The purpose of the present study was	N=60 Treatment n= 27 Control n= 33	Age mean (SD): Treatment 24.5 ± 6.12; Control 24.7 ± 6.15 Gender: all	Modified DBT: team-based approach including individual therapy, group-based skills training,	WL + TAU The control condition was a 6-month WL for DBT while receiving TAU (TAU+WL). Subjects, both	Summary: The study found no statistically significant differences between modified DBT and waitlist control/TAU except for some quality of life measures. There were trends towards modified	The primary outcomes (differences in proportions and event rates) of any deliberate self-harm (DSH) event; general	3 and 6 month follow-up	BDQ days in bed, d=-0.66 (-1.25,-0.07). BDQ days out of role, d= -0.43 (-1.01, 0.15) Days in hospital, d= -0.16 (-0.62,	Very clear on methods of randomisation and concealment (sealed envelopes).

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
project: Randomized controlled trial of dialectical behaviour therapy in women with borderline personality disorder. The Australian and New Zealand journal of psychiatry, (2), 162-173.	to compare dialectical behaviour therapy (DBT) and the control condition of treatment as usual plus weight list (WL) for DBT (TAU+WL).		female Diagnosis: BPD via clinical interview by a psychiatrist using DSM-IV criteria. To be in the study, needed a history of multiple episodes of deliberate self-harm, at least three self-reported episodes in the preceding 12 months. Exclusion: Exclusion criteria were presence of a disabling organic condition, schizophrenia, bipolar affective disorder,	telephone access to an individual therapist and therapist supervision groups following the model of treatment developed by Linehan et al. The main change to the Linehan et al. model was the telephone access to individual therapists. In the present study telephone access was delivered using a group roster of DBT individual therapists (not contact with each participant's individual therapist) between 8:30 a.m. and 10 p.m., and	in the initial DBT group and in the TAU+WL group who came to DBT after 6 months were offered 12 months DBT treatment, although the comparison between groups was restricted to the first 6 months of DBT versus TAU+WL.	DBT in reductions in hospitalisations, shorter lengths of stay, days in bed. Authors state: There are several possible explanations given to as to why DBT was not effective in this study: regression to background (pre-baseline) levels, the Hawthorne effect whereby both groups improved because of the effect of being in a study, the potentially powerful effect of being in a 6 month TAU+WL group for DBT for the control condition, beneficial effects of the TAU condition available in the Hunter region, modifications to standard DBT, the possible inferiority of training of DBT therapists to that of those in other studies or inferior adherence to the DBT methods despite adequate training, and methodological differences. Detail: The present study found reductions in psychiatric hospitalization for both DBT and WL+TAU over time but no	hospital admission for DSH and psychiatric admission for any reason; and mean difference in length of stay for any hospitalization. Secondary outcomes were disability and quality of life measures. Specific measures: Composite International Diagnostic Interview modules: anxiety, depression, bipolar disorders, alcohol abuse and dependence, substance abuse and dependence. International Personality Disorder Examination Questionnaire. Brief Disability Questionnaire Lifetime Parasuicidal		0.30). No. hospital admissions, d= -0.22 (-0.68, 0.24). No. hospital presentations without admission, d= 0.03 (-0.43, 0.49) No. self-harm episodes in previous 3 months, d= -0.18 (-0.64, 0.28) WHOQOL-BREF Environmental domain, d= 0.43 (-0.14, 0.99) WHOQOL-BREF Physical domain, d= 0.69 (0.11, 1.27) WHOQOL-BREF Psychological domain, d= 0.65 (0.07, 1.23) WHOQOL-BREF Social domain, d= -0.04 (-0.60, 0.53)	Randomization occurred after baseline assessment. Hospitalisation data was intention to treat but rest was per-protocol. Large discrepancy in drop outs between groups. QC 1.1=A 1.2=A 1.3=A 1.4=F 1.5=A 1.6=B 1.7=A 1.8=47.4% (TX) and 11.4(C) 1.9= B 1.10= 2.1 = (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			psychotic depression, florid antisocial behaviour, or developmental disability.	telephone contact with the local psychiatric hospital between 10 p.m. and 8:30 a.m. Treatment subjects were also assigned to the relevant skills training group, meeting weekly with the modules running in the following order: Interpersonal Effectiveness, Emotion Regulation and Distress Tolerance. Each module ran for 8 weeks. Groups had a minimum of 4 members before commencement and a maximum of 8		significant benefit in favour of DBT for the binary outcome, the mean event rate or the mean length of stay for those with an admission at the end-point of the trial. There were no significant differences in proportions for general hospital admission for DSH or for any psychiatric admission. The length of stay overall, or the length of stay for those with either type of admission was not significantly different, although the DBT group tended to have shorter lengths of stay. For the per-protocol analyses, there were no significant differences for the proportion of patients with any DSH episode in 6 months, or for the number of self-harm episodes for the baseline–3 months and 3–6 months periods. There was a significant benefit in favour of DBT for days spent in bed but no significant effect for days out of role. There was a significant beneficial effect in favour of DBT, for three of the four domains	Count-2 Parasuicidal History Interview-3 month period WHO Quality of Life-BREF version			

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
				members. Entry to the skills group occurred only at the commencement of the next skills module.		of quality of life: Physical, Psychological and Environmental.				
Cottraux, J., Note, I.D., Boutitie, F., Milliery, M., Genouihlac, V., Yao, S.N., Note, B., Mollard, E., Bonasse, F., Gaillard, S., Djamoussian, D., De Mey Guillard, C., Culem, A. & Gueyffier, F. 2009. Cognitive Therapy versus Rogerian Supportive Therapy in Borderline Personality Disorder. Psychotherapy and	RCT (pilot study) Level II	N = 65 n=33 (CT) n=32 (RST) Eighty-eight patients were screened: 13 did not meet the inclusion criteria, 10 refused to enter the study and 65 were randomised, 51 followed up post treatment.	CT Male n=9 Female n=24 Mean age 34.3 SD 10.2 RST Male n=6 Female n=26 Mean age 32.6 SD 8.3 Diagnosis using MINI and confirmed by the Interview for Borderline Personality Disorder-Revised (DIBR), with a score of at least 8, according to the threshold of the scale.	Cognitive therapy 10 sessions of individual 1-hour sessions, over 1 year.	Rogerian supportive therapy (RST) 10 sessions of individual 1-hour sessions, over 1 year.	Summary: CT retained the patients in therapy for longer than RST. At week 24, CT was better than RST on the Hopelessness Scale, IVE scale and regarding the therapeutic relationship. At week 104, the CGI improvement (patient and evaluator) was significantly better in CT than in RST. High baseline depression and impulsivity predicted dropouts. High baseline depression and impulsivity predicted dropouts. Detail: A between-group comparison of the time spent in therapy showed that dropouts left the study later in CT (CT: mean = 51 days, SD = 37.4; RST: mean = 29 days, SD = 32.4; Wilcoxon-Mann-Whitney = –2.05; p = 0.040). In the whole sample, the	Clinical Global Impression (CGI) Scale Hamilton Depression Scale Beck Depression Inventory Beck Anxiety Inventory Hopelessness Scale Young Schema Questionnaire II Eysenck Impulsivity Venturesomeness Empathy (IVE) Inventory	51 patients were evaluated at week 24, 38 at week 52 and 21 at week 104. 21.5% drop out 6 mths of intensive care with 1 session per week (24 sessions) and a maintenance phase with a session every fortnight over 6 mths (12 sessions).	Not Reported	Same therapists in both groups QC 1.1 = A 1.2 = B 1.3 = B 1.4 = B 1.5 = A 1.6 = A 1.7 =A 1.8 = 21.5% 1.9= B 1.10 C 2.1 (+)

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Psychosomatics, 78, 307-316. France			Exclusion criteria were: age under 18 or over 60 years, patients living too far from the centres, psychotic disorders with current delusions, significant drug or alcohol addiction in the foreground or antisocial behaviours.			average time before ending therapy was 82 days in CT vs. 60 in RST (Wilcoxon-Mann- Whitney = –1.5; p = 0.13) Using all available information on the response criterion, the odds of success were estimated to be 61% higher in the CT group than in the RST group, a large but non-significant effect (OR: 1.61, 95% CI: 0.62–4.16, p = 0.32). When missing outcomes were considered as failures, the estimated treatment effect was reduced to an OR of 1.33 (95% CI: 0.60–2.96, p =0.48). Change from baseline was significant for the IVE scale: CT mean = 0.85 (SD 1.74); RST mean = –0.67 (SD 2.87); Wilcoxon-Mann-Whitney: –2.086, p = 0.03. The Hopelessness Scale also changed more in CT: mean –3.31 (SD 4.64); RST mean = –0.50 (SD 3.73); Wilcoxon-Mann- Whitney:				

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						–2.27, p = 0.02 The therapeutic relationship was also better in CT: the therapists rated the patients more favourably in CT than in RST (p = 0.04).				
Davidson, K.M., Tyrer, P., Norrie, J., Palmer, S.J., & Tyrer, H. (2010). Cognitive therapy v. Usual treatment for borderline personality disorder: Prospective 6-year follow-up. British Journal of Psychiatry, 197(6), 456-462. UK	RCT Level II	N= 106 n= 76 T=43 C= 33	Age mean (SD) T= 32.4 ± 9.0 C= 31.4 ± 9.4 Gender – Female (n, %) T= (45, 83.3%) C= (44, 84.6%) Diagnosis: BPD, met criteria for at least 5 items of BPD using the Structured Clinical Interview for DSM IV Axis II Personality Disorders. Inclusion: to enter the study,	30 x 1 hr sessions of individual cognitive–behavioural therapy for personality disorders (CBT–PD) over 1 year in addition to their usual treatment	TAU	Summary: The original positive treatment effect is maintained over an average of 6 yrs follow-up: a difference of 1.26 suicide attempts over the following 5 yrs. Detail: Over the 6-year period, 73% (n = 24/33) in the TAU group had made at least one suicide attempt compared with 56% (n = 24/43) in the CBT–PD group (adjusted odds ratio 0.37, 95% CI 0.10–1.38, P= 0.13). In terms of self-harm (non-suicidal) there was little evidence of a difference between the groups. However, it was clear that the overall rate of self-harm declined in both groups. For measures of depression, anxiety, general psychopathology, social functioning, quality of life and dysfunctional	Structured Clinical Interview for DSM–IV Axis II Personality Disorders. Acts of Deliberate Self-Harm Inventory. Beck Depression Inventory (BDI). Spielberger State–Trait Anxiety Inventory (STAI). Brief Symptom Inventory (BSI). Participant's beliefs thought to be related to personality disorder were measured using the Young Schema	6 year follow-up Of the people who originally took part n = 76/106 (72%) were interviewed at 6 year follow-up.	BDI, d=0.02 (-0.44, 0.47) BSI, d= 0.07 (-0.39, 0.52) EQ-5D thermometer, d= -0.11 (-0.57, 0.34) EQ-5D weighted HSV, d= -0.24 (-0.69, 0.22) IIP-32, d=0.18 (-0.27, 0.64) SFQ, d=-0.18 (-0.63, 0.27) State-Anxiety, d=-0.19 (-0.64, 0.27) Suicide attempts, d = -0.32 (-0.77, 0.14) Trait-Anxiety, d= -0.10 (-0.56, 0.35) Youth Schema Questionnaire, d=-0.07 (-0.52, 0.39)	No information on comorbidity and prescribed drug use was obtained across the trial and follow-up, and no formal assessment of interrater agreement was carried out on SCID–II diagnosis. Randomization was stratified by high (presence of suicidal acts in past

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			participants had received either in-patient psychiatric services or an assessment at accident and emergency services or an episode of deliberate self-harm (either suicidal act or self-mutilation) in the previous 12 months. Exclusion: those who had evidence of an organic illness, mental impairment, alcohol or drug dependence, schizophrenia or bipolar affective			attitudes, there were no statistically significant differences between the groups during follow-up. At 6 yrs, 54% of the sample no longer met diagnostic criteria for BPD: 56% (n = 24/43) of the CBT–PD group and 52% (n = 17/33) of the TAU group. There was no difference between the groups in terms of those who continued to meet diagnostic criteria (P = 0.44). Defined poor outcome as any suicide attempt in the follow-up period and examined the baseline predictors of good and poor outcome. From all the variables known to be of prognostic importance pre-randomisation, only having special needs at school was specifically associated with the presence of any suicide attempts during the 6-year follow-up. Overall quality of life scores for the entire group remained poor and continued to lie within a similar range to values	Questionnaire (YSQ). Social Functioning Questionnaire (SFQ). Inventory of Interpersonal Problems – Short form 32 (IIP–32). Cost effectiveness via quality-adjusted life-year (QALY), assessed using the EuroQol (EQ–5D), and the Client Service Receipt Inventory (CSRI) for the 6 months before follow-up interview.			12 months) or low (presence of self mutilation only in past 12 months) episodes of self-harm, using randomized permuted blocks of size 4. It was completed confidentially at a separate centre. Therapy adherence measures were completed. QC 1.1=A 1.2=A 1.3=A 1.4=F 1.5=A 1.6=A 1.7=A 1.8= 20% (TX) and 36% (C)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			disorder. Did not exclude those who were abusing drugs or alcohol providing they did not meet criteria for dependence			reported for other severe mental health populations such as severe schizophrenia. Use of hospital services remained high in both groups with about 54% of all individuals having received in-patient treatment and almost two-thirds having utilised accident and emergency (A&E) treatment during the follow-up period. With the exception of in-patient and A&E utilisation, no particularly large differences were observed between the treatment groups. However, the mean length of hospitalisation was markedly lower in the CBT–PD group than for the TAU group (10.81 v. 60.97 days respectively). Although a similar proportion of patients in both groups attended A&E, both the mean and median number of attendances were higher in the TAU group.				1.9= A 1.10=A 2.1 = (++)
Doering, S., Horz, S., Rentrop, M., Fischer-	RCT Level II	Treatment n=52 Control n= 52	Age mean (SD): Treatment 27.46 ±6.8;	Transference-focused psychotherapy: Two 50-		Summary: Transference focused psychotherapy group had fewer DSM features at 1 year, fewer	Primary: Drop-outs Suicide attempts and self-harming	Follow-up: 1 year	Any suicide attempts during psychotherapy, d = -0.08	High, differential drop out

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Kern, M., Schuster, P., Benecke, C., Buchheim, A., Martius, P., Buchheim, P. (2010). Transference-focused psychotherapy v. Treatment by community psychotherapists for borderline personality disorder: Randomised controlled trial. British Journal of Psychiatry, 196(5), 389-395. Germany			Control 27.19 ± 7.5 Gender – all females Diagnosis: DSM-IV BPD via Structured Clinical Interview for DSM and Structured Interview for Personality Organisation Exclusion: Exclusion criteria were diagnosis of antisocial personality disorder, schizophrenia, bipolar I and II disorder with a major depressive, manic or hypomanic episode during the previous 6 months,	minute sessions are delivered per week. Before treatment starts, a treatment contract is negotiated orally with the individual, covering general aspects like duration and payment as well as potential threats to the treatment specific to each patient (e.g. suicide attempts, drug misuse or anorectic behaviour). The treatment focuses on the integration of internalised experiences of dysfunctional early relationships. For this purpose, the		self harm and suicide attempts, lower duration and less time as an inpatient and better psychosocial functioning than control group. The drop-out rate was significantly higher in the experienced community psychotherapists group Detail: There were no significant differences between the groups with regard to medication at baseline and during the 1-year treatment period. The transference-focused psychotherapy group showed a significantly higher proportion of participants that fulfilled less than five DSM–IV diagnostic borderline criteria after 1 year and were not diagnosed BPD any more (42.3% v. 15.4%, P= 0.002). The transference-focused psychotherapy group was significantly superior with regard to the number of DSM–IV diagnostic criteria, psychosocial functioning, personality organisation, suicide attempts and number and duration of psychiatric in-	behaviour: Cornell Interview for Suicidal and Self-Harming Behaviour- Self Report (CISSB), adapted from the Parasuicidal History Interview Secondary: DSM-IV diagnostic criteria for BPD via SCID GAF Beck Depression Inventory State-Trait Anxiety Inventory Brief Symptom Inventory Psychiatric inpatient admissions - Cornell Revised Treatment History Inventory (CRTHI) Personality organisation: STIPO		(-0.47, 0.30) BDI, d=0.12 (-0.26, 0.51) Brief symptom inventory, d=0.08 (-0.31, 0.46) GAF, d=0.34 (-0.04, 0.73) Level of personality organisation, d= -0.26 (-0.65, 0.12) No. of days in psychiatric inpatient during psychotherapy, d= -0.23 (-0.61, 0.16) No. of DSM-IV diagnostic criteria for BPD, d=-0.56 (-0.95, -0.17) No. of psychiatric inpatient admissions during psychotherapy, d= -0.47 (-0.86, -0.08) Self-harming during psychotherapy, d= -0.12 (-0.50,	QC 1.1=A 1.2=A 1.3=A 1.4=F 1.5=A 1.6=C 1.7=A 1.8= Treatment 17% not assessed at follow-up; Control 44% not assessed at follow-up 1.9= A 1.10=C 2.1 = (-)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			substance dependency (including alcohol) during the previous 6 months, organic pathology or mental retardation.	actual relationship between the individual and the therapist ('transference relationship') is examined as much as possible. Additional psychotherapy not allowed		patient treatments. To rule out a mere dose effect of transference-focused psychotherapy, completer analyses were conducted, controlling for the number of therapy sessions delivered. The group differences remained significant for GAF Score, number of DSM–IV borderline criteria, and level of personality organisation. In both groups all but one of the individuals who attempted suicide dropped out of treatment. Those who dropped out were not included in the completer analysis. The results demonstrate the significant superiority of transference-focused psychotherapy with regard to the primary outcome criteria of drop-out rate and suicide attempts during the treatment year. The same was true for the secondary outcome criteria reduction of DSM–IV diagnostic borderline criteria, psychosocial functioning, level of personality organisation and psychiatric in-patient			0.27) State-Trait Anxiety X1, d= 0.18 (-0.20, 0.57) State-Trait Anxiety X2, d = 0.04 (-0.35, 0.42)	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						admissions. Participants in the transference-focused psychotherapy group received 48.5 (s.d. = 34.2) sessions and those in the experienced community psychotherapists group 18.6 (s.d. = 24.0) sessions of individual psychotherapy within the 1-year study period. Future research should look at long-term follow-up, since effects of psychotherapy seem to take yrs to develop and to continue after termination of treatment Transference-therapists received more supervision and had assessment of treatment adherence. Large difference between dropout rates between groups. Control group participants attended fewer sessions than the intervention group.				
McMain, S. F., Links, P. S., Gnam, W. H., Guimond, T., Cardish, R. J., Korman, L.,	RCT Level II	Treatment n=90 Control n= 90 The primary	Age mean (SD) T=29.4±9.2 C= 31.3±10.6 Gender Female (n, %)	Dialectical behaviour therapy. Multimodal: Individual sessions (1	General psychiatric management. Consisted of case management, dynamically	Summary: both groups improved on most measures, except the utilization of non-study treatments decreased significantly more in the DBT group than in the general psychiatric	Structured Clinical Interview for DSM-IV Axis I Disorders–Patient Edition International Personality Disorder	Assessed at baseline and every 4 months over the 1-year active treatment phase	Risk of suicide and self-injurious episodes rpb=0.89 Symptom severity	QC 1.1=A 1.2=A 1.3=A 1.4=F 1.5=A 1.6=A 1.7=A

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
& Streiner, D. L. (2009). A randomized trial of dialectical behaviour therapy versus general psychiatric management for borderline personality disorder. The American journal of psychiatry, (12), 1365-1374 Canada		goal to eliminate behavioural dyscontrol by helping patients develop more effective coping strategies.	T= (81,90%) C= (84,82.2%) DSM-IV criteria for BPD via Structured Clinical Interview Inclusion: Patients had to meet DSM-IV criteria for BPD, be 18–60 yrs of age, and have had at least two episodes of suicidal or nonsuicidal self-injurious episodes in the past 5 yrs, at least one of which was in the 3 months preceding enrolment. Exclusion: Were limited to	hour weekly); skills group (2 hours weekly); phone coaching (2 hours weekly). Consultation team for therapists mandated (2 hours weekly). Organized according to a hierarchy of targets: suicidal, treatment-interfering, and quality-of-life-interfering behaviours. Explicit focus on self-harm and suicidal behaviour. Treatment involves: dialectical strategies, irreverent and reciprocal communication style, formal	informed psychotherapy, and symptom-targeted medication management. Individual sessions (1 hour weekly) including medication management based on structured drug algorithm. Therapist supervision meeting mandated (90 minutes weekly). Focus is expanded away from self-harm and suicidal behaviours. Psychodynamic approach, emphasized the relational aspects and early	management group Detail: The utilization of non-study treatments decreased significantly more in the DBT group than in the general psychiatric management group (odds ratio=0.52, p=0.002). The mean adherence scores for essential interventions were significantly greater than the mean adherence score for proscribed dialectical behaviour therapy items across all time points. Both groups showed statistically significant decreases in the frequency of suicidal episodes (odds ratio= 0.23, p=0.01) and nonsuicidal self-injurious episodes (odds ratio=0.52, p=0.03). There were no b/w group differences in the frequency of suicidal episodes or nonsuicidal self-injurious episodes. Those with any suicidal or nonsuicidal self-injurious	Examination Treatment fidelity: modality specific adherence scales Frequency and severity of suicidal and non-suicidal self-injurious behaviour episodes: Suicide Attempt Self-Injury Interview Borderline symptoms: Zanarini Rating Scale for BPD General symptoms: Symptom Checklist–90–Revised State-Trait Anger Expression Inventory Beck Depression Inventory Inventory of Interpersonal		(ZRSBPD) rpb =1.13 Depression (BDI) rpb =1.07 Anger (State-Trait Anger Expression Inventory - Anger out) rpb =0.32 Health-related QoL (EQ-5D) rpb =0.24 Symptom distress (SCL-90-R) rpb =0.68 Interpersonal functioning (Inventory of Interpersonal Problems-64) rpb =0.45	1.8=Treatment 39%; Control 38% 1.9= A 1.10=F 2.1 = (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			having a DSM-IV diagnosis of a psychotic disorder, bipolar I disorder, delirium, dementia, or mental retardation or a diagnosis of substance dependence in the preceding 30 days; having a medical condition that precluded psychiatric medications; living outside a 40-mile radius of Toronto; having any serious medical condition likely to require hospitalization within the next	skills training. Behavioural strategies: exposure, contingency management, diary cards, behavioural analysis. Patients encouraged to rely on skills over pills where appropriate (e.g., anxiolytics). Tapering from medications was a treatment goal.	attachment relationships. Disturbed attachment relationships related to emotion dysregulation as a primary deficit. Involves attention to signs of negative transference. Patients were encouraged to use medications concurrently.	episodes experienced a significant decrease in the medical risk over time, but there was no between-group difference. Using mixed-effects linear growth curve analyses, significant decreases over the 1-year treatment period (but no between-group differences) were found for the following variables: borderline symptoms, depression, interpersonal functioning, symptom distress, and anger. On health-related quality of life (based on the EQ-5D thermometer), both groups reported improvements, but these changes were not statistically significant. Based on generalized-estimating-equation analysis, participants in both groups showed statistically significant decreases in the total number of emergency department visits (odds ratio=0.43, p<0.0001), with no statistically	Problems, 64-item version Health-related quality of life: EQ-5D thermometer Treatment History Interview: self-reported counts of the number of hospital admissions, days in hospital, emergency department visits, medications, and outpatient psychosocial treatments. Reasons for Early Termination From Treatment Questionnaire			

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			year (e.g., cancer); and having plans to leave the province in the next 2 yrs			significant differences between groups. Both groups demonstrated statistically significant reductions in the number of emergency department visits for suicidal behaviour (odds ratio=0.35, p<0.0001), with no between-group differences.				

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Soler, J., Pascual, J. C., Tiana, T., Cebria, A., Barrachina, J., Campins, M. J., Perez, V. (2009). Dialectical behaviour therapy skills training compared to standard group therapy in borderline personality disorder: A 3-month randomised controlled clinical trial. Behaviour Research and Therapy, 47(5), 353-358. Spain	RCT Level II	Treatment n=29 Control n= 30	Age mean (SD) T= 28.45 ±6.55 C=29.98±5.63 Gender Female (n, %) T= (23,79.3%) C= (26, 86.7%) Diagnosis: BPD via Structured Clinical Interview for DSM-IV Axis II Disorders (SCID-II) and the Revised Diagnostic Interview for Borderlines (DIB-R). Exclusion: Inclusion criteria consisted of: 1) meeting the DSM-IV	Dialectical behaviour therapy - Skills training (DBT-ST) DBT-ST and SGT, consisted of thirteen psychotherapy sessions of 120 min each, 2 therapists (a male and a female) for each group, in groups of 9–11 participants. The DBT format used was adapted from the standard version, applying one of the four modes of intervention: skills training.	Standard group therapy (SGT) The SGT format was oriented to provide a relational experience, allowing people with BPD to share their characteristic difficulties. Prominent techniques used were interpretation (although this was not used systematically), highlighting, exploration, clarification and confrontation. The therapists mainly	Summary: mental state and psychopathology scales showed significant difference favouring DBT-ST. Detail: No significant differences of mean number of attended sessions between the two groups. DBT-ST group showed a significant improvement in more psycho- pathology scales. DBT-ST group showed a greater decrease in depression, anxiety and general psychiatric symptoms compared with the SGT group. Regarding the SCL90-R, HLM analysis showed statistically significant differences in the psychoticism subscale, and in the BDI irritability subscale. A greater decrease was detected in the DBT-ST condition. Both treatment conditions showed significant reductions in CGI-BPD global severity scores. However, no significant differences were displayed between groups in HLM analysis. In this measure, several specific	BPD core symptoms: Clinical Global Impression-BPD (CGI-BPD) Hamilton Rating Scale-Depression (HRSD-17) Hamilton Rating Scale-Anxiety (HRSA) Psychotic symptoms: Brief Psychiatric Rating Scale (BPRS) Psychiatric symptoms: Symptom Checklist, Revised (SCL90-R) Hostility/irritability: Buss–Durkee Inventory (BDI). Impulsivity: Barrat Inventory (BI). In addition to clinical scales, they rated self-injury, suicide attempts, and visits to psychiatric	13 weekly sessions	Between group standardised mean differences d (95% CI) No. of medications, d= -0.16 (-0.45, 0.13) No. of non-study tre, d= -0.39 (-0.69, -0.10) HRSD-17, d= -0.98 (-1.52, -0.44) HRSA, d= -0.68 (-1.21, -0.16) BPRS, d = -0.67 (-1.19, -0.14) BDI Irritability, d = -0.61 (-1.13, -0.09) BDI Indirect Hostility, d = 0.51 (-1.03, 0.01) SCL-90-R GSI, d=-0.42 (-0.95, 0.09)	QC 1.1=A 1.2=A 1.3=E 1.4=B 1.5=B 1.6=A 1.7=A 1.8=Treatment: 34% drop out; Control: 63% drop out; Intention to treat analysis 1.9= A 1.10=F 2.1 = (+) Large differences in retention

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			diagnostic criteria for BPD; 2) age between 18 and 45 yrs; 3) no comorbidity with schizophrenia, drug-induced psychosis, organic brain syndrome, alcohol or other psychoactive substance dependence, bipolar disorder, mental retardation, or major depressive episode in course; 4) Clinical Global Impression of Severity (CGI-S) score	DBT-ST included all the original skills. These skills can be divided into those that promote change, interpersonal effectiveness and emotional regulation skills, and those that promote acceptance, mindfulness and distress tolerance skills. Similar to other skills training in behavioural treatments, DBT-ST includes teaching, in-	played a role of conductor in group interactions, and targeted specially nihilistic or destructive interactions, characteristic BPD interactions and those that could interfere with group functioning. SGT interventions were led by two experienced psychodynamic-oriented psychotherapists.	sub-scales, such as: anger, emptiness, and affect instability, had a significantly greater reduction in DBT-ST compared to SGT. No differences were seen in the other scales (impulsivity) or behavioural reports (number of self-harm behaviours, suicides or emergency visits) used in the study.	emergency service'		SCL-90-R Interperson, d=-0.81 (-1.34, -0.28) SCL-90-R Hostility, d= -0.34 (-0.85, 0.17) SCL-90-R Psychoticism, d= -0.58 (-1.10, -0.06) CGI-BPD Global, d= -1.02, (-1.57, -0.48) CGI-BPD Unstable rel, d= -0.29 (-0.80, 0.22) CGI-BPD Impulsivity, d= -0.62 (-1.15, -0.10) CGI-BPD Suicide, d= -0.10 (-0.61, 0.41) CGI-BPD Affect Instability, d= -1.08 (-1.63, -0.53)	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			≥ 4; 5) no current psychotherapy.	session practice of new skills and homework assignments to practice each skill every week. DBT-ST intervention was led by 2 cognitive behavioural psychotherapists with prior experience in BPD group therapy					CGI-BPD Anger, d = -0.85 (-1.38, -0.32) CGI-BPD Emptiness, d = -0.44 (-0.95, 0.08) CGI-Global Improv-Patient, d = 0.68 (0.16, 1.21)	

Social/Personal Functioning

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Bateman, A., & Fonagy, P. (2008). 8-year follow-up of patients treated for borderline personality disorder: Mentalization-based treatment versus treatment as usual. American Journal of Psychiatry, 165(5), 631-638. (follow up from Bateman A, Fonagy P: Effectiveness of partial hospitalization in the treatment of	RCT Level II RCT (8 yrs since intervention follow-up – reporting occurrences since the 3 year follow-up).	N=41 T=22 C= 19	Age and gender not reported. Diagnosis: BPD on both Structured Clinical Interview for DSM-III-R and Diagnostic Interview for Borderline Patients. Exclusion: If the met criteria for schizophrenia, bipolar, substance misuse or mental impairment or had evidence of organics brain disorder.	Partial hospitalisation consisting of a long-term psychoanalytically orientated treatment for 18 months. Metallization based treatment (MBT) individual and group therapy. MBT by partial hospitalization consists of 18-month individual and group psychotherapy in a partial hospital setting offered within a structured	Treatment as usual (TAU) consists of general psychiatric outpatient care with medication prescribed by the consultant psychiatrist, community support from mental health nurses, and periods of partial hospital and inpatient treatment as necessary but no specialist psychotherapy.	Summary: MBT had a greater effect than TAU on clinical symptoms, suicide and risk behaviours, service utilisation and general functioning Detail: 23% made suicide attempts in the mentalization-based treatment group (mean attempts 0.5±0.9), contrasted with 74% of the treatment as usual group (mean attempts 0.52±0.48), which was significant. Mean number of emergency room visits and hospital days highly significantly favoured the MBT group, as did the continuing treatment profile. During mentalization-based treatment group therapy, all of the experimental group but only 31% of the treatment as usual group received therapy. Over the 5-year postdischarge period, both groups received around 6 months of psychological therapy (n.s.). For all other treatments, the TAU group received significantly more input postdischarge—3.6 yrs of psychiatric outpatient treatment and 2.7 yrs of	Primary: number of suicide attempts over the whole of the 5year post-discharge follow-up period. Associated outcomes were service use, including emergency room visits; the length and frequency of hospitalization; continuing outpatient psychiatric care; and use of medication, psychological therapies, and community support. Secondary: 1) symptom status as assessed at a follow-up interview using the Zanarini Rating Scale for DSM-IV borderline personality disorder 2) global functioning as measured by the	2 yrs	Suicide attempts total, d=1.4 (0.3, 1.5) Zanarini Rating Scale (ZRS) for BPD: total: d=1.8 (0.14, 3.5), affect: d=1.1 (0.41, 1.7), cognitive: d= 0.84 (0.3, 1.4), impulsivity: d= 1.2 (0.59, 1.9), interpersonal: d=1.6 (1, 2.3) GAF, d=0.75 (-1.9, 3.4) No. of days of hospitalisation, d=1.5 (0.36, 2.7) No. of emergency room visits, d= 1.4 (0.21, 2.63) No. of yrs of employment, d= 0.94 (0.29, 1.6) No. of yrs psychiatric outpatient	QC 1.1=A 1.2=B 1.3=B 1.4=B 1.5=B 1.6=A 1.7=A 1.8= 0% and 18% 1.9= C 1.10=F 2.1 = (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
borderline personality disorder: a randomized controlled trial. Am J Psychiatry 1999; 156:1563–1569)				and integrated program provided by a supervised team. Expressive therapy using art and writing groups is included. Crises are managed within the team; medication is prescribed according to protocol by a psychiatrist working in the therapy program. The focus of therapy is on the patient's moment-to-moment state of mind. The patient and therapist		assertive community support, compared with 2 yrs and 5 months, respectively, for the mentalization-based treatment group. The TAU group had an average of over 3 yrs taking antipsychotic medication, whereas the mentalization-based treatment group had less than 2 months. Smaller but still substantial differences were apparent in antidepressant and mood stabilizer use. The TAU group spent nearly 2 yrs taking three or more psychoactive medications, compared to an average of 2 months for the mentalization-based treatment group. At the end of the follow-up period, 13% of the mentalization-based treatment patients met diagnostic criteria for BPD, compared with 87% of the TAU group. The contrast between mean total scores for the Zanarini Rating Scale for BPD yielded a large effect size favouring the mentalization-based treatment group, albeit with a	Global Assessment of Functioning Scale (GAF) at 6-month intervals after 18 months of mentalization-based treatment by partial hospitalization: TX profiles (emergency room visits, hospitalization, psychiatric outpatients, community support, psychotherapy, medication) and suicidality and self-harm using criteria defined in the original trial for each patient by interview and scrutiny of medical records. Collected data twice yearly on vocational status, calculating the number of 6-month periods in which the patient was		treatment, d= 0.93 (-4, 1.5) No. of yrs further therapy 36 months post-intake, d= 0.07 (-0.23, 0.37) No. of yrs further assertive outreach treatment, d=1.8 (1.4, 2.2) Medication (yrs) antidepressants, d= 1.1 (0.45, 1.7) Medication (yrs) antipsychotics, d= 2.04 (1.6, 2.5) Medication (yrs) mood stabilisers, d=1.17 (0.73, 1.6) Medication (yrs) three or more drugs, d= 1.45 (1.1, 1.8)	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
				collaboratively try to generate alternative perspectives to the patient's subjective experience of himself or herself and others by moving from validating and supportive interventions to exploring the therapy relationship itself as it suggests alternative understanding.		wide confidence interval. Multivariate analysis of variance across the four symptom clusters also reflected the better outcome for the mentalization-based treatment group (Wilks's lambda=0.55, F=6.4, df=4, 32, p=0.001). The largest differences favouring mentalization-based treatment were in terms of impulsivity and interpersonal functioning. There was over a 6-point difference in the GAF scores between the two groups, yielding a clinically significant moderate effect size of 0.8 (95% CI=–1.9 to 3.4). 46% OF MBT group compared to 11% of the TAU group had GAF scores above 60. Vocational status favoured the MBT group, who were employed for nearly three times as long as the TAU group. There was increase in the % of MBT groups employment or education in the three post discharge periods.	employed or attended an educational program for more than 3 months. Patient recall for self-harm was unreliable and could not be independently corroborated from medical records and so is not reported. The authors consider the frequency of emergency room visits to be a reasonable proxy of severe self-harm in this population.			

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Bateman, A., & Fonagy, P. (2009). Randomized controlled trial of outpatient mentalization-based treatment versus structured clinical management for borderline personality disorder. American Journal of Psychiatry, 166(12), 1355-1364. UK	RCT Level II	N=134 MBT (T) n= 71 SCM (C) n= 63 MBT = mentalization-based treatment SCM = structured clinical management	Age mean (SD) TX= 31.3 (7.6) C=30.9 (7.9) Female (n, %) TX= 57, 80.3% C= 50, 79.4% Diagnosis - All participants were assessed using the Structured Clinical Interview for DSM-IV (SCID-I and SCID-II). Ethnicity - White British/European MBT: 76.1%, SCM: 68.3%; Black African/Afro-Caribbean MBT: 15.5%, 20.6% Other	Mentalization-based treatment (MBT) is manualized, consisting of 18 months of weekly combined individual and group psychotherapy provided by two different therapists. MBT is a psychodynamic treatment rooted in attachment and cognitive theory. It requires limited training with moderate levels of supervision for implementation by	Protocol-driven treatment, structured clinical management (SCM), in an outpatient context representing best current clinical practice. Practitioners received equivalent supervision. Crisis plans were developed collaboratively within each treatment team for all patients. SCM therapists focused on support and problem solving.	Summary: This study suggests that structured, integrated psychological and psychiatric treatment offering coordinated clinical management recommended by NICE significantly benefits patients with borderline personality disorder. Both conditions were associated with substantially reduced suicidality, self-harm, and hospitalization and improvement on measures of symptoms and social and interpersonal functioning by the end of treatment. The rate of improvement in both groups was higher than spontaneous remission of symptoms of BPD. Although patients in both groups made statistically significant improvements, MBT was associated with greater improvements than SCM for most outcomes. Detail: Suicidal behaviour: Six-month periods free of suicidal behaviours, severe self-injurious behaviours, and hospitalization improved from	Primary outcome: proportion of each group without severe parasuicidal behaviour as indicated by 1) suicide attempt, 2) life-threatening self-harm, or 3) hospital admission. Hospital admission was included because patients are primarily offered inpatient care in anticipation of suicide attempts and severe self-harm Secondary outcome: were independently rated Global Assessment of Functioning (GAF) scores at the beginning and end of treatment and self-reported psychiatric symptoms, social and interpersonal functioning, and	18 mths Assessed at entry and over the course of an 18-mth treatment at 6, 12, and 18 mths.	Life-threatening suicide attempts, d = 0.65 (0.58, 0.73) Severe self-harm attempts, d = 0.62 (0.28, 0.97) Interpersonal distress, d = 0.95 (0.59, 1.3) Social adjustment problems, d = 0.72 (0.37, 1.06) Symptom distress, d = 0.67 (0.33, 1.02) Depression, d= 0.45 (0.1, 0.79) Hospital admissions, suicidal and self-injurious episodes, d = -0.72 (-1.07, -0.37) Length of hospitalisation	Very good description of factors similar between groups and randomisation procedures. QC 1.1=A 1.2=A 1.3=B 1.4=F 1.5=A 1.6=A 1.7=A 1.8= 0% 1.9= A 1.10=F 2.1 = (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			Chinese/Turkish Pakistani 8.5%, 11.1% Exclusion Inclusion criteria were 1) diagnosis of BPD, 2) suicide attempt or episode of life-threatening self-harm within last 6 months, and 3) age 18–65. Exclusion criteria were kept to a minimum. Patients were excluded if they currently 1) were in long-term psychotherapeutic treatment, 2) met DSM-IV criteria	generic mental health professionals. It aims to strengthen patients' capacity to understand their own and others' mental states in attachment contexts in order to address their difficulties with affect, impulse regulation, and interpersonal functioning, which act as triggers for acts of suicide and self-harm. Crisis plans were		0% to 43% in the SCM group and to 73% in the MBT group; behaviour increased in patients assigned to MBT more than for patients in the SCM group, however, differences only became statistically significant after 12 months of treatment. Number of episodes of hospital admissions, suicide attempts, and severe self-injuries) also declined in both groups but a substantially greater reduction in the MBT than the SCM group. Data were relatively consistent and showed reduced suicidal behaviour in both groups. The rate of improvement was significantly greater in the MBT group both in terms of any suicide attempt and the count data associated with it. Differences between groups only became marked in the last 6 months of treatment; at 12 months, groups were not significantly different. Self-harm: Frequency of self-harm behaviours had significantly steeper reduction in the MBT group compared	medication use assessed at baseline and at 6-month intervals until the end of treatment at 18 months. Patients' subjective experience of symptoms was measured using the SCL-90-R, and depression was assessed by using the Beck Depression Inventory. Social adjustment and interpersonal functioning were measured using the modified Social Adjustment Scale–self-report and the Inventory of Interpersonal Problems–circumflex version.		, d = -0.43, (-0.78, -0.09) Medication use, d= -0.58, (-0.93, -0.24) Psychiatric hospitalisation, d= -0.53, (-0.88, -0.19)	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			for psychotic disorder or bipolar I disorder, 3) had opiate dependence requiring specialist treatment, or 4) had mental impairment or evidence of organic brain disorder. Current psychiatric inpatient treatment, temporary residence, drug/alcohol misuse, and comorbid personality disorder were not exclusion criteria.	developed collaboratively within each treatment team for all patients. MBT therapists focused on helping patients reinstate mentalising during a crisis via telephone contact. SCM therapists focused on support and problem solving		with SCM. During the 6 months before end of treatment fewer patients in the MBT group severely self-harmed (24% versus 43%, c2=4.6, p<0.05; relative risk=0.55, 95% CI=0.33–0.92). However, during the first 6 months of tx, comparison of the proportion of individuals manifesting self-injurious behaviour favoured the SCM group (75% versus 59%, c2=3.1, p<0.08; relative risk=1.27, 95% CI=0.99–1.63). From 6 to 18 months the proportion of these patients in the MBT group who self-harmed showed a steeper decline when compared with the SCM group. The more consistent reduction in the counts of self-injurious behaviour and the difference in incidence rate ratios favouring MBT was highly statistically significant. Hospitalisation: Before treatment about 25% of each group had had at least one hospital admission. During the first 6 months of treatment patients in the MBT				

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						group had significantly fewer days in hospital (Kruskal-Wallis c2=4.25, p<0.04), and the difference increased by 12 months (Kruskal-Wallis c2=6.54, p<0.02) and 18 months (Kruskal-Wallis c2=9.01, p<0.003). The decline in number of admissions over the whole period of treatment was significantly steeper in the MBT group. The number of patients hospitalized reduced in the MBT group relative to the SCM group and was markedly lower in the MBT group in the last 6 months of treatment (c2=7.7, p<0.005; relative risk=0.14, 95% CI=0.3–0.64). Secondary outcomes: GAF increased substantially for both groups over the 18-month period from 41 (95% CI=39.7–42.7) to 57 (95% CI=54.9–60.0) (t=15.5, df=125, p<0.0001) but the increase was rated as greater in the MBT group. There was improvement on all self-rated				

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						measures for both groups. This was particularly notable for symptoms of depression and social adjustment. The slope of decline in self-reported symptoms and relationship and social adjustment problems was significantly greater in the MBT group across all four measures. The size of difference between the two groups at the end of treatment was substantial for reduction in interpersonal distress (d=0.95, 95% CI=0.59–1.3), moderate for social adjustment problems (d=0.72, 95% CI=0.37–1.06) and symptom distress (d=0.67, 95% CI=0.33–1.02), and more modest for depression (d=0.45, 95% CI=0.10–0.79). Medication: use of medication reduced significantly in both groups. The proportion of patients not receiving medication increased from 27% to 57%. The increase was greater for the MBT group. Counting the number of classes of psychotropic medication also showed a decline across both groups with the incidence rate ratio				

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						suggesting a significant difference in favour of the MBT group. The number of people receiving two or more different classes of medication substantially reduced in both groups from 30% at the beginning of treatment to 8% at the end of treatment.				
Bellino, S., Rinaldi, C., Bogetto, F. (2010) Adaptation of interpersonal psychotherapy to borderline personality disorder: A comparison of combined therapy and single pharmacotherapy. Canadian Journal of Psychiatry. 55(2), 74-81.	RCT Level II	N= 55 enrolled n=44 analysed	55 participants (18 male, 37 female) with DSM-IV-TR diagnosis of BPD were recruited from patients attending the Service for Personality Disorder of the Unit of Psychiatry, Dept. of Neuroscience, University of Turin. Mean age of 25.8 yrs in medication-	28 patients received fluoxetine 20 mg to 40 mg daily (see control group for schedule) plus IPT-BPD. IPT-DBT consisted of weekly, manualised sessions lasting 1 hour. Patients in the combined therapy group were treated by a psychothera	27 patients received fluoxetine 20 mg to 40 mg daily plus clinical management consisting of a fortnightly clinical review of 15-20 minutes duration. Initially, fluoxetine was prescribed at a fixed dosage of 20 mg daily with the opportunity to increase the dosage to 40 mg daily	Summary: Small sample size limits ability to draw strong conclusions but results suggest that combined therapy was superior to monotherapy in relieving anxiety, improving functioning and alleviating the severity of some symptoms of BPD during the 32 weeks of the trial. Detail: Of 55 subjects, 11 (20%) dropped out (6 in medication-only, 5 in combined therapy). Only treatment completers (n=44) were included in the analysis. Using a univariate General Linear Model to calculate the effects of 1) duration of treatment and 2) the type of treatment on each assessment scale score, only duration of treatment had a statistically significant effect on global	Depression (Hamilton Depression Rating Scale) Anxiety (Hamilton Anxiety Rating Scale) Quality of life (SAT-P satisfaction profile) Global functioning (CGI Clinical Global Impression Scale) Social and occupational functioning (SOFAS) BPD symptoms severity and frequency (BPD-SI)	Treatment lasted 32 wks.	Not reported	No Intention to treat analysis – only analysed data for completers (i.e. 44 of 55 enrolled) and potential attrition bias due to lack of compliance was not addressed. Combined therapy was not compared with IPT

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Italy			only group and 26.2 yrs in combined therapy group; 62% previous hospitalizations; 27% employed; 31% married. Excluded were those with a lifetime diagnosis of delirium, dementia, amnestic or other cognitive disorders, schizophrenia or other psychotic disorders, and bipolar disorder. Concomitant Axis I or II disorders were also excluded. Female	pist who was not the psychiatrist prescribing the medication and who had 5 yrs of experience practising IPT. The psychotherapy and the pharmacotherapy started at the same time.	beginning in week 2, depending on clinical judgment. treatment lasted 32 weeks.	functioning, depressive symptoms and social and occupational functioning (p=<0.001), while both treatments alleviated symptoms of depression and improved global functioning. Combined therapy was superior to medication-only in alleviating anxiety symptoms (p=<0.001). Combined therapy was significantly superior to medication-only in improving psychological functioning (p=0.003). The interaction between combined therapy and treatment duration was superior to medication-only in improving social functioning as measured by the SAT-P for subjective quality of life (p=0.03). Only duration of therapy had an effect on the BPD-SI total score (p=<0.001), and duration also had an effect on the following factors from the BPD-SI: outbursts of anger (p=<00.1) and emptiness (p=<.001). Combined therapy had significant effects on interpersonal relationships (p=<.009), impulsivity				alone. QC 1.1=A 1.2=C 1.3=B 1.4=D 1.5=B 1.6=B 1.7=B 1.8= 20% 1.9=D 1.10=F 2.1 = (-)

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			patients of childbearing age were excluded if they were not using an adequate method of birth control, as were those who had recently received psychotherapy or pharmacotherapy, and current substance abusers.			(p=<0.01), and affective instability (p=0.02) which increased over time (p=<0.001 for all domains). Neither type of therapy nor duration of therapy had effects on: abandonment, parasuicidal behaviour, paranoid ideation, and identity.				
Bos, E. H., Van Wel, E. B., Appelo, M. T., & Verbraak, M. J. (2010). A randomized controlled trial of a Dutch version of systems	RCT Level II Randomization was done separately at each location.	N=79 TX (n = 42) C (n = 37)	Between 8 and 12 subjects were included in each group for the Treatment group. If at the time of randomisation, an insufficient	Systems Training for Emotional Predictability and Problem Solving (STEPPS) + individual treatment Group treatment; it combines	TAU The STEPPS groups began simultaneously with a group of patients that started TAU. The control condition was treatment as usual, i.e., the standard	Summary: Moderate to large effect sizes were seen for symptom variables and psychological quality of life at T2. At T3, moderate effects on symptoms were still present, while also moderate effects on physical, social and overall quality of life could be observed. More than TAU, STEPPS plus limited adjunctive individual therapy reduced	Primary efficacy measures included general psychiatric and BPD-specific symptoms, measured with the Symptom Checklist-90 total score (SCL-90) and the Borderline Personality Disorder checklist-40 total score (BPD-	Pre-treatment assessments (T1) took place following randomization, just	Effect sizes (non-standardised): Primary outcomes: Estimated mean differences at the end of treatment (T2), adjusted for differences at T1, were: SCL-	Raters were not blind and interrater reliability was not assessed for the BPDSI-IV. Intention to treat analysis was

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training for emotional predictability and problem solving for borderline personality disorder. Journal of Nervous and Mental Disease, 198(4), 299-304. The Netherlands			number of participants were assigned to a group, the remaining spots were randomly assigned to subjects who did not meet full BPD criteria (these participants were not included in this analysis). Age mean (SD) Treatment 32.9 (5.6) Control 31.8 (9.2) Gender – female (n, %) Treatment 35, 83.3% Control 33, 89.2%	skills training with general CBT elements and has a strong systems component; family members and significant others are actively involved in the program. The Dutch version of the STEPPS group program involves 18 weekly sessions and a single follow-up session 3 to 6 months after the conclusion of the program.	treatment for BPD offered at the participating sites. This treatment consisted of individual therapy from a psychotherapist, psychologist, or psychiatric nurse, offered every 1 to 4 weeks. STEPPS-related treatments like DBT or family groups for family members of the patients were not allowed. In both conditions, the main treatment could be supplemented with	symptomatology and improved quality of life, also in the longer run. STEPPS was not superior to TAU in reducing impulsive and parasuicidal behaviours, but this may be explained by the low base rate of these behaviours in our sample. It may also be that a more intensive treatment, such as DBT, is required to find differential effects on these behaviours. The merit of the STEPPS program is that it is relatively easily learned and implemented, and nevertheless improves BPD treatment in a number of ways. Further research to compare this treatment with other effective treatments is warranted. Importantly, this RCT on STEPPS is the first done by others than its developers. Detail: Scores on the primary efficacy measures. SCL-90 and BPD-40 symptom scores generally decreased from T1 to T3, and more so in the STEPPS group than in the TAU group. Quality of life scores (WHOQOL-Bref) generally increased from T1 to T3.	40) respectively. Secondary outcome measures included impulsive and parasuicidal behaviour, and quality of life. Impulsive and parasuicidal behaviour were assessed using 2 subscales of the Borderline Personality Disorder Severity Index-IV (BPDSI-IV). The impulsivity subscale contains 11 items reflecting potentially harmful impulsive behaviours (e.g., gambling, reckless driving, binge eating). The parasuicide subscale contains 13 items reflecting self-mutilating Parasuicidal behaviours and suicidal thoughts and attempts. Quality of life was	before the start of the intervention. Post-treatment assessments (T2) were done after the final weekly session of the STEPPS program (mean 23.9 ±3.6 weeks after T1). Follow-up assessments (T3) took place approxi	90, -47.0 (95% CI, -78.2 to -15.9, p = 0.003); BPD-40, -18.7 (95% CI, -31.6 to -5.8, p =0.005). At 6-month follow-up (T3), the differences were smaller but still significant: SCL-90, -38.4 (95% CI, -67.1 to -9.6, p =0.009); BPD-40, -14.7 (95% CI, -26.6 to -2.8, p =0.016). Secondary outcomes: In the domain of Psychological Health, STEPPS scores were higher than TAU scores particularly at T2 (estimated mean difference	completed but yielded similar results to the per-protocol analysis so only the per-protocol analysis was presented. The comparability of treatment between sites and the comparability between different therapists was not assessed. QC 1.1=A 1.2=A 1.3=B 1.4=F 1.5=A 1.6=A

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			Diagnosis BPD confirmed by administering the BPD modules from the Dutch versions of the Personality Diagnostic Questionnaire and the Structured Clinical Interview for DSM-IV Axis II Disorders. Participants had to be above threshold on either impulsivity and/or parasuicide subscales of the BPD Severity Index-IV Exclusion	The program has 3 main components: (1) psychoeducation about BPD; (2) emotion management skills training; and (3) behaviour management skills training. STEPPS is system-based in that friends and relatives of the patients are explicitly involved in the program for support and reinforcement of the newly learned skills (the "support group").	(medication) contacts with a psychiatrist, social worker, or other health care professional.	Overall treatment effects were found for Overall Quality of Life and General Health, Physical Health, and Psychological Health. For Social Relationships the overall treatment effect was a trend, for Environment the overall treatment effect was not significant. In both conditions, the number of patients scoring above the cut-off for ratings for the parasuicide and impulsivity subscales of the BPDSI-IV decreased from T1 to T3. There were no significant differences between the conditions (overall treatment effects). Medication was similar between the groups at baseline and remained stable during follow-up assessment. Over the entire study period, patients in the STEPPS group received 15 STEPPS group sessions on average, and had a mean of 8 contacts with their individual therapist. TAU-patients had a mean of 9 individual contacts with their main therapist. In addition to these study treatment	measured with the World Health Organization Quality of Life Assessment-Bref (WHOQOL-Bref)	mately 6 months after T2 (mean 25.7 ±4.2 weeks after T2). Outcome measures were assessed on all 3 occasions	adjusted for T1 score: 2.08 [95% CI, 0.76 – 3.41, p=0.002]); at T3, this difference was reduced to 0.91 (95% CI, -0.32–2.15, p = 0.146). With respect to Overall Quality of Life and General Health, Physical Health and Social Relationships, STEPPS scores were significantly higher than TAU scores only at T3 (estimated differences 1.80 [95% CI, 0.30 –3.30, p= 0.019]; 1.41 [95% CI, 0.15–2.66, p = 0.028]; and 1.86 [95% CI,	1.7=B 1.8=28.9% (TX) and 13.2% (C) 1.9= 3 1.10=4 2.1 = (+)

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			Subjects were excluded if they did not speak Dutch; were cognitively impaired (IQ < 70); younger than 18 yrs; treated involuntary; or presented an imminent danger to themselves or others.	They receive education about BPD and are instructed how to interact with the person with the disorder. STEPPS is administered by 2 mental health professionals, of who at least one is a psychotherapist. Subjects assigned to STEPPS also received limited individual therapy. This therapy was developed as an adjunct to STEPPS to help consolidate		contacts, TAU-patients reported to have had 31 ambulatory therapy contacts on average with other mental health care workers (e.g., psychiatrists, psychologists, psychiatric nurses, social workers). Patients in the STEPPS condition had a mean of 21 additional ambulatory therapy contacts.			0.14 –3.57, p = 0.035], respectively), but not at T2 (estimated differences 1.58 [95% CI, -0.07–3.22, p =0.060]; 0.96 [95% CI, -0.40 –2.32, p = 0.164]; and 0.77 [95% CI, -1.08 –2.61, p =0.431, respectively). Odds ratios for impulsivity were (T2): 0.81 (95% CI, 0.26 – 2.53, p=0.716); and (T3): 0.68 (95% CI, 0.22– 2.09, p=0.501). Odds ratios for parasuicide were (T2): 2.05 (95% CI, 0.66– 6.35, p=0.211); and (T3): 1.02 (95% CI, 0.35– 2.97, p=0.974). Effect sizes	

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				the newly acquired skills and to stimulate their use. It had a structured format, in which the previous STEPPS session was discussed as well as the use of the learned skills in everyday life. The therapy was offered every 2 wks during the entire study period.					(standardised): Effect sizes for the differences between the treatments at T2: SCL-90, 0.68; BPD-40, 0.68; Psychological Health, 0.96. At T3 effect sizes were: SCL-90, 0.56; BPD-40, 0.53; Overall Quality of life & General Health, 0.61; Physical Health, 0.56; Social Relationships, 0.61.	
Davidson, K. M., Tyrer, P., Norrie, J., Palmer, S. J., & Tyrer, H. (2010). Cognitive therapy v. Usual treatment	RCT Level II	N= 106 n= 76 T=43 C= 33	Age mean (SD) T= 32.4 ± 9.0 C= 31.4 ± 9.4 Gender – Female (n, %) T= (45, 83.3%)	30 x 1 hr sessions of individual cognitive–behavioural therapy for personality disorders (CBT–PD) over 1 year	TAU	Summary: The original positive treatment effect is maintained over an average of 6 yrs follow-up: a difference of 1.26 suicide attempts over the following 5 yrs. Detail: Over the 6-year period, 73% (n = 24/33) in the TAU group had made at least one suicide attempt compared	Structured Clinical Interview for DSM–IV Axis II Personality Disorders. Acts of Deliberate Self-Harm Inventory. Beck Depression Inventory (BDI). Spielberger State–	6 year follow-up Of the people who originally took part n =	BDI, d=0.02 (-0.44, 0.47) BSI, d= 0.07 (-0.39, 0.52) EQ-5D thermometer, d= -0.11 (-0.57, 0.34) EQ-5D weighted HSV,	No information on comorbidity and prescribed drug use was obtained across the

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for borderline personality disorder: Prospective 6-year follow-up. British Journal of Psychiatry, 197(6), 456-462. UK			C= (44, 84.6%) Diagnosis: BPD, met criteria for at least 5 items of BPD using the Structured Clinical Interview for DSM IV Axis II Personality Disorders. Inclusion: to enter the study, participants had received either in-patient psychiatric services or an assessment at accident and emergency services or an episode of deliberate self-harm (either	in addition to their usual treatment		with 56% (n = 24/43) in the CBT–PD group (adjusted odds ratio 0.37, 95% CI 0.10–1.38, P= 0.13). In terms of self-harm (non-suicidal) there was little evidence of a difference between the groups. However, it was clear that the overall rate of self-harm declined in both groups. For measures of depression, anxiety, general psychopathology, social functioning, quality of life and dysfunctional attitudes, there were no statistically significant differences between the groups during follow-up. At 6 yrs, 54% of the sample no longer met diagnostic criteria for BPD: 56% (n = 24/43) of the CBT–PD group and 52% (n = 17/33) of the TAU group. There was no difference between the groups in terms of those who continued to meet diagnostic criteria (P = 0.44). Defined poor outcome as any suicide attempt in the follow-up period and examined the baseline predictors of good and poor outcome. From all the variables known	Trait Anxiety Inventory (STAI). Brief Symptom Inventory (BSI). Participant's beliefs thought to be related to personality disorder were measured using the Young Schema Questionnaire (YSQ). Social Functioning Questionnaire (SFQ). Inventory of Interpersonal Problems – Short form 32 (IIP–32). Cost effectiveness via quality-adjusted life-year (QALY), assessed using the EuroQol (EQ–5D), and the Client Service Receipt Inventory (CSRI) for the 6 months before follow-up interview.	76/106 (72%) were intervie wed at 6 year follow-up.	d= -0.24 (-0.69, 0.22) IIP-32, d=0.18 (-0.27, 0.64) SFQ, d=-0.18 (-0.63, 0.27) State-Anxiety, d=-0.19 (-0.64, 0.27) Suicide attempts, d= -0.32 (-0.77, 0.14) Trait-Anxiety, d= -0.10 (-0.56, 0.35) Youth Schema Questionnaire, d=-0.07 (-0.52, 0.39)	trial and follow-up, and no formal assessment of interrater agreement was carried out on SCID–II diagnosis. Randomizat ion was stratified by high (presence of suicidal acts in past 12 months) or low (presence of self mutilation only in past 12 months) episodes of self-harm, using randomized permuted blocks of size 4. It was

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			suicidal act or self-mutilation) in the previous 12 months. Exclusion: those who had evidence of an organic illness, mental impairment, alcohol or drug dependence, schizophrenia or bipolar affective disorder. Did not exclude those who were abusing drugs or alcohol providing they did not meet criteria for dependence			to be of prognostic importance pre-randomisation, only having special needs at school was specifically associated with the presence of any suicide attempts during the 6-year follow-up. Overall quality of life scores for the entire group remained poor and continued to lie within a similar range to values reported for other severe mental health populations such as severe schizophrenia Use of hospital services remained high in both groups with about 54% of all individuals having received in-patient treatment and almost two-thirds having utilised accident and emergency (A&E) treatment during the follow-up period. With the exception of in-patient and A&E utilisation, no particularly large differences were observed between the treatment groups. However, the mean length of hospitalisation was markedly lower in the CBT–PD group than for the TAU group (10.81 v. 60.97 days respectively). Although a similar proportion of patients				completed confidentially at a separate centre. Therapy adherence measures were completed. QC 1.1=A 1.2=A 1.3=A 1.4=F 1.5=A 1.6=A 1.7=A 1.8= 20% (TX) and 36% (C) 1.9= A 1.10=A 2.1 = (++)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						in both groups attended A&E, both the mean and median number of attendances were higher in the TAU group.				
Doering, S., Horz, S., Rentrop, M., Fischer-Kern, M., Schuster, P., Benecke, C., Buchheim, A., Martius, P., Buchheim, P. (2010). Transference-focused psychotherapy v. Treatment by community psychotherapists for borderline personality disorder: Randomised controlled trial. British Journal of Psychiatry, 196(5), 389-	RCT Level II	Treatment n=52 Control n= 52	Age mean (SD): Treatment 27.46 ±6.8; Control 27.19 ± 7.5 Gender – all females Diagnosis: DSM-IV BPD via Structured Clinical Interview for DSM and Structured Interview for Personality Organisation Exclusion: Exclusion criteria were diagnosis of antisocial personality disorder, schizophreni	Transference-focused psychotherapy: Two 50-minute sessions are delivered per week. Before treatment starts, a treatment contract is negotiated orally with the individual, covering general aspects like duration and payment as well as potential threats to the treatment specific to each patient (e.g. suicide		Summary: Transference focused psychotherapy group had fewer DSM features at 1 year, fewer self harm and suicide attempts, lower duration and less time as an inpatient and better psychosocial functioning than control group. The drop-out rate was significantly higher in the experienced community psychotherapists group Detail: There were no significant differences between the groups with regard to medication at baseline and during the 1-year treatment period. The transference-focused psychotherapy group showed a significantly higher proportion of participants that fulfilled less than five DSM–IV diagnostic borderline criteria after 1 year and were not diagnosed BPD any more (42.3% v. 15.4%, P= 0.002). The transference-focused psychotherapy group was	Primary: Drop-outs Suicide attempts and self-harming behaviour: Cornell Interview for Suicidal and Self-Harming Behaviour-Self Report (CISSB), adapted from the Parasuicidal History Interview Secondary: DSM-IV diagnostic criteria for BPD via SCID GAF Beck Depression Inventory State-Trait Anxiety Inventory Brief Symptom Inventory Psychiatric inpatient admissions - Cornell Revised Treatment History Inventory (CRTHI) Personality	Follow-up: 1 year	Any suicide attempts during psychotherapy, d = -0.08 (-0.47, 0.30) BDI, d=0.12 (-0.26, 0.51) Brief symptom inventory, d= 0.08 (-0.31, 0.46) GAF, d=0.34 (-0.04, 0.73) Level of personality organisation, d= -0.26 (-0.65, 0.12) No. of days in psychiatric inpatient during psychotherapy, d= -0.23 (-0.61, 0.16) No. of DSM-IV diagnostic criteria for BPD, d=-0.56	High, differential drop out QC 1.1=A 1.2=A 1.3=A 1.4=F 1.5=A 1.6=C 1.7=A 1.8= Treatment 17% not assessed at follow-up; Control 44% not assessed at follow-up 1.9= A 1.10=C 2.1 = (-)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
395. Germany			a, bipolar I and II disorder with a major depressive, manic or hypomanic episode during the previous 6 months, substance dependency (including alcohol) during the previous 6 months, organic pathology or mental retardation.	attempts, drug misuse or anorectic behaviour). The treatment focuses on the integration of internalised experiences of dysfunctional early relationships. For this purpose, the actual relationship between the individual and the therapist ('transference relationship') is examined as much as possible. Additional psychotherapy not		significantly superior with regard to the number of DSM–IV diagnostic criteria, psychosocial functioning, personality organisation, suicide attempts and number and duration of psychiatric in-patient treatments. To rule out a mere dose effect of transference-focused psychotherapy, completer analyses were conducted, controlling for the number of therapy sessions delivered. The group differences remained significant for GAF Score, number of DSM–IV borderline criteria, and level of personality organisation. In both groups all but one of the individuals who attempted suicide dropped out of treatment. Those who dropped out were not included in the completer analysis. The results demonstrate the significant superiority of transference-focused psychotherapy with regard to the primary outcome criteria of drop-out rate and suicide attempts during the treatment year. The same was true for	organisation: STIPO		(-0.95, -0.17) No. of psychiatric inpatient admissions during psychotherapy, d= -0.47 (-0.86, -0.08) Self-harming during psychotherapy, d= -0.12 (-0.50, 0.27) State-Trait Anxiety X1, d= 0.18 (-0.20, 0.57) State-Trait Anxiety X2, d= 0.04 (-0.35, 0.42)	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
				allowed		the secondary outcome criteria reduction of DSM–IV diagnostic borderline criteria, psychosocial functioning, level of personality organisation and psychiatric in-patient admissions. Participants in the transference-focused psychotherapy group received 48.5 (s.d.= 34.2) sessions and those in the experienced community psychotherapists group 18.6 (s.d.= 24.0) sessions of individual psychotherapy within the 1-year study period. Future research should look at long-term follow-up, since effects of psychotherapy seem to take yrs to develop and to continue after termination of treatment Transference-therapists received more supervision and had assessment of treatment adherence. Large difference between drop out rates between groups. Control group participants attended fewer sessions than the intervention group.				

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Farrell, J. M., Shaw, I. A., & Webber, M. A. (2009). A schema-focused approach to group psychotherapy for outpatients with borderline personality disorder: a randomized controlled trial. Journal of behaviour therapy and experimental psychiatry, 40(2), 317-328. USA	RCT Level II Patients (N = 32) were randomly assigned to SFT-TAU and TAU alone.	N=28 n=16 (intervention) n=12 (TAU)	Age mean: 22-52 Gender: all female Inclusion criteria: females between the ages of 18 and 65, who met criteria for a BPD diagnosis confirmed by the Diagnostic Interview for Personality Disorders-Revised and the Borderline Syndrome Index, were in individual psychotherapy of at least six-months duration and would agree to continue that	Eight-month, thirty-session schema-focused therapy (SFT) group to added to treatment-as-usual (TAU) individual psychotherapy for borderline personality disorder (BPD). The group-SFT program consists of thirty weekly sessions, each lasting 90 min, over an eight-month period, with 6 patients and 2 therapists and manual based.	TAU (individual psychotherapy of at least six-months duration)	Summary: When baseline scores were compared to post-treatment scores, the improvement on all measures was significant for the SFT-group, but not for the TAU control group. The improvement was maintained or strengthened for the treatment group and lack of improvement maintained for the control group from post to six-month follow-up The TAU group showed little improvement, or even some deterioration, over the fourteen months of the study. Detail: Significant reductions in BPD symptoms and global severity of psychiatric symptoms, and improved global functioning with large treatment effect sizes were found in the SFT-TAU group. At the end of treatment, 94% of SFT-TAU compared to 16% of TAU no longer met BPD diagnosis criteria ($p < .001$). There was a significant overall effect on DIB-R and specifically	Primary Measures: Borderline Syndrome Index (BSI) a 52 item true or false self-report measure of BPD symptoms that allows measurement of change by specifying a time period for the subject to base answers on. Symptom Check List-90 (SCL-90) the global severity score was used as a measure of subjective experience of general symptoms. Diagnostic Interview for Borderline Personality Disorders-Revised (DIB-R) a structured interview that assesses four putative aspects of BPD	Post-treatment and 6-month follow-up.	BSI (BL/Post/FUp) .22/1.97*/2.81 * DIB_R (BL/Post/FUp) .46/2.22*/2.42 * SCL-90 (BL/Post/FUp) .13/1.35/2.2* GAF (BL/Post/FUp) 0.06/1.39/3.13 * indicates significant between group differences in effect at that time point.	No Intention to treat analysis was undertaken, only treatment completed analysis, but there was only dropout from treatment in the control group. QC 1.1 = A 1.2 = A 1.3 = B 1.4 = B 1.5 = A 1.6 = A 1.7 =A 1.8 = There was no drop out from the TX group but 25% drop out from

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			treatment for the course of the study. Exclusion criteria were: an Axis I diagnosis of a psychotic disorder or a below average IQ (89), as measured by the Shipley Institute of Living Scale. IQ was made an exclusion criterion because of the cognitive and reading demands of the program. Attendance at weekly individual psychotherapy sessions			for impulses and interpersonal subscales.	psychopathology (affect, cognition, impulse, interpersonal) and assigns scaled severity scores. Global Assessment of Function Scale (GAFS) ratings by patients' individual therapists was used as a measure of global functioning since it includes symptom, social and occupational functioning.			the control group. 1.9= A 1.10=F 2.1 (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			was a condition of remaining in the study.							
Ingenhoven, T., Lafay, P., Rinne, T., Passchier, J., Duivenvoorden, H. (2010) Effectiveness of pharmacotherapy for severe personality disorders: Meta-analyses of randomized controlled trials. Journal of Clinical Psychiatry. 71(1), 14-25. The Netherlands	SR Level 1	N = 32 included studies of which n = 21 were subject to meta-analysis.	Adults from inpatient/ outpatient settings (6 studies), inpatient only (5 studies) and outpatient settings (21 studies).	Flupentixol IM – 1 study, Thiotixene – 1 study, Trifluoperazine -1 study, Haloperidol – 3 studies, Olanzapine – 3 studies, Risperidone – 1 study, Aripiprazole – 1 study, Mianserine – 1 study, Tranylcypromine- 1 study, Amitriptyline - 1 study, Desipramine - 1 study, Phenelzine – 2 studies, Fluoxetine – 4 studies, Fluvoxamine	Varied by study	Summary: No evidence for effect of antidepressants on impulse control, depressed mood, global functioning. Small effect on anxiety and anger. Mood stabilisers had a very large effect on impulsive behavioural dyscontrol, anger, anxiety. Moderate effect on depressed mood. More pronounced effect than antipsychotics on global functioning. Use is not supported nor is the combined use with antipsychotics Atypical antipsychotics do not outperform classic neuroleptics. Detail: Antipsychotics have a moderate effect on cognitive-perceptual symptoms. Antipsychotics have a moderate to large effect on anger. Antidepressants have no significant effect on impulsive-behavioural dyscontrol and	Three symptom domains: cognitive perceptual symptoms impulsive-behavioural dyscontrol affective dysregulation: (4 subdomains) depressed mood, anxiety, anger, mood lability. Global functioning	5 – 26 weeks	Antipsychotics have a moderate effect on cognitive-perceptual symptoms (5 PC-RCTs; standardized mean difference [SMD] = 0.56) and a moderate to large effect on anger (4 PC-RCTs; SMD = 0.69) Antidepressants have a small but significant effect on anxiety (5 PC-RCTs; SMD = 0.30) and anger (4 PC-RCTs; SMD = 0.34). The effect of	QC 1.1 =A 1.2= A 1.3 =A 1.4 =A 1.5 =A 2.1 (++)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
				- 1 study, Carbamazepine -2 studies, Lithium – 1 study, Valproate – 3 studies, Lamotrigine- 1 study, Topiramate - 3 studies		depressed mood. Antidepressants have a small but significant effect on anxiety and anger. Mood stabilizers have a very large effect on impulsive behavioural dyscontrol. Mood stabilizers have a very large effect on anger. Mood stabilizers have a very large effect on anxiety. Mood stabilizers have a moderate effect on depressed mood. Mood lability as an outcome measure was seldom assessed. Mood stabilizers have a more pronounced effect on global functioning than have antipsychotics. The effect of antidepressants on global functioning is negligible. The review suggests that atypical antipsychotics do not outperform the classic neuroleptics. With respect to impulsive-behavioural dyscontrol, the prevalent use of antidepressants (SSRIs) is not validated by this meta-analysis, nor is the second step of adding a traditional antipsychotic drug.			antidepressants on global functioning is negligible. Mood stabilizers have a very large effect on impulsive-behavioural dyscontrol (6 PC-RCTs; SMD = 1.51) and anger (7 PC-RCTs; SMD = 1.33), a large effect on anxiety (3 PC-RCTs; SMD = 0.80), but a moderate effect on depressed mood (5 PC-RCTs; SMD =0.55). Mood stabilisers have a more pronounced effect on global functioning (3 PCRCTs; SMD =	

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						Modern mood stabilizers seem to deserve a more prominent position. Prescribing SSRIs as first and second steps in the treatment of affective dysregulation seems out-dated since mood stabilizers have a more pronounced effect. Evidence-based pharmacologic treatment guidelines for severe personality disorders are still in their infancy.			0.79) than have antipsychotics (5 PC-RCTs; SMD = 0.37).	
Kramer, U., Berger, T., Kolly, S., Marquet, P., Preisig, M., De Roten, Y., Despland, J.N., Caspar, F. (2011). Effects of motive-oriented therapeutic relationship in early-phase treatment of borderline personality	RCT Level II	Treatment (MOTR) n=11 Control n= 14	Age mean (SD) Treatment 30.29±12.43 Control 31.27±8.21 Gender – female Treatment 57.14% Control 81.81% Diagnosis BPD via Structured Clinical Interview for DSM-IV (SCID-II)	Motive-oriented therapeutic relationship (MOTR, also called complementary therapeutic relationship) + control TAU – 10 sessions This group received the control condition with additional MOTR and plan analysis	Summary: Reduction of interpersonal problems was larger in the MOTR condition than in the TAU condition Detail: TAU – 10 session early-phase TAU for patients presenting with BPD. Therapists followed a manual-based psychiatric	Outcome Therapeutic outcome measured using residual gains on the OQ-45 questionnaire between intake and discharge did not show an overall effect. However, on the subscale level, the domain of interpersonal problems assessed using the OQ-45 was significant, which indicates that the reduction of interpersonal problems is larger in the MOTR condition than in the control condition. No other subscale was significant in the between-group comparison. Therapeutic alliance: Significant difference favouring MOTR for the	MINI for axis I SCID-II for axis II Therapist adherence: PA and MOTR scale Psychotherapeutic results (subscales of symptomatic level, interpersonal relationships, and social role): Outcome Questionnaire 45.2 (OR-45) Therapeutic alliance: Working Alliance Inventory—Short Form (WAI)	Outcomes measured after 10 treatment sessions - no longer term follow-up	Between treatment groups effect sizes: OQ- total d= 0.52 OQ- symptoms d= 0.32 OQ- interpersonal problems d= 0.86 OQ- social role d= 0.38 WAI Therapeutic alliance – patients d= 0.51 WAI	MOTR condition had significantly fewer drop-outs (2; 18%), compared with the control condition (8; 57%) The results of the MOTR—as an operationalization of the responsive

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disorder: A pilot study of a randomized trial. Journal of Nervous and Mental Disease, 199(4), 244-250. Switzerland			Additional diagnoses: Treatment: 1 agoraphobia, 1 alcohol abuse, 1 major depression, 1 bulimia, 1 anorexia, 1 schizoid personality disorder Control: 1 panic disorder, 1 alcohol abuse, 2 major depression, 1 somatoform disorder, 1 paranoid personality disorder Exclusion: Inclusion criteria were a main diagnosis of BPD (APA, 1994), being	(PA). The duration, contents, and objectives of the MOTR-based treatments were exactly the same as in the control condition; MOTR "infuses" the process from session 2 to 10; no sessions were added. MOTR is implemented after the intake session which serves the therapist as data for the establishment of the PA and the ensuing MOTR.	and psychotherapeutic approach. The imperatives of the manual are (1) Establishment of reliable psychiatric diagnoses, including comorbidities and other problem areas, and communication of this information to the patient; (2) Establishment of psychiatric anamnesis; (3) Identification of the main problems to be treated and establishment of treatment focus; (4) Definition of	patient's ratings of therapeutic alliance, but no difference was found for the therapist's rating of therapeutic alliance (measured on a restricted sample of treatment completers). The patients receiving the MOTR-treatments rated that the therapeutic alliance was better and increased more strongly, compared with the control treatments. With respect to the patient's in-session experience, comparing actual means between the groups did not yield any significant difference. However, the quality of the therapeutic relationship, as rated by the patient, increased more strongly over the course of the MOTR treatment, compared with the control condition. All the other subscales of the BPSR-P did not differ between the groups with regard to the slope over time.	Therapeutic impact: Bern Post-Session Report (BPSR)		Therapeutic alliance – therapist d= 0.32 Effect sizes of change in scores over time using treatment group as a factor (coefficient, SE): WAI patient: 0.87 (0.13) WAI therapist: 0.70 (0.67) BPSR-P Resource activation 1: 0.05 (0.32) BPSR-P Resource activation 2: 0.17 (0.28) BPSR-P Contentment: 0.47 (0.32) BPSR-P Therapeutic relationship: 0.59 (0.29) BPSR-P	ness concept—are consistent with the hypothesis of a differential impact of this relational-technique variable on the interpersonal level in patients presenting with BPD. This pilot study showed an excellent feasibility of an add-on RCT design on an individualized responsiveness procedure, implement

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			between 18 to 60 yrs old and speaking French; exclusion criteria were an organic disorder or a persistent substance abuse/dependence which might affect brain function (memory, level of consciousness, cognitive abilities) and a psychotic disorder implying pronounced break in reality testing (chronic or intermittent), such as schizophrenia, delusional disorder,	PA, an integrative method serving case conceptualization and the ensuing relational-technique variable of the MOTR. The main focus of PA according to Caspar is the instrumentality of behaviour and experience: based on the patient's verbal, and in particular, nonverbal behaviour, which are manifest in- and between sessions, the therapist makes	short-term objectives and general enhancement of motivation; (5) Identification of and dealing with treatment-interfering problems; and (6) Formulation of relational interpretations of core conflictual themes. One session per week was given; if necessary, short-term inpatient treatment was organized, as was adjunct pharmacotherapy				Problem actuation 0.32 (0.35) BPSR-P Mastery: 0.22 (0.27) BPSR-P Clarification: 0.22 (0.30)	ed in early-phase treatment for BPD. Focus on process variables rather than broader outcome variables QC 1.1=A 1.2=B 1.3=A 1.4=F 1.5=A 1.6=A 1.7=B 1.8=Treatment: 18% drop out; Control 57% drop out; Intention to treat analyses conducted 1.9= B 1.10=E 2.1 = (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			bipolar affective disorder I, an acute risk of suicide or severe cognitive impairment.	inferences about the implied plans and motives, answering the question "Which conscious or unconscious purpose could underlie a particular aspect of an individual's behaviour or experience? "						
Lieb, K., Vollm, B., Rucker, G., Timmer, A., Stoffers, J.M. (2010) Pharmacotherapy for borderline personality disorder: Cochrane systematic review of randomised	SR Level I	N= 27 studies Twenty-seven trials were included in which first and second generation antipsychotics, mood stabilisers, antidepres	Participants were adults from mostly outpatient settings. There was a mix of male and female participants ranging from 16 – 314 with 1714 participants in total.	Olanzapine vs placebo – 6 studies, Carbamazepine vs placebo – 1 study, Valproate semisodium vs placebo – 2 studies, Thiothixene vs placebo – 1 study, Omega 3	Varied by study	Summary: Little evidence for effectiveness of antidepressants. There were positive effects for valproate, lamotrigine and topiramate but not carbamazepine. Haloperidol reduced anger, flupenthixol reduced suicidal behaviour, aripiprizole reduced pathology. Omega 3 fatty acids may reduce depressive symptoms but few studies. Detail: First generation antipsychotics – The	Primary outcomes were overall disorder severity as well as specific core symptoms. Secondary outcomes comprised associated psychiatric pathology and drug tolerability	Study durations ranged from 5 weeks to 24 weeks, with a mean duration of approximately 84 days (s.d.=	Standardised mean difference (SMD 95% CI), standardised mean change (SMC) or risk ratio (RR, 95% CI) Effect sizes vs. placebo: First generation antipsychotics Haloperiodol	Authors state that the robustness of findings is low, since they are based mostly on single, small studies. QC 1.1 =A 1.2 =A

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
trials. British Journal of Psychiatry. 196(1), 4-12. UK		sants and omega-3 fatty acids were tested		fatty acids vs placebo – 2 studies, Loxapine Chlorpromazine vs placebo - 1 study, Topiramate vs placebo – 3 studies, Aripiprazole vs placebo – 1 study, Ziprasidone vs placebo - 1 study, Fluvoxamine vs placebo - 1 study, Fluoxetine vs placebo – 2 studies, Haloperidol Phenelzine sulphate vs placebo – 1 study, Haloperidol Amitriptyline vs placebo – 1 study, Lamotrigine vs placebo –		comparisons of first-generation antipsychotics (FGAs) with placebo yielded significant effects for haloperidol in the reduction of anger and flupentixol decanoate in the reduction of suicidal behaviour. No proof of efficacy was found for thiothixene for any outcome. Tolerability between active and placebo treatment did not differ in any comparison. Second generation antipsychotics – Among second-generation antipsychotics (SGAs), aripiprazole was found to have both significant effects in the reduction of the core pathological symptoms of BPD, as investigated by one trial with 52 participants. Six trials compared olanzapine with placebo; among these were two large studies including approximately 300 participants each. Unfortunately, the different formats of result reporting (end-point v. change data) did not allow pooling of all study estimates for the majority of outcomes. There were also		54.7).	for anger SMD -0.46 (-0.84, -0.09) Flupentixol decanoate for suicidal behaviour RR 0.49 (0.29, 0.92) No proof of efficacy for thiothixene. Second-generation antipsychotics Aripiprazole for anger SMD -1.14 (-1.73, -0.55), for psychotic symptoms SMD -1.05 (-1.64, -0.47), for impulsivity SMD -1.84 (-2.49, -1.18), for interpersonal problems SMD -0.77 (-1.33, -0.20), for depression SMD -1.25 (-1.85, -0.65),	1.3 =A 1.4 =A 1.5 =B 2.1 (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
				1 study, Olanzapine, Fluoxetine Olanzapine + fluoxetine – 1 study, Flupentixol decanoate vs placebo - 1 study, Mianserin vs placebo – 1 study.		statistically significant benefits for the reduction of anxiety. However, results for suicidal ideation were inconsistent Mood stabilisers – Beneficial effects were found for the mood stabilisers valproate semisodium (divalproex sodium), lamotrigine and topiramate, but not for carbamazepine. Antidepressants - There was little evidence of effectiveness for antidepressant treatment. Other drugs – For supplementary omega-3 fatty acids, significant effects were found in one study for the reduction of suicidality and depressive symptoms. There was also an effect estimate of a second study for depressive symptoms, but because of different formats of reporting it could not be pooled with the first one. However, these findings also tended towards better results in participants given omega-3 fatty acids. Tolerability and safety – Tolerability did not differ for any drug–placebo comparison, i.e. drug treatment was not associated with a higher ratio			for anxiety SMD -0.73 (-1.29, -0.17), for general severity of psychiatric pathology SMD -1.27 (-1.87, -0.67). Olanzapine for affective instability SMC -0.16 (-0.32, -0.01), for anger SMC -0.27 (-0.43, -0.12), for psychotic symptoms SMC -0.18 (-0.34, -0.03), for anxiety mean change difference -0.22 (-0.41, -0.03), for suicide ideation SMC 0.29 (0.07, 0.50), for suicidality SMD 0.15 (-0.36, 0.65), self-harm RR 1.20	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						of non-completers than was placebo treatment. Detailed data on adverse effects were available for olanzapine treatment. Participants treated with this drug were, overall, no more likely to experience any adverse effect than were members of the control group. Adverse effects were also reported in detail for topiramate treatment. Data on the frequency of memory problems, trouble in concentrating, headache, fatigue, dizziness, menstrual pain and paraesthesia were also available for one RCT, with no significant difference in frequency between the topiramate and placebo groups comparison. Drug vs drug - Two FGAs, loxapine and chlorpromazine, were compared in one study with 80 participants. Tolerability did not differ significantly. However, there was no usable information on any pathology-related outcome. Two antidepressants were compared with the FGA haloperidol. The tricyclic antidepressant amitriptyline			(0.50, 2.88). No significant effects for ziprasidone. Mood stabilisers Valproate semisodium for interpersonal problems SMD -1.04 (-1.85, -0.23), for depression SMD -0.66 (-1.31, -1.01), for two studies of anger SMD -1.83 (-3.17, -0.48) and SMD -0.15 (-0.91, 0.61). Lamotrigine for impulsivity SMD -1.62, (-2.54, -0.69) Topiramate for interpersonal problems SMD -0.91 (-1.36, -0.35), for impulsivity SMD – 3.36 (-4.44, -2.27),	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						did not differ significantly from haloperidol treatment for any outcome. The monoamine oxidase inhibitor phenelzine sulphate, however, proved to be superior to haloperidol in the reduction of depression and general psychiatric pathology, and in improving mental health status as investigated in one study. No significant effect was found for the comparison of the SGA olanzapine with the antidepressant fluoxetine for any pathology related outcome. Drug vs combination of drugs - One trial tested the effects of olanzapine and fluoxetine separately against their combination. There was no significant difference indicating any benefits from combined treatment v. treatment with olanzapine or fluoxetine alone. Tolerability did not differ significantly. Detailed data were available for body weight change, the frequency of restlessness and mild sedation. There was no significant difference.			for anger in males SMD -0.65 (-1.27, -0.03), for anger in females SMD -3.00 (-3.64, -2.36), for anxiety SMD -1.40 (-1.99, -0.81), for general psychiatric pathology SMD -1.19 (-1.76, -0.61) Antidepressants Amitriptyline for depression SMD -0.59 (-1.12, -0.06). No significant effects for miansein, fluoxetine, fluvoxamine or phenelzine sulphate. Other drugs Omega-3 fatty acids for sucidality RR 0.52 (0.27,	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
									0.95), for depression RR 0.48 (0.28, 0.81) and SMD -0.34 (-1.15, 0.46). Tolerability and safety[6] Olanzapine for adverse events RR 1.13 (1.00, 1.28), for weight gain RR 1.05 (0.90, 1.20), increased appetite RR 2.78 (1.75, 4.34), somnolence RR 2.97 (1.75, 5.03), dry mouth RR 2.24 (1.08, 4.67), sedation RR 9.23 (2.18, 39.12) and RR 1.26 (0.44,	

[6] Please note blood measures are available but not reported here

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
									3.66). Topiramate on weight loss SMD -0.55 (-0.91, -0.19). Haloperidol on weight gain SMD -0.18 (-0.70, 0.34) Phenelzine sulphate on weight gain SMD 0.11 (-0.39, 0.61) Effect sizes drug vs. drug comparisons Phenelzine sulphate superior to haloperidol for depression SMD -0.68 (-1.19, -0.17), anxiety SMD -0.66 (-1.16, -0.15), general psychiatric pathology SMD -0.53 (-1.03, -0.03), improving mental health status SMD	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
									0.51 (0.01, 1.01). Olanzapine had more weight gain than fluoxetine SMD 0.98 (0.20, 1.76), and more mild sedation RR 3.50 (1.23, 9.92). No significant effect sizes reported for any other drug vs. drug comparisons.	
Loew, T.H., & Nickel, M.K. (2008). Topiramate treatment of women with borderline personality disorder, part ii: An open 18-month follow-up. Journal of	RCT Level II	N=56 Topiramate n = 28 Placebo n = 28	TG (Topiramate Group) vs PG (placebo group) Age [in yrs]: TG, 24.9 ± 5.3; PG, 25.6 ± 5.7 Ever been treated with psychotherapy: TG, n = 15 [53.6%]; PG, n = 13	100mg topiramate daily. After blind was broken, participants in the intervention group continued to take topiramate.	Initially placebo controlled but after blind was broken, former placebo group received no intervention.	Summary: Topiramate - reduction in aggressive behaviour, anxiety and phobias, obsessiveness, depression, paranoia, interpersonal problems, pain Improved health and activity related measures, and affective instability No effect on psychoticism. Mild-moderate side-effects usually with initiating or increasing dose No significant change occurred on the scale that depicts	SCL-90-R SF-36 Inventory of Interpersonal Problems	10 weeks for initial blinded treatment period. 18 month long-term follow-up observa	Accurate effect sizes cannot be calculated (except for changes in weight) because no means were provided. Estimate of the standardised mean difference between intervention	QC 1.1=A 1.2=B 1.3=B 1.4=A 1.5=A 1.6=A 1.7=A 1.8=21.4% and 25% 1.9= A 1.10=F 2.1 = (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Clinical Psychopharmacology, 28(3), 355-357. Austria/ Germany			[46.4%] Ever been treated with psychopharmacological therapy: TG, n = 26 [92.8%]; PG, n = 27 [96.4%] Ever been hospitalized for psychiatric disorders: TG, n = 6 [21.4%]; PG, n = 7 [25.0%]) Depressive disorders: TG, n = 20 [71.4%]; PG, n = 21 [75.0%] Anxiety disorders: TG, n = 15 [53.6%]; PG, n = 14 [50.0%] Obsessive-compulsive disorders:			relatively borderline symptomology. It is possible that topiramate exerts a merely modulating effect on aggressive expansive traits. Detail: Topiramate significantly reduced health-related impediments to physical activities, increased the ability to engage in specific activities, reduced physical pain, improved personal assessment of one's own health, increased vitality, reduced restrictions in social and vocational activities, and significantly improved the emotional state of health. The increased affective stability and reduction of pain also conform to the findings of previous studies. Significant changes were seen on all scales of the SCL-90-R (P < 0.01), except psychoticism, and on the Global Severity Index (P < 0.01). These findings conform to previous reports of clear improvements not only in aggressive behaviour but also in anxiety and phobias. They also corroborate and		tions were reported, after blinding was discontinued.	and control group for psychological variables using p value: d = -0.71 (95% CI -0.76, -0.17) Standardised change in weight between baseline and follow-up for topiramate group: d= -0.59 (95% CI -0.99, -0.19); and for placebo group d = 0.25, (95% CI -0.13, 0.62). Standardised mean difference between intervention and control group for weight: d = -2.06 (95% CI -2.71, -1.41)	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			TG, n = 3 [10.7%]; PG, n = 4 [14.3%] Somatoform disorders: TG, n = 17 [60.7%]; PG, n = 18 [64.3%]) BPD diagnosed by SCID.			expand findings from the initial study on obsessiveness, depression, and paranoid ideation. On the other hand, topiramate does not seem to be effective in treating psychoticism. In comparison to the placebo, topiramate resulted in significant improvement on 5 scales of the German Language Version of the Inventory of Interpersonal Problems. Some side effects: but are mild to moderate, often occurring only when topiramate is initiated or increased in dose.				
McMain, S.F., Links, P.S., Gnam, W.H., Guimond, T., Cardish, R.J., Korman, L., & Streiner, D.L. (2009). A randomized trial of dialectical behaviour therapy	RCT Level II	Treatment n=90 Control n= 90 The primary goal: to eliminate behavioural dyscontrol by helping patients develop	Age mean (SD) T=29.4±9.2 C= 31.3±10.6 Gender Female (n, %) T= (81, 90%) C= (84, 82.2%) DSM-IV criteria for BPD via Structured	Dialectical behaviour therapy. Multimodal: Individual sessions (1 hour weekly); skills group (2 hours weekly); phone coaching (2 hours weekly).	General psychiatric management. Consisted of case management, dynamically informed psychotherapy, and symptom-targeted medication management.	Summary: both groups improved on most measures, except the utilization of non-study treatments decreased significantly more in the DBT group than in the general psychiatric management group Detail: The utilization of non-study treatments decreased significantly more in the DBT group than in the general psychiatric management group (odds ratio = 0.52, p = 0.002). The mean adherence scores for essential interventions	Structured Clinical Interview for DSM-IV Axis I Disorders–Patient Edition International Personality Disorder Examination Treatment fidelity: modality specific adherence scales Frequency and severity of suicidal and non-suicidal	Assessed at baseline and every 4 months over the 1-year active treatment phase	Risk of suicide and self-injurious episodes rpb=0.89 Symptom severity (ZRSBPD) rpb =1.13 Depression (BDI) rpb =1.07 Anger (State-Trait Anger	QC 1.1=A 1.2=A 1.3=A 1.4=F 1.5=A 1.6=A 1.7=A 1.8=Treatment 39%; Control 38% 1.9= A 1.10=F 2.1 = (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
versus general psychiatric management for borderline personality disorder. The American journal of psychiatry, (12), 1365-1374 Canada		more effective coping strategies.	Clinical Interview Inclusion: Patients had to meet DSM-IV criteria for BPD, be 18–60 yrs of age, and have had at least two episodes of suicidal or nonsuicidal self-injurious episodes in the past 5 yrs, at least one of which was in the 3 months preceding enrolment. Exclusion: Were limited to having a DSM-IV diagnosis of a psychotic disorder, bipolar I disorder,	Consultation team for therapists mandated (2 hours weekly). Organized according to a hierarchy of targets: suicidal, treatment-interfering, and quality-of-life-interfering behaviours. Explicit focus on self-harm and suicidal behaviour. Treatment involves: dialectical strategies, irreverent and reciprocal communication style,	Individual sessions (1 hour weekly) including medication management based on structured drug algorithm. Therapist supervision meeting mandated (90 minutes weekly). Focus is expanded away from self-harm and suicidal behaviours. Psychodynamic approach emphasized the relational aspects and early attachment relationships. Disturbed	were significantly greater than the mean adherence score for proscribed dialectical behaviour therapy items across all time points. Both groups showed statistically significant decreases in the frequency of suicidal episodes (odds ratio = 0.23, p = 0.01) and nonsuicidal self-injurious episodes (odds ratio = 0.52, p = 0.03). There were no b/w group differences in the frequency of suicidal episodes or nonsuicidal self-injurious episodes. Those with any suicidal or nonsuicidal self-injurious episodes experienced a significant decrease in the medical risk over time, but there was no between-group difference. Using mixed-effects linear growth curve analyses, significant decreases over the 1-year treatment period (but no between-group differences) were found for	self-injurious behaviour episodes: Suicide Attempt Self-Injury Interview Borderline symptoms: Zanarini Rating Scale for BPD General symptoms: Symptom Checklist–90–Revised State-Trait Anger Expression Inventory Beck Depression Inventory Inventory of Interpersonal Problems, 64-item version Health-related quality of life: EQ-5D thermometer Treatment History Interview: self-reported counts of the number of hospital admissions,		Expression Inventory - Anger out) rpb =0.32 Health-related QoL (EQ-5D) rpb =0.24 Symptom distress (SCL-90-R) rpb =0.68 Interpersonal functioning (Inventory of Interpersonal Problems-64) rpb =0.45	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			delirium, dementia, or mental retardation or a diagnosis of substance dependence in the preceding 30 days; having a medical condition that precluded psychiatric medications; living outside a 40-mile radius of Toronto; having any serious medical condition likely to require hospitalization within the next year (e.g., cancer); and having plans to leave the	formal skills training. Behavioural strategies: exposure, contingency management, diary cards, behavioural analysis. Patients encouraged to rely on skills over pills where appropriate (e.g., anxiolytics). Tapering from medications was a treatment goal.	attachment relationships related to emotion dysregulation as a primary deficit. Involves attention to signs of negative transference. Patients were encouraged to use medications concurrently.	the following variables: borderline symptoms, depression, interpersonal functioning, symptom distress, and anger. On health-related quality of life (based on the EQ-5D thermometer), both groups reported improvements, but these changes were not statistically significant. Based on generalized-estimating-equation analysis, participants in both groups showed statistically significant decreases in the total number of emergency department visits (odds ratio = 0.43, $p<0.0001$), with no statistically significant differences between groups. Both groups demonstrated statistically significant reductions in the number of emergency department visits for suicidal behaviour (odds ratio = 0.35, $p<0.0001$), with no between-group differences.	days in hospital, emergency department visits, medications, and outpatient psychosocial treatments. Reasons for Early Termination From Treatment Questionnaire			

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			province in the next 2 yrs							
Schuppert, H., Giesen-Bloo, J., van Gemert, T.G., Wiersema, H.M., Minderaa, R.B., Emmelkamp, P.M., & Nauta, M.H. (2009). Effectiveness of an emotion regulation group training for adolescents--A randomized controlled pilot study. Clinical Psychology & Psychotherapy, 16(6), 467-478.	RCT Level II 4 block randomisation	N=43 ERT+TAU = 23 TAU=20	Age: ERT+TAU = 16.23yo; TAU = 15.9 Gender: ERT+TAU = 95.6% FM; TAU = 80% FM	Emotion Regulation Training (ERT): 17 sessions, one systems meeting and two booster sessions. The main goal of the training is to introduce alternative ways of coping with affective instability, daily stressors and psychological vulnerability. Reducing self-harm or harm to others is another important	Treatment as usual (TAU): medication, individual psychotherapy, system-based therapy, inpatient psychiatric care and emergency services in case of self-harm or suicidal behaviour.	Summary: BPD symptoms and internal locus of control improved over time in ERT group Detail: Repeated measure ANOVAs indicated improvement over time, measured by the total score of the BPDSI-IV (F [1,29] = 6.39; p = 0.02) (Table 3). The other primary outcome measures demonstrated no significant improvement over time (BPDSI-IV subscale affect regulation (F [1,29] = 2.06; p = 0.16) and internal locus of control as measured by the MERLC (F [1,24] = 0.49; p = 0.49)). According to the secondary outcome measures, a trend over time was found on the internalizing subscale of the YSR (F [1,23] = 4.10; p = 0.06), but no significant effect on the externalizing subscale of the YSR (F [1,24] = 2.61; p = 0.12). Repeated measure ANOVAs on the BPDSI-IV showed that there was no significant level	BPDSI-IV to assess current severity and frequency of DSM-IV BPD symptoms. The Multidimensional Emotion Regulation Locus of Control (MERLC) The Youth Self Report (YSR)	Post treatment	BPDSI-IV total score = 0.27 BPDSI-IV affective stability = 0.33 MERLC subscale internal locus of control =-.49 YSR subscale internalizing = 0.04 YSR subscale externalizing = 0.15	QC 1.1=A 1.2=A 1.3=E 1.4=B 1.5=B 1.6=B 1.7=B 1.8=6.5% drop from assessment to randomisation; 39% loss to second assessment ERT & 15% in TAU; 1.9= D 1.10=E 2.1 = (-)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
The Netherlands				issue. The adolescents learn that they can take more responsibility for their behaviour and realize they have a choice in how to (re)act when emotionally distressed.		of change between groups for both the total and the subscale affective stability of the BPDSI-IV (BPDSI-IV total score F [1,29] = 0.07; p = 0.79; BPDSI-IV subscale affect regulation F [1,29] = 0.24; p = 0.63). Other primary outcome measures: significant interaction effect on the adolescents' MERLC subscale internal locus of control (F [1,24] = 9.16; p = 0.006). Adolescents in the ERT group reported an improvement in their feeling of having control over their emotions, whereas the adolescents in the TAU alone group reported a decrease of internal locus of control. The secondary outcome measures for the adolescents showed no significant effect between groups, measured by the YSR, internalizing and externalizing subscales (YSRintern F [1,23] = 0.32; p = 0.58; YSRextern F [1,24] = 0.06; p = 0.82).				
Stoffers, J., Völlm, B.A., Rücker, G.,	Cochrane Systematic Review	Study samples ranged	Adult patients with a	Any drug or a defined combination	Comparison treatments were	Summary: Total BPD severity was not significantly influenced by any drug. There	Primary outcomes: Overall BPD severity Severity of single	Variable	Altogether, 28 RCTs have been included,	Results are mostly based on

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Timmer, A., Huband, N., Lieb, K. (2010) Pharmacological interventions for borderline personality disorder. Cochrane Database of Systematic Reviews. 16 (6). Germany.	Level 1	from n = 16 to n = 314 in size. In total, the included studies provided data from 1742 patients.	formal diagnosis of BPD according to DSM criteria. The studies were conducted in either the USA (14 studies) or in Western European countries (12 studies) 5 in Germany and/or Austria, 2 each in the UK and Spain, and 1 each in Belgium, Ireland and the Netherlands. There were 2 international multicentre trials. 1 took place in 13 study	of drugs administered on a long-term basis (i.e. not only in case of crisis only) with the intention to treat BPD pathology.	classified in four categories: • placebo; • active comparator drug; • combination of drugs; • combined treatment, i.e. drug plus concomitant psychotherapeutic treatment or counselling.	was little evidence for effectiveness of antidepressants. There was little effect of antipsychotics but olanzapine may increase self harming, weight gain Detail: First-generation antipsychotics (flupenthixol decanoate, haloperidol, thiothixene); second-generation antipsychotics (aripirazole, olanzapine, ziprasidone), mood stabilisers (carbamazepine, valproate semisodium, lamotrigine, topiramate), antidepressants (amitriptyline, fluoxetine, fluvoxamine, phenelzine sulfate, mianserin), and dietary supplementation (omega-3 fatty acid) were tested. First-generation antipsychotics were subject to older trials, whereas recent studies focussed on second-generation antipsychotics and mood stabilisers. Data were sparse for individual comparisons, indicating marginal effects for first-generation antipsychotics and antidepressants.	BPD criteria according to DSM (avoidance of abandonment, dysfunctional interpersonal patterns, identity disturbance, impulsivity, suicidal ideation, suicidal behaviour, self-mutilating behaviour, affective instability, feelings of emptiness, anger, psychotic paranoid symptoms, dissociative symptoms) Secondary outcomes: Depression Anxiety General psychiatric pathology: comprehensive measures Mental health status Attrition Adverse effects		covering 22 different comparisons in 10 comparison categories. In the presence of the multitude of different comparisons and outcome variables, most results are based on single study findings only. The study sample sizes were rather small, and ranged, with exception of 2 large trials (Schulz 2007; N= 314; Zanarini 2007; N of patient data used here: 301), between 16 (Hollander 2001) and 108	single study effect estimates. Long-term use of these drugs has not been assessed. Conclusions have to be drawn carefully in the light of several limitations of the RCT evidence that constrain applicability to everyday clinical settings (among others, patients' characteristics and duration of interventions and

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			centres in the USA, South America, and Eastern Europe.			Adverse event data were scarce, except for olanzapine. There was a possible increase in self-harming behaviour, significant weight gain, sedation and changes in haemogram parameters with olanzapine. A significant decrease in body weight was observed with topiramate treatment. All drugs were well tolerated in terms of attrition. Direct drug comparisons comprised two first-generation antipsychotics (loxapine vs. chlorpromazine), first-generation antipsychotic against antidepressant (haloperidol vs. amitriptyline; haloperidol vs. phenelzine sulfate), and second-generation antipsychotic against antidepressant (olanzapine vs. fluoxetine). Data indicated better outcomes for phenelzine sulfate but no significant differences in the other comparisons, except olanzapine which showed more weight gain and sedation than fluoxetine. The only trial testing single vs.			(Soloff 1993; divided into three groups). Therefore, the power to detect significant effects was quite low. In addition, the overall robustness of findings must be considered low for the majority of comparisons.	observation periods). QC 1.1 =A 1.2 =A 1.3 =A 1.4 =A 1.5 =A 2.1 = (++)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						combined drug treatment (olanzapine vs. olanzapine plus fluoxetine; fluxetine vs. fluoxetine plus olanzapine) yielded no significant differences in outcomes.				
Varghese, B.S., Rajeev, A., Norrish, M., A,l,. Khusaiby, S.B.M., (2010) Topiramate for anger control: A systematic review. Indian Journal of Pharmacology. 42(3): 135-41. India	SR Level 1	n = 24 included topirmate. n=5 were included in final analysis.	Study participants were required to be aggressive adults. Studies included participants below 18 yrs of age provided that the mean age of participants clearly indicated that the majority of participants were adults. Age range 16-61 yrs, with a mean age of 41 yrs. Studies were	Included studies were required to have at least one arm in which topiramate was used as intervention. BPD diagnosis = 3 studies Depression diagnosis = 1 study Chronic Backache diagnosis = 1 study Study 1 - The study dealt with women aged between 20 and 35 yrs who were more	Placebo	Summary: With a fairly good quality of studies in the analysis, the study came to a conclusion that there is sufficient evidence to suggest that topiramate is significantly effective in stabilizing trait anger but appears to reduce state anger, anger-out anger-in and hostility. The reduction in the scores was highest in borderline personality disorder (BPD) patients as compared to those with low back ache. Trait Anger dropped by -2.93 (-3.49 to -2.37), especially in female BPD patients. Anger- In reduced more or less uniformly across the studies by -1.43 (-1.84 to -1.03). Anger-Out decreased by -2.8 (-3.19 to -2.42). This effect was minimal among the male BPD patients. Anger Control uniformly increased across the four studies by 2.32 (2.00-2.64).	(a) Four STAXI scales - State Anger, Trait Anger, Anger Out, Anger Control - or any equivalent measure of component or global response. The State Anger scale assesses the intensity of anger as an emotional state at a particular time. The Trait Anger scale measures how often angry feelings are experienced over time. The Anger Expression and Anger Control scales assess relatively independent anger-related traits: (i) expression of anger toward other persons or objects in the environment	8 – 10 weeks.	CALCULATED weighted mean difference -3.16 (-3.64 to -2.68) in State Anger. Limited detail to allow for effect size calculation.	Primary search was Medline only, also did additional screening of Cochrane and PubMed The sample size was relatively small and the percentage of males included is less compared to that of females. The study duration was generally only 8-10

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			conducted among patients who suffered from other types of aggression, including that in BPDs.	susceptible to BPD than men and STAXI was used as the primary outcome measure. Study 2 – This study conducted a directed study for BPD in males wherein the same standards (above) as the previous study in females were applied. There were 22 subjects each in the topiramate and placebo arms. Study 3 – This was a 10-wk study, which enrolled 64		There is sufficient evidence to suggest that topiramate is significantly effective in stabilizing the "trait anger" while reducing the "state anger." "Anger-Out" and "hostility" were significantly reduced. "Anger-In" was the feature that was the least affected, although this was significant. This suggests that topiramate is effective in controlling anger. There was no suggestion of topiramate precipitating psychomorbidity. The studies varied in terms of inclusion criteria such as BPD, depression and even low back ache. There were separate studies for men and women.	(Anger-Out), (ii) holding in or suppressing angry feelings (Anger-In) and (iii) controlling angry feelings by preventing the expression of anger toward other persons or objects in the environment or controlling suppressed angry feelings by calming down or cooling off (Anger Control). Individuals rate themselves on the scales that assess both the intensity of their anger at a particular time and the frequency at which anger is experienced, expressed and controlled. (b) Symptoms: a change in self-reported feelings of anger and impulsiveness, either an increase or decrease in the			weeks, which reduced the incidence of adverse effects and the dropout rate. QC 1.1 =B 1.2 =B 1.3 =B 1.4 =B 1.5 =C 2.1 (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
				subjects, and grouped them into topiramate and placebo arms in a 1:1 ratio. Study 4 – This study on an unrelated condition, i.e. chronic low back pain, topiramate was titrated from 50 mg/day to 300 mg/day in 48 subjects. The effect was compared with a placebo group. Study 5 - In this study 56 females with BPD were randomized to receive topiramate			frequency and severity. (c) Behaviour: a reduction in aggression, either to self or others; a reduction in impulsiveness.			

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
				50-200 mg/day or placebo in a 1:1 ratio						
Zanarini, M.C., & Frankenburg, .R. (2008). A preliminary, randomized trial of psychoeducation for women with borderline personality disorder. Journal of Personality Disorders, 22(3), 284-290 USA	RCT Level II	N= 50 Treatment n=30 Control n= 20	Age mean (SD) in total sample 19.3 ± 1.4 Gender – all female Diagnosis - BPD diagnosed with Diagnostic Interview for DSM-IV Personality Disorders and Revised Diagnostic Interview for Borderlines. These participants were being diagnosed for the first time. Additionally in terms of lifetime disorders,	Psychoeducation on BPD aetiology, phenomenology, co-occurring disorders, treatment options and longitudinal course	Waitlist (took part in workshop at the end of the 12 week study)	Summary: Immediate psychoeducation after diagnosis can lead to reductions in interpersonal storminess and general impulsivity. This may be because increased knowledge may be more useful in helping people control behaviour rather than affects or cognition. Detail: No significant difference in BPD symptoms on ZAN-BPD between groups over time. The mean scores of the groups as a whole declined significantly over time. Declines in interpersonal storminess and general impulsivity (not counting self-mutualisation or suicide) were found to be significantly greater among those in the immediate treatment group than the waitlist. There was no significant difference in SDS impairment ratings between groups. In vocational or social functioning over time. There	Structured Clinical Interview for DSM-IV Axis I disorders Zanarini Rating Scale for DSM-IV BPD (ZAN-BPD) Sheehan Disability Scale (SDS) Knowledge of aspects of BPD	12 weeks	Between group standardised mean differences, d (95% CI): Two forms of impulsivity, d = -0.40 (-0.97, 0.174) Stormy relationships, d = -0.381 (-0.952, 0.190) Other details not reported to calculate effect sizes	QC 1.1=B 1.2=B 1.3=C 1.4=F 1.5=A 1.6=A 1.7=A 1.8=no drop out 1.9= A 1.10=F 2.1 = (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			78% met criteria for a mood disorder, 40% met criteria for a substance use disorder, 28% met criteria for an anxiety disorder and 50% met criteria for an eating disorder. Exclusion: current psychiatric treatment, met criteria for lifetime /current schizophrenia, schizoaffective disorder or bipolar 1 or current substance dependence (except nicotine)			was a trend for vocational but not social functioning to improve over time for the group taken as a whole. Knowledge of BPD increased (6% answered 6+ questions at baseline but 78% answered 6+ correctly after)				

Clinical Question 7. Which psychological therapies are most effective? (CBT, mentalisation, behaviour therapy, psychodynamic, CAT, group therapy, family therapy, schema-focused therapy, transference-focused and DBT, miscellaneous)

NICE Guideline summary

There is very little evidence for the efficacy of individual psychological interventions in the treatment of people with BPD because almost all studies are uncontrolled. The RCT evidence showed some weak evidence that Cognitive Analytical Therapy (CAT) (in young people) and STEPPS may help to improve general functioning, and reduce self-harm and suicide. The effect size for self-harm and suicide outcome was not quite statistically significant for CAT, which was compared with a manualised treatment and 'good clinical practice'. Other outcomes from the studies of CAT and STEPPS, and outcomes from RCTs of other therapies (Cognitive behavioural therapy (CBT), schema-focused psychotherapy and individual dynamic psychotherapy), did not show any benefit of treatment. Data from the study of transference-focused psychotherapy were not extractable so effect sizes could not be calculated and the study was excluded from the analysis. It should also be noted that the studies had few outcomes in common making the dataset as a whole hard to evaluate. The non-RCT evidence suggests that individual psychological interventions are acceptable to people with borderline personality disorder. They showed generally positive outcomes (based on authors' conclusions from statistical significance testing rather than calculating effect sizes from extracted data), which need to be tested against control conditions in randomised trials before firm conclusions about the efficacy of these treatments can be drawn.

Table for The Clinical Question: Psychological treatments (Source - Appendix 16: Characteristics Table for The Clinical Question: Psychological treatments)

CAT vs TAU (manualised good clinical practice)	CHANEN 2008
CBT (non-comparative)	HENGEVELD1996
CBT+TAU vs TAU	DAVIDSON2006
Cognitive analytic therapy (noncomparative)	RYLE2000
Cognitive therapy (non-comparative)	BROWN2004
Cognitive therapy vs Rogerian supportive therapy	COTTRAUX2009
day treatment followed by outpatient group psychotherapy	WILBERG1998
DBT (Dialectical Behavioural Therapy)	HARLEY2007

DBT (non comparative)	ALPER2001 BARLEY1993 CUNNINGHAM2004 LANIUS2003 MCQUILLAN2005 PRENDERGAST2007
DBT vs CCT (control)	TURNER2000
DBT vs CTBE	LINEHAN2006

DBT vs CVT+12 step	LINEHAN2002
DBT vs TAU	KOONS2001 LINEHAN1991 LINEHAN1999 VANDENBOSCH2002
DBT vs TFP vs SPT	-
DBT vs Waitlist	BOHUS2004 CARTER unpub
IGP vs IDP	MUNROEBLUM1995
intensive inpatient treatment (noncomparative)	GABBARD2000
IPT (non-comparative)	MARKOWITZ2006
IPT vs CBT	-
MACT + TAU vs TAU	WEINBERG2006
MACT vs TAU	TYRER2003
MBT (noncomparative)	ANDREA unpub
Partial hospitalisation vs standard psychiatric care	BATEMAN1999
Psychoanalytically-oriented psychotherapy (non-comparative)	LOFFLERSTASTKA2003 STEVENSON2005
Psychoanalytic-interactional therapy (non-comparative)	LEICHSENRING2007
Schema focused approach	FARRELL 2009
Schema therapy (non-comparative)	NORDAHL2005
SFT vs TFP	GIESENBLOO2006
Social Problem Solving + brief psychoeducation vs Waitlist control	-
SSRIs plus IPT	BELLINO2005
STEPPS (non-comparative)	BLUM2002
STEPPS + TAU vs TAU	BLUM2008
TFP vs DBT vs SPT	CLARKIN2004

Updated search

Summary

Interpretation of the updated search for Q7 should be made with caution as many studies were conducted prior to 2008 and more recent studies often test more complex clinical questions, or measure specific outcomes, beyond efficacy or effectiveness. Refer to the meta-analysis for Q6 for greater detail and assistance with interpretation. This question should be considered in conjunction with the NICE guideline summary.

Treatment completion rates are good for most types of treatment. Most treatments showed positive effects but many had mixed results with both the treatment and control groups improving. Psychoanalytic/dynamic therapies showed good outcomes the only recent systematic review of psychological interventions for BPD.

Summary Table

Reference	Quality	DBT	SFT	CBT	STEPPS	MBT	IPT	Dynamic/analytic oriented therapies
Barnicot, K., Katsakou, C., Marougka, S., Priebe, S. (2011) Treatment completion in psychotherapy for borderline personality disorder - a systematic review and meta-analysis. Acta Psychiatrica Scandinavica; 23(5):327-38	+	Treatments under 12 months: 53-100% completion (14 studies) Treatments over 12 months: 36-89% (14 studies)	Treatments under 12 months: 100% (1 study) Treatments over 12 months: 73-85% (2 studies)	Treatments under 12 months: no studies Treatments over 12 months: 69-75% (2 studies)	Treatments under 12 months: 48-92% completion (4 studies) Treatments over 12 months: no studies	Treatments under 12 months: no studies Treatments over 12 months: 88% (1 study)		Treatments under 12 months: no studies Treatments over 12 months: 49-71% (3 studies)
Carter, G.L., Willcox, C.H., Lewin, T.J., Conrad, A.M., & Bendit, N. (2010). Hunter DBT project: Randomized controlled trial of dialectical behaviour therapy in women with borderline personality disorder. The Australian and New Zealand journal of psychiatry, (2), 162-173.	++	No difference btw DBT, WL and TAU+WL on any measures						
Cottraux, J., Note, I.D., Boutitie, F., Milliery, M., Genouihlac, V., Yao, S.N., Note, B., Mollard, E.,				CT reduced hopelessness and impulsivity				

Reference	Quality	DBT	SFT	CBT	STEPPS	MBT	IPT	Dynamic/analytic oriented therapies
Bonasse, F., Gaillard, S., Djamoussian, D., De Mey Guillard, C., Culem, A. & Gueyffier, F. 2009. Cognitive Therapy versus Rogerian Supportive Therapy in Borderline Personality Disorder. Psychotherapy and Psychosomatics, 78, 307-316. Cognitive Therapy Rogerian Supportive Therapy				at 24 weeks and general psychopatholog y at 104 weeks. No other differences were found.				
Farrell, J. M., Shaw, I. A., & Webber, M. A. (2009). A schema-focused approach to group psychotherapy for outpatients with borderline personality disorder: a randomized controlled trial. Journal of behaviour therapy and experimental psychiatry, 40(2), 317-328. RCT Scheme-focused Group psychotherapy								
Harned, M.S., Chapman, A.L., Dexter-Mazza, E. T., Murray, A., Comtois, K.A., & Linehan, M.M. (2008). Treating co-occurring Axis I disorders in recurrently suicidal women with borderline	+	DBT more likely than community treatment to reach full remission for Axis I disorders						

Reference	Quality	DBT	SFT	CBT	STEPPS	MBT	IPT	Dynamic/analytic oriented therapies
personality disorder: A 2-year randomized trial of dialectical behaviour therapy versus community treatment by experts. Journal of Consulting and Clinical Psychology, 76(6), 1068-1075.								
McMain, S.F., Links, P.S., Gnam, W.H., Guimond, T., Cardish, R.J., Korman, L., & Streiner, D.L. (2009). A randomized trial of dialectical behaviour therapy versus general psychiatric management for borderline personality disorder. The American journal of psychiatry, (12), 1365-1374	++	DBT reduced use of non-study treatments. No difference btw groups on numbers of self harm or suicidal events						
Soler, J., Pascual, J.C., Tiana, T., Cebria, A., Barrachina, J., Campins, M.J., Perez, V. (2009). Dialectical behaviour therapy skills training compared to standard group therapy in borderline personality disorder: A 3-month randomised controlled clinical trial. Behaviour Research and Therapy, 47(5), 353-358.	+	DBT skills training group improved on psychopathology, Axis I symptoms and general functioning but no difference on BPD symptoms compared to standard group therapy						
Ball S.A., Maccarelli, L.M., LaPaglia, D.M., Ostrowski, M.J . (2011) Randomized trial of dual-focused vs. single-focused individual therapy for	+		Both groups improved. No benefit of Dual focused schema therapy over					

Reference	Quality	DBT	SFT	CBT	STEPPS	MBT	IPT	Dynamic/analytic oriented therapies
personality disorders and substance dependence. J Nerv Ment Dis 199(5):319-28.			individual drug counselling for people with co-occurring substance abuse and BPD					
Davidson, K. M., Tyrer, P., Norrie, J., Palmer, S.J., & Tyrer, H. (2010). Cognitive therapy v. Usual treatment for borderline personality disorder: Prospective 6-year follow-up. British Journal of Psychiatry, 197(6), 456-462.	++			CBT reduced suicide attempts compared to TAU at 6 year follow-up				
Rowe S.L, Jordan J, McIntosh V.V, Carter F.A, Bulik C.M, Joyce P.R. (2008) Impact of borderline personality disorder on bulimia nervosa. Aust N Z J Psychiatry. Dec; 42(12):1021-9.	NA			All three groups improved. Those with bulimia nervosa did not have worse outcomes compared to those who did not have bulimia nervosa				
Morey, L.C., Lowmaster, S.E., & Hopwood, C.J. (2010). A pilot study of manual-assisted cognitive therapy with a therapeutic assessment augmentation for borderline personality disorder. Psychiatry Research, 178(3), 531-535.				Manual assisted cognitive therapy (MACT) plus therapeutic assessment v MACT alone: Both groups improved but no difference				

Reference	Quality	DBT	SFT	CBT	STEPPS	MBT	IPT	Dynamic/analytic oriented therapies
				between groups on other measures. (TA included collaborative case formulation and motivational feedback on assessment)				
Bateman, A., & Fonagy, P. (2008). 8-year follow-up of patients treated for borderline personality disorder: Mentalization-based treatment versus treatment as usual. American Journal of Psychiatry, 165(5), 631-638.	+					Those in MBT showed greater reduction in self harm and suicide, ED visits, treatment attendance. 13% v 87 of TAU still met criteria for BPD at 8 year follow-up. TAU group used more external treatments and greater length of use of medication		
Bateman, A., & Fonagy, P. (2009). Randomized controlled trial of outpatient mentalization-based treatment versus structured clinical management for borderline personality disorder. American Journal of Psychiatry, 166(12), 1355-1364.	++					Greater reductions in self harm, suicide, hospitalisation and medication use in MBT than clinical mgt. Greater increases in general functioning,		

Reference	Quality	DBT	SFT	CBT	STEPPS	MBT	IPT	Dynamic/analytic oriented therapies
						depression and social adjustment, relationships in MBT.		
Bos, E.H., Van Wel, E.B., Appelo, M.T., & Verbraak, M.J. (2010). A randomized controlled trial of a Dutch version of systems training for emotional predictability and problem solving for borderline personality disorder. Journal of Nervous and Mental Disease, 198(4), 299-304.	+				Both groups improved in measures of BPD pathology and general functioning, QoL, medication use and treatment attendance but STEPPS showed greater improvement than TAU. No differences in parasuicide measures.			
Schuppert, H., Giesen-Bloo, J., van Gemert, T.G., Wiersema, H.M., Minderaa, R.B., Emmelkamp, P.M., & Nauta, M.H. (2009). Effectiveness of an emotion regulation group training for adolescents--A randomized controlled pilot study. Clinical Psychology & Psychotherapy, 16(6), 467-478.	-				Both Emotion regulation training adapted from STEPPS and TAU improved over time but no difference was found between groups.			
Bellino, S., Rinaldi, C., Bogetto, F. (2010) Adaptation of interpersonal psychotherapy to borderline personality disorder:	+						Small sample size limits ability to draw strong conclusions but	

Reference	Quality	DBT	SFT	CBT	STEPPS	MBT	IPT	Dynamic/analytic oriented therapies
A comparison of combined therapy and single pharmacotherapy. Canadian Journal of Psychiatry. 55(2), 74-81.							results suggest that combined therapy was superior to monotherapy in relieving anxiety, improving functioning and alleviating the severity of some symptoms of BPD during the 32 weeks of the trial	
Bellino, S., Zizza, M., Camilla, R., & Filippo, B. (2006) Combined treatment of major depression in patients with borderline personality disorder: A comparison with pharmacotherapy. Canadian Journal of Psychiatry, 51(7), 453-460.	+						Small sample size does not allow strong conclusions to be drawn from this study but results suggest that combined therapy (Fluoxetine + IPT) for BPD patients with comorbid depression may be superior to fluoxetine (+ clinical mgt) in improving symptoms of depression and social and psychological functioning	
Doering, S., Horz, S., Rentrop,	-							Transference

Reference	Quality	DBT	SFT	CBT	STEPPS	MBT	IPT	Dynamic/analytic oriented therapies
M., Fischer-Kern, M., Schuster, P., Benecke, C., Buchheim, A., Martius, P., Buchheim, P. (2010). Transference-focused psychotherapy v. Treatment by community psychotherapists for borderline personality disorder: Randomised controlled trial. British Journal of Psychiatry, 196(5), 389-395.								focused psychotherapy resulted in reduced BPD symptoms compared to Treatment by community psychotherapist. Higher drop out in the control group. No other differences.
Gregory, R.J., DeLucia-Deranja, E., Mogle, J.A. (2010) Dynamic deconstructive psychotherapy versus optimized community care for borderline personality disorder co-occurring with alcohol use disorders: a 30-month follow-up. J Nerv Ment Dis. 198, 292-298.	+							Dynamic deconstructive psychotherapy showed greater improvements on BPD and depressive symptoms and dissociation. Both groups improved suicidal and self harm behaviours and in heavy drinking but DDP showed greater improvement.
Gregory, R. J., Remen, A. L., Soderberg, M., & Ploutz-Snyder, R. J. (2009). A controlled trial of psychodynamic psychotherapy for co-occurring borderline	- Not enough detail to rate							Both DDP and TAU showed declines on a number of measures including suicidal/self

Reference	Quality	DBT	SFT	CBT	STEPPS	MBT	IPT	Dynamic/analytic oriented therapies
personality disorder and alcohol use disorder: Six-month outcome. Journal of the American Psychoanalytic Association, 57(1), 199-205.								harming behaviour and intoxication but only small differences between groups.
Kramer, U., Berger, T., Kolly, S., Marquet, P., Preisig, M., De Roten, Y., Despland, J.N., Caspar, F. (2011). Effects of motive-oriented therapeutic relationship in early-phase treatment of borderline personality disorder: A pilot study of a randomized trial. Journal of Nervous and Mental Disease, 199(4), 244-250.								Patient ratings of therapeutic alliance were improved in the MOTR group compared to the TAU group but no other differences were found.

Systematic reviews

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Barnicot, K., Katsakou, C., Marougka, S., Priebe, S. (2011) Treatment completion in psychotherapy for borderline personality disorder - a systematic review and meta-analysis. Acta Psychiatrica Scandinavica; 23(5):327-38. UK	SR Level 1 Systematic Review - Only studies published between 1980 and 2009 were searched to focus the search on the new treatments that have recently been developed specifically for or adapted for treating BPD.	N = 41 Both RCT and observational studies were included.	N = 41 studies were included: participants were adults from inpatient, outpatient and forensic settings. Inpatient = 3 studies Outpatient = 34 studies Forensic = 2 studies 2 systematic reviews were completed n = 16 studies included self – harm. n = 4 studies included AOD dependence. 20 studies were female only.	MBT - mentalisation-based therapy = 1 study STEPPS - systems training for emotional predictability and problem solving = 3 studies DBT – dialectical behaviour therapy = 28 studies CBT- cognitive behavioural therapy = 2 studies TFP - transference-focused psychotherapy = 3 studies SFT - schema-focused therapy = 3	Treatment as usual	Summary: Most studies had a reasonably good completion rate (between 36-100% average 75%); there were no apparent differences between types of treatment in completion, although most studies were of DBT. Detail: Completion rates ranging from 36% to 100% - substantial between-study heterogeneity. Random effects meta-analyses yielded an overall completion rate of 75% (95% CI: 68-82%) for interventions of <12 months duration, and 71% (95% CI: 65-76%) for longer	Treatment Completion Rates Treatment Completion vs dropout	TX length ranged from 3 – 18 months.	A meta-analysis yielded an overall completion rate of 71% for interventions of 12 months or greater duration, and 75% for interventions of a shorter duration. There was a high degree of heterogeneity in completion rates between studies.	Only searched two databases – Medline and PsycINFO. The main limitation of this review is that it included eight different interventions, which were applied in a variety of treatment settings, patient groups and treatment lengths. QC 1.1 =A 1.2 =A 1.3 =B 1.4 =A 1.5 =B 2.1 (+)

				studies ERGT - emotion regulation group therapy = 1 study DDP - dynamic deconstructive psychotherapy = 1 study		interventions. Eggers test for publication bias was significant for both analyses (P 0.01). The funnel plots could be interpreted as suggesting that smaller studies were more likely to be published if they had a high completion rate. Study characteristics such as treatment model and treatment setting did not explain between-study heterogeneity. In individual studies, factors predicting dropout status included commitment to change, the therapeutic relationship and impulsivity, whilst sociodemographics were consistently non-predictive.				

DBT

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Carter, G.L., Willcox, C.H., Lewin, T.J., Conrad, A.M., & Bendit, N. (2010). Hunter DBT project: Randomized controlled trial of dialectical behaviour therapy in women with borderline personality disorder. The Australian and New Zealand journal of psychiatry, (2), 162-173.	RCT Level II The purpose of the present study was to compare dialectical behaviour therapy (DBT) and the control condition of treatment as usual plus weight list (WL) for DBT (TAU+WL).	N=60 Treatment n= 27 Control n= 33	Age mean (SD): Treatment 24.5 ± 6.12; Control 24.7 ± 6.15 Gender: all female Diagnosis: BPD via clinical interview by a psychiatrist using DSM-IV criteria. To be in the study, needed a history of multiple episodes of deliberate self-harm, at least three self-reported episodes in the preceding 12 months. Exclusion: Exclusion	Modified DBT: team-based approach including individual therapy, group-based skills training, telephone access to an individual therapist and therapist supervision groups following the model of treatment developed by Linehan et al. The main change to the Linehan et al. model was the telephone access to individual therapists. In the present study telephone access was delivered using a group roster	WL + TAU The control condition was a 6-month WL for DBT while receiving TAU (TAU+WL). Subjects, both in the initial DBT group and in the TAU+WL group who came to DBT after 6 months were offered 12 months DBT treatment, although the comparison between groups was restricted to the first 6 months of DBT versus TAU+WL.	Summary: The study found no statistically significant differences between modified DBT and waitlist control/TAU except for some quality of life measures. There were trends towards modified DBT in reductions in hospitalisations, shorter lengths of stay, days in bed. Detail: The present study found reductions in psychiatric hospitalization for both DBT and WL+TAU over time but no significant benefit in favour of DBT for the binary outcome, the mean event rate or the mean length of stay for those with an admission at the end-point of the trial. There were no significant differences in proportions for general hospital admission for DSH or for any psychiatric admission. The length of stay overall, or the length of stay for those with either type of admission was not	The primary outcomes (differences in proportions and event rates) of any deliberate self-harm (DSH) event; general hospital admission for DSH and psychiatric admission for any reason; and mean difference in length of stay for any hospitalization. Secondary outcomes were disability and quality of life measures. Specific measures: Composite International Diagnostic Interview modules: anxiety, depression, bipolar disorders, alcohol abuse and dependence, substance abuse and dependence International Personality Disorder Examination Questionnaire	3 and 6 month follow-up	BDQ days in bed, d =-0.66 (-1.25, -0.07) BDQ days out of role, d = -0.43 (-1.01, 0.15) Days in hospital, d = -0.16 (-0.62, 0.30) No. hospital admissions, d = -0.22 (-0.68, 0.24) No. hospital presentations without admission, d= 0.03 (-0.43, 0.49) No. self-harm episodes in previous 3 months, d = -0.18 (-0.64, 0.28) WHOQOL-BREF Environmental domain, d= 0.43 (-0.14, 0.99) WHOQOL-BREF Physical domain, d= 0.69 (0.11, 1.27) WHOQOL-BREF	There are several possible explanations given to as to why DBT was not effective in this study: regression to background (pre-baseline) levels, the Hawthorne effect whereby both groups improved because of the effect of being in a study, the potentially powerful effect of being in a 6 month TAU+WL group for DBT for the control condition, beneficial effects of the TAU condition available in the Hunter region, modifications to standard DBT, the possible

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			criteria were presence of a disabling organic condition, schizophrenia, bipolar affective disorder, psychotic depression, florid antisocial behaviour, or developmental disability	of DBT individual therapists (not contact with each participant's individual therapist) between 8:30 a.m. and 10 p.m., and telephone contact with the local psychiatric hospital between 10 p.m. and 8:30 a.m. Treatment subjects were also assigned to the relevant skills training group, meeting weekly with the modules running in the following order: Interpersonal Effectiveness, Emotion Regulation and Distress Tolerance.		significantly different, although the DBT group tended to have shorter lengths of stay. For the per-protocol analyses, there were no significant differences for the proportion of patients with any DSH episode in 6 months, or for the number of self-harm episodes for the baseline–3 months and 3–6 months periods. There was a significant benefit in favour of DBT for days spent in bed but no significant effect for days out of role. There was a significant beneficial effect in favour of DBT, for three of the four domains of quality of life: Physical, Psychological and Environmental.	Brief Disability Questionnaire Lifetime Parasuicidal Count-2 Parasuicidal History Interview- 3 month period WHO Quality of Life-BREF version		Psychological domain, d= 0.65 (0.07, 1.23) WHOQOL-BREF Social domain, d= -0.04 (-0.60, 0.53)	inferiority of training of DBT therapists to that of those in other studies or inferior adherence to the DBT methods despite adequate training, and methodological differences. Very clear on methods of randomisation and concealment (sealed envelopes). Randomization occurred after baseline assessment. Hospitalisation data was intention to treat but rest was per-protocol. Large discrepancy in drop outs between groups.

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				Each module ran for 8 weeks. Groups had a minimum of 4 members before commencement and a maximum of 8 members. Entry to the skills group occurred only at the commencement of the next skills module.						QC 1.1=A 1.2=A 1.3=A 1.4=F 1.5=A 1.6=B 1.7=A 1.8=47.4% (TX) and 11.4(C) 1.9= B 1.10= 2.1 = (++)
Harned, M.S., Chapman, A.L., Dexter-Mazza, E.T., Murray, A., Comtois, K.A., & Linehan, M.M. (2008). Treating co-occurring Axis I disorders in recurrently suicidal women with borderline	RCT Level II Participants were randomly assigned to condition by the participant coordinator, who used a computerized adaptive	N=101 T ; n=52 C ; n= 49	Age mean: T= 29.0; C= 29.6 Gender: all female Diagnosis: Participants were 101 women (age 18–45) who met criteria for BPD and reported at least two suicide attempts	Dialectical Behaviour Therapy (DBT) vs Community Treatment by Experts (CTBE)	The CTBE condition was developed to control for expertise, treatment allegiance, availability of a clinical supervision group, prestige, general factors and assistance in finding a	Summary: There were no differences between DBT and community treatment on number of Axis I disorders. But DBT were more likely to reach full remissions. Those with substance use disorders were more often abstinent. Overall, DBT and CTBE patients did not significantly differ in the proportion of Axis I disorders that reached full remission or that subsequently relapsed.	Structured Clinical Interview for DSM–III–R Personality Disorders and International Personality Disorders Examination TX HX interview assessed psychotropic medications. Longitudinal Interval Follow-Up Evaluation (LIFE): retrospective ratings of Axis I disorders for each	1 year (+ 4 mthly assessments during 12 mth treatment)	Standardised mean differences between treatment groups d (95% CI) Proportion of Axis I disorders reaching full remission, d = 0.20 (-0.24, 0.63) Proportion of fully remitted Axis I disorders that later relapsed, d =	Data was from the Linehan et al (2006) study to examine the efficacy of DBT versus CTBE in treating co-occurring Axis I disorders among suicidal BPD patients. Because patients in DBT reported fewer BPD criterion behaviours (i.e., suicide

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personality disorder: A 2-year randomized trial of dialectical behaviour therapy versus community treatment by experts. Journal of Consulting and Clinical Psychology, 76(6), 1068-1075 USA	minimization randomization procedure that matched participants on five primary prognostic variables.		and/or non-suicidal self-injury acts in the past 5 years, with at least one act in the 8-week pre-study period. BPD diagnosed by Structured Clinical Interview for DSM–III–R Personality Disorders and International Personality Disorders Examination Exclusion: Exclusion criteria were (a) schizophrenia, schizoaffective disorder, bipolar disorder, psychotic		therapist, availability of affordable and sufficient treatment hours, and therapist gender, training, and clinical experience. Community mental health leaders nominated CTBE therapists as experts in the treatment of difficult patients. CTBE therapists excluded who self-identified as cognitive or behavioural in orientation.	For specific Axis I disorders, DBT patients were significantly more likely to achieve full remission from SDD than were CTBE patients. DBT patients spent significantly more time in partial remission and less time in no remission from SDD than did CTBE patients. Survival analysis of the time to the first full remission did not indicate significant differences between treatments for any Axis I disorder. Similarly, DBT patients and CTBE patients did not significantly differ in rates of relapse for any Axis I disorder. DBT patients with SDD reported a significantly greater proportion of drug- and alcohol-abstinent days across time than did CTBE patients with SDD.	week of the study. Time line follow-back procedure: assigned weekly psychological status ratings (PSRs) for each disorder identified at pre-treatment via the SCID–I. For substance dependence disorders (SDD), used the remission criteria from the Diagnostic and Statistical Manual of Mental Disorders - full remission as at least 8 consecutive weeks with minimal or no symptoms. Proportion of days abstinent from drugs and alcohol during treatment and follow-up measured via TLFB.		0.02 (-0.50, 0.54) Comparison rates of full remission (Cohen's w): Remission MDD, w =0.2 (-0.05, 0.45) Remission Panic, w = 0.06, (0.28, 0.41) Remission PTSD, w =0.12 (-0.18, 0.42) Remission other anxiety disorders, w = 0.08 (-0.25, 0.41) Remission SDD, w = 0.55 (0.17, 0.93) Remission Eating Disorder, w = 0.12 (-0.39, 0.63) Remission All disorders combined, w = 0.08 (-0.14, 0.3) Time spent in not remission of SDD, d = 1.15 (0.07, 2.11). No other effect	attempts) and less psychotropic medication use during the study than did CTBE patients (Linehan et al., 2006), they also examined whether these variables explained any significant group differences in Axis I disorder remission. QC 1.1=A 1.2=A 1.3=B 1.4=B 1.5=A 1.6=B 1.7=A 1.8=All were analysed in intention-to-treat but: 30% treatment dropped out of treatment/lost to follow-up;

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			disorder not otherwise specified, or mental retardation; (b) a seizure disorder requiring medication; (c) a mandate to treatment; or (d) the need for primary treatment for another debilitating condition.			DBT and CTBE patients with SDD did not significantly differ in the number of BPD criteria met or in use of psychotropic medication.			sizes were significant for time spent in full, partial or no remission for any disorder. Rate of relapse was also not significant. No. of BPD criteria met, d = 0.16 (-0.95, 1.24). Use of psychotropic medications, d = 0.79 (-0.24,1.73)	71% control dropped out/lost to follow-up 1.9= A 1.10=F 2.1 = (+)
McMain, S.F., Links, P.S., Gnam, W.H., Guimond, T., Cardish, R.J., Korman, L., & Streiner, D.L. (2009) A randomized trial of dialectical behaviour therapy	RCT Level II	Treatment n=90 Control n= 90 The primary goal: to eliminate behavioural dyscontrol by helping	Age mean (SD) T=29.4±9.2 C= 31.3±10.6 Gender Female (n,%) T= (81, 90%) C= (84, 82.2%) DSM-IV criteria for BPD via	Dialectical behaviour therapy (DBT). Multimodal: Individual sessions (1 hr weekly); skills group (2 hrs weekly); phone coaching (2 hrs weekly). Consultation team for	General psychiatric management. Consisted of case management, dynamically informed psychotherapy, and symptom-	Summary: DBT reduced use of non-study treatments. No difference between groups on numbers of self harm or suicidal events Detail: The utilization of non-study treatments decreased significantly more in the DBT group than in the general psychiatric management group (odds ratio = 0.52, p	Structured Clinical Interview for DSM-IV Axis I Disorders–Patient Edition International Personality Disorder Examination Treatment fidelity: modality specific adherence scales Frequency and severity of suicidal	Assessed at baseline and every 4 months over the 1-year active treatment phase	Risk of suicide and self-injurious episodes rpb = 0.89 Symptom severity (ZRSBPD) rpb = 1.13 Depression (BDI) rpb = 1.07	QC 1.1=A 1.2=A 1.3=A 1.4=F 1.5=A 1.6=A 1.7=A 1.8=Treatment 39%; Control 38% 1.9= A 1.10=F 2.1 = (++)

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versus general psychiatric management for borderline personality disorder. The American journal of psychiatry, (12), 1365-1374 Canada		patients develop more effective coping strategies.	Structured Clinical Interview Inclusion: Patients had to meet DSM-IV criteria for BPD, be 18–60 yrs of age, and have had at least two episodes of suicidal or nonsuicidal self-injurious episodes in the past 5 yrs, at least one of which was in the 3 months preceding enrolment. Exclusion: Were limited to having a DSM-IV diagnosis of a psychotic disorder, bipolar I	therapists mandated (2 hrs weekly). Organized according to a hierarchy of targets: suicidal, treatment-interfering, and quality-of-life-interfering behaviours. Explicit focus on self-harm and suicidal behaviour. Treatment involves: dialectical strategies, irreverent and reciprocal communication style, formal skills training. Behavioural strategies: exposure, contingency management,	targeted medication management. Individual sessions (1 hour weekly) including medication management based on structured drug algorithm. Therapist supervision meeting mandated (90 minutes weekly). Focus is expanded away from self-harm and suicidal behaviours. Psychodynamic approach, emphasized the	= 0.002). The mean adherence scores for essential interventions were significantly greater than the mean adherence score for proscribed dialectical behaviour therapy items across all time points. Both groups showed statistically significant decreases in the frequency of suicidal episodes (odds ratio = 0.23, p = 0.01) and nonsuicidal self-injurious episodes (odds ratio = 0.52, p = 0.03). There were no between group differences in the frequency of suicidal episodes or nonsuicidal self-injurious episodes. Those with any suicidal or nonsuicidal self-injurious episodes experienced a significant decrease in the medical risk over time, but there was no between-group difference. Using mixed-effects linear	and non-suicidal self-injurious behaviour episodes: Suicide Attempt Self-Injury Interview Borderline symptoms: Zanarini Rating Scale for BPD General symptoms: Symptom Checklist–90–Revised State-Trait Anger Expression Inventory Beck Depression Inventory Inventory of Interpersonal Problems, 64-item version Health-related quality of life: EQ-5D thermometer Treatment History Interview: self-reported counts of the number of hospital admissions, days in hospital, emergency department visits, medications, and		Anger (State-Trait Anger Expression Inventory - Anger out) rpb = 0.32 Health-related QoL (EQ-5D) rpb = 0.24 Symptom distress (SCL-90-R) rpb = 0.68 Interpersonal functioning (Inventory of Interpersonal Problems-64) rpb = 0.45	

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			disorder, delirium, dementia, or mental retardation or a diagnosis of substance dependence in the preceding 30 days; having a medical condition that precluded psychiatric medications; living outside a 40-mile radius of Toronto; having any serious medical condition likely to require hospitalization within the next year (e.g., cancer); and having plans to leave the	diary cards, behavioural analysis. Patients encouraged to rely on skills over pills where appropriate (e.g., anxiolytics). Tapering from medications was a treatment goal.	relational aspects and early attachment relationships. Disturbed attachment relationships related to emotion dysregulation as a primary deficit. Involves attention to signs of negative transference. Patients were encouraged to use medications concurrently.	growth curve analyses, significant decreases over the 1-year treatment period (but no between-group differences) were found for the following variables: borderline symptoms, depression, interpersonal functioning, symptom distress, and anger. On health-related quality of life (based on the EQ-5D thermometer), both groups reported improvements, but these changes were not statistically significant. Based on generalized-estimating-equation analysis, participants in both groups showed statistically significant decreases in the total number of emergency department visits (odds ratio = 0.43, $p<0.0001$), with no statistically significant differences between groups. Both groups demonstrated statistically significant	outpatient psychosocial treatments. Reasons for Early Termination From Treatment Questionnaire			

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			province in the next 2 yrs.			reductions in the number of emergency department visits for suicidal behaviour (odds ratio = 0.35, p<0.0001), with no between-group differences.				
Soler, J., Pascual, J.C., Tiana, T., Cebria, A., Barrachina, J., Campins, M.J., Perez, V. (2009). Dialectical behaviour therapy skills training compared to standard group therapy in borderline personality disorder: A 3-month randomised controlled clinical trial. Behaviour Research and Therapy, 47(5), 353-358.	RCT Level II	Treatment n = 29 Control n = 30	Age mean (SD) T = 28.45 ±6.55 C = 29.98±5.63 Gender Female (n,%) T = (23, 79.3%) C = (26, 86.7%) Diagnosis: BPD via Structured Clinical Interview for DSM-IV Axis II Disorders (SCID-II) and the Revised Diagnostic Interview for Borderlines (DIB-R). Exclusion:	Dialectical behaviour therapy - Skills training (DBT-ST) DBT-ST and SGT, consisted of thirteen psychotherapy sessions of 120 min each, 2 therapists (a male and a female) for each group, in groups of 9–11 participants. The DBT format used was adapted from the standard version, applying one of the four modes of intervention: skills training. DBT-ST included all the	Standard group therapy (SGT) The SGT format was oriented to provide a relational experience, allowing people with BPD to share their characteristic difficulties. Prominent techniques used were interpretation (although this was not used systematically), highlighting, exploration, clarification	Summary: DBT skills training group improved on psychopathology, Axis I symptoms and general functioning but no difference on BPD symptoms compared to SGT Detail: No significant differences of mean number of attended sessions between the two groups. DBT-ST group showed a significant improvement in more psycho- pathology scales. DBT-ST group showed a greater decrease in depression, anxiety and general psychiatric symptoms compared with the SGT group. Regarding the SCL90-R, HLM analysis showed statistically significant differences in the	BPD core symptoms: Clinical Global Impression-BPD (CGI-BPD) Hamilton Rating Scale-Depression (HRSD-17) Hamilton Rating Scale-Anxiety (HRSA) Psychotic symptoms: Brief Psychiatric Rating Scale (BPRS) Psychiatric symptoms: Symptom Checklist, Revised (SCL90-R) Hostility/irritability: Buss–Durkee Inventory (BDI). Impulsivity: Barrat Inventory (BI). In addition to clinical scales, they rated	13 weekly sessions	Between group standardised mean differences d(95% CI) No. of medications, d = -0.16 (-0.45, 0.13) No. of non-study tre, d = -0.39 (-0.690, -0.10) HRSD-17, d = -0.98 (-1.52, -0.44) HRSA, d = -0.68 (-1.21, -0.16) BPRS, d =-0.67 (-1.19, -0.14) BDI Irritability, d = -0.61 (-1.13, -0.09) BDI Indirect Hostility, d=0.51 (-1.03, 0.01) SCL-90-R GSI, d = -0.42 (-0.95,	QC 1.1=A 1.2=A 1.3=E 1.4=B 1.5=B 1.6=A 1.7=A 1.8=Treatment: 34% drop out; Control: 63% drop out; Intention to treat analysis 1.9= A 1.10=F 2.1 = (+) Large differences in retention

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Spain			Inclusion criteria consisted of: 1) meeting the DSM-IV diagnostic criteria for BPD; 2) age between 18 and 45 yrs; 3) no comorbidity with schizophrenia, drug-induced psychosis, organic brain syndrome, alcohol or other psychoactive substance dependence, bipolar disorder, mental retardation, or major depressive episode in course; 4) Clinical Global Impression	original skills. These skills can be divided into those that promote change, interpersonal effectiveness and emotional regulation skills, and those that promote acceptance, mindfulness and distress tolerance skills. Similar to other skills training in behavioural treatments, DBT-ST includes teaching, in-session practice of new skills and homework assignments to practice each skill every week. DBT-ST intervention	and confrontation. The therapists mainly played a role of conductor in group interactions, and targeted specially nihilistic or destructive interactions, characteristic BPD interactions and those that could interfere with group functioning. SGT interventions were led by two experienced psychodynamic-oriented psychotherapists.	psychoticism subscale, and in the BDI irritability subscale. A greater decrease was detected in the DBT-ST condition. Both treatment conditions showed significant reductions in CGI-BPD global severity scores. However, no significant differences were displayed between groups in HLM analysis. In this measure, several specific sub-scales, such as: anger, emptiness, and affect instability, had a significantly greater reduction in DBT-ST compared to SGT. No differences were seen in the other scales (BI) or behavioural reports (number of self-harm behaviours, suicides or emergency visits) used in the study.	self-injury, suicide attempts, and visits to psychiatric emergency services		0.09) SCL-90-R Interperson, d = -0.81 (-1.34, -0.28) SCL-90-R Hostility, d = -0.34 (-0.85, 0.17) SCL-90-R Psychoticism, d = -0.58 (-1.10, -0.06) CGI-BPD Global, d = -1.02, (-1.57, -0.48) CGI-BPD Unstable rel, d = -0.29 (-0.80, 0.22) CGI-BPD Impulsivity, d = -0.62 (-1.15, -0.10) CGI-BPD Suicide, d= -0.10 (-0.61, 0.41) CGI-BPD Affect Instability, d = -1.08 (-1.63, -0.53) CGI-BPD Anger, d = -0.85 (-1.38, -0.32) CGI-BPD	

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			of Severity (CGI-S) score ≥ 4; 5) no current psychotherapy.	was led by two cognitive behavioural psychotherapists with prior experience in BPD group therapy					Emptiness, d = -0.44 (-0.95, 0.08) CGI-Global Improv-Patient, d = 0.68 (0.16, 1.21)	

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Ball, S.A., Maccarelli, L.M., LaPaglia, D.M., Ostrowski, M.J. (2011) Randomized trial of dual-focused vs. single-focused individual therapy for personality disorders and substance dependence. J Nerv Ment Dis 199(5), 319-28. USA	RCT Level II	N=105 T= 54 C= 51	105 residents, 81% male, mean age 26.5 yrs, 53% European-America, 27% African-American 29% current DSM-IV diagnosis of substance dependence, lifetime diagnoses: alcohol 41%, cocaine 31%, cannabis 31%, opiates 20%. Mean number of previous AOD treatment = 2, mean previous psychiatric treatment = 1.2, mean lifetime criminal convictions = 7.3, mean arrests = 13.7, mean number of moths incarcerated = 16.1. 29.5% (n = 31) met Personality Diagnostic	Manual-guided, weekly Dual Focused Schema Therapy (DFST) individual therapy delivered during the first 6 months in a residential TC. DFST = integrated cognitive behavioural coping skills for substance use with targeted interventions for early maladaptive affective reactions, relational problems, and maladaptive	Manual-guided weekly individual drug counselling (IDC) delivered during the first 6 months in a residential therapeutic community. IDC specifically focused on addiction and it addressed symptoms by providing exposure to various recovery topics and tools. IDC did not target personality or other psychiatric	Summary: Both groups improved. No benefit of DFST over IDC for people with co-occurring substance abuse and BPD Detail: Participants diagnosed with borderline PD showed significant symptom reductions during the first 3 months in both therapy conditions, however IDC showed continued reductions during the remaining 3 months, whereas DFST showed no further improvement. The three-way interaction of PD X Time X Therapy condition was significant ($F [1,428] = 7.01$; $p < 0.008$. IDC resulted in more sustained reductions than did DFST in psychiatric and affective symptoms for paranoid, antisocial, and BPD but not for non-PD participants. Investigators concluded that the value of adding	Brief Symptom Inventory Global Severity Index Dysphoria, anxiety, depression, and hostility subscales of Multiple-Affect Adjective Checklist (MAACL) Revised Interpersonal problems - Inventory of Interpersonal Problems (IIP) General Therapist Skills and session characteristics – Adherence/Competence Rating Scale	6 months	There were significant main effects for BPD for BSI symptoms ($F [1,158] = 35.28$; $p < 0.001$), IIP problems ($F[1,179] = 23.12$; $p < 0.001$), and MAACL dysphoria ($F[1,163] = 12.78$; $p < 0.001$).	Subjects with personality disorders started with higher psychiatric, interpersonal, and dysphoria symptoms, and both therapies reduced symptoms during 6 months of residential treatment of substance dependence. The size of the BPD disorder sub-group was also small so results must be interpreted with caution. As the study was conducted in a residential treatment setting, results cannot be generalized to outpatient settings where

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			Questionnaire Version 4 Revised criteria for BPD. Other PDs included paranoid (54%) and antisocial (50%). 39% met no PD diagnostic criteria. 54 subjects were randomized to DFST (n = 12 BPD), 51 to IDC (n = 19 BPD).	behavioural coping styles.	disorders and had very little overlap with DFST.	dual-focus therapies for a range of co-occurring PDs and substance dependence in residential rehabilitation settings was not supported by this trial.				clients are exposed to substances. QC 1.1=A 1.2=A 1.3=A 1.4=B 1.5=A 1.6=A 1.7=B 1.8= 50% left residential rehab early 1.9=A 1.10=F 2.1 = (+)
Farrell, J.M., Shaw, I.A., & Webber, M.A. (2009). A schema-focused approach to group psychotherapy for outpatients with borderline personality disorder: a randomized controlled	RCT Level II Patients (N = 32) were randomly assigned to SFT-TAU and TAU alone.	N = 28 n = 16 (intervention) n = 12 (TAU)	Age mean: 22-52 Gender: all female Inclusion criteria were: females between the ages of 18 and 65, who met criteria for a BPD diagnosis confirmed by the Diagnostic Interview for Personality Disorders-Revised and the	8-month, 30-session schema-focused therapy (SFT) group added to treatment-as-usual (TAU) individual psychotherapy for BPD. The group-SFT program consists of	TAU (individual psychotherapy of at least six-months duration)	Summary: When baseline scores were compared to post-treatment scores, the improvement on all measures was significant for the SFT-group, but not for the TAU control group. The improvement was maintained or strengthened for the treatment group and lack of improvement maintained for the control group from post to six-month follow-up The TAU group showed	Primary Measures: Borderline Syndrome Index (BSI) a 52 item true or false self-report measure of BPD symptoms that allows measurement of change by specifying a time period for the subject to base answers on.	Post-treatment and six-month follow-up.	BSI (BL/Post/F Up) .22/1.97*/ 2.81* DIB_R (BL/Post/F Up) .46/2.22*/ 2.42* SCL-90 (BL/Post/F Up) .13/1.35/2. 2*	No Intention to treat analysis was undertaken, only treatment completed analysis, but there was only dropout from treatment in the control group. QC 1.1 = A 1.2 = A 1.3 = B 1.4 = B 1.5 = A

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trial. Journal of behaviour therapy and experimental psychiatry, 40(2), 317-328. USA			Borderline Syndrome Index and were in individual psychotherapy of at least 6-months duration and would agree to continue that treatment for the course of the study. Exclusion criteria were: an Axis I diagnosis of a psychotic disorder or a below average IQ (89), as measured by the Shipley Institute of Living Scale. IQ was made an exclusion criterion because of the cognitive and reading demands of the program. Attendance at weekly individual psychotherapy sessions was a	30 weekly sessions, each lasting 90 min, over an 8-month period, with 6 patients and 2 therapists and manual based.		little improvement, or even some deterioration, over the fourteen months of the study. Detail: Significant reductions in BPD symptoms and global severity of psychiatric symptoms, and improved global functioning with large treatment effect sizes were found in the SFT-TAU group. At the end of treatment, 94% of SFT-TAU compared to 16% of TAU no longer met BPD diagnosis criteria ($p < .001$). There was a significant overall effect on DIB-R and specifically for impulses and interpersonal subscales.	Symptom Check List-90 (SCL-90) the global severity score was used as a measure of subjective experience of general symptoms. Diagnostic Interview for Borderline Personality Disorders-Revised (DIB-R) a structured interview that assesses four putative aspects of BPD psychopathology (affect, cognition, impulse, interpersonal) and assigns scaled severity scores. Global Assessment of Function Scale (GAFS) ratings by patients' individual		GAF (BL/Post/F Up) 0.06/1.39/ 3.13 * indicates significant between group differences in effect at that time point.	1.6 = A 1.7 =A 1.8 = There was no drop out from the TX group but 25% drop out from the control group. 1.9= A 1.10=F 2.1 (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			condition of remaining in the study.				therapists was used as a measure of global functioning since it includes symptom, social and occupational functioning.			

Other CBT

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Cottraux, J., Note, I.D., Boutitie, F., Milliery, M., Genouihlac, V., Yao, S.N., Note, B., Mollard, E., Bonasse, F., Gaillard, S., Djamoussian, D., De Mey Guillard, C., Culem, A. & Gueyffier, F. 2009. Cognitive Therapy versus Rogerian Supportive Therapy in Borderline Personality Disorder. Psychotherapy and Psychosomatics, 78, 307-316. France	RCT (pilot study) Level II	N = 65 n=33 (CT) n=32 (RST) 88 patients were screened: 13 did not meet the inclusion criteria, 10 refused to enter the study and 65 were randomised, 51 followed up post treatment.	CT Male n=9 Female n=24 Mean age 34.3 SD 10.2 RST Male n=6 Female n=26 Mean age 32.6 SD 8.3 Diagnosis using MINI and confirmed by the Interview for Borderline Personality Disorder-Revised (DIBR), with a score of at least 8, according to the threshold of the scale. Exclusion criteria were: age under 18 or	Cognitive therapy 10 sessions of individual 1-hour sessions, over 1 year.	Rogerian supportive therapy 10 sessions of individual 1-hour sessions, over 1 year.	Summary: CT retained the patients in therapy for longer than RST. At week 24, CT was better than RST on the Hopelessness Scale, IVE scale and regarding the therapeutic relationship. At week 104, the CGI improvement (patient and evaluator) was significantly better in CT than in RST. High baseline depression and impulsivity predicted dropouts. Detail: A between-group comparison of the time spent in therapy showed that dropouts left the study later in CT (CT: mean = 51 days, SD = 37.4; RST: mean = 29 days, SD = 32.4; Wilcoxon-Mann-Whitney = –2.05; p = 0.040). In the whole sample, the average time before ending therapy was 82 days in CT vs. 60 in RST (Wilcoxon-Mann-Whitney = –1.5; p = 0.13). Using all available information on the response criterion, the odds of success were estimated to be 61% higher in the CT group than in the RST	Clinical Global Impression (CGI) Scale Hamilton Depression Scale Beck Depression Inventory Beck Anxiety Inventory Hopelessness Scale Young Schema Questionnaire II Eysenck Impulsivity Venturesomeness Empathy (IVE) Inventory	51 patients were evaluated at week 24, 38 at week 52 and 21 at week 104. 21.5% drop out 6 mths of intensive care with 1 session per week (24 sessions) and a maintenance phase with a session every fortnight over 6 mths (12 sessions).	Not Reported	Same therapists in both groups QC 1.1 = A 1.2 = B 1.3 = B 1.4 = B 1.5 = A 1.6 = A 1.7 =A 1.8 = 21.5% 1.9= B 1.10 C 2.1 (+)

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			over 60 years, patients living too far from the centres, psychotic disorders with current delusions, significant drug or alcohol addiction in the foreground or antisocial behaviours.			group, a large but non-significant effect (OR: 1.61, 95% CI: 0.62–4.16, p = 0.32). When missing outcomes were considered as failures, the estimated treatment effect was reduced to an OR of 1.33 (95% CI: 0.60–2.96, p = 0.48). Change from baseline was significant for the IVE scale: CT mean = 0.85 (SD 1.74); RST mean = –0.67 (SD 2.87); Wilcoxon-Mann-Whitney: –2.086, p = 0.03. The Hopelessness Scale also changed more in CT: mean –3.31 (SD 4.64); RST mean = –0.50 (SD 3.73); Wilcoxon-Mann- Whitney: –2.27, p = 0.02. The therapeutic relationship was also better in CT: the therapists rated the patients more favourably in CT than in RST (p = 0.04).				
Davidson, K.M., Tyrer, P., Norrie, J., Palmer, S.J., & Tyrer, H. (2010). Cognitive	RCT Level II	N= 106 n= 76 T=43 C= 33	Age mean (SD) T= 32.4 ± 9.0 C= 31.4 ± 9.4 Gender – Female (n, %)	30 x 1 hr sessions of individual cognitive–behavioural therapy for personality	TAU	Summary: CBT reduced suicide attempts compared to TAU at 6 year follow-up Detail: The original treatment effect is maintained over an average of 6 yrs follow-up: a	Structured Clinical Interview for DSM–IV Axis II Personality Disorders. Acts of	6 year follow-up Of the people who originally	BDI, d = 0.02 (-0.44, 0.47) BSI, d = 0.07 (-0.39, 0.52) EQ-5D thermometer, d = -0.11	No information on comorbidity and prescribed drug use was obtained across the trial and follow-up, and no formal

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therapy v. Usual treatment for borderline personality disorder: Prospective 6-year follow-up. British Journal of Psychiatry, 197(6), 456-462. UK			T= (45, 83.3%) C= (44, 84.6%) Diagnosis: BPD, met criteria for at least 5 items of BPD using the Structured Clinical Interview for DSM IV Axis II Personality Disorders. Inclusion: to enter the study, participants had received either in-patient psychiatric services or an assessment at accident and emergency services or an episode of deliberate	disorders (CBT–PD) over 1 year in addition to their usual treatment		difference of 1.26 suicide attempts over the following 5 yrs. Over the 6-year period, 73% (n = 24/33) in the TAU group had made at least one suicide attempt compared with 56% (n = 24/43) in the CBT–PD group (adjusted odds ratio 0.37, 95% CI 0.10–1.38, P = 0.13). In terms of self-harm (non-suicidal) there was little evidence of a difference between the groups. However, it was clear that the overall rate of self-harm declined in both groups. For measures of depression, anxiety, general psychopathology, social functioning, quality of life and dysfunctional attitudes, there were no statistically significant differences between the groups during follow-up. At 6 yrs, 54% of the sample no longer met diagnostic criteria for BPD: 56% (n = 24/43) of the CBT–PD group and 52% (n = 17/33) of the TAU group. There was no difference between the groups in terms of those who continued to	Deliberate Self-Harm Inventory. Beck Depression Inventory (BDI). Spielberger State–Trait Anxiety Inventory (STAI). Brief Symptom Inventory (BSI). Participant's beliefs thought to be related to personality disorder were measured using the Young Schema Questionnaire (YSQ). Social Functioning Questionnaire (SFQ). Inventory of Interpersonal Problems – Short form 32	took part n = 76/106 (72%) were interviewed at 6 year follow-up.	(-0.57, 0.34) EQ-5D weighted HSV, d = -0.24 (-0.69, 0.22) IIP-32, d= 0.18 (-0.27, 0.64) SFQ, d = -0.18 (-0.63, 0.27) State-Anxiety, d = -0.19 (-0.64, 0.27) Suicide attempts, d= -0.32 (-0.77, 0.14) Trait-Anxiety, d = -0.10 (-0.56, 0.35) Youth Schema Questionnaire, d = -0.07 (-0.52, 0.39)	assessment of interrater agreement was carried out on SCID–II diagnosis. Randomization was stratified by high (presence of suicidal acts in past 12 months) or low (presence of self mutilation only in past 12 months) episodes of self-harm, using randomized permuted blocks of size 4. QC 1.1=A 1.2=A 1.3=A 1.4=F 1.5=A 1.6=A 1.7=A 1.8= 20% (TX) and 36% (C) 1.9= A 1.10=A 2.1 = (++)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			self-harm (either suicidal act or self-mutilation) in the previous 12 months. Exclusion: those who had evidence of an organic illness, mental impairment, alcohol or drug dependence, schizophrenia or bipolar affective disorder. Did not exclude those who were abusing drugs or alcohol providing they did not meet criteria for dependence			meet diagnostic criteria (P = 0.44). Defined poor outcome as any suicide attempt in the follow-up period and examined the baseline predictors of good and poor outcome. From all the variables known to be of prognostic importance pre-randomisation, only having special needs at school was specifically associated with the presence of any suicide attempts during the 6-year follow-up. Overall quality of life scores for the entire group remained poor and continued to lie within a similar range to values reported for other severe mental health populations such as severe schizophrenia Use of hospital services remained high in both groups with about 54% of all individuals having received in-patient treatment and almost two-thirds having utilised accident and emergency (A&E) treatment during the follow-up period. With the exception of in-patient and A&E utilisation, no particularly	(IIP–32). Cost effectiveness via quality-adjusted life-year (QALY), assessed using the EuroQol (EQ–5D), and the Client Service Receipt Inventory (CSRI) for the 6 months before follow-up interview. Therapy adherence measures were completed			

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						large differences were observed between the treatment groups. However, the mean length of hospitalisation was markedly lower in the CBT–PD group than for the TAU group (10.81 v. 60.97 days respectively). Although a similar proportion of patients in both groups attended A&E, both the mean and median number of attendances were higher in the TAU group.				
Morey, L.C., Lowmaster, S.E., & Hopwood, C.J. (2010). A pilot study of manual-assisted cognitive therapy with a therapeutic assessment augmentation for borderline personality disorder. Psychiatry Research, 178(3), 531-	RCT Level II	Treatment n=8 Control n= 8	Age mean (SD): Treatment 32.5±9.41; Control 29.63±8.72 Gender – female (n, %): Treatment 7 (87.5%), Control 6 (75%) Diagnosis: BPD via Diagnostic Interview for DSM-IV Personality	Manual-Assisted Cognitive behaviour Therapy (MACT) + Therapeutic Assessment (TA) MACT is a 6-session, manualized therapy that targets deliberate self-harm, incorporating elements of other cognitive-	MACT alone 6 sessions	Summary: TA+MACT vs. MACT alone: Both groups improved but no difference between groups on other measures. Detail: No significant retention rate differences between conditions were observed, with four MACT condition (50%) and five TA+MACT condition (63%) participants failing to complete all six sessions of treatment. Among those who did complete treatment, significant improvements were observed in both conditions with respect to reducing both borderline symptomatology and suicidal ideation.	Borderline measures Diagnostic Interview for DSM-IV Personality Disorders DIPD-IV Personality Assessment Inventory (PAI) Borderline Features scale (BOR) with four subscales (Affective Instability, Identity Disturbance, Negative		Effect sizes between groups: Number of sessions attended: d = -0.16. Standardised mean difference for treatment completers: in MACT+TA: PAI-BOR d=0.95 BOR-A d=4.35 BOR-I d=0.57 BOR-N d=0.82 BOR-S d=0.52 PAI-SUI d=1.72	6 of 7 completers were concurrently being treated with medications whereas only 3 of 9 non-completers were being treated with medications, suggesting that concurrent psychiatric care may promote retention in MACT QC 1.1=A 1.2=B 1.3=C 1.4=F 1.5=A

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
535. USA			Disorders DIPD-IV. 56% of these individuals were currently taking psychotropic medication but no individuals were receiving other psychosocial interventions. Exclusion: Inclusion criteria were scores a) N70 on PAI BOR and SUI, b) z5 on the PDQ-4 BPD, c) N70 on the SPS total and d) N5 BPD symptoms on the DIPD-IV. Participants were	based interventions for BPD. In addition to the standard MACT orientation material, the first session also included an individualized collaborative assessment. This procedure included developing questions that the client would like to "ask the test data" about themselves and the articulation of specific, individualized treatment goals. During the second session, the		For those who completed treatment there was a substantial and significant main effect for change in PAI-BOR from baseline to post-treatment. Analyses of BOR subscales suggest a significant change in affective instability and a moderately significant change in self-harm. No significant differences in treatment response across study groups were found for borderline features, although large differential changes in BOR-A were observed that approached significance, suggesting superior treatment response in the TA+MACT group. With regard to suicidal ideation, participants reported substantial and significant decreases on both the PAI-SUI and SPS-SI. Again, a trend for a group-by-time interaction was found for SPS-SI, also suggesting a larger improvement over time in the TA+MACT group. To examine client improvement at the individual level, reliable change indices (RC) were computed to determine whether the MACT	Relationships, and Self-Harm) Personality Diagnostic Questionnaire (PDQ-4) — Borderline scale Suicidal ideation: Personality Assessment Inventory Suicidal Ideation (SUI) Suicide Probability Scale (SPS) with four subscale scores: Hopelessness, Suicidal Ideation, Negative Self-Evaluation, and Hostility.		SPS d=1.37 SPS-S d=1.75 Standardised mean difference for treatment completers: in MACT: PAI-BOR d=1.22 BOR-A d=0.85 BOR-I d=0.93 BOR-N d=0.31 BOR-S d=0.56 PAI-SUI d=2.27 SPS d = 0.56 SPS-SI d=0.77 Carry-forward effect sizes are also available in the paper. They are more conservative than those presented.	1.6=A 1.7=A 1.8=MACT + TA: 63% failed to completed all 6 sessions of treatment; MACT: 50% failed to complete all 6 sessions of treatment 1.9= B 1.10=F 2.1 = (++)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			excluded if they exhibited an active psychosis, a history of schizophrenia, or substance intoxication or withdrawal	therapist and client discussed the assessment results and motivational feedback was provided, in addition to implementing the second MACT session. Aside from these augmentations to the first two sessions, the manual for the remainder of the treatment was identical for both conditions.		treatment significantly improved borderline symptomatology and suicidal ideation. Of the 7 participants who completed treatment, 5 (71%) showed significant reductions on PAI-BOR. With regard to suicidal symptoms, 3 of 7 participants (43%) demonstrated significant improvement on the SPS and 6 out of 7 (86%) had significant decrement in suicidal ideation as measured by the PAI-SUI. For all participants: Using carry-forward methodology to provide a more conservative estimate of changes observed, there was significant main effect for change in PAI-BOR from baseline to post-treatment. With respect to suicidal ideation, significant decreases were observed on the PAI-SUI and SPS-SI. No significant differences in treatment response across groups were found for borderline features or suicidal ideation using this more conservative carry-forward approach.				

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Rowe S.L, Jordan J, McIntosh V.V, Carter F.A, Bulik C.M, Joyce P.R. (2008) Impact of borderline personality disorder on bulimia nervosa. Aust N Z J Psychiatry. Dec; 42(12), 1021-9. New Zealand	Follow-up of RCT Level II Follow-up of subjects from previous RCT which evaluated the additive efficacy of exposure-based vs. non-exposure-based behavioural treatments to a core of cognitive behaviour therapy for BN.	N=134 Follow-up data for 101 at 1 yr and 112 at 3 yrs	28% (n=38) met DSM-III-R criteria for BPD. Participants: women 17-45 yrs (n=134), with a current DSM-III-R diagnosis of BN. Exclusion criteria were AN, obesity (BMI>30), severe MDD, substance use disorder, BPAD, schizophrenia, severe medical illness or complications of BN, use psychoactive meds and unwillingness to undergo supervised drug wash-	All participants received eight sessions of cognitive therapy before being randomized to a further eight sessions of one of three forms of behavioural therapy: (i) exposure to pre-binge cues with binging being prevented (B-ERP); (ii) exposure to pre-purge cues with purging being prevented (P-ERP); or (iii) relaxation training (RELAX).	All participants received eight sessions of cognitive therapy before being randomized to a further eight sessions of one of three forms of behavioural therapy: (i) exposure to pre-binge cues with binging being prevented (B-ERP); (ii) exposure to pre-purge cues with purging being prevented (P-ERP); or (iii) relaxation training (RELAX).	Summary: All three groups improved. Those with bulimia nervosa (BN) did not have worse outcomes compared to those who did not have BN Detail: Women with BN and BPD did not differ significantly from the other PD and no PD groups in eating disorder symptoms and attitudes at 1 year and 3 year follow up. General and psychiatric functioning as measured on the GAF and HDRS showed improvements for all three groups at 1 year follow up. No significant differences among the groups were found at 1 year follow up. At 3 year follow up eating disorder symptoms were improved in all three groups and general psychiatric functioning did not differ among the three groups. Overall, the BPD group had the lowest rate of any eating disorder diagnoses at follow up - 35% and 24% at 1 and 3 yrs, respectively, compared to 45% and 31% for other PD and 38% and 36% for no PD. Differences in personality profiles between the BPD and	Eating disorder symptoms and general functioning-Comprehensive Bulimia Severity Index (CBSI) Depression – HDRS Global Assessment of Functioning – GAF Personality traits - Temperament and character inventory (CTI)	Follow-up data were available for 101 women (75%) at 1 yr follow up and 112 (84%) at 3 yr follow up. Ninety-two participants were available for all three time points (including baseline).	There was a significant effect for HA in the BPD (Wilks' λ=0.34, F(2,14)=13.88, p<.001, multivariate partial η2 = 0.67) and no PD groups (Wilks' λ=0.67, F(2,34) =8.5, p<.001, multivariate partial η2 = 0.33). SD also showed significant within-group effects in the no PD group across 3 yrs (Wilks' λ = 0.51, F(2,34)= 16.36, p<.001, multivariate partial η2 = 0.49). Despite an increase of one standard deviation in SD, the BPD group had a smaller effect	Overall, despite having a marginally poorer clinical presentation at pre-treatment assessment, women with BN and comorbid BPD did not have a worse eating disorder or general functioning outcome at 3 yrs after treatment than those with other or no PDs, indicating that in regard to this clinical question, the treatment for BN offered to this sample required no modification for the subjects with BPD. However the small sample size in the 3 groups may have decreased the power to detect significant differences, increasing the

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			out period.			no PD group evident at follow up were on measures of harm avoidance (HA) and self-directedness (SD).			size than the no PD group (Wilks' λ = 0.59, F(2,14) = 4.8, p<.03, multivariate partial η2 = 0.41). The other PD group had no significant within-group changes in HA or SD across 3 yrs.	likelihood of Type II error. No indication of which original group patients allocated **No checklist as was follow up to RCT no actual RCT

Mentalisation

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Bateman, A., & Fonagy, P. (2008). 8-year follow-up of patients treated for borderline personality disorder: Mentalization-based treatment versus treatment as usual. American Journal of Psychiatry, 165(5), 631-638. (follow up from Bateman A, Fonagy P. (1999) Effectiveness of partial hospitalization in the treatment of borderline personality	RCT Level II RCT (8 yrs since intervention follow-up – reporting occurrences since the 3 year follow-up).	N=41 T=22 C= 19	Age and gender not reported. Diagnosis: BPD on both Structured Clinical Interview for DSM-III-R and Diagnostic Interview for Borderline Patients. Exclusion: If they met criteria for schizophrenia, bipolar, substance misuse or mental impairment or had evidence of organics brain disorder.	Partial hospitalisation consisting of a long-term psychoanalytically orientated treatment for 18 months. Metallization based treatment (MBT) individual and group therapy. MBT by partial hospitalization consists of 18-month individual and group psychotherapy in a partial hospital setting offered within a structured and integrated program provided by a supervised team. Expressive	Treatment as usual (TAU) consists of general psychiatric outpatient care with medication prescribed by the consultant psychiatrist, community support from mental health nurses, and periods of partial hospital and inpatient treatment as necessary but no specialist psychotherapy.	Summary: Those in MBT showed greater reduction in self harm and suicide, ED visits, treatment attendance. 13% v 87% of TAU still met criteria for BPD at 8 year follow-up. TAU group used more external treatments and greater length of use of medication Detail: 23% made suicide attempts in the MBT group (mean attempts 0.5±0.9), contrasted with 74% of the TAU group (mean attempts 0.52±0.48), which was significant. Mean number of emergency room visits and hospital days highly significantly favoured the MBT group, as did the continuing treatment profile. During MBT group therapy, all of the experimental group but only 31% of the TAU group received therapy. Over the 5-year postdischarge period, both groups received around 6 months of psychological therapy (n.s.). For all other treatments, the TAU group received significantly more input postdischarge—3.6 yrs of psychiatric outpatient treatment and 2.7 yrs of assertive community support, compared	Primary: number of suicide attempts over the whole of the 5 year post-discharge follow-up period. Associated outcomes were service use, including emergency room visits; the length and frequency of hospitalization; continuing outpatient psychiatric care; and use of medication, psychological therapies, and community support. Secondary: 1) symptom status as assessed at a follow-up interview using the Zanarini Rating Scale for DSM-IV borderline personality disorder 2) global functioning as	2 yrs	Suicide attempts total, d =1.4 (0.3, 1.5) Zanarini Rating Scale (ZRS) for BPD: total: d = 1.8 (0.14, 3.5), affect: d=1.1 (0.41, 1.7), cognitive: d = 0.84 (0.3, 1.4), impulsivity: d = 1.2 (0.59, 1.9), interpersonal: d = 1.6 (1, 2.3) GAF, d= 0.75 (-1.9, 3.4) No. of days of hospitalisation, d = 1.5 (0.36, 2.7) No. of emergency room visits, d = 1.4 (0.21, 2.63) No. of yrs of	QC 1.1=A 1.2=B 1.3=B 1.4=B 1.5=B 1.6=A 1.7=A 1.8= 0% and 18% 1.9= C 1.10=F 2.1 = (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
disorder: a randomized controlled trial. Am J Psychiatry. 156, 1563–1569.				therapy using art and writing groups is included. Crises are managed within the team; medication is prescribed according to protocol by a psychiatrist working in the therapy program. The focus of therapy is on the patient's moment-to-moment state of mind. The patient and therapist collaboratively try to generate alternative perspectives to the patient's subjective experience of himself or herself and		with 2 yrs and 5 months, respectively, for the MBT group. The TAU group had an average of over 3 yrs taking antipsychotic medication, whereas the mentalization-based treatment group had less than 2 months. Smaller but still substantial differences were apparent in antidepressant and mood stabilizer use. The TAU group spent nearly 2 yrs taking three or more psychoactive medications, compared to an average of 2 months for the MBT group. At the end of the follow-up period, 13% of the MBT patients met diagnostic criteria for BPD, compared with 87% of the TAU group. The contrast between mean total scores for the Zanarini Rating Scale for BPD yielded a large effect size favouring the MBT group, albeit with a wide confidence interval. Multivariate analysis of variance across the four symptom clusters also reflected the better outcome for the MBT group (Wilks's lambda = 0.55, F = 6.4, df = 4, 32, p = 0.001). The largest differences favouring MBT were in terms of impulsivity	measured by the Global Assessment of Functioning Scale (GAF) at 6-month intervals after 18 months of MBT by partial hospitalization: TX profiles (emergency room visits, hospitalization, psychiatric outpatients, community support, psychotherapy, medication) and suicidality and self-harm using criteria defined in the original trial for each patient by interview and scrutiny of medical records. Collected data twice yearly on vocational status, calculating the number of 6-month periods in which the patient was employed or attended an		employment , d = 0.94 (0.29, 1.6) No. of yrs psychiatric outpatient treatment, d = 0.93 (-4, 1.5) No. of yrs further therapy 36 months post-intake, d = 0.07 (-0.23, 0.37) No. of yrs further assertive outreach treatment, d = 1.8 (1.4, 2.2) Medication (yrs) antidepressants, d = 1.1 (0.45, 1.7) Medication (yrs) antipsychotics, d = 2.04 (1.6, 2.5) Medication (yrs) mood	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
				others by moving from validating and supportive interventions to exploring the therapy relationship itself as it suggests alternative understanding .		and interpersonal functioning. There was over a 6-point difference in the GAF scores between the two groups, yielding a clinically significant moderate effect size of 0.8 (95% CI =–1.9 to 3.4). 46% of MBT group compared to 11% of the TAU group had GAF scores above 60. Vocational status favoured the MBT group, who were employed for nearly three times as long as the TAU group. There was increase in the % of MBT group's employment or education in the three post discharge periods.	educational program for more than 3 months. Patient recall for self-harm was unreliable and could not be independently corroborated from medical records and so is not reported. The authors consider the frequency of emergency room visits to be a reasonable proxy of severe self-harm in this population.		stabilisers, d = 1.17 (0.73, 1.6) Medication (yrs) 3 or more drugs, d = 1.45 (1.1, 1.8)	
Bateman, A., & Fonagy, P. (2009). Randomized controlled trial of outpatient mentalizatio n-based treatment versus structured clinical managemen t for	RCT Level II	N=134 MBT (T) n= 71 SCM (C) n= 63	Age mean (SD) TX= 31.3 (7.6) C=30.9 (7.9) Female (n, %) TX= 57, 80.3% C= 50, 79.4% Diagnosis - All participants were assessed	Mentalization-based treatment (MBT) is manualized, consisting of 18 months of weekly com-bined individual and group psychotherapy provided by two different therapists.	Protocol-driven treatment, structured clinical management (SCM), in an outpatient context representing best current clinical practice. Practitioners received	Summary: Greater reductions in self harm, suicide, hospitalisation and medication use in MBT than clinical mgt. Greater increases in general functioning, depression and social adjustment, relationships in MBT Detail: Suicidal behaviour: Six-month periods free of suicidal behaviours, severe self-injurious behaviours, and hospitalization improved from 0% to 43% in the SCM group and to 73% in the MBT group; behaviour increased	Primary outcome: proportion of each group without severe parasuicidal behaviour as indi-cated by 1) suicide attempt, 2) life-threatening self-harm, or 3) hospital admission. Hospital admission was included because patients are primarily offered inpatient	18 mths Assessed at entry and over the course of an 18-mth treatmen t at 6, 12, and 18 mths.	Life-threatening suicide attempts, d = 0.65 (0.58, 0.73) Severe self-harm attempts, d = 0.62 (0.28, 0.97) Interpersona l distress, d = 0.95 (0.59, 1.3)	This study suggests that structured, integrated psycho-logical and psychiatric treatment offering coordinate d clinical manageme nt recommen

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
borderline personality disorder. American Journal of Psychiatry, 166(12), 1355-1364. UK			using the Structured Clinical Interview for DSM-IV (SCID-I and SCID-II). Ethnicity - White British/European MBT: 76.1%, SCM: 68.3%; Black African/Afro-Caribbean MBT: 15.5%, 20.6% Other Chinese/Turkish Pakistani 8.5%, 11.1% Exclusion Inclusion criteria were 1) diagnosis of BPD, 2) suicide attempt or episode of life-threatening self-harm within last 6 months, and	MBT is a psychodynamic treatment rooted in attachment and cognitive theory. It requires limited training with moderate levels of supervision for implementation by generic mental health professionals. It aims to strengthen patients' capacity to understand their own and others' mental states in attachment contexts in order to address their difficulties with affect, impulse regulation, and	equivalent supervision. Crisis plans were developed collaboratively within each treatment team for all patients. SCM therapists focused on support and problem solving.	in patients assigned to MBT more than for patients in the SCM group, however, differences only became statistically significant after 12 months of treatment. Number of episodes of hospital admissions, suicide attempts, and severe self-injuries) also declined in both groups but a substantially greater reduction in the MBT than the SCM group. Data were relatively consistent showed reduced suicidal behaviour in both groups. The rate of improvement was significantly greater in the MBT group both in terms of any suicide attempt and the count data associated with it. Differences between groups only became marked in the last 6 months of treatment; at 12 months, groups were not significantly different. Self-harm: Frequency of self-harm behaviours had significantly steeper reduction in the MBT group compared with SCM. During the 6 months before end of treatment fewer patients in the MBT group severely self-harmed (24% versus 43%, c2=4.6, p<0.05; relative risk=0.55, 95% CI=0.33–0.92).	care in anticipation of suicide attempts and severe self-harm Secondary outcome: were independently rated Global Assessment of Functioning (GAF) scores at the beginning and end of treatment and self-reported psychiatric symptoms, social and interpersonal functioning, and medication use assessed at baseline and at 6-month intervals until the end of treatment at 18 months. Patients' subjective experience of symptoms was measured using the SCL-90-R, and depression was assessed by using the Beck Depression Inventory.		Social adjustment problems, d = 0.72 (0.37, 1.06) Symptom distress, d = 0.67 (0.33, 1.02) Depression, d=0.45 (0.1, 0.79) Hospital admissions, suicidal and self-injurious episodes, d= -0.72 (-1.07, -0.37) Length of hospitalisation , d=-0.43, (-0.78, -0.09) Medication use, d=-0.58, (-0.93, -0.24) Psychiatric hospitalisation, d= -0.53, (-0.88, -0.19)	ded by NICE significantly benefits patients with borderline personality disorder. Both conditions were associated with substantially reduced suicidality, self-harm, and hospitalization and improvement on measures of symptoms and social and interpersonal functioning by the end of treatment. The rate of

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			3) age 18–65. Exclusion criteria were kept to a minimum. Patients were excluded if they currently 1) were in long-term psychotherapeutic treatment, 2) met DSM-IV criteria for psychotic disorder or bipolar I disorder, 3) had opiate dependence requiring specialist treatment, or 4) had mental impairment or evidence of organic brain disorder.	interpersonal functioning, which act as triggers for acts of suicide and self-harm. Crisis plans were developed collaboratively within each treatment team for all patients. MBT therapists focused on helping patients reinstate mentalising during a crisis via telephone contact. SCM therapists focused on support and problem solving		However, during the first 6 months of tx, comparison of the proportion of individuals manifesting self-injurious behaviour favoured the SCM group (75% versus 59%, c2=3.1, p<0.08; relative risk=1.27, 95% CI=0.99–1.63). From 6 to 18 months the proportion of these patients in the MBT group who self-harmed showed a steeper decline when compared with the SCM group. The more consistent reduction in the counts of self-injurious behaviour and the difference in incidence rate ratios favouring MBT was highly statistically significant. Hospitalisation: Before treatment about 25% of each group had had at least one hospital admission. During the first 6 months of treatment patients in the MBT group had significantly fewer days in hospital (Kruskal-Wallis c2=4.25, p<0.04), and the difference increased by 12 months (Kruskal-Wallis c2=6.54, p<0.02) and 18 months (Kruskal-Wallis c2=9.01, p<0.003). The decline in number of admissions over the whole period	Social adjustment and interpersonal functioning were measured using the modified Social Adjustment Scale–self-report and the Inventory of Interpersonal Problems–circumflex version. The instruments provide an assessment of an individual's work, spare time activities, and family life as well as difficulties with interpersonal functioning.			improvement in both groups was higher than spon-taneous remission of symptoms of BPD. Although patients in both groups made statistically significant improvements, MBT was as-sociated with greater improvements than SCM for most outcomes. Very good description of factors similar between groups and randomisati

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			Current psychiatric inpatient treatment, temporary residence, drug/alcohol misuse, and comorbid personality disorder were not exclusion criteria.			of treatment was significantly steeper in the MBT group. The number of patients hospitalized reduced in the MBT group relative to the SCM group and was markedly lower in the MBT group in the last 6 months of treatment (c2=7.7, p<0.005; relative risk=0.14, 95% CI=0.3–0.64). Secondary outcomes: GAF increased substantially for both groups over the 18-month period from 41 (95% CI=39.7–42.7) to 57 (95% CI=54.9–60.0) (t=15.5, df=125, p<0.0001) but the increase was rated as greater in the MBT group. There was improvement on all self-rated measures for both groups. This was particularly notable for symptoms of depression and social adjustment. The slope of decline in self-reported symptoms and relationship and social adjustment problems was significantly greater in the MBT group across all four measures. The size of difference between the two groups at the end of treatment was substantial for reduction in interpersonal distress (d=0.95, 95% CI=0.59–				on procedures. QC 1.1=A 1.2=A 1.3=B 1.4=F 1.5=A 1.6=A 1.7=A 1.8= 0% 1.9= A 1.10=F 2.1 = (++)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						1.3), moderate for social adjustment problems (d=0.72, 95% CI=0.37–1.06) and symptom distress (d=0.67, 95% CI=0.33–1.02), and more modest for depression (d=0.45, 95% CI=0.10–0.79). Medication: use of medication reduced significantly in both groups. The proportion of patients not receiving medication increased from 27% to 57%. The increase was greater for the MBT group. Counting the number of classes of psychotropic medication also showed a decline across both groups with the incidence rate ratio suggesting a significant difference in favour of the MBT group. The number of people receiving two or more different classes of medication substantially reduced in both groups from 30% at the beginning of treatment to 8% at the end of treatment.				

STEPPS

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Bos, E.H., Van Wel, E.B., Appelo, M.T., & Verbraak, M.J. (2010). A randomized controlled trial of a Dutch version of systems training for emotional predictability and problem solving for borderline personality disorder. Journal of Nervous and Mental Disease, 198(4), 299-304. The Netherlands	RCT Level II Randomization was done separately at each location.	N=79 TX (n = 42) C (n = 37)	Between 8 and 12 subjects were included in each group for the Treatment group. If at the time of randomisation, an insufficient number of participants were assigned to a group, the remaining spots were randomly assigned to subjects who did not meet full BPD criteria (these participants were not included in this analysis).	Systems Training for Emotional Predictability and Problem Solving (STEPPS) + individual treatment Group treatment; it combines skills training with general CBT elements and has a strong systems component; family members and significant others are actively involved in the program. The Dutch version of the STEPPS group program involves 18 weekly sessions and a single follow-up session 3 to 6 months after the conclusion of the program. The program has 3 main components: (1)	Treatment as usual (TAU): The STEPPS groups began simultaneously with a group of patients that started TAU. The control condition was TAU, i.e., the standard treatment for BPD offered at the participating sites. This treatment consisted of individual therapy from a psychotherapist, psychologist, or psychiatric nurse, offered every 1 to 4 weeks. STEPPS-related treatments like DBT or	Summary: Both groups improved n measures of BPD pathology and general functioning, QoL, medication use and treatment attendance but STEPPS showed greater improvement than TAU. No differences in parasuicide measures Detail: Scores on the primary efficacy measures. SCL-90 and BPD-40 symptom scores generally decreased from T1 to T3, and more so in the STEPPS group than in the TAU group. Quality of life scores (WHOQOL-Bref) generally increased from T1 to T3. Overall treatment effects were found for Overall Quality of Life and General Health, Physical Health, and Psychological Health. For Social Relationships the overall treatment effect was a trend, for Environment the overall treatment effect was not	Primary efficacy measures included general psychiatric and BPD-specific symptoms, measured with the Symptom Checklist-90 total score (SCL-90) and the Borderline Personality Disorder checklist-40 total score (BPD-40) respectively. Secondary outcome measures included impulsive and parasuicidal behaviour, and quality of life. Impulsive and parasuicidal behaviour were assessed using 2 subscales of the Borderline Personality	Pre-treatment assessments (T1) took place following randomization, just before the start of the intervention. Post-treatment assessments (T2) were done after the final weekly session of the STEPPS program (mean 23.9 ±3.6 weeks after T1). Follow-up assessments (T3) took place	Effect sizes (non-standardised): Primary outcomes: Estimated mean differences at the end of treatment (T2), adjusted for differences at T1, were: SCL-90, -47.0 (95% CI, -78.2 to -15.9, p = 0.003); BPD-40, -18.7 (95% CI, -31.6 to -5.8, p = 0.005). At 6-month follow-up (T3), the differences were smaller but still significant: SCL-90, -38.4 (95% CI, -67.1 to -9.6, p =0.009); BPD-40, -14.7 (95% CI, -26.6 to -2.8, p =0.016). Secondary outcomes: In the domain of Psychological	Moderate to large effect sizes were seen for symptom variables and psychological quality of life at T2. At T3, moderate effects on symptoms were still present, while also moderate effects on physical, social and overall quality of life could be observed. More than TAU, STEPPS plus limited adjunctive individual therapy reduced symptomatology and improved quality of life, in the longer run. STEPPS was not

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			Age mean (SD) Treatment 32.9 (5.6) Control 31.8 (9.2) Gender – female (n,%) Treatment 35, 83.3% Control 33, 89.2% Diagnosis: BPD confirmed by administering the BPD modules from the Dutch versions of the Personality Diagnostic Questionnaire and the Structured Clinical Interview for DSM-IV Axis II Disorders. Participants	psychoeducation about BPD; (2) emotion management skills training; and (3) behaviour management skills training. STEPPS is system-based in that friends and relatives of the patients are explicitly involved in the program for support and reinforcement of the newly learned skills (the "support group"). They receive education about BPD and are instructed how to interact with the person with the disorder. STEPPS is administered by 2 mental health professionals, of who at least one is a psychotherapist. Subjects assigned	family groups for family members of the patients were not allowed. In both conditions, the main treatment could be supplemented with (medication) contacts with a psychiatrist, social worker, or other health care professional.	significant. In both conditions, the number of patients scoring above the cut-off for ratings for the parasuicide and impulsivity subscales of the BPDSI-IV decreased from T1 to T3. There were no significant differences between the conditions (overall treatment effects). Medication was similar between the groups at baseline and remained stable during follow-up assessment. Over the entire study period, patients in the STEPPS group received 15 STEPPS group sessions on average, and had a mean of 8 contacts with their individual therapist. TAU-patients had a mean of 9 individual contacts with their main therapist. In addition to these study treatment contacts, TAU-patients reported to have had 31 ambulatory therapy contacts on average with other mental health care	Disorder Severity Index-IV (BPDSI-IV). The impulsivity subscale contains 11 items reflecting potentially harmful impulsive behaviours (e.g., gambling, reckless driving, binge eating). The parasuicide subscale contains 13 items reflecting self-mutilating parasuicidal behaviours and suicidal thoughts and attempts. Quality of life was measured with the World Health Organization Quality of Life Assessment-Bref (WHOQOL-Bref)	approximately 6 months after T2 (mean 25.7 ±4.2 weeks after T2). Outcome measures were assessed on all 3 occasions	Health, STEPPS scores were higher than TAU scores particularly at T2 (estimated mean difference adjusted for T1 score: 2.08 [95% CI, 0.76 –3.41, p = 0.002]); at T3, this difference was reduced to 0.91 (95% CI, -0.32 – 2.15, p = 0.146). With respect to Overall Quality of Life and General Health, Physical Health and Social Relationships, STEPPS scores were significantly higher than TAU scores only at T3 (estimated differences 1.80 [95% CI, 0.30 – 3.30, p = 0.019]; 1.41 [95% CI, 0.15 – 2.66, p = 0.028]; and 1.86	superior to TAU in reducing impulsive and parasuicidal behaviours, but this may be explained by the low base rate of these behaviours in our sample. It may also be that a more intensive treatment, such as DBT, is required to find differential effects on these behaviours. The merit of the STEPPS program is that it is relatively easily learned and implemented, and nevertheless improves BPD treatment in a number of ways. Further

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			had to be above threshold on either impulsivity and/or parasuicide subscales of the BPD Severity Index-IV Exclusion: Subjects were excluded if they did not speak Dutch; were cognitively impaired (IQ < 70); younger than 18 yrs; treated involuntary; or presented an imminent danger to themselves or others.	to STEPPS also received limited individual therapy. This therapy was developed as an adjunct to STEPPS to help consolidate the newly acquired skills and to stimulate their use. It had a structured format, in which the previous STEPPS session was discussed as well as the use of the learned skills in everyday life. The therapy was offered every 2 weeks during the entire study period.		workers (e.g., psychiatrists, psychologists, psychiatric nurses, social workers). Patients in the STEPPS condition had a mean of 21 additional ambulatory therapy contacts.			[95% CI, 0.14 – 3.57, p = 0.035], respectively), but not at T2 (estimated differences 1.58 [95% CI, -0.07 – 3.22, p = 0.060]; 0.96 [95% CI, -0.40 – 2.32, p = 0.164]; and 0.77 [95% CI, -1.08 – 2.61, p = 0.431, respectively). Odds ratios for impulsivity were (T2): 0.81 (95% CI, 0.26 – 2.53, p = 0.716); and (T3): 0.68 (95% CI, 0.22 – 2.09, p = 0.501). Odds ratios for parasuicide were (T2): 2.05 (95% CI, 0.66–6.35, p = 0.211); and (T3): 1.02 (95% CI, 0.35 – 2.97, p = 0.974). Effect sizes (standardised): Effect sizes for the differences between the	research to compare this treatment with other effective treatments is warranted. Importantly, this RCT on STEPPS is the first done by others than its developers. Raters were not blind and interrater reliability was not assessed for the BPDSI-IV. Intention to treat analysis was completed but yielded similar results to the per-protocol analysis so only the per-protocol analysis was presented. The comparability of treatment between sites and the comparability

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									treatments at T2: SCL-90, 0.68; BPD-40, 0.68; Psychological Health, 0.96. At T3 effect sizes were: SCL-90, 0.56; BPD-40, 0.53; Overall Quality of life & General Health, 0.61; Physical Health, 0.56; Social Relationships, 0.61.	between different therapists was not assessed. QC 1.1=A 1.2=A 1.3=B 1.4=F 1.5=A 1.6=A 1.7=B 1.8= 28.9% (TX) and 13.2% (C) 1.9= 3 1.10=4 2.1 = (+)
Schuppert, H., Giesen-Bloo, J., van Gemert, T.G., Wiersema, H.M., Minderaa, R.B., Emmelkamp, P.M., & Nauta, M.H. (2009). Effectiveness of an emotion regulation	RCT Level II 4 block randomisation	N=43 ERT+TAU = 23 TAU=20	Age: ERT+TAU = 16.23yo; TAU=15.9 Gender: ERT+TAU = 95.6% FM; TAU = 80% FM	Emotion Regulation Training (ERT) is an adaptation of STEPPS involving 17 sessions, one systems meeting and two booster sessions. The main goal of the training is to introduce alternative ways of coping with affective instability, daily stressors and	Treatment as usual (TAU): medication, individual psychotherapy, system-based therapy, inpatient psychiatric care and emergency services in case of self-harm or suicidal behaviour.	Summary: Both ERT adapted from STEPPS and TAU improved over time but no difference was found between groups. Detail: Repeated measure ANOVAs indicate improvement over time, measured by the total score of the BPDSI-IV (F [1, 29] = 6.39; p = 0.02). The other primary outcome measures demonstrated no	BPDSI-IV to assess current severity and frequency of DSM-IV BPD symptoms. The Multidimensional Emotion Regulation Locus of Control (MERLC) The Youth Self Report (YSR)	Post treatment	BPDSI-IV total score = 0.27 BPDSI-IV affective stability = 0.33 MERLC subscale internal locus of control =- .49 YSR subscale internalizing = 0.04 YSR subscale externalizing = 0.15	QC 1.1=A 1.2=A 1.3=E 1.4=B 1.5=B 1.6=B 1.7=B 1.8=6.5% drop from assessment to randomisation; 39% loss to second assessment ERT & 15% in TAU;

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group training for adolescents-A randomized controlled pilot study. Clinical Psychology & Psychotherapy, 16(6), 467-478. The Netherlands				psychological vulnerability. Reducing self-harm or harm to others is another important issue. The adolescents learn that they can take more responsibility for their behaviour and realize they have a choice in how to (re)act when emotionally distressed.		significant improvement over time (BPDSI-IV subscale affect regulation (F [1, 29] = 2.06; p = 0.16) and internal locus of control as measured by the MERLC (F [1, 24] = 0.49; p = 0.49)). According to the secondary outcome measures, a trend over time was found on the internalizing subscale of the YSR (F [1, 23] = 4.10; p = 0.06), but no significant effect on the externalizing subscale of the YSR (F [1, 24] = 2.61; p = 0.12). Repeated measure ANOVAs on the BPDSI-IV showed that there was no significant level of change between groups for both the total and the subscale affective stability of the BPDSI-IV (BPDSI-IV total score F [1, 29] = 0.07; p = 0.79; BPDSI-IV subscale affect regulation F [1, 29] = 0.24; p = 0.63). Other primary outcome measures: significant				1.9= D 1.10=E 2.1 = (-)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						interaction effect on the adolescents' MERLC subscale internal locus of control (F [1, 24] = 9.16; p = 0.006). Adolescents in the ERT group reported an improvement in their feeling of having control over their emotions, whereas the adolescents in the TAU alone group reported a decrease of internal locus of control. The secondary outcome measures for the adolescents showed no significant effect between groups, measured by the YSR, internalizing and externalizing subscales (YSRintern F [1, 23] = 0.32; p = 0.58; YSRextern F [1, 24] = 0.06; p = 0.82).				

IPT

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Bellino, S., Rinaldi, C., Bogetto, F. (2010) Adaptation of interpersonal psychotherapy to borderline personality disorder: A comparison of combined therapy and single pharmacotherapy. Canadian Journal of Psychiatry. 55(2), 74-81. Italy	RCT Level II	N = 55 enrolled N = 44 analysed	55 participants (18 males and 37 females) with DSM-IV-TR diagnosis of BPD were recruited from patients attending the Service for Personality Disorder of the Unit of Psychiatry, Department of Neuroscience, University of Turin. Mean age of 25.8 yrs in medication-only group and 26.2 yrs in combined therapy group; 62% previous hospitalizations; 27% employed; 31% married. Excluded were those with a lifetime diagnosis of	28 patients received fluoxetine 20 mg to 40 mg daily (see control group for schedule) plus IPT-BPD. IPT-DBT consisted of weekly, manualised sessions lasting 1 hour. Patients in the combined therapy group were treated by a psychotherapist who was not the psychiatrist prescribing the medication and who had 5 yrs of experience practising IPT. The psychotherapy and the pharmacother	27 patients received fluoxetine 20 mg to 40 mg daily plus clinical management consisting of a fortnightly clinical review of 15-20 minutes duration. Initially, fluoxetine was prescribed at a fixed dosage of 20 mg daily with the opportunity to increase the dosage to 40 mg daily beginning in week 2, depending on clinical judgment. Treatment lasted 32 weeks.	Summary: Small sample size limits ability to draw strong conclusions but results suggest that combined therapy was superior to monotherapy in relieving anxiety, improving functioning and alleviating the severity of some symptoms of BPD during the 32 weeks of the trial Detail: Of 55 subjects, 11 (20%) dropped out (6 in medication-only, 5 in combined therapy). Only treatment completers (n=44) were included in the analysis. Using a univariate General Linear Model to calculate the effects of 1) duration of treatment and 2) the type of treatment on each assessment scale score, only duration of treatment had a statistically significant effect on global functioning, depressive symptoms and social and occupational functioning (p=<0.001), while both treatments alleviated symptoms of depression and improved global functioning. Combined therapy was superior to medication-only in alleviating	Depression (Hamilton Depression Rating Scale) Anxiety (Hamilton Anxiety Rating Scale) Quality of life (SAT-P satisfaction profile) Global functioning (CGI Clinical Global Impression Scale) Social and occupational functioning (SOFAS) BPD symptoms severity and frequency (BPD-SI)	Treatment lasted 32 weeks.		No Intention to treat analysis – only analysed data for completers (i.e. 44 of 55 enrolled) and potential attrition bias due to lack of compliance was not addressed. QC 1.1=A 1.2=C 1.3=B 1.4=D 1.5=B 1.6=B 1.7=B 1.8= 20% 1.9=D 1.10=F 2.1 = (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			delirium, dementia, amnestic or other cognitive disorders, schizophrenia or other psychotic disorders, and bipolar disorder. Concomitant Axis I or II disorders were also excluded. Female patients of childbearing age were excluded if they were not using an adequate method of birth control, as were those who had recently received psychotherapy or pharmacotherapy, and current substance abusers.	apy started at the same time.		anxiety symptoms (p=<0.001). Combined therapy was significantly superior to medication-only in improving psychological functioning (p=0.003). The interaction between combined therapy and treatment duration was superior to medication-only in improving social functioning as measured by the SAT-P for subjective quality of life (p=0.03). Only duration of therapy had an effect on the BPD-SI total score (p=<0.001), and duration also had an effect on the following factors from the BPD-SI: outbursts of anger (p=<00.1) and emptiness (p=<.001). Combined therapy had significant effects on interpersonal relationships (p=<.009), impulsivity (p=<0.01), and affective instability (p=0.02) which increased over time (p=<0.001 for all domains). Neither type of therapy nor duration of therapy had effects on: abandonment, parasuicidal behaviour, paranoid ideation, and identity.				

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Bellino, S., Zizza, M., Camilla, R., & Filippo, B. (2006) Combined treatment of major depression in patients with borderline personality disorder: A comparison with pharmacotherapy. Canadian Journal of Psychiatry, 51(7), 453-460. Italy	RCT Level II	N=39 enrolled N=32 analysed	39 participants with DSM-IV-TR diagnosis of BPD who met clinical and DSM-IV criteria for a major depressive episode (mild to moderate). Mean age of 26.4 yrs (SD 3.7); male to female ratio 3:5. Subjects were selected from patients attending the Service for Personality Disorder of the Unit of Psychiatry, Department of Neuroscience, University of Turin. Excluded were those with a lifetime diagnosis of delirium, dementia,	20 patients received fluoxetine (see control group for schedule) plus IPT. IPT consisted of weekly, manualised sessions lasting 1 hour. Patients in the combined therapy group were treated by a psychotherapist who was not the psychiatrist prescribing the medication and who had 5 yrs of experience practicing IPT. The psychotherapy and the pharmacotherapy started at the same time.	19 patients received fluoxetine 20 mg to 40 mg daily plus clinical management. Initially, fluoxetine was prescribed at a fixed dosage of 20 mg daily with the opportunity to increase the dosage to 40 mg daily beginning in Week 2, depending on clinical judgment.	Summary: Small sample size does not allow strong conclusions to be drawn from this study but results suggest that combined therapy for BPD patients with comorbid depression may be superior to fluoxetine alone in improving symptoms of depression and social and psychological functioning Detail: Of 39 subjects, 7 dropped out (4 in medication-only, 3 in combined therapy). Only subjects that completed the study were included in the analysis (n=32). Changes in depression remission rates, CGI, and HARS score did not differ between treatments with 75% (n =12) of combined-treatment patients and 62.5% (n =10) of medication-only patients achieving remission (x2 = 0.562, p = 0.446). (Remission was defined by a decreased HDRS score (≥ 40%), with a final score of ≤8, and a score of 1 (very much improved) or 2, (much improved) on the Improvement item of the CGI). Using a univariate General Linear Model to calculate the effects of 1) duration of	Depression (Hamilton Depression Rating Scale - HDRS) Anxiety (Hamilton Anxiety Rating Scale – HARS) Quality of life (SAT-P satisfaction profile) Self-assessed interpersonal functioning (64-item Inventory of Interpersonal Problems) Global functioning (Clinical Global impression Scale - CGI)	Treatment lasted 24 weeks. Assessment at baseline, Week 12, and Week 24.		Participants very poorly described – limited demographic details reported. No description of randomisation procedure. No Intention to treat analysis – only analysed data for completers (i.e. 32 of 39 enrolled) and potential attrition bias due to lack of compliance was not addressed. . QC 1.1=A 1.2=A 1.3=D 1.4=D 1.5=A 1.6=A

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			amnestic or other cognitive disorders, schizophrenia or other psychotic disorders, and patients whose major depressive episode was an expression of bipolar disorder.	Treatment lasted 24 weeks.		treatment and 2) the type of treatment on each assessment scale score, treatment type had a significant effect on HDRS scores - subjects receiving combined therapy had lower mean HDRS scores (T0 mean 18.6, T1 mean 13.6, T2 mean 9.1) than medication only subjects (T0 mean 19.6, T1 mean 15.9, T2 mean 12; p=0.005). Duration of treatment also had a significant effect on HDRS scores (p=0.0005), but the interaction between the two was not significant. Combined therapy (p=0.020) and the interaction of duration and treatment (p=0.005) both had significant effects on social functioning and the difference between treatments increased over time. The interaction between combined therapy and treatment duration was superior to medication-only in improving psychological functioning (relates to self-esteem, problem solving, autonomy) as measured by the AST-P (combined T1 mean 47.0, T2 mean 69.0; medication only T1 50.0, T2 57.2; p=0.017).				1.7=B 1.8= 15% 1.9=D 1.10=F 2.1 = (+)

Transference focused psychotherapy

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Doering, S., Horz, S., Rentrop, M., Fischer-Kern, M., Schuster, P., Benecke, C., Buchheim, A., Martius, P., Buchheim, P. (2010). Transference-focused psychotherapy v. Treatment by community psychotherapists for borderline personality disorder: Randomised controlled trial. British Journal of Psychiatry, 196(5), 389-395. Germany	RCT Level II	Treatment n = 52 Control n = 52	Age mean (SD): Treatment 27.46 ±6.8; Control 27.19 ± 7.5 Gender – all females Diagnosis: DSM-IV BPD via Structured Clinical Interview for DSM and Structured Interview for Personality Organisation Exclusion: Exclusion criteria were diagnosis of antisocial personality disorder, schizophrenia, bipolar I and II	Transference-focused psychotherapy (TFP): Two 50-minute sessions are delivered per week. Before treatment starts, a treatment contract is negotiated orally with the individual, covering general aspects like duration and payment as well as potential threats to the treatment specific to each patient (e.g. suicide attempts, drug misuse or anorectic behaviour). The treatment	Treatment by community psychotherapist	Summary: TFP resulted in reduced BPD symptoms compared to Treatment by community psychotherapist. Higher drop out in the control group. No other differences Detail: The drop-out rate was significantly higher in the experienced community psychotherapists group. There were no significant differences between the groups with regard to medication at baseline and during the 1-year treatment period. The TFP group showed a significantly higher proportion of participants that fulfilled less than five DSM–IV diagnostic borderline criteria after 1 year and were not diagnosed BPD any more (42.3% v. 15.4%, P= 0.002). The TFP group was	Primary: Drop-outs Suicide attempts and self-harming behaviour: Cornell Interview for Suicidal and Self-Harming Behaviour-Self Report (CISSB), adapted from the Parasuicidal History Interview Secondary: DSM-IV diagnostic criteria for BPD via SCID GAF Beck Depression Inventory State-Trait	Follow-up: 1 year	Any suicide attempts during psychotherapy, d = -0.08 (-0.47, 0.30) BDI, d = 0.12 (-0.26, 0.51) Brief symptom inventory, d = 0.08 (-0.31, 0.46) GAF, d = 0.34 (-0.04, 0.73) Level of personality organisation, d = -0.26 (-0.65, 0.12) No. of days in psychiatric inpatient during psychotherapy, d = -0.23 (-0.61, 0.16) No. of DSM-IV diagnostic criteria for BPD, d =-0.56 (-0.95, -0.17) No. of	The results demonstrate the significant superiority of transference-focused psychotherapy with regard to the primary outcome criteria of drop-out rate and suicide attempts during the treatment year. The same was true for the secondary outcome criteria, reduction of DSM–IV diagnostic borderline criteria, psychosocial functioning, level of personality organisation and psychiatric in-patient admissions. Participants in the transference-focused psychotherapy group received 48.5 (s.d. = 34.2) sessions and those in the experienced community psychotherapists group 18.6 (s.d. = 24.0) sessions of individual psychotherapy within the 1-year study period. Future research should look at long-term follow-

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			disorder with a major depressive, manic or hypomanic episode during the previous 6 months, substance dependency (including alcohol) during the previous 6 months, organic pathology or mental retardation.	focuses on the integration of internalised experiences of dysfunctional early relationships. For this purpose, the actual relationship between the individual and the therapist ('transference relationship') is examined as much as possible. Additional psychotherapy not allowed		significantly superior with regard to the number of DSM–IV diagnostic criteria, psychosocial functioning, personality organisation, suicide attempts and number and duration of psychiatric in-patient treatments. To rule out a mere dose effect of TFP, completer analyses were conducted, controlling for the number of therapy sessions delivered. The group differences remained significant for GAF Score, number of DSM–IV borderline criteria, and level of personality organisation. In both groups all but one of the individuals who attempted suicide dropped out of treatment. Those who dropped out were not included in the completer analysis.	Anxiety Inventory Brief Symptom Inventory Psychiatric inpatient admissions - Cornell Revised Treatment History Inventory (CRTHI) Personality organisation: STIPO		psychiatric inpatient admissions during psychotherapy, d = -0.47 (-0.86, -0.08) Self-harming during psychotherapy, d = -0.12 (-0.50, 0.27) State-Trait Anxiety X1, d = 0.18 (-0.20, 0.57) State-Trait Anxiety X2, d = 0.04 (-0.35, 0.42)	up, since effects of psychotherapy seem to take yrs to develop and to continue after termination of treatment. Transference-therapists received more supervision and had assessment of treatment adherence. Large difference in drop out rates between groups was observed. Control group participants attended fewer sessions than the intervention group. QC 1.1=A 1.2=A 1.3=A 1.4=F 1.5=A 1.6=C 1.7=A 1.8= Treatment 17% not assessed at follow-up; Control 44% not assessed at follow-up 1.9= A 1.10=C 2.1 = (-)

Dynamic deconstructive psychotherapy

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Gregory, R.J. DeLucia-Deranja, E., & Mogle, J.A. (2010) Dynamic deconstructive psychotherapy versus optimized community care for borderline personality disorder co-occurring with alcohol use disorders: A 30-month follow-up. [Comparative Study]. Journal of Nervous & Mental Disease, 198(4), 292-298. USA	RCT Level II	N=30 Treatment n = 15 Control n = 15	Age mean (SD): Treatment 28.3±7.1; Control 29±8.6 Gender – female (n, %): Treatment 13 (87%); Control 11 (73%) Diagnosis: Participants included 30 adults ages 18 to 45 yrs having BPD and active alcohol abuse (n=10) or dependence (n =20). Diagnosed via Structured Clinical Interview for DSM–IV Axis II Personality	Dynamic deconstructive psychotherapy (DDP): a time-limited, 1hr weekly individual treatment. Manual-based treatment for particularly challenging populations of BPD, especially those having co-occurring substance use disorders or antisocial personality disorder. Although DDP is offered as a stand-alone treatment, therapists encourage the use of adjunctive modalities, such as group therapy, family therapy, self-help groups, and medications. The key deficit of BPD within this	Optimized community care (OCC): referred to the best treatment available in the community within the restrictions of their own financial resources, availability of treatment, and their willingness to engage. Over the course of the study, their treatment generally involved a combination of individual psychotherapy, medication management, alcohol and drug counselling, professional and self-help groups (such as Alcoholics Anonymous),	Summary: DDP showed greater improvements on BPD and depressive symptoms and dissociation. Both groups improved suicidal and self harm behaviours in heavy drinking but DDP showed greater improvement Detail: Almost all DDP participants displayed clinically meaningful improvement by 12 months, compared with only 38% of participants receiving OCC. This difference was sustained during the naturalistic follow-up period Relative to participants receiving OCC, DDP participants made large and statistically significant reductions over time in BPD symptoms and depression and more	BPD section of the Structured Clinical Interview for DSM-IV Axis II Personality Disorders The alcohol disorders module of the Structured Clinical Interview for DSM-IV-TR Axis I Disorders Severity of BPD: Borderline Evaluation of Severity Over Time (BEST) Beck Depression Inventory (BDI) Dissociative Experiences Scale (DES) Treatment History Interview (THI) Maladaptive behaviours were assessed by structured interviews, including: (1)			Sample size is small, making it difficult to draw firm conclusions. This difficulty is exacerbated by participants who were lost to follow-up. QC 1.1=A 1.2=A 1.3=B 1.4=F 1.5=B 1.6=B 1.7=A 1.8= Tx 40% dropped out of treatment; Control 33% dropped out of treatment; Tx and control 46.7% dropped out of follow-up. 1.9= A 1.10=D 2.1 = (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			Disorders and Structured Clinical Interview for DSM–IV–TR Axis I Disorders Exclusion: Exclusion criteria included schizophrenia or schizoaffective disorder, mental retardation, or neurological conditions having secondary psychiatric symptoms.	model is aberrant processing of emotional experiences. DDP attempts to remediate deficits in 3 neurocognitive functions putatively responsible for adaptive processing of emotional experiences: Association (the ability to identify, acknowledge, and sequence emotional experiences), Attribution (the ability to form complex and integrated attributions of self and others), and Alterity (the ability to form realistic and differentiated attributions of self and others). Interventions that repeatedly	and/or case management. During the first 12 months, overall treatment intensity of OCC tended to be higher than DDP for total paid outpatient mental health contact hours per month (7.39±6.92 vs. 4.79±2.81), average number of psychotropic medications used (2.67 ± 1.45 vs. 2.34 ± 1.61) and proportion participating in self-help groups (55% vs. 20%).	modest improvement in dissociation. Gains achieved during treatment with DDP were sustained during the naturalistic follow-up period. An analysis of DDP participant study completers (n = 8) revealed large repeated measures effect sizes between baseline and 30 months for BEST and BDI scores) and a medium effect size for change in DES score. As a group, the participants who received OCC had mixed symptom changes. Symptoms of BPD modestly improved, whereas depression and dissociation remained largely unchanged at 30 months as compared with baseline. Both groups of participants displayed marked	Lifetime Parasuicide Count, modified in the current study to enumerate self-harm episodes and suicide attempts over the previous 6 months; (2) Addiction Severity Index (McLellan et al., 1992) quantifies substance use over the prior month, such as heavy drinking (consuming ≥5 drinks on a single occasion), recreational drug use, as well as related health and social problems. Social support: Social Provisions Scale (SPS) Occupational functioning: item from Addiction Severity Index			

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
				activate these neurocognitive functions form the foundation of DDP. All DDP participants were required to terminate treatment with DDP after 12 to 18 months. Half of the participants elected to discontinue any type of individual psychotherapy and the other half were referred to nonspecific supportive psychotherapy in the community.		improvement in parasuicide behaviour over time, including self-harm and suicide attempts. By 30 months, participants who had received DDP were no longer engaged in parasuicide. This was a significant change from baseline and a large treatment effect. Among OCC participants, the frequency of parasuicide also significantly improved from baseline to 30 months; however, a third were still participating in this behaviour during the 24 to 30 month follow-up period. Participants receiving DDP reported no suicide attempts from 6 to 12 months and they remained free from attempts during the 24 to 30 month interval. OCC participants made	that elicits, "How many days were you paid for working in the past 30 days?"			

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						significantly more suicide attempts during 6 to 12 months of treatment than did DDP participants, but were no longer reporting suicide attempts during the 24 to 30 month follow-up. DDP participants displayed significant improvement in heavy drinking behaviour from baseline to 30 months and a large repeated measures treatment effect. OCC participants reported significantly more heavy drinking at 12 months than those receiving DDP and did not display significant change over time. However, OCC participants made some improvement in this behaviour during the naturalistic follow-up phase of the study such that there was				

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						only a trend for between-group statistically significant differences by 30 months. Recreational drug use completely remitted by the end of treatment with DDP and was still in remission at 30-month follow-up, demonstrating a large repeated measures effect size over the course of the study. For OCC participants, recreational drug use slightly worsened over time. At 30-month follow-up, most of the OCC participants (n = 5) were using recreational drugs. Social and occupational functioning tended towards greater improvement among DDP than OCC participants. Although between-				

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						group differences were not statistically significant, perceived social support, as measured by SPS scores, significantly improved for DDP participants at 30 months compared with baseline. Improvement in paid employment days trended towards significance.				
Gregory, R.J., Remen, A.L., Soderberg, M., & Ploutz-Snyder, R.J. (2009). A controlled trial of psychodynamic psychotherapy for co-occurring borderline personality disorder and alcohol use disorder: Six-month outcome. Journal of the American Psychoanalytic	RCT Level II This is an ongoing 30 month controlled study but only preliminary 3 and 6 month outcomes are reported in this paper	N=30 Treatment n = 15 Control n = 15	Age mean (SD): Total sample 28.7±7.7 Gender: female 80% in total sample Diagnosis: Participants included 30 adults, ages 18 to 45, meeting the DSM-IV diagnostic criteria for BPD and active	Dynamic deconstructive psychotherapy (DDP) is a time-limited, manual-based treatment that was developed for patients with BPD who are particularly difficult to engage in a therapeutic relationship, including those having co-occurring substance use disorders. The model employs elements of	Treatment as usual (TAU) in the community	Summary: Both DDP and TAU showed declines on a number of measures including suicidal/self harming behaviour and intoxication, but only small differences between groups. Detail: At 6 months: Risk for parasuicidal behaviour in the DDP group decreased by 38%, as against an increase in relative risk of 35% for TAU. Even for participants who continued to report parasuicidal	Parasuicidal behaviour, episode of intoxication, drinking days, days using elicit substances, institutional care, inpatient days, emergency room visits, detail on the actual measures was not provided.	3 and 6 month	Relative risks: Parasuicidal behaviour: DPP -38%; TAU 35% Episode of intoxication: DPP -31%; TAU 31% Institutional care: DPP -55%; TAU 32% Effect sizes could not be calculated due to lack of information	This was a poster summary in a peer reviewed journal. During the first six months, both treatment groups received approximately the same number of individual treatment contact hours/month (4.4 +/- 1.5 DDP vs. 4.0 +/- 3.6 TAU), but the TAU participants received more

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Association, 57(1), 199-205. USA			alcohol abuse or dependence, determined by structured diagnostic interviews Exclusion: Exclusion criteria included primary psychotic disorder, neurological diagnosis, or mental retardation	object relations theory, deconstruction philosophy, and neurocognitive research to delineate specific integrative functions of the self that are targeted for treatment over sequential stages, including functions of association, attribution, and alterity. The treatment aims to support integrative self-functions and to deconstruct pathological attributions that can interfere with a therapeutic alliance. The therapist attempts to foster verbalization and integration of patient experiences, narratives, and		behaviour, the number of incidents decreased by 64%, indicating a harm-reduction benefit. The relative risk for an episode of intoxication decreased by 31% for both treatment groups over six months. Mean number of drinking days decreased by approximately half in both groups (53% for the DDP group; 48% for TAU). The mean number of days using illicit substances decreased 54% for DDP and 25% for TAU. The relative risk of institutional care decreased by 55% for DDP and 32% for TAU. In addition, the mean number of inpatient days decreased by 94% for DDP and 64% for TAU. The mean number of visits to the emergency				hours of group therapy (0.36 +/- 0.92 DDP vs. 2.6 +/- 5.2 TAU), suggesting that TAU represents a high treatment-intensity comparison group. Study retention rates have been equivalent (27% for both groups at six months). However, therapist retention rates differed markedly between the treatment groups (73% DDP vs. 18% TAU). QC 1.1=A 1.2=B 1.3=D 1.4=F 1.5=E 1.6=C 1.7=E

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
				attributions while remaining generally nondirective and nonjudgmental, and relying on moment-by-moment affective responses of both patient and therapist to inform the appropriate intervention. Problematic behaviours, including alcohol misuse, are viewed as maladaptive coping mechanisms and are explored nonjudgmentally within the context of interpersonal narratives		department decreased by 93% for DDP and 86% for TAU.				1.8=27% retention in both groups at 6 months 1.9= D 1.10=D 2.1 = not enough detail to make a judgement

Motive oriented therapeutic relationship (MOTR)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Kramer, U., Berger, T., Kolly, S., Marquet, P., Preisig, M., De Roten, Y., Despland, J.N., Caspar, F. (2011). Effects of motive-oriented therapeutic relationship in early-phase treatment of borderline personality disorder: A pilot study of a randomized trial. Journal of Nervous and Mental Disease, 199(4), 244-250. Switzerland	RCT Level II	Treatment n = 11 Control n = 14	Age mean (SD) Treatment 30.29±12.43 Control 31.27±8.21 Gender – female Treatment 57.14% Control 81.81% Diagnosis: BPD via Structured Clinical Interview for DSM-IV (SCID-II). Additional diagnoses: Treatment: 1 agoraphobia, 1 alcohol abuse, 1 major depression, 1 bulimia, 1 anorexia, 1 schizoid personality disorder Control: 1 panic disorder, 1 alcohol abuse, 2 major depression, 1 somatoform disorder, 1 paranoid personality disorder Exclusion: Inclusion	Motive-oriented therapeutic relationship (MOTR, also called complementary therapeutic relationship) + control TAU – 10 sessions This group received the control condition with additional MOTR and plan analysis (PA). The duration, contents, and objectives of the MOTR-based treatments were exactly the same as in the control condition; MOTR "infuses" the process from session 2 to 10; no sessions were added. MOTR is implemented after the intake session which serves the therapist as data	TAU – 10 session early-phase TAU for patients presenting with BPD. Therapists followed a manual-based psychiatric and psychotherapeutic approach. The imperatives of the manual are (1) Establishment of reliable psychiatric diagnoses, including comorbidities and other problem areas, and communication of this information to the patient; (2) Establishment of psychiatric anamnesis; (3) Identification of the main problems to be	Summary: Patient ratings of therapeutic alliance were improved in the MOTR group compared to the TAU group but no other differences were found Detail: Therapeutic outcome measured using residual gains on the OQ-45 questionnaire between intake and discharge did not show an overall effect. However, on the subscale level, the domain of interpersonal problems assessed using the OQ-45 was significant, which indicates that the reduction of interpersonal problems is larger in the MOTR condition than in the control condition. No other subscale was significant in the	MINI for axis I SCID-II for axis II Therapist adherence: PA and MOTR scale Psychotherapeutic results (subscales of symptomatic level, interpersonal relationships, and social role): Outcome Questionnaire 45.2 (OR-45) Therapeutic alliance: Working Alliance Inventory—Short Form (WAI)	Outcomes measured after 10 treatment sessions - no longer term follow-up	Between treatment groups effect sizes: OQ- total d = 0.52 OQ-symptoms d = 0.32 OQ-interpersonal problems d = 0.86 OQ- social role d = 0.38 WAI Therapeutic alliance – patients d = 0.51 WAI Therapeutic alliance – therapist d = 0.32 Effect sizes of change in scores over time using treatment group as a factor (coefficient,	MOTR condition had significantly fewer drop-outs (2; 18%), compared with the control condition (8; 57%) The results of the MOTR—as an operationalization of the responsiveness concept—are consistent with the hypothesis of a differential impact of this relational-technique variable on the interpersonal level in patients presenting with BPD. This pilot study showed an excellent feasibility of an add-on RCT

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			criteria were a main diagnosis of BPD (APA, 1994), being aged between 18 to 60 and speaking French; exclusion criteria were an organic disorder or a persistent substance abuse/dependence which might affect brain function (memory, level of consciousness, cognitive abilities) and a psychotic disorder implying pronounced break in reality testing (chronic or intermittent), such as schizophrenia, delusional disorder, bipolar affective disorder I, an acute risk of suicide or severe cognitive impairment.	for the establishment of the PA and the ensuing MOTR. PA an integrative method serving case conceptualization and the ensuing relational-technique variable of MOTR. The main focus of PA according to Caspar is the instrumentality of behaviour and experience: based on the patient's verbal, and nonverbal behaviour, which are manifest in- and between sessions, the therapist makes inferences about the implied Plans and motives, answering the question "Which conscious or unconscious purpose could underlie a	treated and establishment of treatment focus; (4) Definition of short-term objectives and general enhancement of motivation; (5) Identification of and dealing with treatment-interfering problems; and (6) Formulation of relational interpretations of core conflictual themes. One session per week was given; if necessary, short-term inpatient treatment was organized, as was adjunct pharmacotherapy	between-group comparison. Therapeutic alliance: Significant difference favouring MOTR for the patient's ratings of therapeutic alliance, but no difference was found for the therapist's rating of therapeutic alliance (measured on a restricted sample of treatment completers). The patients receiving the MOTR-treatments rated that the therapeutic alliance was better and increased more strongly, compared with the control treatments. With respect to the patient's in-session experience, comparing actual means between the groups did not yield	Therapeutic impact: Bern Post-Session Report (BPSR)		SE): WAI patient: 0.87 (0.13) WAI therapist: 0.70 (0.67) BPSR-P Resource activation 1: 0.05 (0.32) BPSR-P Resource activation 2: 0.17 (0.28) BPSR-P Contentment: 0.47 (0.32) BPSR-P Therapeutic relationship: 0.59 (0.29) BPSR-P Problem actuation 0.32 (0.35) BPSR-P Mastery: 0.22 (0.27) BPSR-P Clarification: 0.22 (0.30)	design on an individualized responsiveness procedure, implemented in early-phase treatment for BPD. Focus on process variables rather than broader outcome variables QC 1.1=A 1.2=B 1.3=A 1.4=F 1.5=A 1.6=A 1.7=B 1.8=Treatment : 18% drop out; Control 57% drop out; Intention to treat analyses conducted 1.9= B 1.10=E 2.1 = (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
				particular aspect of an individual's behaviour or experience?"		any significant difference. However, the quality of the therapeutic relationship, as rated by the patient, increased more strongly over the course of the MOTR treatment, compared with the control condition. All the other subscales of the BPSR-P did not differ between the groups with regard to the slope over time				

Psychoeducation

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Zanarini, M.C., & Frankenburg, .R. (2008). A preliminary, randomized trial of psychoeducation for women with borderline personality disorder. Journal of Personality Disorders, 22(3), 284-290 USA	RCT Level II	N= 50 Treatment n = 30 Control n = 20	Age mean (SD) in total sample 19.3 ± 1.4 Gender – all female Diagnosis - BPD diagnosed with Diagnostic Interview for DSM-IV Personality Disorders and Revised Diagnostic Interview for Borderlines. These participants were being diagnosed for the first time. Additionally in terms of lifetime disorders, 78% met criteria for a mood disorder, 40% met criteria for a substance use disorder, 28% met criteria for an anxiety disorder and 50% met criteria for an eating disorder. Exclusion: current psychiatric treatment, met criteria for lifetime/current schizophrenia, schizoaffective disorder or bipolar 1 or current substance dependence (except nicotine)	Psychoeducation on BPD aetiology, phenomenology, co-occurring disorders, treatment options and longitudinal course	Waitlist (took part in workshop at the end of the 12 week study)	No significant difference in BPD symptoms on ZAN-BPD between groups over time. The mean scores of the groups as a whole declined significantly over time. Declines in interpersonal storminess and general impulsivity (not counting self-mutualisation or suicide) were found to be significantly greater among those in the immediate treatment group than the waitlist. There was no significant difference in SDS impairment ratings between groups. In vocational or social functioning over time. There was a trend for vocational but not social functioning to improve over time for the group taken as a whole. Knowledge of BPD increased (6% answered 6+ questions at baseline but 78% answered 6+ correctly after). Immediate psychoeducation after diagnosis can lead to reductions in interpersonal storminess and general impulsivity. This may be because increased knowledge may be more useful in helping people control behaviour rather than affects or cognition.	Structured Clinical Interview for DSM-IV Axis I disorders Zanarini Rating Scale for DSM-IV BPD (ZAN-BPD) Sheehan Disability Scale (SDS) Knowledge of aspects of BPD	12 weeks	Between group standardised mean differences, d (95% CI): Two forms of impulsivity, d = -0.40 (-0.97, 0.174) Stormy relationships, d = -0.381 (-0.952, 0.190) Other details not reported to calculate effect sizes	QC 1.1=B 1.2=B 1.3=C 1.4=F 1.5=A 1.6=A 1.7=A 1.8=no drop out 1.9= A 1.10=F 2.1 = (+)

Clinical Question 8. Which psychosocial therapies are most effective?

Clinical question 8 was combined with clinical question 7.

Note evidence table under Question 7 should include Question 8 as the Committee determined to merge questions 7 and 8 into a single question:

*Which **psychological or psychosocial** therapies are most effective?*

Clinical Question 9. Which pharmacological therapies maximise benefits while minimising harms? (+ comorbidities)

NICE Guideline summary

The NICE guideline refers to pharmacotherapies on page 211.

Although there were 28 evaluable studies of pharmacological treatments in people with a diagnosis of borderline personality disorder (six of which did not meet inclusion criteria), there were few studies of each individual drug, which makes it difficult to draw firm conclusions. There were no trials of benzodiazepines or of ECT. Also, there were variations in the populations in each study, including inpatients, outpatients and symptomatic volunteers, and those with and without comorbid axis I disorders. This means that there were very few studies for each drug within each setting, and consequently, any calculations have low power. Another problem with this dataset is the large number of outcomes reported by each individual study and the lack of standard outcome rating scales within the research field. This also makes the dataset very hard to analyse. However, a relatively large proportion of the available studies have been published relatively recently, which points to a growing interest in research in this area. This is encouraging for the future. There was some evidence that pharmacological treatments can help to reduce specific symptoms experienced by people with borderline personality disorder including anger, anxiety, depression symptoms, hostility and impulsivity, although this is largely based on single studies. However, there is no evidence that they alter the fundamental nature of the disorder in either the short or longer term. The evidence is weak, and it is far from clear if the effects found are the consequence of treating comorbid disorders. In addition, no drug has UK marketing authorisation for these indications in people with borderline personality disorder. There were too few data to assess quality of life outcomes, self-harm/suicidality (except for omega-3 fatty acids) and service use. It was also not possible to explore potential moderators including:

- % population with bipolar diagnoses
- % psychotic or schizotypal
- high dropout rates.

There were few meaningful data regarding harm, so this was difficult to assess. However, it is well known that treatment with olanzapine can lead to weight gain and diabetes and the use of antipsychotics is associated with significant, and in some cases irreversible, long-term harm, such as tardive dyskinesia. There were no data to suggest that any drug was effective as an overall mood stabiliser in people with borderline personality disorder. There is therefore insufficient evidence for the treatment of borderline personality disorder or of the individual symptoms of borderline personality disorder. However, pharmacological treatments may be appropriate for the treatment of comorbid disorders, such as depression.

The NICE guidelines made several clinical recommendations on the role of drug treatment:

- Drug treatment should not be used specifically for borderline personality disorder or for the individual symptoms or behaviour associated with the disorder (for example, repeated self-harm, marked emotional instability, risk-taking behaviour and transient psychotic symptoms).
- Antipsychotic drugs should not be used for the medium- and long-term treatment of borderline personality disorder.
- Drug treatment may be considered in the overall treatment of comorbid conditions (see Section 8.5.13).
- Review the treatment of people with borderline personality disorder who do not have a diagnosed comorbid mental or physical illness and who are currently being prescribed drugs, with the aim of reducing and stopping unnecessary drug treatment.

NICE included studies – pharmacological treatments (Source - Appendix 16: Characteristics Table for The Clinical Question: Pharmacological treatments)

Amitriptyline vs Haloperidol vs Placebo	SOLOFF1989
Aripiprazole vs Placebo	NICKEL2006
Carbamazepine vs Placebo	DE LA FUENTE1994
Roex vs Placebo	FRANKENBURG2002 HOLLANDER2001 HOLLANDER2003
E-EPA (Omega 3) vs Placebo	HALLAHAN2007 ZANARINI2003
Fluoxetine plus DBT vs Placebo plus DBT	SIMPSON2004
Fluoxetine plus IPT vs Fluoxetine plus CT	BELLINO2007
Fluoxetine vs Fluoxetine plus IPT	BELLINO2006B
Fluoxetine vs Olanzapine vs Combined Fluoxetine plus Olanzapine	ZANARINI2004
Fluvoxamine vs Placebo	RINNE2002
Haloperidol vs Phenelzine vs Placebo	SOLOFF1993
Lamotrigine vs Placebo	TRITT2003
Loxapine vs Chlorpromazine	LEONE1982
Olanzapine + DBT vs Placebo + DBT	SOLER2005
Olanzapine vs Placebo	BOGENSCHUTZ2004 ELILILLY#6253 SCHULTZ2008 ZANARINI2001
Topiramate vs Placebo	LOEW2006 NICKEL2004 NICKEL2005
Ziprasidone vs Placebo	PASCUAL2008

Updated search

Summary

There are now a number of systematic reviews of pharmacological interventions for BPD. Most SRs were well conducted and reported but all reviewed small numbers of studies in each category and most of the included studies had small sample sizes. The heterogeneity of outcomes measured made pooling data difficult. Many studies have found positive effects of pharmacotherapy on a range of symptoms including global symptoms/psychopathology and pharmacotherapies appear to be effective for some co-occurring problems. There was stronger evidence for the effectiveness of mood stabilisers than other pharmacotherapies. Antipsychotics showed some effects, as did some anticonvulsants, but there was little evidence for effectiveness of antidepressants. However, caution is required interpreting these results because of the paucity and heterogeneity of the studies. There have been a number of RCT studies, many with small samples, that have been conducted since the reviews; similar results were found.

Summary table (Systematic reviews)

Reference	Quality/comments	Antidepressants	Mood stabilisers	Antipsychotics	Anticonvulsants	Other
Bellino 2008	- This was a poor quality study – search strategy and methodology not clearly outlined and did not assess quality of included studies. Number of included studies for each drug was small.	MAOIs - may help with atypical depression, anger and impulsivity independent of antidepressant effects Tricyclics - modest effect and high potential for harm SSRIs - may help with affective instability and emotional dyscontrol	Lithium - some effect on core pathology but can be toxic and potentially fatal in overdose Carbamazepine - Some effect on wide range of symptoms including impulsive aggressive behaviour and effective dysregulation Lamotrigine[7] - highly significant improvement in anger was observed after 8 weeks of one trial	Tiotixene, Trifluoperazine, Haloperidol, Olanzapine, Aripiprazole showed some effects on a range of symptoms: global symptoms, depression, anxiety, paranoid ideation, psychotic symptoms, obsessive symptoms, rejection sensitivity, suicidal attempts, impulsive aggression, chronic dysphoria Risperidone – no effect	NA	NA

[7] Lamotrigine and topiramate are anticonvulsants but also used as a mood stabiliser. They are reported under the category reported by the authors of the studies

Reference	Quality/comments	Antidepressants	Mood stabilisers	Antipsychotics	Anticonvulsants	Other
Duggan 2008	++	NA	NA	Reduction in cognitive perceptual and mental state disturbance	Reduction in aggression	NA
Ingenhoven 2010	++	No evidence for effect on impulse control, depressed mood, global functioning. Small effect on anxiety and anger Use is not supported nor is the combined use with antipsychotics	Very large effect on impulsive behavioural dyscontrol, anger, anxiety. Moderate effect on depressed mood. More pronounced effect than antipsychotics on global functioning	Atypicals do not outperform classic neuroleptics	NA	NA
Lieb 2010	+	Little evidence for effectiveness	Effects for valproate, lamotrigine and topiramate but not carbamazepine	Haloperidol reduced anger, flupenthixol reduced suicidal behaviour, aripiprizole reduced pathology	NA	Omega 3 fatty acids may reduce depressive symptoms but few studies
Mercer 2009	+	Moderately effective for short term reduction of depression	Highly effective for anger, moderately effective for depressed mood	Moderate effect on anger, depression. Some evidence that haloperidol may worsen depression	NA	NA
Stoffers 2010	++	Little evidence for effectiveness. May help for comorbidity	NA	Olanzapine may increase self harming, weight gain	NA	NA
Varghese 2010	++	NA	NA	NA	NA	Topiramate resulted in reduction in state anger, anger out, hostility, anger in but not trait anger

Summary table (Randomised trials)

Reference	Quality/ comments	Antidepressants	Mood stabilisers	Antipsychotics	Anticonvulsants	Other
Leiberich 2008	+				Lamotrigine - significant reduction in anger and aggression measured by the STAXI than placebo No serious side effects but some adverse events during the trial: self-mutilation (LG), attempted suicide (placebo) and weight loss (both)	
Loew 2008	+				Topiramate - reduction in aggressive behaviour, anxiety and phobias, obsessiveness, depression, paranoia, interpersonal problems, pain. Improved health and activity related measures, and affective instability. No effect on psychoticism. Mild-moderate side-effects usually with initiating or increasing dose.	
Shafti 2010	+			Both olanzapine and haloperidol improved but no difference between them – no placebo control group		
Ziegenhorn 2009	-					Significant improvement in hyperarousal for patients with PTSD for clonidine compared to control but not measures of general psychopathology or BPD symptoms. Mild adverse effects reported

Systematic Reviews

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Bellino, S., Paradiso, E., Bogetto, F. (2008) Efficacy and tolerability of pharmacotherapies for borderline personality disorder. CNS Drugs. 22(8), 671-92. Italy	SR Level I	N = 27 These are reviewed for 3 TX interventions: 1) ADs, 2) Mood stabilizers and 3) APs	1) Efficacy and Tolerability of Antidepressant Agents ADs - MAOIs, Tricyclic and Heterocyclic ADs and SSRIs – 8 studies were included: TX length ranged from 5 – 14 weeks, number of participants ranged from 10 – 108. 2) Efficacy and Tolerability of Mood Stabilizers MS – Lithium, Carbamazepine, Valproate semisodium and Lamotrigine – 7 studies were	1)Efficacy and Tolerability of Antidepressant Agents MAOIs - 3 studies Tricyclic and Heterocyclic Ads – 2 studies SSRIs – 4 studies 2) Efficacy and Tolerability of Mood Stabilizers Lithium – 1 study Carbamazepine – 2 studies Oxcarbazepine – 0 studies Valproate semisodium – 3 studies Lamotrigine – 1 study	Varied by study	Summary: MAOIs - may help with atypical depression, anger and impulsivity independent of antidepressant effects. Tricyclics - modest effect and high potential for harm. SSRIs - may help with affective instability and emotional dyscontrol. Lithium - some effect on core pathology but can be toxic and potentially fatal in overdose. Carbamazepine - Some effect on wide range of symptoms	No outcome measures stated	Not stated	Not reported	Not very clear SR, methods are vague and little detail is given clearly in results, the tables lack detail, the review is more descriptive. Studies have small sample sizes, short durations and high drop outs. Heterogeneity of selection criteria and outcome measures (no detail). QC 1.1 =A 1.2 =D 1.3 =C 1.4 =D

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			included: TX length ranged from 6– 12 weeks, number of participants ranged from 10 – 52. Some inpatients and outpatients. 3) Efficacy and Tolerability of Antipsychotics APs – First generation and atypical AP – 11 studies were included: TX length ranged from 6 – 12 weeks, number of participants ranged from 16 -108.	3) Efficacy and Tolerability of Antipsychotics First generation antipsychotics Tiotixene – 2 studies Trifluoperazine – 1 study Haloperidol – 2 studies Atypical antipsychotics Risperidone – 1 study Olanzapine – 4 studies Ariprazole – 1 study		including impulsive aggressive behaviour and effective dysregulation. Lamotrigine - highly significant improvement in anger was observed after 8 weeks of one trial. Tiotixene, Trifluoperazine, Haloperidol, Olanzapine, Aripiprazole showed some effects on global symptoms, depression, anxiety, paranoid ideation, psychotic symptoms, obsessive symptoms, rejection sensitivity, suicidal				1.5 =B 2.1 (-)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						attempts, impulsive aggression, chronic dysphoria Risperidone – no effect Detail: Antidepressant Agents MAOIs - can useful in treating BPD with main effectiveness on symptoms of atypical depression, anger and impulsivity. The effects are considered to be independent of the anti-depressive action of these drugs. Tricyclic and Heterocyclic Ads – response to TCAs in patients with				

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						BPD appears modest. The risk of behavioural toxicity and potential lethality of TCAs in overdose support the use of SSRIs or other Ads. SSRIs – (in particular fluoxetine and fluvoxamine) were found to be efficacious in treating BPD. The effectiveness of the drugs concerned symptoms of effective instability (depression, anxiety and anger) and impulsive dyscontrol (verbal aggression and aggression against				

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						objects).Risk of toxicity is lower. Mood Stabilizers Lithium – one crossover study showed efficacy of lithium on core features of BPD but was a small study, 10 participants for 6 weeks. Lithium can be toxic. Can be fatal in overdose so caution with suicide risk is advised. Carbamazepine – Limited data – Suggestion of effectiveness of carbamazepine on wide range of symptoms, including impulsive aggressive behaviour and effective dysregulation.				

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						One study reported link to melancholic depression. Oxcarbazepine – No RCTs reported. Valproate semisodium – Limited data – only open label studies. Some success with impulse aggression. Potential dose related effects. Lamotrigine – Limited data – A highly significant improvement in anger was observed after 8 weeks of one trial. Antipsychotics - First generation antipsychotics Tiotixene – 2 studies - Reduction in global				

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						symptomatology, depression, anxiety and paranoid ideation, reduction in psychotic symptoms, obsessive symptoms Trifluoperazine – reduction in depression, anxiety, and rejection sensitivity and reduction in suicidal attempts vs. placebo Haloperidol – Reduction in global symptomatology, depression, anxiety and paranoid ideation, reduction in psychotic symptoms, obsessive symptoms				

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						Antipsychotics - Atypical antipsychotics Risperidone – no sig difference Olanzapine – reduction in impulsive aggression, chronic dysphoria, reduction in anxiety, paranoia and global symptomatology. Aripiprazole – reduction in global psychopathology, depression and anxiety.				
Duggan, C., Huband, N., Smailagic, N., Ferriter, M., Adams, C. (2008) The use of pharmacological	SR Level 1	N=35 A total of 35 studies described pharmacological interventions for people	AGE RANGE (18 - 62) = 18 studies No Age Range = 11 studies GENDER Male and Females = 18	Olanzapine vs. placebo = 2 studies Carbamazepine vs. placebo = 1 study Divalproex sodium vs. placebo =4	Placebo + others listed under intervention.	Summary: This review identifies a very limited evidence base to justify intervening with drugs in this group.	Quality of Life (SF36) = 1 study BDI = 2 studies BIS = 1 study IMPS = 2	12 weeks = 2 studies, 32 days + washout = 1 study, 6 months = 3 studies, 12 weeks + washout = 2	Mean differences (MD, 95% CI) provided for individual studies and weighted mean differences (WMD, 95% CI) provided for >1 study.	Search only up to 31 Dec 2006. QC 1.1 =A 1.2 =A 1.3 =A 1.4 =A

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
treatments for people with personality disorder: A systematic review of randomized controlled trials. Personality and Mental Health. Jul; 2(3), 119-70. UK		with a variety of personality disorders. Studies reviewed included diagnostic category for BPD	studies Females = 12 studies Males = 1 study SETTING Outpatient = 16 studies Outpatient and community = 1 study Community = 8 studies Inpatient = 3 studies Multicentre = 1 study Not stated = 1 study	studies Thiothixene hydrochloride vs. placebo = 1 Fluoxetine vs. Nortriptylyne = 1 study Loxapine succinate vs. Chlorpromazine = 1 study Topiramate vs. placebo = 3 studies Mianserin vs. placebo = 1 study Aripiprazole vs. placebo = 1 study Naloxone vs. placebo = 1 study clonidine vs. clonidine = 1 study Fluvoxamine vs. placebo = 1 study Fluoxetine vs. placebo = 1 study		The main positive findings were those favouring the use of anticonvulsants to reduce aggression, and of anti-psychotics to reduce cognitive perceptual and mental state disturbance. However, there were major methodological deficiencies in the trial designs, including small numbers of participants and limited duration of treatment and follow-up.	studies SCL-90 = 2 studies SSI = 2 studies Stic = 2 studies WSIAP = 2 studies HDQ = 1 study STAXI = 2 studies HAM (VARIOUS) = 8 studies Behaviour (BPD SI) = 1 study Behaviours (VARIOUS AGGRESSION) = 4 studies Behaviour – suicide attempt = 2	studies, 10 weeks = 2 studies, 12 weeks + tapering = 1 study, 12 weeks + placebo run-in = 1 study, 6 weeks + 6 month, follow up = 1 study, 6 weeks = 1 study, 8 weeks = 6 studies, 6 – 35 days = 1 study, 4 – 16 days = 1 study, 24 weeks = 1 study, 3 months + washout = 1 study, 5 weeks + washout = 2 studies, 52 weeks + placebo washout = 1 study.	Cognitive-perceptual thinking: Paranoid thinking (aripiprazole) MD: -8.10 (-12.21, -3.99) Psychoticism (aripiprazole) MD: -6.20 (-8.94,-3.46) Somatization (topiramate) MD -6.80 (-9.97,-3.63) Depression: SCL-90 (anticonvulsant) WMD -0.57 (-1.27, 0.13); HAM-D (atypical antipsychotic) WMD -3.98 (-5.70, -2.26), SCL-90-R (aripiprazole) MD -16.40 (-20.88, -11.9); POMS (fluoxetine) risk ratio 0.26 (0.09, 0.72); HAM-D (phenelzine vs. haloperidol) MD -7.86 (-10.51, -5.21) favours	1.5 =A 2.1 (++)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
				Thiothixene hydrochloride vs. Haloperidol = 1 study Fluoxetine + DBT vs. placebo +DBT = 1 study Olanzapine + adapted DBT vs. placebo + adapted DBT= 1 study Haloperidol vs. Phenelzine sulphate vs. placebo = 1 study Lamotrigine vs. placebo = 1 study Omega 3 fatty acid vs. placebo =1 study Olanzapine vs. Fluoxetine vs. Olanzapine + fluoxetine = 1 study Paroxetine vs. placebo = 1			studies Behaviour (impulsivity) = 2 studies Behavioural dyscontrol (acting out, AOS) = 1 study Behaviour (self injury) = 2 studies		phenelzine. Anger STAXI State anger (anticonvulsants) WMD -6.66 (-7.63, -5.68), (aripiprazole) MD -7.70 (-10.1,-5.39) STAXI Trait anger (anticonvulsant) WMD -3.89 (-4.84, -2.93), (aripiprazole) MD -5.90 (-8.04,-3.76) STAXI Anger in (anticonvulsant) WMD -1.11 (-1.64, -0.57), (aripiprazole) MD -4.20 (-5.79,-2.61) STAXI Anger out (anticonvulsant) WMD -5.09 (-5.75, -4.43), (aripiprazole) MD -6.40 (8.27, -4.53) STAXI Anger control (anticonvulsant) WMD 2.64 (2.22, 3.07), (aripiprazole) MD 2.70 (0.53, 4.87)	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
				study Haloperidol vs. Amitriptyline vs. placebo = 1 study Nortriptyline vs. Bromocriptine vs. placebo = 1 study CBT vs. Moclobemide vs. placebo = 1 study Amantadine + Std. care vs. Desipramine + Std. care vs. placebo + Std. care = 1 study Risperidone vs. placebo = 1 study Fluoxetine hydrochloride vs. placebo = 1 study Fluphenazine decanoate vs. Fluphenazine decanoate = 1 study					SCL-90 Anger/hostility (anticonvulsant) WMD -0.91 (-1.37, -0.45), (aripiprazole) MD -8.50 (-12.48, -4.52) POMS Anger (fluoxetine) risk ratio 0.30 (0.10, 0.85) BDHI Hostility (phenelzine) MD -9.19 (-16.12, -2.26) Anxiety IMPS intropunitiveness (conventional anti-psychotic) WMD -0.36 (-3.30, 2.58), (phenelzine) MD -3.88 (-7.51,-0.25) HAM-A general anxiety (atypical anxipsychotic) WMD -2.62 (-4.52, -0.72) SCL-90-R general anxiety (topiramate) MD -6.30 (-8.63,	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
				Desipramine + Std. Methadone treatment vs. placebo + Std. Methadone treatment = 1 study Two studies (Simpson et al., 2004; Soler et al., 2005) used a drug plus DBT in the active treatment arm, but in both cases compared it with a placebo					-3.97), (aripiprazole) MD -9.10 (-12.55, -5.65) SCL-90-R phobic anxiety (topiramate) MD -4.10 (-6.72, -1.48), (aripiprazole) MD -5.70 (-10.33, -1.07) SCL-90-R interpersonal sensitivity (divalproex sodium) MD -0.70 (-1.30, -0.10) SCL-90-R insecurity in social contact (topiramate) MD -6.80 (-10.63, -2.92), (aripiprazole) MD -4.50 (-7.64 -1.36) Impulsiveness BIS (conventional anti-psychotic) WMD 1.38 (-7.51, 10.27) STIC (conventional	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
									anti-psychotic) WMD 1.12 (-0.82, 3.07) Global functioning GAS (conventional anti-psychotic) WMD 1.75 (-2.37, 5.86) CGI (divalproex sodium) risk ratio 0.58 (0.36, 0.94) GAS (phenelzine vs. haloperidol) MD 5.15 (0.29, 10.01) favours phenelzine Social functioning SF-36 (topiramate) MD 7.70 (4.44, 10.96) Overall symptoms/mental health IMPS (conventional anti-psychotic) WMD -1.86 (-10.85, 7.14) SCL-90-R global severity (aripiprazole) MD -9.30 (-13.22,	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
									-5.38), (topiramate) MD -5.90 (-8.47,-3.33) SF-36 (topiramate) MD 4.50 (1.27, 7.73) Interpersonal symptoms (IIP-D) Overly autocratic/ dominant (topiramate) MD -5.30 (-6.15,-4.45) Overly quarrelsome/ competitive (topiramate) MD -5.80 (-6.56,-5.04) Overly introverted/ social avoiding (topiramate) MD -2.60 (-3.38,-1.82) Overly expressive/ importunate (topiramate) MD -3.80 (-4.36,-3.24) Overall physical functioning SF-36 physical functioning (topiramate) MD 3.90 (0.99, 6.81)	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
									SF-36 Role limitation (topiramate) MD 4.00 (0.02, 7.98) Adverse effects Menstrual problems (anticonvulsants) risk ratio 1.31 (0.41, 4.16) Any adverse effects in 2 weeks (fluvoxamine) risk ratio 1.62 (1.05, 2.51) favours placebo Mild sedation (olanzapine) risk ratio 3.50 (1.23, 9.92) favours fluoxetine SF-36 vitality (topiramate) MD 6.60 (3.71, 9.49) favours topiramate Nausea (fluvoxamine) risk ratio 4.05 (1.01, 16.32) favours placebo	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Ingenhoven, T., Lafay, P., Rinne, T., Passchier, J., Duivenvoorden, H. (2010) Effectiveness of pharmacotherapy for severe personality disorders: Meta-analyses of randomized controlled trials. Journal of Clinical Psychiatry.71(1), 14-25. The Netherlands	SR Level 1	N = 32 included studies of which n = 21 were subject to meta-analysis.	Adults from inpatient/outpatient settings (6 studies), inpatient only (5 studies) and outpatient settings (21 studies).	Flupentixol IM – 1 study, Thiotixene – 1 study, Trifluoperazine -1 study, Haloperidol – 3 studies, Olanzapine – 3 studies, Risperidone – 1 study, Aripiprazole – 1 study, Mianserine – 1 study, Tranylcypromine- 1 study, Amitriptyline- 1 study, Desipramine- 1 study, Phenelzine – 2 studies, Fluoxetine – 4 studies, Fluvoxamine- 1 study, Carbamazepine -2 studies, Lithium – 1 study, Valproate – 3	Varied by study	Summary: No evidence for effect of antidepressants on impulse control, depressed mood or global functioning. Small effect on anxiety and anger. Mood stabilisers had a very large effect on impulsive behavioural dyscontrol, anger, anxiety. Moderate effect on depressed mood. More pronounced effect than antipsychotics on global functioning. Use is not supported nor is the combined use with antipsychotics.	3 symptom domains: cognitive perceptual symptoms, impulsive-behavioural dyscontrol, affective dysregulation: (4 subdomains) depressed mood, anxiety, anger, mood lability. Global functioning	5 – 26 weeks	Antipsychotics have a moderate effect on cognitive-perceptual symptoms (5 PC-RCTs; standardized mean difference [SMD] = 0.56) and a moderate to large effect on anger (4 PC-RCTs; SMD = 0.69) Antidepressants have a small but significant effect on anxiety (5 PC-RCTs; SMD = 0.30) and anger (4 PC-RCTs; SMD = 0.34). The effect of antidepressants on global functioning is negligible. Mood stabilizers have a very large effect on impulsive-behavioural dyscontrol (6 PC-	QC 1.1 =A 1.2= A 1.3 =A 1.4 =A 1.5 =A 2.1 (++)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
				studies, Lamotrigine- 1 study, Topiramate - 3 studies		Atypical antipsychotics do not outperform classic neuroleptics. Detail: Antipsychotics have a moderate effect on cognitive-perceptual symptoms. Antipsychotics have a moderate to large effect on anger. Antidepressants have no significant effect on impulsive-behavioural dyscontrol and depressed mood. Antidepressants have a small but significant effect on anxiety and			RCTs; SMD = 1.51) and anger (7 PC-RCTs; SMD = 1.33), a large effect on anxiety (3 PC-RCTs; SMD = 0.80), but a moderate effect on depressed mood (5 PC-RCTs; SMD = 0.55. Mood stabilisers have a more pronounced effect on global functioning (3 PCRCTs; SMD = 0.79) than have antipsychotics (5 PC-RCTs; SMD = 0.37).	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						anger. Mood stabilizers have a very large effect on impulsive behavioural dyscontrol. Mood stabilizers have a very large effect on anger. Mood stabilizers have a very large effect on anxiety. Mood stabilizers have a moderate effect on depressed mood. Mood lability as an outcome measure was seldom assessed. Mood stabilizers have a more pronounced effect on global functioning than have antipsychotics. The effect of				

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						antidepressants on global functioning is negligible. The review suggests that atypical antipsychotics do not outperform the classic neuroleptics. With respect to impulsive-behavioural dyscontrol, the prevalent use of antidepressants (SSRIs) is not validated by this meta-analysis, nor is the second step of adding a traditional antipsychotic drug. Modern mood stabilizers seem to deserve a more prominent position. Prescribing				

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						SSRIs as first and second steps in the treatment of affective dysregulation seems out-dated since mood stabilizers have a more pronounced effect. Evidence-based pharmacologic treatment guidelines for severe personality disorders are still in their infancy.				
Lieb, K., Vollm, B., Rucker, G., Timmer, A., Stoffers, J.M. (2010) Pharmacotherapy for borderline personality disorder: Cochrane	SR Level I	N= 27 studies 27 trials were included in which first and second generation antipsychotics, mood	Participants were adults from mostly outpatient settings. There was a mix of male and female participants ranging from 16 – 314 with	Olanzapine vs placebo – 6 studies, Carbamazepine vs placebo – 1 study, Valproate semisodium vs placebo – 2 studies, Thiothixene vs placebo – 1	Varied by study	Summary: Little evidence for effectiveness of antidepressants. There were positive effects for valproate, lamotrigine and topiramate but not carbamazepine. Haloperidol	Primary outcomes were overall disorder severity as well as specific core symptoms. Secondary outcomes comprised associated	Study durations ranged from 5 weeks to 24 weeks, with a mean duration of approximately 84 days (s.d. = 54.7).	Standardised mean difference (SMD 95% CI), standardised mean change (SMC) or risk ratio (RR, 95% CI) Effect sizes vs. placebo: First generation antipsychotics Haloperiodol for	Authors state that the robustness of findings is low, since they are based mostly on single, small studies. QC 1.1 =A

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
systematic review of randomised trials. British Journal of Psychiatry.196(1), 4-12. UK		stabilisers, antidepressants and omega-3 fatty acids were tested	1714 participants in total.	study, Omega 3 fatty acids vs placebo – 2 studies, Loxapine Chlorpromazine vs placebo - 1 study, Topiramate vs placebo – 3 studies, Aripiprazole vs placebo – 1 study, Ziprasidone vs placebo - 1 study, Fluvoxamine vs placebo - 1 study, Fluoxetine vs placebo – 2 studies, Haloperidol Phenelzine sulphate vs placebo – 1 study, Haloperidol Amitriptyline vs placebo – 1 study, Lamotrigine vs		reduced anger, flupenthixol reduced suicidal behaviour, aripiprizole reduced pathology. Omega 3 fatty acids may reduce depressive symptoms but few studies Detail: First generation antipsychotics – The comparisons of first-generation antipsychotics (FGAs) with placebo yielded significant effects for haloperidol in the reduction of anger and flupentixol decanoate in the reduction of suicidal behaviour. No proof of efficacy	psychiatric pathology and drug tolerability		anger SMD -0.46 (-0.84, -0.09) Flupentixol decanoate for suicidal behaviour RR 0.49 (0.29, 0.92) No proof of efficacy for thiothixene. Second-generation antipsychotics Aripiprazole for anger SMD -1.14 (-1.73, -0.55), for psychotic symptoms SMD -1.05 (-1.64, -0.47), for impulsivity SMD -1.84 (-2.49, -1.18), for interpersonal problems SMD -0.77 (-1.33, -0.20), for depression SMD -1.25 (-1.85, -0.65), for anxiety SMD -0.73 (-1.29, -0.17), for general severity of	1.2 =A 1.3 =A 1.4 =A 1.5 =B 2.1 (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
				placebo – 1 study, Olanzapine, Fluoxetine Olanzapine + fluoxetine – 1 study, Flupentixol decanoate vs placebo - 1 study, Mianserin vs placebo – 1 study.		was found for thiothixene for any outcome. Tolerability between active and placebo treatment did not differ in any comparison. Second generation antipsychotics – Among second-generation antipsychotics (SGAs), aripiprazole was found to have both significant effects in the reduction of the core pathological symptoms of BPD, as investigated by one trial with 52 participants. Six trials compared olanzapine with placebo; among these were two			psychiatric pathology SMD -1.27 (-1.87, -0.67). Olanzapine for affective instability SMC -0.16 (-0.32, -0.01), for anger SMC -0.27 (-0.43, -0.12), for psychotic symptoms SMC -0.18 (-0.34, -0.03), for anxiety mean change difference -0.22 (-0.41, -0.03), for suicide ideation SMC 0.29 (0.07, 0.50), for suicidality SMD 0.15 (-0.36, 0.65), self-harm RR 1.20 (0.50, 2.88). No significant effects for ziprasidone. Mood stabilisers Valproate semisodium for interpersonal problems SMD	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						large studies including approximately 300 participants each. Unfortunately, the different formats of result reporting (end-point vs. change data) did not allow pooling of all study estimates for the majority of outcomes. There were also statistically significant benefits for the reduction of anxiety. However, results for suicidal ideation were inconsistent. Mood stabilisers – Beneficial effects were found for the mood stabilisers valproate			-1.04 (-1.85, -0.23), for depression SMD -0.66 (-1.31, -1.01), for two studies of anger SMD -1.83 (-3.17, -0.48) and SMD -0.15 (-0.91, 0.61). Lamotrigine for impulsivity SMD -1.62, (-2.54, -0.69) Topiramate for interpersonal problems SMD -0.91 (-1.36, -0.35), for impulsivity SMD – 3.36 (-4.44, -2.27), for anger in males SMD -0.65 (-1.27, -0.03), for anger in females SMD -3.00 (-3.64, -2.36), for anxiety SMD -1.40 (-1.99, -0.81), for general psychiatric pathology SMD -1.19 (-1.76,	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						semisodium (divalproex sodium), lamotrigine and topiramate, but not for carbamazepine. Antidepressants - There was little evidence of effectiveness for antidepressant treatment. Other drugs – For supplementary omega-3 fatty acids, significant effects were found in one study for the reduction of suicidality and depressive symptoms . There was also			-0.61) Antidepressants Amitriptyline for depression SMD -0.59 (-1.12, -0.06). No significant effects for miansein, fluoxetine, fluvoxamine or phenelzine sulphate. Other drugs Omega-3 fatty acids for sucidality RR 0.52 (0.27, 0.95), for depression RR 0.48 (0.28, 0.81) and SMD -0.34 (-1.15, 0.46). Tolerability and safety[8] Olanzapine for adverse events RR 1.13 (1.00, 1.28), for weight	

[8] Please note blood measures are available but not reported here

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						an effect estimate of a second study for depressive symptoms, but because of different formats of reporting it could not be pooled with the first one. However, these findings also tended towards better results in participants given omega-3 fatty acids. Tolerability and safety – Tolerability did not differ for any drug–placebo comparison, i.e. drug treatment was not associated with a higher ratio of non-completers than was placebo			gain RR 1.05 (0.90, 1.20), increased appetite RR 2.78 (1.75, 4.34), somnolence RR 2.97 (1.75, 5.03), dry mouth RR 2.24 (1.08, 4.67), sedation RR 9.23 (2.18, 39.12) and RR 1.26 (0.44, 3.66). Topiramate on weight loss SMD -0.55 (-0.91, -0.19). Haloperidol on weight gain SMD -0.18 (-0.70, 0.34) Phenelzine sulphate on weight gain SMD 0.11 (-0.39, 0.61) Effect sizes drug vs. drug comparisons Phenelzine sulphate superior to haloperidol for depression SMD -0.68 (-1.19, -0.17), anxiety	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						treatment. Detailed data on adverse effects were available for olanzapine treatment. Participants treated with this drug were, overall, no more likely to experience any adverse effect than were members of the control group. Adverse effects were also reported in detail for topiramate treatment. Data on the frequency of memory problems, trouble in concentrating, headache, fatigue, dizziness, menstrual pain			SMD -0.66 (-1.16, -0.15), general psychiatric pathology SMD -0.53 (-1.03, -0.03), improving mental health status SMD 0.51 (0.01, 1.01). Olanzapine had more weight gain than fluoxetine SMD 0.98 (0.20, 1.76), and more mild sedation RR 3.50 (1.23, 9.92). No significant effect sizes reported for any other drug vs. drug comparisons.	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						and paraesthesia were also available for one RCT, with no significant difference in frequency between the topiramate and placebo groups comparison. Drug vs drug - Two FGAs, loxapine and chlorpromazine, were compared in one study with 80 participants. Tolerability did not differ significantly. However, there was no usable information on any pathology-related outcome. Two antidepressants were compared with the FGA haloperidol. The				

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						tricyclic antidepressant amitriptyline did not differ significantly from haloperidol treatment for any outcome. The monoamine oxidase inhibitor phenelzine sulphate, however, proved to be superior to haloperidol in the reduction of depression and general psychiatric pathology, and in improving mental health status as investigated in one study. No significant effect was found for the comparison of the SGA				

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						olanzapine with the antidepressant fluoxetine for any pathology related outcome. Drug vs combination of drugs - One trial tested the effects of olanzapine and fluoxetine separately against their combination. There was no significant difference indicating any benefits from combined treatment vs. treatment with olanzapine or fluoxetine alone. Tolerability did not differ significantly. Detailed data were available				

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						for body weight change, the frequency of restlessness and mild sedation. There was no significant difference.				
Mercer, D., Douglass, A.B., Links, P.S. (2009) Meta-analyses of mood stabilizers, antidepressants and antipsychotics in the treatment of borderline personality disorder: Effectiveness for depression and anger symptoms. J Personal Disord. 23(2), 156-	SR Level 1	N = 18 studies were included in the final meta analyses	Adults with more female than males (73% female). Number of participants ranged from 16 – 96. Range of treatment is detailed under interventions. 61% included subject with dysthymia or major depression. 9 of the studies include concurrent TX. 5 studies excluded if	Olanzapine vs placebo - 3 studies Fluoxetine vs placebo – 3 studies Tranylcypromine trifluoperazine carbamazepine vs placebo – 1 study? Divalproic acid vs placebo – 3 studies Topiramate – 3 studies Aripiprazole vs placebo – 1 study	Varied by study	Summary: Antidepressants moderately effective for short term reduction of depression. Mood stabilisers highly effective for anger, moderately effective for depressed mood Antipsychotics moderately effective for anger, depression. Some evidence that haloperidol may worsen depression. Detail:	Depression Hamilton Rating Scale for Depression (HDRS) – 7 studies Symptom Checklist – 90 (SCL-90) Depression – 3 studies Beck Depression Inventory (BDI) – 2 studies Anger SCL-90 Hostility – 5 studies Overt	5 – 24 weeks	Whilst there were large variations between studies of anger reduction, significant pooled effect sizes were found for all three drug types Two longer term studies with divalproic acid (12 and 24 weeks) had negligible effect sizes Mood stabilizers gave the largest reduction in anger/aggression compared to the other drug types, with an effect size d = -1.75 (95% CI -2.77, -0.74). Antidepressant d	Limitations – small numbers of studies in each class – 8 mood, 7 ADs and 6 APs. QC 1.1 =A 1.2 =A 1.3 =B 1.4 =B 1.5 =A 2.1 (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
74. Canada			concurrent treatment in psychotherapy. None of the studies included patients with substance abuse and most excluded patients with suicidal ideation. 33% of included participants in the meta-analysis were selected for difficulty with aggression, prominent behavioural dyscontrol or anger.	Fluvoxamine vs placebo- 1 study Amitriptyline haloperidol vs placebo – 1 study Phenelzine haloperidol vs placebo – 1 study lamotrigine vs placebo – 1 study		Studies assessing anger Mood Stabilizers – MA showed that as class mood stabilizers are highly effective for management of anger in BPD – studies with largest effective sizes were short in length Antipsychotics – MA suggest that as a class, APs have medium effect on anger in BPD in short and medium terms. Further studies on efficacy of olanzapine in BPD are needed. Antidepressants – MA suggests that ADs as a class with exception of	Aggression Scale – Modified (OAS-M) – 3 studies State-Trait Anger Expression Inventory (STAXI) – 5 studies Profile of Mood States (POMS) – 1 study Note: Two other measures developed by researchers were included		= -0.74 (-1.27, -0.21), antipsychotic d = -0.59 (-1.04, -0.15). For depressed mood symptoms, mood stabilisers again gave greatest reduction d = -0.63 (-0.99, -0.27); antidepressants d = -0.37 (-0.69, -0.05), antipsychotic d = -0.46 (-0.94, 0.03).	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						tricyclics are moderately effective for short term. All studies in this group included some patients with depression and other concurrent TX. Caution required as only short term measured. Studies of depression mood Mood stabilizers – MA suggests mood stabilizers were moderately effective for depression in BPD. Effect size was over-estimated and only 4/8 studies included measures for depression. Antidepressants – MA of all 7 studies included				

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						measures of depression but only small effect of AD was shown. Antipsychotics - MA showed a medium effect on symptoms of depression. However CI crossed zero. One study suggestion that haloperidol had effect on anger but could worsen depression.				
Stoffers, J., Völlm, B.A., Rücker, G., Timmer, A., Huband, N., Lieb, K. (2010) Pharmacological interventions for borderline personality disorder.	Cochrane Systematic Review Level 1	Study samples ranged from n = 16 to n = 314 in size. In total, the included studies provided data from	Adult patients with a formal diagnosis of BPD according to DSM criteria. The studies were conducted in either the USA (14 studies) or in Western European countries (12	Any drug or a defined combination of drugs administered on a long-term basis (i.e. not in case of crisis only) with the intention to treat BPD pathology.	Comparison treatments were classified in four categories: • placebo; • active comparator drug; • combination of drugs; • combined treatment, i.e. drug plus	Summary: Total BPD severity was not significantly influenced by any drug. There was little evidence for effectiveness of antidepressants. There was little effect of antipsychotics but olanzapine	Primary outcomes: Overall BPD severity Severity of single BPD criteria according to DSM (avoidance of abandonment, dysfunctional interpersonal patterns,	Variable	Altogether, 28 RCTs have been included, covering 22 different comparisons in ten comparison categories. In the presence of the multitude of different comparisons and outcome	Results are mostly based on single study effect estimates. Long-term use of these drugs has not been assessed. Authors note: Conclusions

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Cochrane Database of Systematic Reviews. 16(6) Germany.		1742 patients.	studies) 5 in Germany and/or Austria, two each in the UK and Spain, and one each in Belgium, Ireland and the Netherlands. There were two international multicentre trials. One took place in 13 study centres in the USA, South America, and Eastern Europe.		concomitant psychotherapeutic treatment or counselling.	may increase self harming, weight gain Detail: First-generation antipsychotics (flupenthixol decanoate, haloperidol, thiothixene); second-generation antipsychotics (aripirazole, olanzapine, ziprasidone), mood stabilisers (carbamazepine, valproate semisodium, lamotrigine, topiramate), antidepressants (amitriptyline, fluoxetine, fluvoxamine, phenelzine sulfate, mianserin), and dietary supplementation (omega-3 fatty acid) were	identity disturbance, impulsivity, suicidal ideation, suicidal behaviour, self-mutilating behaviour, affective instability, feelings of emptiness, anger, psychotic paranoid symptoms, dissociative symptoms) Secondary outcomes: Depression Anxiety General psychiatric pathology: comprehensive measures Mental health status Attrition Adverse		variables, most results are based on single study findings only. The study sample sizes were rather small and ranged, with exception of two large trials (Schulz 2007; N= 314; Zanarini 2007; N of patient data used here: 301), between 16 (Hollander 2001) and 108 (Soloff 1993; divided into three groups). Therefore, the power to detect significant effects was quite low. In addition, the overall robustness of findings must be considered low for the majority of comparisons.	have to be drawn carefully in the light of several limitations of the RCT evidence that constrain applicability to everyday clinical settings (among others, patients' characteristics and duration of interventions and observation periods). QC 1.1 =A 1.2 =A 1.3 =A 1.4 =A 1.5 =A 2.1 = (++)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						tested. First-generation antipsychotics were subject to older trials, whereas recent studies focussed on second-generation antipsychotics and mood stabilisers. Data were sparse for individual comparisons, indicating marginal effects for first-generation antipsychotics and antidepressants. Adverse event data were scarce, except for olanzapine. There was a possible increase in self-harming behaviour, significant weight gain,	effects			

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						sedation and changes in haemogram parameters with olanzapine. A significant decrease in body weight was observed with topiramate treatment. All drugs were well tolerated in terms of attrition. Direct drug comparisons comprised two first-generation antipsychotics (loxapine versus chlorpromazine), first-generation antipsychotic against antidepressant (haloperidol versus amitriptyline; haloperidol versus phenelzine				

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						sulfate), and second-generation antipsychotic against antidepressant (olanzapine versus fluoxetine). Data indicated better outcomes for phenelzine sulfate but no significant differences in the other comparisons, except olanzapine which showed more weight gain and sedation than fluoxetine. The only trial testing single versus combined drug treatment (olanzapine versus olanzapine plus				

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						fluoxetine; fluxetine versus fluoxetine plus olanzapine) yielded no significant differences in outcomes.				
Varghese, B.S., Rajeev, A., Norrish, M., A.l., Khusaiby, S.B.M., (2010) Topiramate for anger control: A systematic review. Indian Journal of Pharmacology 42(3), 135-41. India	SR Level 1	n = 24 included topirmate. n = 5 were included in final analysis.	Study participants were required to be aggressive adults. Studies included participants below 18 yrs of age, provided that the mean age of participants clearly indicated that the majority of participants were adults. Age range 16-61 yrs, with a mean age of 41 yrs.	Included studies were required to have at least one arm in which topiramate was used as intervention. BPD diagnosis = 3 studies Depression diagnosis = 1 study Chronic Backache diagnosis = 1 study Study 1 - The study dealt with women aged between 20 and 35 yrs who were more	Placebo	Summary: With a fairly good quality of studies in the analysis, the study came to a conclusion that there is sufficient evidence to suggest that topiramate is significantly effective in stabilizing trait anger but appears to reduce state anger, anger-out anger-in and hostility. The reduction in the scores was highest in borderline	(a) Four STAXI scales- State Anger, Trait Anger, Anger Out, Anger Control - or any equivalent measure of component or global response. The State Anger scale assesses the intensity of anger as an emotional state at a particular time. The Trait Anger scale measures how often angry feelings are experienced over time. The	8 – 10 weeks.	Calculated weighted mean difference -3.16 (-3.64 to -2.68) in State Anger. Limited detail to allow for effect size calculation.	Primary search was Medline only, also did additional screening of Cochrane and PubMed The sample size was relatively small and the percentage of males included is less compared to that of females. The study duration was generally only 8-10 weeks, which may have

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			Studies were conducted among patients who suffered from other types of aggression, including that in BPDs.	susceptible to BPD than men and STAXI was used as the primary outcome measure. Study 2 – This study conducted a directed study for BPD in males wherein the same standards (above) as the previous study in females were applied. There were 22 subjects each in the topiramate and placebo arms. Study 3 – This was a 10-week study, which enrolled 64 subjects, and grouped them into topiramate		personality disorder (BPD) patients as compared to those with low back ache. Trait Anger dropped by -2.93 (-3.49 to -2.37), especially in female BPD patients. Anger-In reduced more or less uniformly across the studies by -1.43 (-1.84 to -1.03). Anger-Out decreased by -2.8 (-3.19 to -2.42). This effect was minimal among the male BPD patients. Anger Control uniformly increased across the four studies by 2.32 (2.00-2.64). There is	Anger Expression and Anger Control scales assess relatively independent anger-related traits: (i) expression of anger toward other persons or objects in the environment (Anger-Out), (ii) holding in or suppressing angry feelings (Anger-In) and (iii) controlling angry feelings by preventing the expression of anger toward other persons or objects in the environment or controlling suppressed angry feelings by calming			reduced the incidence of adverse effects and the dropout rate. QC 1.1 =B 1.2 =B 1.3 =B 1.4 =B 1.5 =C 2.1 (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
				and placebo arms in a 1:1 ratio. Study 4 – This study on an unrelated condition, i.e. chronic low back pain, topiramate was titrated from 50 mg/day to 300 mg/day in 48 subjects. The effect was compared with a placebo group. Study 5 - In this study 56 females with BPD were randomized to receive topiramate 50-200 mg/day or placebo in a 1:1 ratio		sufficient evidence to suggest that topiramate is significantly effective in stabilizing the "trait anger" while reducing the "state anger." "Anger-Out" and "hostility" were significantly reduced. "Anger-In" was the feature that was the least affected, although this was significant. This suggests that topiramate is effective in controlling anger. There was no suggestion of topiramate precipitating psychomorbidity. The studies	down or cooling off (Anger Control). Individuals rate themselves on the scales that assess both the intensity of their anger at a particular time and the frequency at which anger is experienced, expressed and controlled. (b) Symptoms: a change in self-reported feelings of anger and impulsiveness, either an increase or decrease in the frequency and severity. (c) Behaviour: a reduction in aggression, either to self			

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						varied in terms of inclusion criteria such as BPD, depression and even low back ache. There were separate studies for men and women.	or others; a reduction in impulsiveness.			

Anticonvulsants

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Leiberich, P., Nickel, M.K., Tritt, K., & Gil, F.P. (2008). Lamotrigine treatment of aggression in female borderline patients, part ii: An 18-month follow-up. Journal of Psychopharmacology, 22(7), 805-808 Germany	RCT Level 2 Double blind RCT, which was broken after the conclusion of final testing in the initial trial (8 weeks) 2:1 randomisation	LG Group n = 18 PG Group n=9	Diagnosis of BPD had to be confirmed by means of an interview with SCID II. Sample was All women. LG Group - mean age 29 PG Group - mean age 28 Participants were outpatients referred through "family doctors".	In the initial 8 week study: Lamotrigine was titrated from 50 mg in the first 2 weeks, to 100 mg in the third week, then to 150 mg in the fourth and fifth weeks, and finally to a dose of 200 mg/day in the sixth, seventh and eighth weeks. 200 mg/day lamotrigine continued to be taken up	Placebo initially provided for 8 weeks. After 8 weeks, blind was broken and participants randomised to placebo took neither lamotrigine or placebo.	Summary: Lamotrigine - significant reduction in anger and aggression measured by the STAXI compared to placebo. No serious side effects but some adverse events during the trial: self-mutilation (LG), attempted suicide (placebo) and weight loss (both) Detail: The LG experienced significantly greater changes compared to the placebo/Ex-PG on all STAXI scales. No serious side effects were observed. In isolated cases, relatively mild rash, dizziness, headache and nausea were reported. Two subjects from the Ex-PG and one from the LG engaged in self-mutilation	State-Trait Anger Expression Inventory (STAXI)	8 weeks for initial blinded treatment period. 18 month long-term follow-up observations were reported, after blinding was discontinued	Standardised change scores between baseline and follow-up for lamotrigine group: STAXI Anger-In d = -1.41 (95% CI -2.15, -0.67) STAXI Anger-Out d = -2.95 (95% CI -4.16, -1.74) STAXI State Anger d = -4.08 (95% CI -5.68, -2.42) STAXI Trait Anger d = -3.98 (95% CI -5.55, -2.42) Weight d = -0.12 (95% CI -0.65, 0.41) Standardised change scores between baseline and follow-up for placebo group: STAXI Anger-In d = 1, (95% CI -0.38, 2.39) STAXI Anger-Out d =	The study was limited in sample size with a particularly high drop out in the former control group and also limited due to the discontinuation of blinding after 8 weeks of treatment. QC 1.1=A 1.2=B 1.3=B 1.4=A 1.5=A 1.6=C 1.7=A

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
				to 18 months.		and one from the Ex-PG attempted suicide during the study. In addition, weight loss was observed after eighteen months treatment. In the LG, weight loss was no more significant than in the PG.			0.10 (95% CI -1.04, 1.23) STAXI State Anger d = -0.03 (95% CI -1.16, 1.10) STAXI Trait Anger d = 0.22 (95% CI -0.93, 1.36) Weight d = 0.09 (95% CI -1.04, 1.23) Standardised mean difference between treatment and control at follow-up: STAXI Anger-In d = -3.29 (95% CI –4.95, -1.62) STAXI Anger-Out d = -3.45 (95% CI -5.16, -1.75) STAXI State Anger d = -3.94(95% CI -5.76, -2.12) STAXI Trait Anger d = -5.87 (95% CI –8.20, -3.53) Weight d = -2.06(95% CI -2.71, -1.41)	1.8=22.2% and 66.7% 1.9= A 1.10=F 2.1 = (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Loew, T.H., & Nickel, M.K. (2008). Topiramate treatment of women with borderline personality disorder, part ii: An open 18-month follow-up. Journal of Clinical Psychopharmacology, 28(3), 355-357. Austria/Germany	RCT Level II	N=56 Topiramate n = 28 Placebo n = 28	TG (Topiramate Group) vs PG (placebo group) Age [in yrs]: TG, 24.9 ± 5.3; PG, 25.6 ± 5.7 Ever been treated with psychotherapy: TG, n = 15 [53.6%]; PG, n = 13 [46.4%] Ever been treated with psychopharmacological therapy: TG, n = 26 [92.8%]; PG, n = 27 [96.4%] Ever been hospitalized	100mg topiramate daily. After blind was broken, participants in the intervention group continued to take topiramate.	Initially placebo controlled but after blind was broken, former placebo group received no intervention.	Summary: Topiramate - reduction in aggressive behaviour, anxiety and phobias, obsessiveness, depression, paranoia, interpersonal problems, pain. Improved health and activity related measures, and affective instability. No effect on psychoticism. Mild-moderate side-effects usually with initiating or increasing dose. No significant change occurred on the scale that depicts relatively borderline symptomology. It is possible that topiramate exerts a merely modulating effect on aggressive expansive traits. Detail: Topiramate significantly reduced health-related	SCL-90-R SF-36 Inventory of Interpersonal Problems	10 weeks for initial blinded treatment period. 18 month long-term follow-up observations were reported, after blinding was discontinued.	Accurate effect sizes cannot be calculated (except for changes in weight) because no means were provided. Estimate of the standardised mean difference between intervention and control group for psychological variables using p value: d = -0.71 (95% CI -0.76, -0.17) Standardised change in weight between baseline and follow-up for topiramate group: d= -0.59 (95% CI -0.99, -0.19); and for placebo group d = 0.25, (95% CI -0.13, 0.62). Standardised mean difference between intervention and control group for	QC 1.1=A 1.2=B 1.3=B 1.4=A 1.5=A 1.6=A 1.7=A 1.8=21.4% and 25% 1.9= A 1.10=F 2.1 = (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			for psychiatric disorders: TG, n = 6 [21.4%]; PG, n = 7 [25.0%]) Depressive disorders: TG, n = 20 [71.4%]; PG, n = 21 [75.0%] Anxiety disorders: TG, n = 15 [53.6%]; PG, n = 14 [50.0%] Obsessive-compulsive disorders: TG, n = 3 [10.7%]; PG, n = 4 [14.3%] Somatoform disorders:			impediments to physical activities, increased the ability to engage in specific activities, reduced physical pain, improved personal assessment of one's own health, increased vitality, reduced restrictions in social and vocational activities, and significantly improved the emotional state of health. The increased affective stability and reduction of pain also conform to the findings of previous studies. Significant changes were seen on all scales of the SCL-90-R (P < 0.01), except psychoticism, and on the Global Severity Index (P < 0.01). These findings conform to previous reports of clear improvements not only in aggressive behaviour but also in anxiety and			weight: d = -2.06 (95% CI -2.71, -1.41)	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			TG, n = 17 [60.7%]; PG, n = 18 [64.3%]) BPD diagnosed by SCID.			phobias. They also corroborate and expand findings from the initial study on obsessiveness, depression, and paranoid ideation. On the other hand, topiramate does not seem to be effective in treating psychoticism. In comparison to the placebo, topiramate resulted in significant improvement on 5 scales of the German Language Version of the Inventory of Interpersonal Problems. Some side effects: but are mild to moderate, often occurring only when topiramate is initiated or increased in dose.				

Antipsychotics

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Shafti, S.S., & Shahveisi, B. (2010). Olanzapine versus haloperidol in the management of borderline personality disorder: A randomized double-blind trial. Journal of Clinical Psychopharmacology, 30(1), 44-7 Iran	RCT Level 2 8 week, parallel group, comparative double-blind RCT (olanzapine vs. haloperidol)	N=28	All females Age: Olzanzapine Group: 30.09 (±8.71) Haloperidol Group: 28.88 (±7.66). The patients were excluded if comorbid MH was present, including major depressive disorder, bipolar disorder, psychosis or substance dependency in Axis I, mental retardation in Axis II, or	Olanzapine The drugs were started at 2.5 mg daily and then individually increased weekly by 2.5-mg increments, as needed or tolerated, to a maximum of 10 mg by week 4. The dose established by week 4 was held constant throughout the remainder of the study.	Haloperidol (in identical looking capsules).	Summary: Both olanzapine and haloperidol improved but no difference between them – no placebo control group Detail: All of the patients from within both groups completed the study. Intragroup analysis at the eighth week interval revealed significant positive response by both olanzapine and haloperidol in comparison with the baseline (P < 0.05); however, between-group analysis showed no significant difference, among	Brief Psychiatric Rating Scale (BPRS) Clinical Global Impression-Severity (CGI-S) Buss-Durkee Hostility Inventory (BDHI) (has 8 subscales: Assault, Indirect Hostility, Irritability, Negativity, Resentment, Suspicion, Verbal Hostility, and Guilt.)	Measured at baseline and after 8 weeks.	The effect size was calculated for changes on the BPRS, BDHI, and CGI-S at the end of treatment, which indicated a large (d ≥ 0.8), readily observable improvement with both olanzapine (Cohen d = 1.40, effect-size r = 0.574; Cohen d = 1.56, effect-size r =0.615; and Cohen d = 0.759,	QC 1.1=B 1.2=B 1.3=B 1.4=A 1.5=A 1.6=B 1.7=A 1.8= 0% both groups 1.9=B 1.10=F 2.1 = (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			identifiable neurological morbidity in Axis III. No other concurrent psychotropic medication or psychosocial interventions were allowed during the trial. Inpatients			the patients. The analysis of specific Brief Psychiatric Rating Scale subscales in both groups revealed considerable and comparable improvements in anxiety, tension, depressive mood, and hostility. There was a significant positive response with both olanzapine and haloperidol at the end of the trial in comparison with the baseline on the BPRD, BDHI and CGI-S. Although olanzapine caused more decrement, the between group analysis showed no significant difference. Analysis			effect-size r = 0.354, respectively) and haloperidol (Cohen d = 2.67, effect-size r = 0.801; Cohen d = 1.06, effect-size r = 0.471; and Cohen d = 0.749, effect-size r = 0.350). Standardised mean difference between haloperidol and olanzapine at follow-up: BPRS d = 0.22 (95% CI -0.53, 0.96)	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						of specific BPRS subscales in both groups revealed similar and significantly lower scores in anxiety, tension, depressive mood, and hostility. In this respect, olanzapine showed appreciably better results on suspiciousness and excitement. A similar pattern was seen by haloperidol on uncooperativeness and unusual thought content. Side effects were mild and well tolerated, no subject failed to complete the study.			BDHI d = -0.02 (95% CI -0.76, 0.72) CGI-S d = -0.32 (95% CI -1.07, 0.42)	

Anxiolytics

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Ziegenhorn, A. A., Roepke, S., Schommer, N. C., Merkl, A., Danker-Hopfe, H., Perschel, F. H., Heuser, I., Anghelescu, I.G., Lammers, C. H. (2009). Clonidine improves hyperarousal in borderline personality disorder with or without comorbid posttraumatic stress disorder: A randomized, double-blind, placebo controlled trial. Journal of clinical psychopharmacology, 29(2), 170-173.	RCT Level II Within-subject, double-blind, placebo-controlled cross over design (block randomisation to receive either clonidine or placebo first)	N=62 n = 18	All patients were white, 1 patient was a male, and 17 patients were female. The mean (SD) age of the BPD patients in this study was 32 (8) yrs (range, 19-44 yrs). 88% had psychiatric comorbidities; the most prevalent axis I disorder was PTSD (12 patients) followed by eating disorders (9 patients), and substance abuse (7 patients). Ten patients were on	Clonidine A slow dose-escalation scheme was used to reach the target dose of 1 capsule (0.150 mg of clonidine) in the morning and 2 capsules (0.300 mg of clonidine) at bedtime at the end of week 1. Participants were assessed during week 2. During week 3, medication/ placebo was tapered to zero. Week 4 was used for a drug washout. From week 5, patients were switched to the alternate	Placebo Capsule	Summary: Significant improvement in hyperarousal for patients with PTSD for clonidine compared to control but not measures of general psychopathology or BPD symptoms. Mild adverse effects reported Detail: Treatment with clonidine resulted in a significant 18.3% improvement in hyperarousal. The improvement in the PTSD	Mini International Neuropsychiatric Interview for DSM-IV and the Structured Clinical Interview for DSM-IV personality disorders. Hyperarousal was measured by the clinician-administered PTSD scale (CAPS-D). BPD typical symptoms were assessed using the borderline symptom list (BSL). The Symptom Checklist 90	6 weeks	Standardised change scores between baseline and follow-up for clonidine group: CAPS-D d = -2.36 (95% CI -3.26, -1.46) BSL d = -0.46 (95% CI -0.94, 0.03) SCL-90-R d = -0.63 (95% CI -1.13, -0.12) BDI d = -0.80 (95% CI -1.33, -0.27) Standardised change scores between baseline and follow-up for placebo group: CAPS-D d = -1.26 (95% CI -1.8, -0.64) BSL d = -0.26 (95% CI -0.73,	Small sample size but still showed improvement CQ 1.1 = A 1.2 = B 1.3 = E 1.4 = D 1.5 = E 1.6 = C 1.7 = A 1.8 = 17% of the total sample dropped out during the placebo and 11% of the total sample dropped out after clonidine; 29% of the total sample after randomisation dropped out. 1.9 = C 1.10 = F 2.1 = (-)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Germany			antidepressant medication (91% second generation antidepressants), 3 were on antipsychotics, and 1 patient was on valproate. Dropouts were not related to the study or adverse effects of the medication. Inpatients	treatment and evaluated in week 6 as before.		positive subsample was 21.2% (z = -2.67, P = 0.008) compared with a 13.1% improvement in the PTSD-negative subsample (z = -1.46, p = 0.144). The improvement of general psychopathology scores (SCL-90-R) in the whole sample did not reach conventional levels of significance. Clonidine had no effect on borderline-typical symptoms in the whole sample (BSL). Adverse effects, when	revised (SCL-90-R) with its 9 subscales. Beck Depression Inventory (BDI). 24-hour urine was collected for catecholamine measurements.		0.21) SCL-90-R d = -0.34 (95% CI -0.82, 0.13) BDI d = -0.49 (95% CI -0.98, 0.00) Standardised mean difference between clonidine and placebo: CAPS-D d = 1.01 (95% CI 0.44, 1.58) BSL d = 0.17 (95% CI -0.30, 0.63) SCL-90-R d = 0.24 (95% CI -0.23, 0.71) BDI d = 0.22 (95% CI -0.25, 0.69)	

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						present, were mild. Hyperarousal as measured by the Clinician Administered PTSD scale improved significantly compared with placebo (P = 0.003) irrespective of PTSD comorbidity. Improvements in general and BPD-typical psychopathology were mainly seen in the PTSD-positive subgroup, whereas the subjective sleep latency (P = 0.005) and the restorative qualities of the sleep (P =				

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						0.014) improved in the whole sample. Authors conclude that clonidine might be a useful adjunct to pharmacotherapy in patients with BPD who have marked hyperarousal and/or sleep problems and, in particular, in patients with BPD who have a PTSD comorbidity.				

Clinical Question 10. *Among people with BPD, are multimodal therapies (pharmacological, psychological, team approaches, day programs, inpatient programs, family/systems therapies, therapeutic communities) more effective than single modal therapies in reducing suicide/self-harm, psychopathology and increasing functioning?*

NICE guideline summary

NICE refers to combination therapies on page 144.

There are few studies comparing the effects of adding a drug to a psychological therapy on symptoms of borderline personality disorder. Consequently the evidence for an effect is weak. There was no evidence of an effect on symptoms of adding fluoxetine or olanzapine to DBT. However, adding IPT to fluoxetine showed some efficacy (compared with fluoxetine alone) in reducing depression symptoms (clinician-rated measure only), and psychological and social functioning aspects of the quality-of-life measure used (self-rated measures). However, the number of participants in this latter trial is very low (n _ 25) and therefore further research is needed to replicate this finding. In the trial comparing IPT with CT, the effect of treatment on outcomes was inconclusive, other than for social functioning where CT improved scores more than IPT. However, this trial is also very small. The evidence does not support any recommendations specifically about the combined use of psychotropic medication and a psychological therapy in the treatment of borderline personality disorder.

Updated search

Summary

There were four new multimodal studies that met the inclusion criteria. Generally studies showed a benefit for combined medication and psychological therapies over medication alone.

Evidence table

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Bellino, S., Rinaldi, C., Bogetto, F. (2010) Adaptation of interpersonal psychotherapy to borderline personality disorder: A comparison of combined therapy and single pharmacotherapy. Canadian Journal of Psychiatry. 55(2), 74-81. Italy	RCT Level II	N= 55 enrolled N=44 analysed	55 participants (18 males and 37 females) with DSM-IV-TR diagnosis of BPD were recruited from patients attending the Service for Personality Disorder of the Unit of Psychiatry, Department of Neuroscience, University of Turin. Mean age of 25.8 yrs in medication-only group and 26.2 yrs in combined therapy group; 62% previous hospitalization	28 patients received fluoxetine 20 mg to 40 mg daily (see control group for schedule) plus IPT-BPD. IPT-BPD consisted of weekly, manualised sessions lasting 1 hour. Patients in the combined therapy group were treated by a psychotherapist who was not the psychiatrist prescribing the medication and who had 5 yrs of experience practising IPT. The psychotherapy and the	27 patients received fluoxetine 20 mg to 40 mg daily plus clinical management consisting of a fortnightly clinical review of 15-20 minutes duration. Initially, fluoxetine was prescribed at a fixed dosage of 20 mg daily with the opportunity to increase the dosage to 40 mg daily beginning in week 2, depending on clinical judgment.	Summary: Combined therapy superior to medication only on a range of measures including anxiety, psychological functioning and social functioning. Detail: Of 55 subjects, 11 (20%) dropped out (6 in medication-only, 5 in combined therapy). Only treatment completers (n=44) were included in the analysis. Using a univariate General Linear Model to calculate the effects of 1) duration of treatment and 2) the type of treatment on each assessment scale score, only duration of treatment had a significant effect on global functioning, depressive symptoms and social and occupational functioning (p=<0.001), while both treatments alleviated symptoms of depression and improved	Depression (Hamilton Depression Rating Scale) Anxiety (Hamilton Anxiety Rating Scale) Quality of life (SAT-P satisfaction profile) Global functioning (CGI Clinical Global Impression Scale) Social and occupational functioning (SOFAS) BPD symptoms severity and	Treatment lasted 32 weeks.		No Intention to treat analysis – only analysed data for completers (i.e. 44 of 55 enrolled) and potential attrition bias due to lack of compliance was not addressed. Combined therapy was not compared with IPT alone. Small sample size limits ability to draw

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			s; 27% employed; 31% married. Excluded were those with a lifetime diagnosis of delirium, dementia, amnestic or other cognitive disorders, schizophrenia or other psychotic disorders, and bipolar disorder. Concomitant Axis I or II disorders were also excluded. Female patients of childbearing age were excluded if they were not	pharmacotherapy started at the same time.		global functioning. Combined therapy was superior to medication-only in alleviating anxiety symptoms (p=<0.001). Combined therapy was significantly superior to medication-only in improving psychological functioning (p=0.003). The interaction between combined therapy and treatment duration was superior to medication-only in improving social functioning as measured by the SAT-P for subjective quality of life (p=0.03). Only duration of therapy had an effect on the BPD-SI total score (p=<0.001), and duration also had an effect on the following factors from the BPD-SI: outbursts of anger (p=<00.1) and emptiness (p=<.001). Combined therapy had significant effects on interpersonal relationships (p=<.009), impulsivity	frequency (BPD-SI)			strong conclusions but results suggest that combined therapy was superior to monotherapy in relieving anxiety, improving functioning and alleviating the severity of some symptoms of BPD during the 32 weeks of the trial. QC 1.1=A 1.2=C 1.3=B 1.4=D 1.5=B

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			using an adequate method of birth control, as were those who had recently received psychotherapy or pharmacotherapy, and current substance abusers.			(p=<0.01), and affective instability (p=0.02) which increased over time (p=<0.001 for all domains). Neither type of therapy nor duration of therapy had effects on: abandonment, parasuicidal behaviour, paranoid ideation, and identity.				1.6=B 1.7=B 1.8= 20% 1.9=D 1.10=F 2.1 = (-)
Bellino, S., Zizza, M., Camilla, R., & Filippo, B. (2006) Combined treatment of major depression in patients with borderline personality disorder: A comparison with pharmacothera	RCT Level II	N=39 enrolled N=32 analysed	39 participants with DSM-IV-TR diagnosis of BPD who met clinical and DSM-IV criteria for a major depressive episode (mild to moderate). Mean age of 26.4 yrs (SD 3.7); male to	20 patients received fluoxetine (see control group for schedule) plus IPT. IPT consisted of weekly, manualised sessions lasting 1 hour. Patients in the combined therapy group were treated by a	19 patients received fluoxetine 20 mg to 40 mg daily plus clinical management. Initially, fluoxetine was prescribed at a fixed dosage of 20 mg daily with the opportunity to increase the dosage to 40	Summary: Combined therapy had significant benefits over medication only on a range of functioning measures. Detail: Of 39 subjects, 7 dropped out (4 in medication-only, 3 in combined therapy). Only subjects that completed the study were included in the analysis (n=32). Changes in depression remission rates, CGI, and	Depression (Hamilton Depression Rating Scale - HDRS) Anxiety (Hamilton Anxiety Rating Scale – HARS) Quality of life (SAT-P satisfaction profile)	Treatment lasted 24 weeks. Assessment at baseline, Week 12, and Week 24.		Participants very poorly described – limited demographic details reported. No description of randomisation procedure. No Intention to treat

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
py. Canadian Journal of Psychiatry, 51(7), 453-460. Italy			female ratio 3:5. Subjects were selected from patients attending the Service for Personality Disorder of the Unit of Psychiatry, Department of Neuroscience, University of Turin. Excluded were those with a lifetime diagnosis of delirium, dementia, amnestic or other cognitive disorders, schizophrenia or other psychotic disorders, and	psychotherapist who was not the psychiatrist prescribing the medication and who had 5 yrs of experience practicing IPT. The psychotherapy and the pharmacotherapy started at the same time.	mg daily beginning in Week 2, depending on clinical judgment.	HARS score did not differ between treatments with 75% (n =12) of combined-treatment patients and 62.5% (n =10) of medication-only patients achieving remission (x2 = 0.562, p = 0.446). (Remission was defined by a decreased HDRS score (≥ 40%), with a final score of ≤8, and a score of 1 (very much improved) or 2, (much improved) on the Improvement item of the CGI). Using a univariate General Linear Model to calculate the effects of 1) duration of treatment and 2) the type of treatment on each assessment scale score, treatment type had a significant effect on HDRS scores - subjects receiving combined therapy had lower mean HDRS scores (T0 mean 18.6, T1 mean 13.6, T2 mean 9.1) than medication only subjects	Self-assessed interpersonal functioning (64-item Inventory of Interpersonal Problems) Global functioning (Clinical Global impression Scale - CGI)			analysis – only analysed data for completers (i.e. 32 of 39 enrolled) and potential attrition bias due to lack of compliance was not addressed. Small sample size does not allow strong conclusions to be drawn from this study but results suggest that combined therapy for BPD

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			patients whose major depressive episode was an expression of bipolar disorder.			(T0 mean 19.6, T1 mean 15.9, T2 mean 12; p = 0.005). Duration of treatment also had a significant effect on HDRS scores (p = 0.0005), but the interaction between the two was not significant. Combined therapy (p = 0.020) and the interaction of duration and treatment (p = 0.005) both had significant effects on social functioning and the difference between treatments increased over time. The interaction between combined therapy and treatment duration was superior to medication-only in improving psychological functioning (relates to self-esteem, problem solving, autonomy) as measured by the AST-P (combined T1 mean 47.0, T2 mean 69.0; medication only T1 50.0, T2 57.2; p = 0.017).				patients with comorbid depression may be superior to fluoxetine alone in improving symptoms of depression and social and psychological functioning. QC 1.1=A 1.2=A 1.3=D 1.4=D 1.5=A 1.6=A 1.7=B 1.8= 15% 1.9=D 1.10=F 2.1 = (-)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Simpson, E.B., Yen, S., Costello, E., Rosen, K., Begin, A., Pistorello, J., & Pearlstein, T. (2004) Combined dialectical behaviour therapy and fluoxetine in the treatment of borderline personality disorder. The Journal of clinical psychiatry, 65(3), 379-385. USA	RCT Level II Randomized, double-blind, placebo-controlled 12-week trial. Block allocation based on presence of PTSD or major depressive disorder to ensure presence of disorders was comparable across treatmen	N = 25	25 female subjects with DSM-IV diagnosis of BPD and meeting at least one BPD criterion for affective instability and one for impulsivity (as fluoxetine was not expected to improve symptoms of identity disturbance) were recruited from admissions to a 5-day, DBT-based partial hospital program for women. Mean age of 35.3 yrs (SD 10.13), 72% Caucasian,	12 subjects were randomly assigned to fluoxetine which was prescribed at a dosage of 20 mg daily at week 1 and increased to 40 mg daily if required beginning in Week 3. All subjects received 12 X 1 hour sessions of individual DBT facilitated by trained therapists and participated in a weekly 2-hour skills building group for 13 weeks. All subjects underwent a week-long washout period	13 subjects were randomly assigned to DBT plus placebo.	Summary: Findings suggest that the addition of 20-40mg of fluoxetine to an evidence-based psychological therapy for BPD such as DBT resulted in no additional benefit over 12 weeks for this sample of females with BPD. Detail: Of 25 subjects, 5 dropped out (3 in fluoxetine group, 2 in placebo). Repeated measures ANOVA with significance level set at 0.01 showed no significant group differences in pre- and post-treatment scores on BDI, STAI, STAXI, DES, OAS-M and GAF, with those in the placebo group showing a greater, but non-significant decrease in symptoms across these measures. Paired sample t tests for within groups showed no significant differences	Depression (Beck Depression Scale - BDI) Anxiety (State-Trait Anxiety Inventory, STAI) Aggression (Overt Aggression Scale – OAS-M) Dissociation (Dissociative Experiences Scale – DES) Anger (State-Trait Anger Expression Inventor-STAXI) Global functioning (Global	13 weeks		A well-conducted study however small sample size and quite short follow-up period must be considered when interpreting results. QC 1.1=A 1.2=A 1.3=A 1.4=A 1.5=A 1.6=A 1.7=A 1.8= 30% 1.9=B 1.10=F 2.1 = (++)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
	t groups.		20% African American, 50% single, 20% married, 56% did not have a college degree. All subjects had at least one other concurrent Axis I disorder either major depression and/or PTSD. Excluded were those with schizophrenia or bipolar disorders, primary diagnosis of substance dependence, seizure disorder, unstable medical conditions, and those	prior to commencing drug therapy or placebo.		between pre-and post-treatment scores among the fluoxetine group on these measures, however significant differences were found among the placebo group for BDI (t= 5.4, df= 10, p=<0.001); and the GAF (t= -5.8, df= 9, p=<0.001), and near-significant improvements were found for improvement in anxiety (t= 3.4, df= 10, p=<0.008); anger expression (t= 3.60, df= 10, p=<0.005); and dissociation (t= 3.42, df= 10, p=<0.007) also among the placebo group. Intention-to-treat analysis of dropouts did not change the findings.	Assessment of Functioning Scale - GAF)			

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			who had been treated with monoamine oxidase inhibitors (MAOIs) or fluoxetine. Pregnant and lactating female patients were excluded as were those not using an adequate method of birth control.							
Soler, J., Pascual, J.C., Campins, J., Barrachina, J., Puigdemont, D., Alvarez, E.,& Perez, V. (2005) Double-blind, placebo-controlled study of dialectical behaviour therapy plus	RCT Level II	N=60	60 participants with DSM-IV diagnosis of BPD assessed by the Structured Clinical Interview for DSM-IV Axis II Disorders and the Revised Diagnostic Interview for	12 weeks of DBT plus olanzapine 5 – 20mg daily. The dialectical behaviour therapy format was adapted from the standard version; two of the four types of intervention were applied:	12 weeks of DBT therapy (as per intervention) plus placebo.	Summary: Olanzapine was significantly superior to placebo in improving mood and anxiety symptoms and in reducing impulsivity/ aggressive behaviour. Detail: All analyses were conducted on an intent-to-treat basis. The endpoint was based on a last-observation-carried-forward strategy. N=42 completed the study	Depression (Hamilton Depression Rating Scale - HDRS) Anxiety (Hamilton Anxiety Rating Scale - HARS) Global functioning (Clinical	12 weeks		No description of randomization procedure. QC 1.1=A 1.2=B 1.3=B 1.4=A 1.5=B 1.6=B

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
olanzapine for borderline personality disorder. American Journal of Psychiatry, 162(6), 1221-1224. Spain			Borderlines were recruited from psychiatric services and emergency psychiatric units. All had moderate-to-high clinical severity without unstable comorbid axis I disorders. Concomitant treatment with other medications (e.g. benzodiazepines, antidepressants, and mood stabilizers) at stable doses was allowed, as was use of toxic substances	skills training and phone calls. Participants were evaluated every 2 weeks by an experienced psychiatrist and participated in weekly 150-minute group psychotherapy sessions led by two trained psychotherapists.		(30% drop-out, 8 of the 30 patients who received olanzapine vs. 10 of the 30 who received placebo) The olanzapine-treated group showed a greater decrease in depressive symptoms according to HDRS: baseline mean 22.5 vs. after-treatment mean 13.71, compared with 20.77 vs. 15.8 for controls ($F = 4.24$, $df = 3.44, 192.64$, $p= 0.004$). A significant decrease in clinical anxiety in the olanzapine-treated group was observed: 26.83 vs. 18.43 compared with 24.36 vs. 19.93 ($F = 3.57$, $df = 3.39, 186.83$, $p<0.02$). Both groups showed a significant improvement in most psychopathology scales however the olanzapine plus DBT group experienced a significantly greater decrease in the frequency of impulsivity /aggressive behaviour than the placebo plus DBT	Global impression Scale - CGI) Self-reported behaviours (impulsivity/aggression, self-injury/suicide attempts, emergency department visits)			1.7=B 1.8= 30% 1.9=A 1.10=F 2.1 = (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			without dependence criteria. 87% female; mean age of 27.5 yrs in treatment group and 26.3 yrs in control group. Excluded were those under 18 and over 45 yrs, unstable Axis I disorder, Clinical Global Impression (CGI) severity of illness score <4, those receiving psychotherapy, female subjects not using medically accepted contraception.			group (F = 2.82, df = 3.68, 184.23, p= 0.03). There was a non-significant decrease in self-injuring behaviour/ suicide attempts in olanzapine-treated group (F = 2.42, df = 2.49, 124.95, p= 0.08). The mean dose of olanzapine was 8.83 mg/day (SD= 3.8, range=5–20). No differences were detected between groups with respect to secondary effects spontaneously reported by the subjects or in movement disorders. Olanzapine-treated patients experienced more weight gain than placebo-treated patients: 2.74 kg (SD=3.2, range=–9 to 7) vs. –0.05 kg (SD= 2.39, range = –8 to 3) (F = 3.24, df= 1.84, 103.55, p<0.05). Participants treated with olanzapine experienced a significantly greater increase in cholesterol levels 0.28 mg/dl vs. –0.1 mg/dl, p<0.04).				

Clinical Question 11. *Among people with BPD and comorbidities (medical [HIV/AIDS, diabetes, chronic pain, obesity, chronic fatigue], other personality disorders, other mental health, alcohol and drug disorders, eating disorders, intellectual disability), what treatments are effective in reducing suicide/self-harm, psychopathology and increasing functioning ?*

Please note that Clinical Questions 11 and 13 were combined after searching.

A summary for both questions is provided under Clinical Question 13.

Clinical Question 12. How should complex and severe BPD be managed, including management strategies (over a period of time) and multiple comorbidities?

NICE Guideline summary

NICE did not address this question separately in searches nor specifically in recommendations. They refer to NICE Clinical Guideline 16 on Self Harm for management of self-harm and attempted suicide.

Updated search

The committee chose not to pursue this question further but to refer to the NICE Clinical Guideline 16. A systematic literature review was not undertaken for this question.

Clinical Question 13. How should the treatment of common comorbidities (depression, psychosis, anxiety disorders, bipolar disorder, substance use disorder, other axis II disorders) be altered in the presence of BPD?

Please note that Clinical Question 11 was combined with Clinical Question 13 after searching the literature. A summary for both questions is provided below.

NICE Guideline summary

Notes: NICE did not specifically address this question in searches but made recommendations based on their general searches. NICE does not specifically refer to evidence on studies of comorbidity but refers to a clinical pathway on page 333 of the NICE Guideline.

Comorbidity of major psychiatric disorders in borderline personality disorder is widely reported in the literature, with mood disorders, anxiety disorders, eating disorders and drug and alcohol dependence being particularly common. This may lead to problems in diagnosis as some of the features of these disorders are inextricably linked to those of personality disorder. In general terms, psychiatric symptoms show particular characteristics when they are linked to borderline personality disorder compared with how they are expressed in independent psychiatric disorders. They tend to be short-lived and can fluctuate rapidly, they are likely to occur primarily in the context of interpersonal stress and they respond swiftly to structured interventions, such as admission or other environmental modification. The diagnosis of both borderline personality disorder and a comorbid disorder should therefore be reviewed before treatment is initiated, particularly if any diagnosis was made during an emergency presentation.

Any psychiatric symptoms that are integral to borderline personality disorder should be treated as part of that disorder. However, if a comorbid disorder is present, clinicians should assess the severity of it and follow the appropriate treatment guidelines. Patients with comorbid axis I and axis II disorders should receive best treatment for both disorders. The treating clinician may need to consider referral to another clinician or service for appropriate treatment of the comorbid disorder depending on their own training and experience, the context of treatment for borderline personality disorder and the severity and type of the comorbid disorder. For example, people with borderline personality disorder that is comorbid with a major psychosis, a severe eating disorder or substance dependence on Class A drugs are likely to require additional expertise if they are to have the best chance of improvement. Under these circumstances clinicians are advised to ensure appropriate arrangements are made for co-ordinated care with agreement on responsibilities and roles. If a comorbid disorder is diagnosed in the initial assessment of a person with borderline personality disorder, it may be most appropriate to refer them for treatment for the axis I disorder before commencing treatment for borderline personality disorder. However, if a person is already engaged in treatment for borderline personality disorder and a comorbid axis I disorder develops or becomes apparent during the course of treatment, a care co-ordinator should keep in contact with the person while they are receiving treatment for the axis I disorder so that they can continue with treatment for borderline personality disorder when appropriate.

The situation is more complex if the comorbid disorder includes predominant depression, PTSD or anxiety symptoms. In many patients these problems are best treated within a psychotherapeutic treatment programme for borderline personality disorder itself and no additional psychotherapy offered. If medication is required, integrating prescribing within the treatment programme may prevent inappropriate prescription of drugs.

NICE clinical practice recommendations

- Before starting treatment for a comorbid condition in people with borderline personality disorder, review:
    - the diagnosis of borderline personality disorder and that of the comorbid condition, especially if either diagnosis has been made during a crisis or emergency presentation
    - the effectiveness and tolerability of previous and current treatments; discontinue ineffective treatments.
- Treat comorbid depression, post-traumatic stress disorder or anxiety within a well-structured treatment programme for borderline personality disorder.
- Refer people with borderline personality disorder who also have major psychosis, dependence on alcohol or Class A drugs, or a severe eating disorder to an appropriate service. The care coordinator should keep in contact with people being treated for the comorbid condition so that they can continue with treatment for borderline personality disorder when appropriate.
- When treating a comorbid condition in people with borderline personality disorder, follow the NICE clinical guideline for the comorbid condition.

Updated search

Summary

There were few studies specifically looking at treatment of common comorbidities among people with BPD. Three papers by the same group, which seem to be from the same study, showed dynamic deconstructive psychotherapy was more effective that TAU in addressing both BPD and alcohol use disorder symptoms. One study of Dual focused schema therapy for co-occurring BPD and substance use disorders failed to show any benefit over individual drug counselling (IDC), and in fact IDC appeared to show more sustained reductions in symptoms. One study of Axis I disorders among those with BPD showed an improvement in substance use abstinence with DBT. Studies of anxiety and depression showed few benefits of psychological therapies, including a brief intervention to prevent crises (Cape Cod model). Clonidine showed an improvement in hyperarousal but not BPD symptoms among people with BPD and PTSD. A single study of cognitive therapy for people with BPD and bulimia nervosa concluded that no modification of the usual therapy for BPD was required for this group.

BPD and substance use

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Gregory, R.J., Chlebowski, S., Kang, D., Remen, A.L., Soderberg, M.G., Stepkovitch, J. & Virk, S. (2008) A controlled trial of psychodynamic psychotherapy for co-occurring borderline personality disorder and alcohol use disorder. Psychotherapy: Theory, Research, Practice, Training, 45(1), 28-41. USA	RCT Level II A minimization method was employed for group assignment which allows for rolling allocation of participants into study groups while ensuring comparability of the two groups on key variables or factors and involves matched group metrics and assigning scores to each group based upon the	N = 30	30 adults with diagnosis of BPD via Structured Clinical Interview for DSM–IV Axis II Personality Disorders, and active alcohol abuse or dependence (i.e., not in full sustained remission) assessed by the alcohol disorders module of the Structured Clinical Interview for DSM–IV–TR Axis I Disorders enrolled in the study. Participants	The investigation treatment was a modified form of psychodynamic psychotherapy, labelled dynamic deconstructive psychotherapy (DDP). DDP was developed for particularly challenging cases of BPD, such as those with co-occurring substance use disorders or antisocial personality disorder. Treatment involved individual weekly sessions over 12 to 18	TAU in the community - TAU participants received a variety of different kinds of treatments over the course of the study involving a combination of individual psychotherapy at a mental health clinic or independent practice, medication management, alcohol counselling, professional and self-help groups and/or case management. Most received	Summary: Results showed that DDP was associated with statistically significant improvement in parasuicide, alcohol misuse, and institutional care. Most secondary outcome measures, including core symptoms of BPD, depression, and dissociation, also improved significantly when compared to controls who received variable community treatment as usual. Detail: Logistic regression showed no statistically significant differences between groups	Primary outcome measures: Parasuicide behaviour (adapted 3-month version of the Lifetime Parasuicide Count); Alcohol misuse measured by the Addiction Severity Index; Institutional care (days in care in past 12 weeks) Secondary outcome measures: Depression (BDI); Dissociation (Dissociative Experiences Scale);	12 – 18 months	Pre=post effect size: BPD symptom severity (BEST) DDP = 1.43, TAU = 0.73 (p=<0.5); BDI DDP = 0.76, TAU = 0.00 (p=<0.5) Social support DDP=0.77, TAU = 0.18 (p=<0.5).	A well-conducted study however the small sample size limits it power to detect treatment effects so results should be interpreted cautiously. QC 1.1=A 1.2=B 1.3=D 1.4=D 1.5=B 1.6=A 1.7=A 1.8=27% for voluntary withdrawal and 33% when the incarcerated

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
	distribution of the selected factors within each group and on each group's total number of participants. The specific factors adjusted for included: age, gender, alcohol abuse versus dependence, current alcohol use, antisocial personality disorder, inpatient utilization, and no. of parasuicides.		were primarily unmarried (90%), female (80%) and Caucasian (90%), with a mean ± SD age of 28.7 ± 7.7 yrs. Only 10 participants (33%) were engaged in part-time or full-time employment. 13 subjects (43%) had a co-occurring diagnosis of antisocial personality disorder and 5 subjects (17%) met criteria for bipolar disorder, Type I or II, all in the TAU group (p = .042). 20 subjects (67%) met criteria for alcohol dependence	months, defined during the initial sessions when the treatment contact was established, and followed a manual-based protocol.	a combination of individual psychotherapy and medication management.	either pre-treatment or during the course of the study on parasuicide, alcohol misuse, or institutional care at each of the five time intervals (all p values >.13). However, there was statistically significant improvement over time on each measure for participants receiving DDP, but not for those receiving TAU. The proportion of DDP participants reporting parasuicide behaviour decreased from 73% (n = 11) pre-treatment to 30% (n = 3) at 12 months. The absolute risk reduction for DDP relative to TAU was	Social support (Social Provisions Scale); Severity of BPD (Borderline Evaluation of Severity over Time)			participant was included. TAU dropout 40% (1 death by suicide) 1.9=A 1.10=F 2.1 = (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			and the remainder (n = 10) for alcohol abuse. 12 subjects (40%) reported currently using illicit drugs. 25 subjects (83%) had prior history of illicit drug use, including heroin (n = 6), sedative hypnotics (n = 10), other opiates (n = 11), amphetamines (n = 12), hallucinogens (n = 14), cocaine (n = 16), and cannabis (n = 25). Exclusion criteria included			21% (the number needed to treat was five, indicating that for every five persons treated with DDP, one more person would be free of parasuicide than if they had received treatment in the community). The proportion of DDP participants reporting incidents of alcohol misuse (>=5 drinks on a single occasion) decreased from 67% (n = 10) pre-treatment to 30% (n = 3) at 12 months. Thus, the proportion of DDP participants remaining abstinent more than doubled over the 12 months of treatment. The absolute risk reduction for DDP relative to TAU was				

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			diagnoses of schizophrenia or schizoaffective disorder, mental retardation, or a neurological condition that may produce secondary psychiatric symptoms (e.g., stroke, multiple sclerosis, partial complex seizures, or traumatic brain injury).			14%, producing a number needed to treat of seven. The proportion of DDP participants needing institutional care decreased from 67% (n = 10) pre-treatment to 10% (n = 1) at 12 months - the absolute risk reduction for DDP relative to TAU was 12%, producing a number needed to treat of eight. Secondary measures: Compared to pre-treatment, at 12 months DDP demonstrated medium to large effect sizes over time on most measures, with changes in core BPD symptoms (BEST), depression (BDI), and				

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						dissociation (DES) reaching statistical significance. Community care did not result in significant improvements on any of the secondary measures. Significant group by time interaction effects ([omega]2 = .05) were demonstrated for BEST, BDI, and SPS scores.				
Gregory, R.J., Remen, A.L., Soderberg, M., & Ploutz-Snyder, R.J. (2009). A controlled trial of psychodynamic psychotherapy for co-occurring borderline personality disorder and	RCT Level II This is an ongoing 30 month controlled study but only preliminary 3 and 6 month outcomes are reported in this paper	N=30 Treatment n =15 Control n = 15	Age mean (SD) : Total sample 28.7±7.7 Gender: female 80% in total sample Diagnosis: Participants included thirty adults, ages eighteen to forty-five, meeting the DSM-IV	Dynamic deconstructive psychotherapy (DDP) is a time-limited, manual-based treatment that was developed for patients with BPD who are particularly difficult to engage in a therapeutic relationship, including those	Treatment as usual in the community	Summary: Improvements in both BPD and alcohol use disorder symptoms for DDP group greater than TAU Detail: During the first six months, both treatment groups received approximately the same number of individual treatment contact	Parasuicidal behaviour Episode of intoxication Drinking days Days using elicit substances Institutional care Inpatient days	3 and 6 month	Relative risks: Parasuicidal behaviour: DPP -38%; TAU 35% Episode of intoxication: DPP -31%; TAU 31% Institutional care: DPP -55%; TAU 32%	This was a poster summary in a peer reviewed journal. QC 1.1=A 1.2=B 1.3=D 1.4=F 1.5=E 1.6=C 1.7=E 1.8=27%

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
alcohol use disorder: Six-month outcome. Journal of the American Psychoanalytic Association, 57(1), 199-205. USA			diagnostic criteria for BPD and active alcohol abuse or dependence, determined by structured diagnostic interviews Exclusion: Exclusion criteria included primary psychotic disorder, neurological diagnosis, or mental retardation	having co-occurring substance use disorders. The model employs elements of object relations theory, deconstruction philosophy, and neurocognitive research to delineate specific integrative functions of the self that are targeted for treatment over sequential stages, including functions of association, attribution, and alterity. The treatment aims to support integrative self-functions and to deconstruct pathological attributions that		hours/month but the TAU participants received more hours of group therapy. Study retention rates were equivalent for both groups at six months. However, therapist retention rates differed markedly between the treatment groups (73% DDP vs. 18% TAU). At 6 months: Risk for parasuicidal behaviour in the DDP group decreased by 38%, as against an increase in relative risk of 35% for TAU. Even for participants who continued to report parasuicidal behaviour, the number of incidents decreased by 64%, indicating a harm-reduction	Emergency room visits Detail on the actual measures was not provided		Effect sizes could not be calculated due to lack of information	retention in both groups at 6 months 1.9= D 1.10=D 2.1 = (-) little detail to make a judgement

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
				can interfere with a therapeutic alliance. The therapist attempts to foster verbalization and integration of patient experiences, narratives, and attributions while remaining generally nondirective and nonjudgmental, and relying on moment-by-moment affective responses of both patient and therapist to inform the appropriate intervention. Problematic behaviours, including alcohol misuse, are viewed as		benefit. The relative risk for an episode of intoxication decreased by 31% for both treatment groups over six months. Mean number of drinking days decreased by approximately half in both groups (53% for the DDP group; 48% for TAU). The mean number of days using illicit substances decreased 54% for DDP and 25% for TAU. The relative risk of institutional care decreased by 55% for DDP and 32% for TAU. In addition, the mean number of inpatient days decreased by 94% for DDP and 64% for TAU. The mean number of visits to				

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
				maladaptive coping mechanisms and are explored nonjudgmentally within the context of interpersonal narratives		the emergency department decreased by 93% for DDP and 86% for TAU.				
Gregory, R.J. DeLucia-Deranja, E., & Mogle, J.A. (2010). Dynamic deconstructive psychotherapy versus optimized community care for borderline personality disorder co-occurring with alcohol use disorders: A 30-month follow-up. [Comparative	RCT Level II	N=30 Treatment n= 15 Control n= 15	Age mean (SD): Treatment 28.3±7.1; Control 29±8.6 Gender – female (n, %): Treatment 13 (87%); Control 11 (73%) Diagnosis: Participants included 30 adults ages 18 to 45 yrs having BPD and active alcohol abuse (n =10) or dependence	Dynamic deconstructive psychotherapy (DDP): a time-limited, 1hr weekly individual treatment. Manual-based treatment for particularly challenging populations of BPD, especially those having co-occurring substance use disorders or antisocial personality disorder. Although DDP is offered as a	Optimized community care (OCC): referred to the best treatment available in the community within the restrictions of their own financial resources, availability of treatment, and their willingness to engage. Over the course of the study, their treatment	Summary: Almost all DDP participants displayed clinically meaningful improvement by 12 months, compared with only 38% of participants receiving OCC. This difference was sustained during the naturalistic follow-up period Detail: Relative to participants receiving OCC, DDP participants made large and statistically significant reductions over time in BPD	BPD section of the Structured Clinical Interview for DSM-IV Axis II Personality Disorders The alcohol disorders module of the Structured Clinical Interview for DSM-IV-TR Axis I Disorders Severity of BPD: Borderline Evaluation of Severity Over			Sample size is small, making it difficult to draw firm conclusions. This difficulty is exacerbated by participants who were lost to follow-up. QC 1.1=A 1.2=A 1.3=B 1.4=F 1.5=B 1.6=B 1.7=A 1.8=Tx 40%

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Study]. Journal of Nervous & Mental Disease, 198(4), 292-298. USA			(n =20). Diagnosed via Structured Clinical Interview for DSM–IV Axis II Personality Disorders and Structured Clinical Interview for DSM–IV–TR Axis I Disorders Exclusion: Exclusion criteria included schizophrenia or schizoaffective disorder, mental retardation, or neurological conditions having secondary psychiatric symptoms.	stand-alone treatment, therapists encourage the use of adjunctive modalities, such as group therapy, family therapy, self-help groups, and medications. The key deficit of BPD within this model is aberrant processing of emotional experiences. DDP attempts to remediate deficits in 3 neurocognitive functions putatively responsible for adaptive processing of emotional experiences: Association (the ability to	generally involved a combination of individual psychotherapy, medication management, alcohol and drug counselling, professional and self-help groups (such as Alcoholics Anonymous), and/or case management. During the first 12 months, overall treatment intensity of OCC tended to be higher than DDP for total paid outpatient mental health contact hours per month (7.39±6.92 vs. 4.79±2.81),	symptoms and depression and more modest improvement in dissociation. Gains achieved during treatment with DDP were sustained during the naturalistic follow-up period. An analysis of DDP participant study completers (n = 8) revealed large repeated measures effect sizes between baseline and 30 months for BEST and BDI scores) and a medium effect size for change in DES score As a group, the participants who received OCC had mixed symptom changes. Symptoms of BPD modestly improved, whereas depression and dissociation	Time (BEST) Beck Depression Inventory (BDI) Dissociative Experiences Scale (DES) Treatment History Interview (THI) Maladaptive behaviours were assessed by structured interviews, including: (1) Lifetime Parasuicide Count, modified in the current study to enumerate self-harm episodes and suicide attempts over the previous 6			dropped out of treatment; Control 33% dropped out of treatment; Tx and control 46.7% dropped out of follow-up. 1.9= A 1.10=D 2.1 = (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
				identify, acknowledge, and sequence emotional experiences), Attribution (the ability to form complex and integrated attributions of self and others), and Alterity (the ability to form realistic and differentiated attributions of self and others) Interventions that repeatedly activate these neurocognitive functions form the foundation of DDP. All DDP participants were required to terminate treatment with DDP after 12 to 18 months. Half of the participants	average number of psychotropic medications used (2.67 ± 1.45 vs. 2.34 ± 1.61) and proportion participating in self-help groups (55% vs. 20%).	remained largely unchanged at 30 months as compared with baseline. Both groups of participants displayed marked improvement in parasuicide behaviour over time, including self-harm and suicide attempts. By 30 months, participants who had received DDP were no longer engaged in parasuicide. This was a significant change from baseline and a large treatment effect. Among OCC participants, the frequency of parasuicide also significantly improved from baseline to 30 months; however, a third were still	months; (2) Addiction Severity Index (McLellan et al., 1992) quantifies substance use over the prior month, such as heavy drinking (consuming ≥5 drinks on a single occasion), recreational drug use, as well as related health and social problems. Social support: Social Provisions Scale (SPS) Occupational functioning: item from Addiction Severity Index			

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
				elected to discontinue any type of individual psychotherapy and the other half were referred to nonspecific supportive psychotherapy in the community.		participating in this behaviour during the 24 to 30 month follow-up period. Participants receiving DDP reported no suicide attempts from 6 to 12 months and they remained free from attempts during the 24 to 30 month interval. OCC participants made significantly more suicide attempts during 6 to 12 months of treatment than did DDP participants, but were no longer reporting suicide attempts during the 24 to 30 month follow-up. DDP participants displayed significant improvement in heavy drinking behaviour from baseline to 30 months and a large	that elicits, "How many days were you paid for working in the past 30 days?"			

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						repeated measures treatment effect. OCC participants reported significantly more heavy drinking at 12 months than those receiving DDP and did not display significant change over time. However, OCC participants made some improvement in this behaviour during the naturalistic follow-up phase of the study such that there was only a trend for between-group statistically significant differences by 30 months. Recreational drug use completely remitted by the end of treatment with DDP and was still in remission at 30-month follow-up, demonstrating a				

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						large repeated measures effect size over the course of the study. For OCC participants, recreational drug use slightly worsened over time. At 30-month follow-up, most of the OCC participants (n = 5) were using recreational drugs. Social and occupational functioning tended towards greater improvement among DDP than OCC participants. Although between-group differences were not statistically significant, perceived social support, as measured by SPS scores, significantly improved for DDP participants at 30 months compared				

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						with baseline. Improvement in paid employment days trended towards significance.				
Ball, S.A., Maccarelli, L.M., LaPaglia, D.M., Ostrowski, M.J. (2011) Randomized trial of dual-focused vs. single-focused individual therapy for personality disorders and substance dependence. J Nerv Ment Dis 199(5), 319-28. USA	RCT Level II	N=105 n=54 Tx n=51 C	105 residents, 81% male, mean age 26.5 yrs, 53% European-America, 27% African-American 29% current DSM-IV diagnosis of substance dependence, lifetime diagnoses: alcohol 41%, cocaine 31%, cannabis 31%, opiates 20%. Mean number of previous AOD treatment =2, mean previous psychiatric	Manual-guided, weekly Dual Focused Schema Therapy (DFST) individual therapy delivered during the first 6 months in a residential TC. DFST = integrated cognitive behavioural coping skills for substance use with targeted interventions for early maladaptive affective reactions, relational problems, and maladaptive behavioural	Manual-guided weekly individual drug counselling (IDC) delivered during the first 6 months in a residential therapeutic community. IDC specifically focused on addiction and it addressed symptoms by providing exposure to various recovery topics and tools. IDC did not target personality or	Summary: There were significant main effects for borderline PD for BSI symptoms, IIP problems and MAACL dysphoria Detail: Participants diagnosed with borderline PD showed significant symptom reductions during the first 3 months in both therapy conditions, however IDC showed continued reductions during the remaining 3 months, whereas DFST showed no further improvement. The three-way interaction of PD X	Brief Symptom Inventory Global Severity Index Dysphoria, anxiety, depression, and hostility subscales of Multiple-Affect Adjective Checklist (MAACL) Revised Interpersonal problems - Inventory of Interpersonal Problems (IIP) General Therapist Skills and	6 months		Subjects with personality disorders started with higher psychiatric, interpersonal, and dysphoria symptoms, and both therapies reduced symptoms during 6 months of residential treatment of substance dependence. The size of the BPD disorder sub-group was also small so results must be

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			treatment =1.2, mean lifetime criminal convictions = 7.3, mean arrests =13.7, mean number of moths incarcerated =16.1. 29.5% (n=31) met Personality Diagnostic Questionnaire Version 4 Revised criteria for BPD Other PDs included paranoid (54%) and antisocial (50%). 39% met no PD diagnostic criteria 54 subjects were randomized to DFST (n=12	coping styles.	other psychiatric disorders and had very little overlap with DFST.	Time X Therapy condition was significant. IDC resulted in more sustained reductions than did DFST in psychiatric and affective symptoms BPD, but not for non-PD participants. Investigators concluded that the value of adding dual-focus therapies for a range of co-occurring PDs and substance dependence in residential rehabilitation settings was not supported by this trial.	session characteristics – Adherence/Competence Rating Scale			interpreted with caution. As the study was conducted in a residential treatment setting, results cannot be generalised to outpatient settings where clients are exposed to substances. QC 1.1=A 1.2=A 1.3=A 1.4=B 1.5=A 1.6=A 1.7=B 1.8= 50% left residential rehab early 1.9=A 1.10=F 2.1 = (++)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			BPD), 51 to IDC (n=19 BPD).							
Harned, M. S., Chapman, A.L., Dexter-Mazza, E.T., Murray, A., Comtois, K.A., & Linehan, M.M. (2008). Treating co-occurring Axis I disorders in recurrently suicidal women with borderline personality disorder: A 2-year randomized trial of dialectical behaviour therapy versus community treatment by experts. Journal of Consulting and Clinical	RCT Level II Participants were randomly assigned to condition by the participant coordinator, who used a computerized adaptive minimization randomizatio n procedure that matched participants on five primary prognostic variables.	N=101 T ; n=52 C ; n= 49	Age mean: T= 29.0; C= 29.6 Gender: all female Diagnosis: Participants were 101 women (age 18–45) who met criteria for BPD and reported at least two suicide attempts and/or non-suicidal self-injury acts in the past 5 years, with at least one act in the 8-week pre-study period. BPD diagnosed by	DBT	The CTBE condition was developed to control for expertise, treatment allegiance, availability of a clinical supervision group, prestige, general factors and assistance in finding a therapist, availability of affordable and sufficient treatment hours, and therapist gender, training, and clinical experience. Community mental health	Summary: There were no differences between DBT and community treatment on number of Axis I disorders. But DBT was more likely to reach full remission. Those with substance use disorders were more often abstinent. Detail: Overall, DBT and CTBE patients did not significantly differ in the proportion of Axis I disorders that reached full remission or that subsequently relapsed. For specific Axis I disorders, DBT patients were significantly more likely to achieve full	Structured Clinical Interview for DSM–III–R Personality Disorders and International Personality Disorders Examination TX HX interview assessed psychotropic medications. Longitudinal Interval Follow-Up Evaluation (LIFE): retrospective ratings of Axis I disorders for each week of the study. Time line follow-back	1 year (+ 4 monthly assessmen ts during 12 month treatment)	Standardis ed mean difference s between treatment groups d (95% CI) Proportion of Axis I disorders reaching full remission, d = 0.20 (-0.24, 0.63) Proportion of fully remitted Axis I disorders that later relapsed, d = 0.02 (-0.50, 0.54) Compariso n rates of full remission	Data was from the Linehan et al (2006) study to examine the efficacy of DBT versus CTBE in treating co-occurring Axis I disorders among suicidal BPD patients. Because patients in DBT reported fewer BPD criterion behaviours (i.e., suicide attempts) and less psychotropic medication use during the study than did CTBE patients

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Psychology, 76(6), 1068-1075 USA			Structured Clinical Interview for DSM–III–R Personality Disorders and International Personality Disorders Examination Exclusion: Exclusion criteria were (a) schizophrenia, schizoaffective disorder, bipolar disorder, psychotic disorder not otherwise specified, or mental retardation; (b) a seizure disorder requiring medication; (c) a mandate to treatment; or (d) the		leaders nominated CTBE therapists as experts in the treatment of difficult patients. CTBE therapists excluded who self-identified as cognitive or behavioural in orientation.	remission from SDD than were CTBE patients. DBT patients spent significantly more time in partial remission and less time in no remission from SDD than did CTBE patients. Survival analysis of the time to the first full remission did not indicate significant differences between treatments for any Axis I disorder. Similarly, DBT patients and CTBE patients did not significantly differ in rates of relapse for any Axis I disorder. DBT patients with SDD reported a significantly greater proportion of drug- and alcohol-abstinent days	procedure: assigned weekly psychological status ratings (PSRs) for each disorder identified at pre-treatment via the SCID–I. For substance dependence disorders (SDD), used the remission criteria from the Diagnostic and Statistical Manual of Mental Disorders - full remission as at least 8 consecutive weeks with minimal or no symptoms. Proportion of days abstinent from drugs and alcohol		(Cohen's w): Remission MDD, w=0.2 (-0.05, 0.45) Remission Panic, w = 0.06, (0.28,0.41) Remission PTSD, w = 0.12 (-0.18, 0.42) Remission other anxiety disorders, w = 0.08 (-0.25, 0.41) Remission SDD, w = 0.55 (0.17, 0.93) Remission Eating Disorder, w = 0.12 (-0.39, 0.63)	(Linehan et al., 2006), they also examined whether these variables explained any significant group differences in Axis I disorder remission. QC 1.1=A 1.2=A 1.3=B 1.4=B 1.5=A 1.6=B 1.7=A 1.8=All were analysed in intention-to-treat but: 30% treatment dropped out of treatment/lost to follow-

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			need for primary treatment for another debilitating condition.			across time than did CTBE patients with SDD. DBT and CTBE patients with SDD did not significantly differ in the number of BPD criteria met or in use of psychotropic medication.	during treatment and follow-up measured via TLFB.		Remission All disorders combined, w = 0.08 (-0.14, 0.3) Time spent in not remission of SDD, d = 1.15 (0.07,2.11) . No other effect sizes were significant for time spent in full, partial or no remission for any disorder. Rate of relapse was also not significant and so has not been reproduce d here	up; 71% control dropped out/lost to follow-up 1.9= A 1.10=F 2.1 = (++)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
									(available in original document). No. of BPD criteria met, d = 0.16 (-0.95, 1.24) Use of psychotropic medications, d= 0.79 (-0.24, 1.73)	

BPD and Anxiety and mood disorders

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Ziegenhorn, A.A., Roepke, S., Schommer, N.C., Merkl, A., Danker-Hopfe, H., Perschel, F.H., Heuser, I., Anghelescu, I.G., Lammers, C.H. (2009). Clonidine improves hyperarousal in borderline personality disorder with or without comorbid posttraumatic stress disorder: A randomized, double-blind, placebo controlled trial. Journal of clinical psychopharmacology,	RCT Level II Within-subject, double-blind, placebo-controlled cross over design (block randomisation to receive either clonidine or placebo first)	N=62 n = 18	All patients were white, 1 patient was a male, and 17 patients were female. The mean (SD) age of the BPD patients in this study was 32 (8) yrs (range, 19-44 yrs). 88% had psychiatric comorbidities; the most prevalent axis I disorder was PTSD (12 patients) followed by eating disorders (9 patients), and substance abuse (7 patients). Ten patients were on	Clonidine A slow dose-escalation scheme was used to reach the target dose of 1 capsule (0.150 mg of clonidine) in the morning and 2 capsules (0.300 mg of clonidine) at bedtime at the end of week 1. Participants were assessed during week 2. During week 3, medication/placebo was tapered to zero. Week 4 was used for a drug washout. From week 5, patients were switched to the alternate treatment and evaluated in	Placebo Capsule	Summary: Significant improvement in hyperarousal for patients with PTSD for clonidine compared to control but not measures of general psychopathology or BPD symptoms. Mild adverse effects reported Detail: Treatment with clonidine resulted in a significant 18.3% improvement in hyperarousal. The improvement in the PTSD positive subsample was 21.2% (z = -2.67, P = 0.008) compared with a 13.1% improvement in the PTSD-negative subsample (z = -	Mini International Neuropsychiatric Interview for DSM-IV and the Structured Clinical Interview for DSM-IV personality disorders. Hyperarousal was measured by the clinician-administered PTSD scale (CAPS-D). BPD typical symptoms were assessed using the borderline symptom list (BSL). The Symptom Checklist 90 revised (SCL-90-R) with its 9 subscales. Beck Depression	6 weeks	Standardised change scores between baseline and follow-up for clonidine group: CAPS-D d= -2.36 (95% CI -3.26, -1.46) BSL d= -0.46 (95% CI -0.94, 0.03) SCL-90-R d= -0.63 (95% CI -1.13, -0.12) BDI d= -0.80 (95% CI -1.33, -0.27) Standardised change scores between baseline and follow-up for placebo group: CAPS-D d= -1.26 (95% CI -1.8, -0.64)	Small sample size but still showed improvement CQ 1.1=A 1.2=B 1.3=E 1.4=D 1.5=E 1.6=C 1.7=A 1.8=17% of the total sample dropped out during the placebo and 11% of the total sample dropped out after clonidine; 29% of the total sample after randomisation dropped

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
29(2), 170-173. Germany			antidepressant medication (91% second generation antidepressants), 3 were on antipsychotics, and 1 patient was on valproate. Dropouts were not related to the study or adverse effects of the medication. Inpatients	week 6 as before.		1.46, p = 0.144). The improvement of general psychopathology scores (SCL-90-R) in the whole sample did not reach conventional levels of significance. Clonidine had no effect on borderline-typical symptoms in the whole sample (BSL). Adverse effects, when present, were mild. Hyperarousal as measured by the Clinician Administered PTSD scale improved significantly compared with placebo (P = 0.003) irrespective of PTSD comorbidity. Improvements in general and BPD-typical psychopathology were mainly seen in	Inventory (BDI). 24-hour urine was collected for catecholamine measurements.		BSL d= -0.26 (95% CI -0.73, 0.21) SCL-90-R d= -0.34 (95% CI -0.82, 0.13) BDI d= -0.49 (95% CI -0.98, 0.00) Standardised mean difference between clonidine and placebo: CAPS-D d= 1.01 (95% CI 0.44, 1.58) BSL d= 0.17 (95% CI -0.30, 0.63) SCL-90-R d= 0.24 (95% CI -0.23, 0.71) BDI d= 0.22 (95% CI -0.25, 0.69)	out. 1.9=C 1.10=F 2.1 = (-)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						the PTSD-positive subgroup, whereas the subjective sleep latency (P = 0.005) and the restorative qualities of the sleep (P=0.014) improved in the whole sample. Authors conclude that clonidine might be a useful adjunct to pharmacotherapy in patients with BPD who have marked hyperarousal and/or sleep problems and, in particular, in patients with BPD who have a PTSD comorbidity.				
Harned, M.S., Chapman, A.L., Dexter-Mazza, E.T., Murray, A., Comtois, K.A., & Linehan, M.M. (2008). Treating co-	RCT Level II Participants were randomly assigned to condition	N=101 T ; n=52 C ; n= 49	Age mean: T= 29.0; C=l 29.6 Gender: all female Diagnosis: Participants	DBT	The CTBE condition was developed to control for expertise, treatment allegiance,	Summary: There were no differences between DBT and community treatment on number of Axis I disorders. But DBT was more likely to	Structured Clinical Interview for DSM–III–R Personality Disorders and International Personality Disorders Examination	1 yr (+ 4 monthly assessments during 12 month treatment)	Standardised mean differences between treatment groups d (95% CI) Proportion of Axis I	Data was from the Linehan et al (2006) study to examine the efficacy of DBT versus CTBE in

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
occurring Axis I disorders in recurrently suicidal women with borderline personality disorder: A 2-year randomized trial of dialectical behaviour therapy versus community treatment by experts. Journal of Consulting and Clinical Psychology, 76(6), 1068-1075 USA	by the participant coordinator, who used a computerized adaptive minimization randomization procedure that matched participants on five primary prognostic variables.		were 101 women (age 18–45) who met criteria for BPD and reported at least two suicide attempts and/or non-suicidal self-injury acts in the past 5 years, with at least one act in the 8-week pre-study period. BPD diagnosed by Structured Clinical Interview for DSM–III–R Personality Disorders and International Personality Disorders Examination Exclusion:		availability of a clinical supervision group, prestige, general factors and assistance in finding a therapist, availability of affordable and sufficient treatment hours, and therapist gender, training, and clinical experience. Community mental health leaders nominated CTBE therapists as experts in the treatment of difficult	reach full remission. Those with substance use disorders were more often abstinent. Detail: Overall, DBT and CTBE patients did not significantly differ in the proportion of Axis I disorders that reached full remission or that subsequently relapsed. For specific Axis I disorders, DBT patients were significantly more likely to achieve full remission from SDD than were CTBE patients. DBT patients spent significantly more time in partial remission and less time in no remission from SDD than did CTBE	TX HX interview assessed psychotropic medications. Longitudinal Interval Follow-Up Evaluation (LIFE): retrospective ratings of Axis I disorders for each week of the study. Time line follow-back procedure: assigned weekly psychological status ratings (PSRs) for each disorder identified at pre-treatment via the SCID–I. For substance dependence disorders (SDD), used the remission criteria from the		disorders reaching full remission, d = 0.20 (-0.24, 0.63) Proportion of fully remitted Axis I disorders that later relapsed, d = 0.02 (-0.50, 0.54) Comparison rates of full remission (Cohen's w): Remission MDD, w= 0.2 (-0.05, 0.45) Remission Panic, w= 0.06, (0.28, 0.41) Remission PTSD, w= 0.12 (-0.18, 0.42) Remission other anxiety disorders, w= 0.08 (-0.25, 0.41)	treating co-occurring Axis I disorders among suicidal BPD patients. Because patients in DBT reported fewer BPD criterion behaviours (i.e., suicide attempts) and less psychotropic medication use during the study than did CTBE patients (Linehan et al., 2006), they also examined whether these variables

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			Exclusion criteria were (a) schizophrenia, schizoaffective disorder, bipolar disorder, psychotic disorder not otherwise specified, or mental retardation; (b) a seizure disorder requiring medication; (c) a mandate to treatment; or (d) the need for primary treatment for another debilitating condition.		patients. CTBE therapists excluded who self-identified as cognitive or behavioural in orientation.	patients. Survival analysis of the time to the first full remission did not indicate significant differences between treatments for any Axis I disorder. Similarly, DBT patients and CTBE patients did not significantly differ in rates of relapse for any Axis I disorder. DBT patients with SDD reported a significantly greater proportion of drug- and alcohol-abstinent days across time than did CTBE patients with SDD. DBT and CTBE patients with SDD did not significantly	Diagnostic and Statistical Manual of Mental Disorders - full remission as at least 8 consecutive weeks with minimal or no symptoms. Proportion of days abstinent from drugs and alcohol during treatment and follow-up measured via TLFB.		Remission SDD, w= 0.55 (0.17, 0.93) Remission Eating Disorder, w = 0.12 (-0.39, 0.63) Remission All disorders combined, w = 0.08 (-0.14, 0.3) Time spent in not remission of SDD, d = 1.15 (0.07, 2.11). No other effect sizes were significant for time spent in full, partial or no remission for any disorder. Rate of relapse was also not significant and so has not been	explained any significant group differences in Axis I disorder remission. QC 1.1=A 1.2=A 1.3=B 1.4=B 1.5=A 1.6=B 1.7=A 1.8=All were analysed in intention-to-treat but: 30% treatment dropped out of treatment/ lost to follow-up; 71% control dropped out/lost to follow-up 1.9= A

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						differ in the number of BPD criteria met or in use of psychotropic medication.			reproduced here (available in original document). No. of BPD criteria met, d=0.16 (-0.95, 1.24) Use of psychotropic medications, d = 0.79 (-0.24, 1.73)	1.10=F 2.1 = (++)
Laddis, A. (2010) Outcome of crisis intervention for borderline personality disorder and post-traumatic stress disorder: a model for modification of the mechanism of disorder in complex post traumatic	Comparative study with concurrent controls - Level III-2-A	n=58. n=32 in experimental condition & n=26 controls. Cases recruited from one short-stay voluntary residential unit (Crisis Stabilization Unit,	Met DSM-IV criteria for BPD (n =54) or PTSD (n = 4). n=49 females, n=9 males (8 in experimental group which was significant, p=0.027). Mean 33.2 yrs cases, 37.2 controls. 72% single	'Cape Cod model' of crisis intervention which helps clients to assess the safety of stress-inducing relationships and limit repetitive and maladaptive behaviours and associated symptoms, plus medication & relaxation. The complete intervention takes place for 1	TAU consisting of medication, supportive psychotherapy, problem solving, occasional analysis of the transference and elements of Dialectical Behavioural Therapy.	Taking into account the covariates gender and pre-BPRS score, BPRS scores improved significantly for cases (baseline 34.8 vs 14.3 at follow-up, p=≤0.001) but not for controls (baseline 26.9 vs 23 at follow-up, NS). There was significant improvement in control group on BPRS domains of withdrawal (p=≤0.001),	Brief Psychiatric Rating Scale (BPRS) Brief Symptom Inventory (BSI) Clinician rated observations of crisis behaviour (Client Observation Scale)	8-24 hrs following treatment	See outcome column	Intervention only vaguely described. Very short follow-up so clinical significance is difficult to determine. Although most subjects had BPD. results were not reported separately for this group.

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
syndromes. Ann Gen Psychiatry. 27(9), 19. USA		CSU) that stabilise patients with self-harming behaviours. Controls recruited from 2 other CSUs.	Cases had higher BPRS scores at baseline (34.8, SD 9.7) than controls (26.9. SD 8; p = 0.002).	to 2 hours initially and then in several shorter sessions over 1 or 2 days.		anxiety-depression (p=≤0.001), hostility-suspiciousness p=≤0.001), and activation p=≤0.005), but little change among controls. There was greater improvement in the Client Observation ratings in the experimental group (M = 7.0, F= 11.859, P = 0.001, partial Eta2 = 0.180). Cases were less likely to have a change in medication than controls (41% vs 92%). There was no significant difference in the BSI l score among groups.				

BPD and eating disorders

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Rowe, S.L, Jordan, J., McIntosh, V.V, Carter, F.A, Bulik, C.M, Joyce, P.R. (2008) Impact of borderline personality disorder on bulimia nervosa. Aust N Z J Psychiatry. Dec; 42(12), 1021-9. New Zealand	Follow-up of RCT Level II Follow-up of subjects from previous RCT which evaluated the additive efficacy of exposure-based versus non-exposure-based behavioural treatments to a core of cognitive behaviour therapy for BN. RCT Participants: women 17-45	N=134	28% (n=38) met DSM-III-R criteria for BPD.	Eight sessions of cognitive therapy plus eight sessions (i) exposure to pre-binge cues with binging being prevented (B-ERP) or (ii) exposure to pre-purge cues with purging being prevented (P-ERP)	Eight sessions of cognitive therapy plus eight sessions of relaxation training	Summary: Women with BN and BPD did not differ significantly from the other PD and no PD groups in eating disorder symptoms and attitudes at 1 year and 3 year follow up. Detail: General and psychiatric functioning as measured on the GAF and HDRS showed improvements for all three groups at 1 year follow up. No significant differences among the groups were found at 1 year follow up.	Eating disorder symptoms and general functioning- Comprehensive Bulimia Severity Index (CBSI) Depression – HDRS Global Assessment of Functioning – GAF Personality traits - Temperament and character inventory (CTI)	Follow-up data were available for 101 women (75%) at 1 yr follow up and 112 (84%) at 3 yr. follow up. Ninety-two participants were available for all three time points (including baseline).	There was a significant effect for HA in the BPD (Wilks' λ = 0.34, F (2,14) = 13.88, p<.001, multivariate partial $\eta 2$ = 0.67) and no PD groups (Wilks' λ = 0.67, F (2, 34) = 8.5, p<.001, multivariate partial $\eta 2$ = 0.33). SD also showed significant within-group effects in the no PD group across 3 yrs	The small sample size in the 3 groups may have decreased the power to detect significant differences, increasing the likelihood of Type II error. No indication of which original group patients allocated **No checklist as was follow up to RCT

	yrs (n=134), with a current DSM-III-R diagnosis of BN. Exclusion criteria were AN, obesity (BMI>30), severe MDD, substance use disorder, BPAD, schizophrenia, severe medical illness or complications of BN, use psychoactive meds and unwillingness to undergo supervised drug wash-out period.					At 3 year follow up eating disorder symptoms were improved in all three groups and general psychiatric functioning did not differ among the three groups. Overall, the BPD group had the lowest rate of any eating disorder diagnoses at follow up - 35% and 24% at 1 and 3 yrs, respectively, compared to 45% and 31% for other PD and 38% and 36% for no PD. Differences in personality profiles between the BPD and no PD group evident at follow up were on measures of harm avoidance (HA) and self-directedness (SD).			(Wilks' λ = 0.51, F (2, 34) = 16.36, p<.001, multivariate partial η2 = 0.49). Despite an increase of one standard deviation in SD, the BPD group had a smaller effect size than the no PD group (Wilks' λ = 0.59, F (2, 14) = 4.8, p<.03, multivariate partial η2 = 0.41). The other PD group had no significant within-group changes in HA or SD across 3 yrs	no actual RCT

Clinical Question 14. *Among people with BPD what treatment modes of delivery are most effective in reducing suicide/self-harm, psychopathology, increasing functioning? (face to face, group, online, self-help)*

NICE Guideline summary

This was a new question – No NICE summary is available

Updated search

Summary

One study was found that examined video delivery of emotional regulation intervention and showed a benefit of a DBT module video delivery over a control video.

Evidence table

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Waltz, J., Dimeff, L. A., Koerner, K., Linehan, M. M., Taylor, L., & Miller, C. (2009). Feasibility of using video to teach a dialectical	Within subjects quasi experimental design (see comments) Level III-1	N=30 (6 Excluded)	Age: 32.5yo Gender: 96% F All met DSM-IV criteria for BPD based Inclusion/exclusion criteria: (1) 18 yrs of age or older, (2) literate, (3) meets BPD criteria, (4) no previous formal DBT	Opposite Action: Changing Emotions You Want to Change features DBT treatment developer, Marsha M. Linehan, teaching "opposite action," a skill from the DBT emotion-regulation	The control condition was designed to control for factors of time, attention, and repeated testing. The control condition video recording	Summary: Viewing the video was associated with significant increases in knowledge of the skill, relative to viewing a control video, and with increases in participants' expectations of	Screening (predictors of outcome): Structured Clinical Interview for DSM-IV, I & II; Beck Depression Inventory Dependent: Skill knowledge: Opposite Action Knowledge Questionnaire;	Post each video (Time 2 and Time 3)	Skills knowledge = 0.40 Outcome expectancies = 0.83	No blinding within subjects design. First subject allocated to initial video randomly (randomisation method not stated) and all subsequent participants alternated between the two

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
behaviour therapy skill to clients with borderline personality disorder. Cognitive and Behavioural Practice, 16(2), 214-222. USA			treatment, (5) not actively psychotic, (6) estimated verbal IQ of 90 or above (based on AM-NART score; (7) aware of diagnostic status, and (8) currently a client of a mental health treatment provider (numbers 7 and 8 were included to address IRB concerns).	module.	was selected to be similar in length and production quality to the experimental video, but not on a mental health topic. It was an episode from a PBS series entitled "The Desert Speaks" on the "culinary, medicinal and scientific uses" of pepper plants	positive outcomes for skill use. In addition, participants rated the video as relevant and helpful. A remarkably high number (80 %) utilized the skill taught subsequent to viewing the video when assigned to do so, and overall reported significant decreases in negative affect after using the skill.	Outcome expectancies (developed based on Fromme et al 1986); Client satisfaction on a 8-item 5 point Likert scale; Skill use and effectiveness: Participants were provided a homework sheet that was based on one from Linehan's Skills Training Manual for BPD			conditions. QC 1.1=A 1.2=B 1.3=C 1.4=C 1.5=C 1.6=B 1.7=A 1.8=Not reported 1.9= D 1.10=F 2.1 = (-) a reasonably well reported and analysed study but method of randomisation, allocation method and concealment and lack of blinding introduce bias.

Clinical Question 15. What type of services maximise effectiveness and safety and minimise harm (taking into account long-term outcomes) for the delivery of specific treatments for people with BPD? (for example, day hospitals, inpatient, therapeutic communities, use of enhanced care programming, team-based or individual-based care, partial hospitalisation)

NICE Guideline summary

No studies were identified by the NICE guideline committee that were relevant. See page 310 NICE guidelines.

Updated search

Summary

Two studies were identified, one examining a post-emergency department admission to a general hospital and the other examining outcomes from day hospital, inpatient and outpatient care.

Evidence table

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Berrino, A., Ohlendorf, P., Duriaux, S., Burnand, Y., Lorillard, S., Andreoli, A. (2011). Crisis intervention at the general hospital: An appropriate treatment choice for acutely suicidal borderline	Prospective cohort study - Level III-2	200 n=100 crisis intervention (CI), n=100 TAU	BPD + deliberate self-harm. Intervention group: mean age 32.6 years, 87% female, mean IPDE score 6.0, 95% suicide attempt Control group:	Post ED treatment, 5 day admission to general hospital for intensive individual psychotherapy program + family therapy and support	Clinical judgement of psychiatrist (TAU)	Summary: Intervention group had lower psychiatric hospitalisation (8%) and suicide attempts (8%) than controls (56% & 17%), and a higher suicide attempt day survival (85.6 days) and hospitalization survival (81.1	IPDE Hamilton Depression Scale Suicide attempts, rehospitalisation rates, psychiatric hospitalisation rates and length of admission,	3 months	N/A	Lack of detailed description of intervention limits its comparability. Severity of BPD symptoms not measured, pharmacotherapy not recorded.

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
patients. Psychiatry Research. 186(2-3), 287-292. Switzerland			mean age 31.5 years, 83% female, mean IPDE score 6.3, 100 % suicide attempt 86% concurrent major depression both groups			days) than controls (79.8 & 42.2), and fewer admission days than controls (mean 1.94 and 9.3). Cost of care was lower for the intervention group.	cost of care.			Short follow-up period.
Bartak, A., Andrea, H., Spreeuwenberg, M.D., Ziegler, U.M., Dekker, J., Rossum, B.V., Hamers, E.F., Scholte, W., Aerts, J., Busschbach, J.J., Verheul, R., Stijnen, T., Emmelkamp, P.M. (2010). Effectiveness of	Non-randomised experimental trial – Level III-2	207 analysed 960 enrolled in the study, 245 met criteria, 13 lost to follow-up n=46 outpatient, n=81 day hospital, n=80 inpatient	Mean age: 31.1yo (range not stated) 71% female 78.7% unmarried 77.3% diagnosis BPD, 12.6 Histrionic PD, 8.7% ASPD (59.4% had Cluster A and/or C PDs)	Outpatient (up to 2 sessions of individual psychotherapy a week). Mean duration 14.5 months Day hospital (at least 1 group per week, plus individual).	Inpatient (individual plus group program 5 days a week). Mean duration 9.1 months	Summary: All groups showed low drop out and improvement on psychiatric symptoms, psychosocial functioning, and quality of life at 18 months after baseline. Patients in the inpatient psychotherapy group showed the	Extensive clinical battery of tests. Reported outcomes measured by BSI –GSI (Dutch version) (psychiatric symptomatology), Outcome Questionniar	3 centres conducted follow-up at 12, 24, and 36 months after BL; other 3 at post, 6 and 12 months after treatment, and 36	(out, day, in) BSI - .55, .97, 1.37 EQ-5D – 0.37, 0.72, 0.80 OQ45 social role – 0.64, 0.77, 0.87	Study well described and conducted Allocation appears to be by clinician assessment Intention to treat analysis stated but analysis does not appear to account for missing data

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
outpatient, day hospital, and inpatient psychotherapeutic treatment for patients with cluster B personality disorders. Psychotherapy and Psychosomatics, 80(1), 28-38 Netherlands				Mean duration 10.4 months		strongest (non-significant) improvement, particularly in psychiatric symptoms Analysis adjusted for initial patient differences based on a multiple propensity score calculated on a range of social, economic and diagnostic variables	e-45 (psychosocial functioning), EQ-5D (QoL)	months after BL. Analysis 18 months after BL	OQ-45 interpersonal – 0.30, 0.60, 0.89	6 treatment centres participated

Clinical Question 16. What is the role of inpatient (e.g. acute, forensic) care in the management of people with BPD?

NICE Guideline summary

No studies were found that specifically related to acute forensic services. See page 320 NICE guidelines.

Updated search

Summary

One study examining post emergency admission to general hospital compared to treatment as usual was identified for this question. The results showed that the intervention group had better outcomes than the treatment as usual group.

Evidence table

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Berrino, A., Ohlendorf, P., Duriaux, S., Burnand, Y., Lorillard, S., Andreoli, A. (2011). Crisis intervention at the general hospital: An appropriate treatment choice for acutely suicidal borderline patients. Psychiatry Research. 186(2-3), 287-292.	Prospective cohort study – Level III-2	200 n=100 crisis intervention (CI), n=100 TAU	BPD + deliberate self-harm. Intervention group: mean age 32.6 years, 87% female, mean IPDE score 6.0, 95% suicide attempt Control group: mean age 31.5 years, 83% female, mean IPDE score 6.3, 100 % suicide	Post ED treatment, 5 day admission to general hospital for intensive individual psychotherapy program + family therapy and support	Clinical judgement of psychiatrist (TAU)	Summary: Intervention group had lower psychiatric hospitalisation (8%) and suicide attempts (8%) than controls (56% & 17%), and a higher suicide attempt day survival (85.6 days) and hospitalization	IPDE Hamilton Depression Scale Suicide attempts, rehospitalisation rates, psychiatric hospitalisation rates and length of admission, cost of care.	3 months	N/A	Lack of detailed description of intervention limits its comparability. Severity of BPD symptoms not measured, pharmacotherapy not recorded. Short follow-up period.

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Switzerland			attempt 86% concurrent major depression both groups			survival (81.1 days) than controls (79.8 & 42.2), and fewer admission days than controls (mean 1.94 & 9.3). Cost of care was lower for the intervention group.				

Clinical Question 17. What is the role of specialist services (including community-based) in the medium and long term management of people with BPD?

NICE Guideline summary

No studies were found that specifically related to this question. See NICE care pathways consensus page 324.

Updated search

No further papers that met the inclusion criteria were identified in an updated search.

Clinical Question 18. Is long-term inpatient care in the treatment of BPD effective?

NICE Guideline summary

Three studies were found that related to inpatient treatment but all evaluated the same inpatient program (and seem to involve the same patients) and none of the studies compared these inpatients to a comparison group so they did not meet our current criteria. See page 320-322 NICE guidelines.

Updated search

Summary

One study examining outpatient, day hospital and inpatient treatment was identified for this question. There were no differences between groups.

Evidence table

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Bartak, A., Andrea, H., Spreeuwenberg, M.D., Ziegler, U.M., Dekker, J., Rossum, B.V., Hamers, E.F., Scholte, W., Aerts, J., Busschbach, J.J., Verheul, R., Stijnen, T., Emmelkamp, P.M. (2010). Effectiveness of outpatient, day hospital, and inpatient	Non randomised experimental trial – Level III-2	207 analysed 960 enrolled in the study, 245 met criteria, 13 lost to follow-up n=46 outpatient, n=81 day hospital, n=80 inpatient	Mean age: 31.1yo (range no stated) 71% female, 78.7% unmarried, 77.,3% diagnosis BPD, 12.6% Histrionic PD, 8.7% ASPD (59.4% had Cluster A and/or C PDs)	Outpatient (up to 2 sessions of individual psychotherapy a week). Mean duration 14.5 months Day hospital (at least 1 group per week, plus individual). Mean duration 10.4 months Inpatient	NA	Summary: All groups showed low drop out and improvement on psychiatric symptoms, psychosocial functioning, and quality of life at 18 months after baseline. Patients in the inpatient psychotherapy group showed	Extensive clinical battery of tests. Reported outcomes measured by BSI –GSI (Dutch version) (psychiatric symptomatology), Outcome Questionniare -45 (psychosocial functioning), EQ-5D (QoL)	3 centres conducted follow-up at 12, 24, and 36 months after BL; other 3 at post, 6 and 12 months after treatment, and 36 months after BL.	(out, day, in) BSI - .55, .97, 1.37 EQ-5D – 0.37, 0.72, 0.80 OQ45 social role – 0.64, 0.77, 0.87 OQ-45	Study well described and conducted Allocation appears to be by clinician assessment Intention to treat analysis stated but analysis does not appear to account for missing

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
psychotherapeutic treatment for patients with cluster B personality disorders. Psychotherapy and Psychosomatics, 80(1), 28-38 Netherlands				(individual plus group program 5 days a week). Mean duration 9.1 months		the strongest (non-significant) improvement, particularly in psychiatric symptoms Analysis adjusted for initial patient differences based on a multiple propensity score calculated on a range of social, economic and diagnostic variables		Analysis 18 months after BL	interpersonal – 0.30, 0.60, 0.89	data 6 treatment centres participated

Clinical Question 19. Are particular therapies suited for particular service settings?

NICE Guideline summary

No studies were found that specifically related to this question. See NICE care pathways consensus page 324.

Updated search

No further papers that met the inclusion criteria were identified in an updated search.

Clinical Question 20. How should healthcare professionals from other healthcare settings care for people with BPD? (primary care, accident and emergency, crisis services, crisis houses, acute care)

NICE Guideline summary

No studies were found that specifically related to this question. See NICE care pathways consensus page 324.

Updated search[9]

This question was addressed in conjunction with the interventions questions and not re-examined as a stand-alone question.

[9] Clarification of settings

Clinical Question 21. Which treatment pathways, care processes and clinical principles (case management, care coordination, care program approach and so on) maximise the effectiveness of care and reduce harm?

NICE Guideline summary

No studies were found that specifically related to this question. See NICE care pathways consensus page 324 and recommendations in Chapter 5 on psychological interventions.

Updated search

No further papers that met the inclusion criteria were identified in an updated search.

Clinical Question 22. How can healthcare professionals involved in the care of people with BPD best be supported? (supervision, training, case loads and so on)

NICE Guideline summary

No studies were found that specifically related to this question. See NICE care pathways consensus page 324 and recommendations in Chapter 5 of the NICE guideline on psychological interventions.

Updated search

Summary

Two studies were identified that showed training improves attitudes and skills of practitioners responding to people with BPD

Evidence table

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Dimeff, L.A., Woodcock, E.A., Harned, M.S., Beadnell, B. (2011). Can dialectical behavior therapy be learned in highly structured learning environments? Results from a randomized controlled dissemination	RCT – Level II	132 n=43 in DBT manual n=47 in e-DBT n=42 in e-control	Participants mental health providers, drug treatment providers, or students in training programs to become treatment providers; were currently treating at least one client with substance abuse problems and/or who was chronically suicidal; and had	Linehan's skills training manual e-learning module of Linehan's material	Placebo e-learning course	Summary: Active DBT training conditions outperformed control on all outcomes except motivation to learn and use the treatment. Practitioners preferred e-learning e-DBT	Primary measures: DBT Distress Tolerance skills, self-efficacy, motivation to apply these skills in clinical practice Secondary measures: Satisfaction and skills utilisation	Assessments were completed at baseline, post-training, and 2, 7, 11, and 15 weeks following training.	Not reported	Study well described and conducted All measures developed for the study

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
trial. *Behavior Therapy, 42*(2), 263-275. USA			limited exposure to DBT			significantly outperformed the manual on knowledge at the 15-week follow-up but no other time points e-DBT highest acceptability and usability and rate of applying and teaching the newly learned skills in clinical practice.				
Treloar, A.J. (2009) Effectiveness of Education Programs in Changing Clinicians' Attitudes Toward Treating Borderline	RCT – Level II	140 at baseline (n=41 control group, n= 50 CBT group, n=49 psycho analytic group)	40% male 74% from mental health settings, 26% emergency settings 72% nurses, 17% allied health, 11% medical	CBT training – conceptualised three cases using a DBT approach self harm as modulating overwhelming affective experiences Psychoanalytic	No-training control	Summary: Significant changes in attitudes scores immediately after training for both training groups Higher scores at follow-up than pre for both	Attitudes Towards Deliberate Self-Harm Questionnaire (ADSHQ) - asked to complete it thinking about patients who	6 months	Not reported	RCT methods not well described, including randomisation and blinding. Partially randomised control group

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Personality Disorder. Psych iatric Services 60 (8), 1128-31 Australia		65 at follow-up (n=22 control group, n= 18 CBT group, n=25 psycho analytic group)	40% had >16 yrs clinical experience 22% daily contact with BPD, 48% weekly contact, 17% less frequent 49% had never received training on BPD	training- three cases using a moral masochism - self harm as discharge unconscious sense of guilt		groups but only psychoanalytic group significant CBT group had higher scores than other two groups at baseline, immediately post and follow-up.	had BPD and self-harmed			

Clinical Question 23. Do families (including children) and families/carers of people with BPD have specific care needs?

NICE Guideline summary

No systematic search was undertaken for this question based on the advice of the GDG. A narrative review is presented in the guidelines. A summary is presented here, but please note NICE did not undertake a systematic search. See page 93 NICE guidelines.

Hoffman et al, 2005 – no evidence that 44 participants (from 34 families) of people with BPD experience surplus stigma. Significant burden assessed by Burden Assessment Scale on Families.

Hoffman et al, 2007 – replicated the 2005 study with 55 participants.

Schiers & Bok, 2007 – administered SCL-90 to 64 individuals related and unrelated to BPD. Both had higher SCL-90 scores than the general population but did not differ from each other.

Updated search

No further papers that met the inclusion criteria were identified in an updated search.

Clinical Question 24. If so, what specific interventions should be offered?

NICE Guideline summary

No additional search was undertaken beyond the initial for this question based on the advice of the GDG. A narrative review is presented in the guidelines. As summary is presented here, but please note this was not a systematic search. See page 94 and 95 NICE guidelines.

- Dixon et al 2001 - showed that families of people with Schizophrenia find psychoeducation and information most helpful.
- Hoffman et al, 2003 - assessed 32 families for knowledge of BPD. Higher knowledge related to higher burden, depression, distress and hostility towards person with BPD.
- Hoffman et al 2005 – impact of Family Connections program 12 week program influenced by DBT on 44 individuals (34 families). Assessment pre, post and 6 month follow-up showed reductions in grief and burden, and enhanced mastery, maintained at follow-up.
- Hoffman et al 2007b – replicated the above with 3 month post assessment.

Updated search

No further papers that met the inclusion criteria were identified in an updated search.

Clinical Question 25. Do family or carers, through their behaviour, styles of relating and relationships, influence clinical and social outcomes or well-being for people with BPD?

NICE Guideline summary

No systematic search was undertaken for this question based on the advice of the GDG. A narrative review is presented in the guidelines. A summary is presented here, but please note NICE did not undertake a systematic search. See page 95 NICE guidelines.

Gunderson et al 2006 – present relationships predict outcomes at 2 years – NICE urges caution in interpretation based on measures used.

Hooley & Hoffman 1999 – followed a group of 35 people with BPD post discharge, assessed expressed emotion with eth Camberwell Family Interview and found no association between hostility and criticism and readmission rates and there were fewer admissions in families with higher expressed over-involvement.

Updated search

No further papers that met the inclusion criteria were identified in an updated search.

Clinical Question 26. If so, what interventions should be offered?

NICE Guideline summary

There were no empirical studies to review in this section. See page 96 NICE guidelines.

Updated search (systematic)

No further papers that met the inclusion criteria were identified in an updated search

Additional Question: Research on BPD related to Aboriginal and Torres Strait Islanders

NICE Guideline summary

NICE did not search for research specifically with Aboriginal and Torres Strait Islanders.

Updated search (systematic)

No papers were identified in a search related to Aboriginal and Torres Strait Islanders and BPD.

Additional Question: Cost-Effectiveness of BPD Treatments

NICE Guideline summary

1. **Individual therapies** (see page 141 NICE guidelines): The systematic search of economic literature identified three studies that assessed the cost effectiveness of individual psychological interventions for borderline personality disorder. One study examined the cost effectiveness of CBT (Palmer et al., 2006). The results of this analysis indicate that CBT is unlikely to be a cost-effective option for people with borderline personality disorder. Another compared the cost effectiveness of schema-focused cognitive therapy and transference-focused psychotherapy (Van Asselt et al., 2008). Overall, schema-focused cognitive therapy was less costly than transference focused psychotherapy over the 4 years of the analysis. The third study assessed costs incurred by people with borderline personality disorder before starting and after completing psychodynamic interpersonal therapy (Hall et al., 2001). Provision of psychodynamic interpersonal therapy to people with borderline personality disorder resulted in a net cost saving of AUS$18,217 per person treated; when the intervention cost was raised to $13,070 per person to reflect therapy provided by specialist psychiatrists, the intervention was cost saving only in the group of high users of healthcare resources.

2. **Combined treatments** (see page 150 NICE guidelines): NICE found no health economics studies on studies of combined psychological and pharmacological interventions.

3. **Psychotherapy programs** (see page 172 NICE guidelines): The systematic search of economic literature identified two studies assessing the cost effectiveness of psychological therapy programmes for borderline personality disorder. The analyses by Brazier and colleagues (2006) are characterised by a number of methodological limitations and the studies upon which the analyses were based were of small sample and not well reported; the authors they suggested that DBT could be a potentially cost-effective intervention in people with borderline personality disorder. Bateman & Fonagy (2003) assessed the total costs of MBT with partial hospitalisation compared with treatment as usual. The findings indicated that MBT might be potentially a cost-effective option in the management of borderline personality disorder. However, economic evidence is very limited, based on data from one small RCT only, and characterised by great uncertainty as the results of probabilistic analysis indicate.

4. **Therapeutic communities** (see page 186 NICE guidelines): The systematic search of the literature identified two economic studies on therapeutic communities. Both studies were conducted in the UK. One study had a before-after design and examined costs associated with treatment of people with personality disorders at the Henderson Hospital (Dolan et al., 1996). Based on the study results, the authors suggested that if the reduction in psychiatric care usage was maintained in the years following treatment, then the cost of treatment at Henderson Hospital would be recovered in just over 2 years following discharge. However, they admitted that usage levels of psychiatric care in this population over time were unknown and further research was required to confirm the potential benefits of treatment at the Henderson in terms of expected future cost offsets. The other study was a cohort study examining two programmes for people with personality disorders at the Cassel Hospital (Beecham et al., 2006). The results of the study indicated that both programmes provided at the Cassel were potentially more effective and more costly than general psychiatric care. The two-stage programme seemed to be more effective than the one-stage programme at a similar cost. However, the study is characterised by a number of limitations, such as the small study samples and the differential attrition between groups over the follow-up period, which may have introduced bias, as acknowledged by the authors of the study.

5. **Pharmacological studies** (see page 296 NICE guidelines): No evidence on the cost effectiveness of pharmacological and other physical treatments for people with borderline personality disorder was identified.

Updated search

Summary

There were 2 studies that included cost effectiveness data in addition to those identified by NICE. They were of varying quality and caution is required in interpretation. One study (Pasieczny) found that DBT was more clinically and cost effective than TAU, although this study was a questionable quality and not well reported. The other study (Thunnissen) looked at aftercare options and found that the use of booster sessions was less costly and more effective than reintegration training so no cost effective analysis was undertaken. The results suggest that use of booster sessions as aftercare would be more cost effective than reintegration training. Overall, taking into consideration the NICE findings and the updated search, it is difficult to make any firm conclusions about cost effectiveness of treatments for BPD and further research in this area is required.

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
Pasieczny, N., & Connor, J. (2011). The effectiveness of dialectical behaviour therapy in routine public mental health settings: An Australian controlled trial. Behaviour Research and Therapy, 49(1), 4-10. Australia	Level 2 RCT	N=91 Female n=84 Male n=6 Mental health patients who met DSM-IV-TR criteria for BPD.	Age range from 18 to 58 years (mean = 33.58, SD = 10.10). At least one DSM Axis I co-morbid diagnosis, most commonly substance use disorders (51%), depressive disorders (77%), Bipolar Affective Disorder (6%), Post Traumatic Stress Disorder (23%), other	The treatment group received outpatient DBT as described in Cognitive Behavioural Therapy of Borderline Personality Disorder and Training Manual for Treating Borderline Personality Disorder. DBT initially took place over six months and consisted of weekly individual psychotherapy (1 h), weekly	The control group received TAU (clinical case management).	Summary: DBT program was more clinically effective and cost effective than TAU. Detail: Comparing the average costs of providing outpatient and inpatient treatment to a patient with BPD in DBT to the outpatient and inpatient cost of providing TAU to a patient with BPD the service saved an average of $5,927 per patient receiving DBT. In total across	Costs benefit analysis of DBT vs. TAU over 6 months of treatment. Clinical service measures (n = 90) The frequency of suicide attempts. The number of emergency department (ED) presentations, inpatient admissions, and inpatient days for each participant. Behavioural and service utilisation	6 months Self-report measures were introduced after the initial 45 patients were recruited to the study in an attempt to broaden the range of clinical domains being examined. These self-report measures, completed by 45 patients (50% of the total sample), were administered at treatment commencement and at 6 and 12 months of	Not reported	The study is limited by the lack of randomisation of patients to treatment conditions. The use of naturalistic wait list controls increases ecological validity, but results in reductions to internal validity. A second limitation is that clinical self-report measures were included to the study protocol

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
			Anxiety Disorders (50%), and Schizophrenia (4%).	group skills training (2 h), access to phone coaching between sessions, and therapist attendance at a weekly DBT consultation meeting (1.5 h).		the 40 patients receiving DBT the public mental health service saved approximately $237,080 over the three years of the program. Assuming patients would otherwise receive TAU after the initial 6 months of DBT, the average cost of providing a patient with an additional 6 months of DBT ($10,769) may be more expensive than providing the same patient with TAU ($7,014) post DBT.	measures were also collected. Self-report measures (n = 45) Beck Depression Inventory II Beck Scale for Suicide Ideation State Trait Anxiety Inventory Brief Symptom Inventory	treatment.		during recruitment. This resulted in a 50% subsample providing data on these measures. QC 1.1=A 1.2=F 1.3=F 1.4=F 1.5=A 1.6=A 1.7=A 1.8=93% and 87% 1.9= A 1.10=F 2.1 = (-)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						This is due to the lack of additional significant reductions in psychiatric bed days seen in the patients continuing in DBT and does not take into consideration the potential differences in case closure rates between patients receiving additional DBT and those receiving TAU post six months of DBT. There was no significant difference in the percentage of patients retained in				

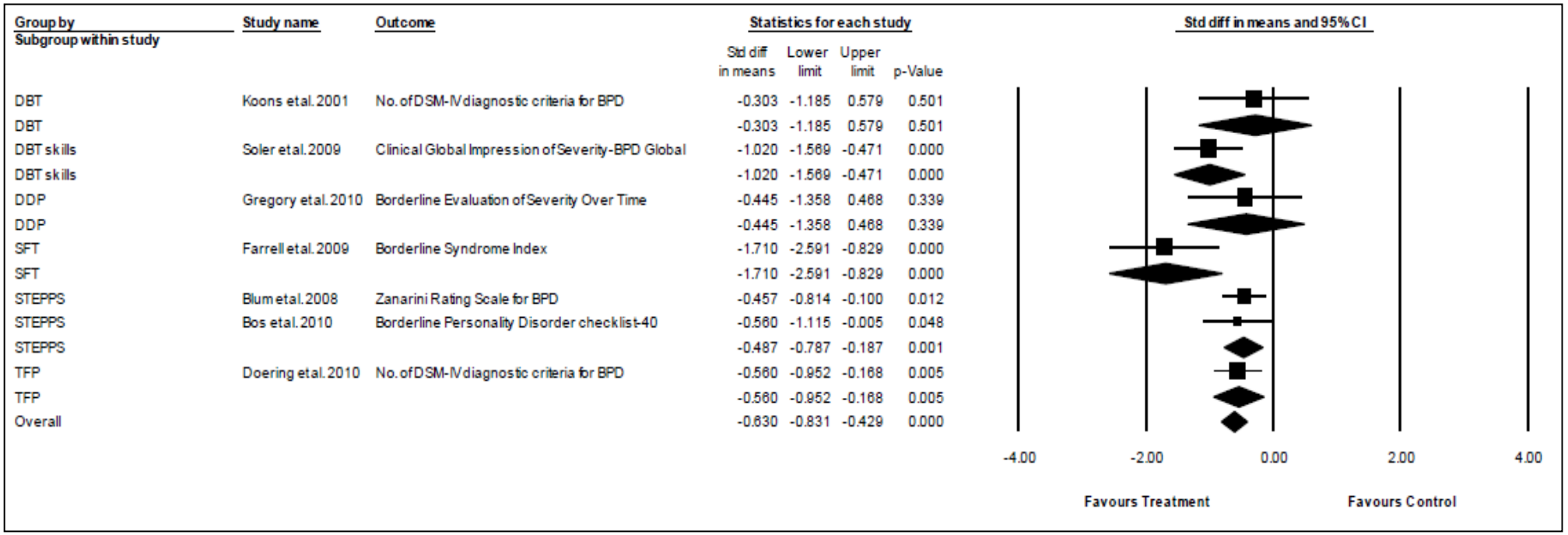
Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
						treatment across the 2 groups; 93% of the DBT group and 87% of the control group participants completed 6 months of treatment.				
Thunnissen, M., Duivenvoorden, H., Busschbach, J., van Roijen, L. H., van Tilburg, W., Verheul, R., Trijsburg, W. (2008). A randomized clinical trial on the effectiveness of a reintegration training program	Level 2 RCT At the end of the primary treatment patients were randomized to either the reintegration training program or booster sessions. 20 groups of	N=160 90.6% of the patients were diagnosed with at least one Axis-I disorder; 97.7% were diagnosed with at least one Axis-II disorder, mainly	The study group consisted of 44 (34.4%) men and 84 (65.6%) women. The average age was 35.6 years (SD = 8.1, range 20–53 years).	Primary Treatment: All patients participated in a three-month inpatient psychotherapy program. Reintegration Training: The reintegration training program consisted of six manual-guided training sessions of	Reintegration training program VS booster sessions. Aftercare as Usual: Booster Sessions. The usual aftercare consisted of two one-day (2 × 8 hour) booster sessions, three and nine months after discharge, with the same therapists as	Summary: Use of booster sessions was less costly and more effective than reintegration training so no cost effective analysis was undertaken. The results suggest that use of booster sessions as aftercare would be more cost effective than reintegration	Symptom Check List Global Severity Index SCL-90 is good Health and Labour Questionnaire Employment was defined as having a paid job, irrespective of the number of hours. Absence from	The aftercare started 3 or 4 1⁄2; months after the primary treatment. Measurement took place at the start (baseline) of the primary treatment, at the start of aftercare (6 months after the start of primary treatment) and		There was no comparison-group that received no aftercare. Compliance in the reintegration training program was significantly lower than in the booster treatment. QC 1.1=A 1.2=A 1.3=E

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
versus booster sessions after short-term inpatient psychotherapy. Journal of Personality Disorders, 22(5), 483-495.	2 × 4 patients: 10 groups for reintegration training and 10 groups for booster sessions.	Cluster C, B, and NOS. 93% had undergone psychotherapeutic treatments during the two years preceding admission to the inpatient treatment, mostly as outpatients; 9.4% had been admitted to a mental hospital and 3.9% had received day-treatment.		three hours each, delivered on a monthly basis between the third and the ninth month after discharge. Training aimed at problem solving and was given by trainers who were new to the patients.	during primary treatment (two sociotherapists one art—or psychomotor therapist, and a psychiatrist or a psychotherapist).	training. Detail: On average, 64.6% of patients attended the 6 half-day sessions in the reintegration training program. Apart from the extra costs for developing the reintegration training program and a feasibility study in a group of ex-patients, the reintegration training was 1.6 times more expensive (1.891 Euro) than the booster sessions (1.198 Euro).	work during the two weeks preceding the interview was measured in half-days; any absence of a half day or more was taken as absent. Work impediments (e.g., having problems in concentrating or in making decisions, working more slowly, having to isolate oneself, postponing work, having others do one's own work) were rated as follows, 0 = no	at the end of aftercare (12 months), and at follow-up (24 months). Of the original 160 patients, 32 did not participate: 7 patients refused to cooperate, and 25 patients dropped out of the inpatient program. Comparison between the 25 dropouts and the 128 patients included in the study group showed that the percentage of males was higher in the dropout group		1.4=E 1.5=B 1.6=A 1.7=A 1.8=E 1.9= A 1.10=A 2.1 = (+)

Ref, Country	Study Design/ Level of Evidence	N (n)	Participants Age Gender Diagnosis Other	Intervention	Comparison	Outcomes	Measure/s	Length of follow-up	Effect Size	Comments
		71.1% patients were employed; 50% were living alone and 19.5% had children.				As the difference in outcome also favoured the booster sessions, a cost-effectiveness analysis appeared redundant.	impediments, 1 = some impediments, 2 = serious impediments. A cost-effectiveness analysis was planned in case the treatment options differed in terms of production losses and impediments at work. Personality disorders were measured using the Structured Interview for DSM-IV Personality Disorders.	(66.7%) than in study patients (34.4%; $\chi 2$ = 9.86; $p < 0.01$). Dropouts were significantly older (40.3 years ±9.6) than study patients (35.6 years ±8.1; t = 2.6; df = 151; $p < 0.01$).		

Forest Plots related to Q6, Q7 and Q9

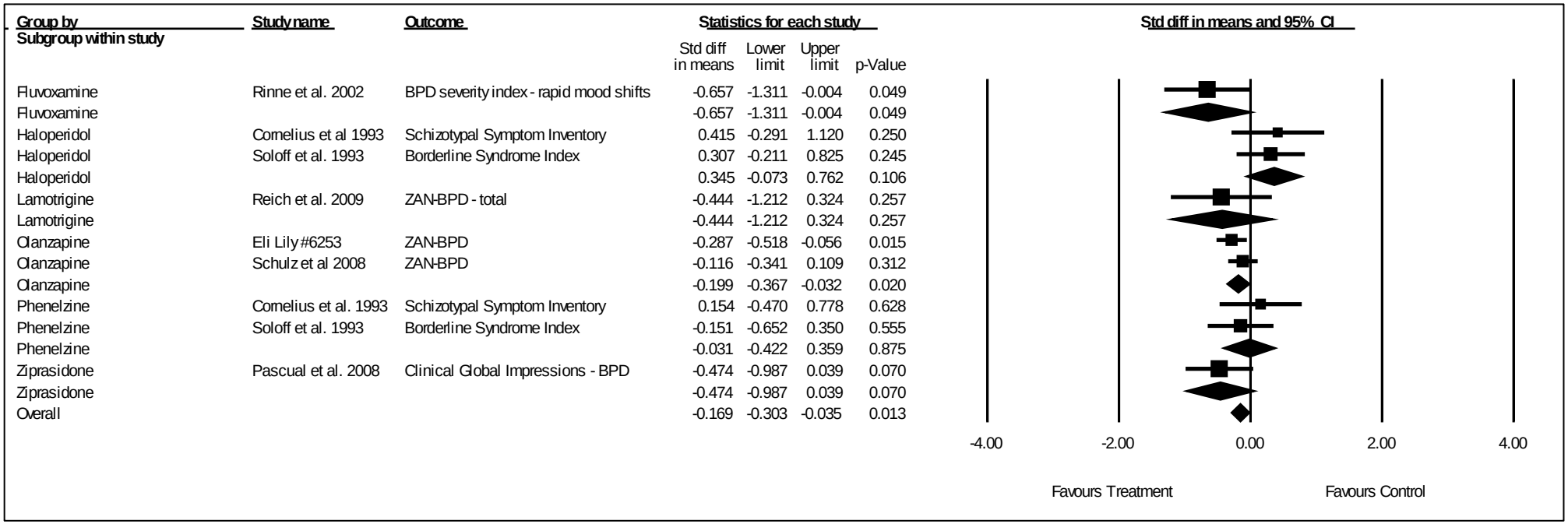
Figure 1: Effect of psychological treatments on BPD symptoms



DSM: Diagnostic and statistical manual of mental disorders; DDP: dynamic deconstructive psychotherapy; DBT: dialectical behaviour therapy; SFT: schema-focused therapy; Std diff: standard difference; STEPPS: systems training for emotional predictability and problem solving; TFP: transference-focused psychotherapy.

Forest plot for meta-analysis of controlled psychological intervention studies that included BPD symptomatology as an outcome measure.[1-7]

Figure 2: Effect of pharmacotherapy on BPD symptoms

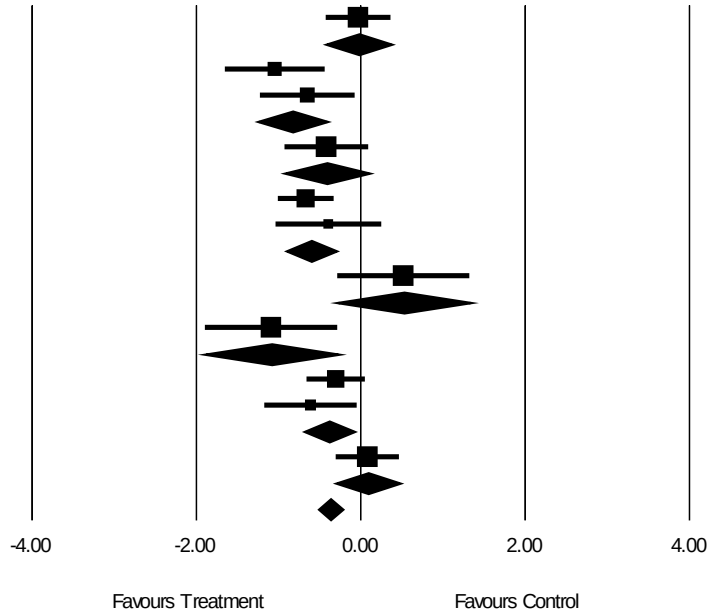


Std diff: standard difference; ZAN-BPD: Zanarini Rating Scale for Borderline Personality Disorder.

Forest plot for meta-analysis of placebo-controlled pharmacotherapy studies that included BPD symptoms as an outcome measure.[8-14]

Figure 3: Effect of psychological treatments on general psychopathology

Group by Subgroup within study	Study name	Outcome	Std diff in means	Lower limit	Upper limit	p-Value
CBT	Davidson et al. 2006	Brief Symptom Inventory - GSI	-0.033	-0.427	0.362	0.871
CBT			-0.033	-0.427	0.362	0.871
DBT	Bohus et al. 2004	Symptom Checklist 90–R GSI	-1.046	-1.655	-0.438	0.001
DBT	Carter et al. 2010	WHOQOL-BREF Psychological domain*	-0.650	-1.226	-0.074	0.027
DBT			-0.838	-1.256	-0.419	0.000
DBT skills	Soler et al. 2009	Symptom Checklist 90–R - GSI	-0.420	-0.930	0.090	0.106
DBT skills			-0.420	-0.930	0.090	0.106
MBT	Bateman et al. 2009	Symptom Checklist 90–R GSI	-0.670	-1.009	-0.331	0.000
MBT	Bateman et al. 1999	Symptom Checklist 90–R GSI	-0.394	-1.036	0.249	0.230
MBT			-0.610	-0.910	-0.310	0.000
MOTR	Kramer et al. 2011	Outcome Questionnaire-45	0.517	-0.285	1.320	0.206
MOTR			0.517	-0.285	1.320	0.206
SFT	Farrell et al. 2009	Symptom Checklist 90–R GSI	-1.092	-1.897	-0.287	0.008
SFT			-1.092	-1.897	-0.287	0.008
STEPPS	Blum et al. 2008	Symptom Checklist 90–R GSI	-0.305	-0.659	0.050	0.092
STEPPS	Bos et al. 2010	Symptom Checklist 90–R GSI	-0.611	-1.173	-0.049	0.033
STEPPS			-0.392	-0.692	-0.092	0.010
TFP	Doering et al. 2010	Brief Symptom Inventory - GSI	0.080	-0.305	0.465	0.683
TFP			0.080	-0.305	0.465	0.683
Overall			-0.376	-0.520	-0.232	0.000

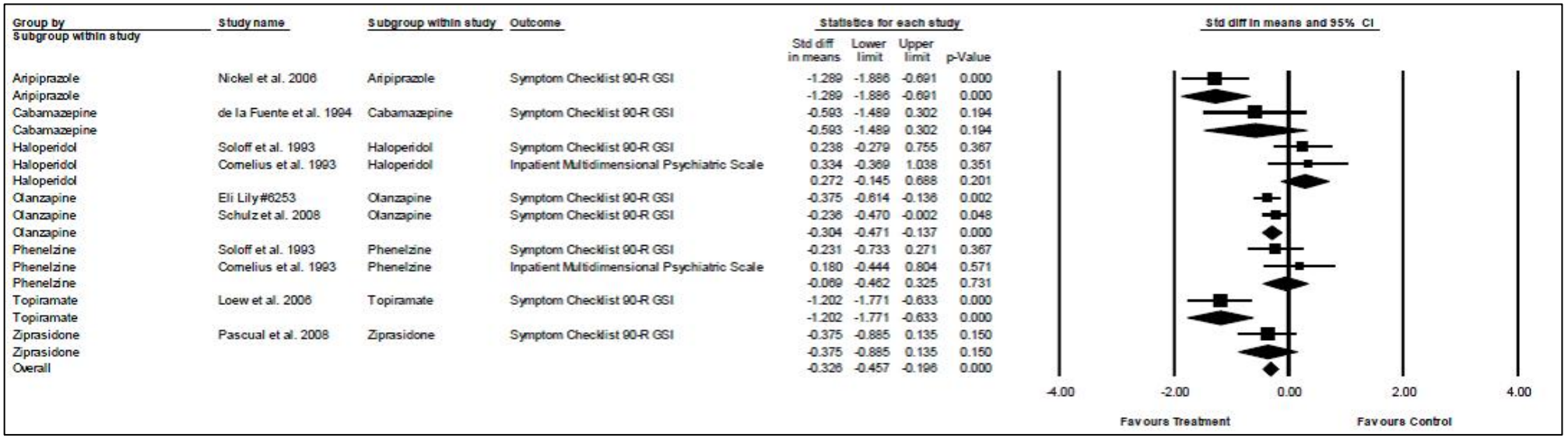


*Note: The effect size for WHOQOL-BREF psychological domain has been reversed to indicate that the effect favoured treatment (i.e. falls to left of zero axis, in line with other psychological function outcome measures). Raw means for WHOQOL-BREF psychological domain were increased in the treatment group.

CBT: cognitive–behavioural therapy; DBT: dialectical behaviour therapy; GSI: global severity index; MBT: mentalisation-based therapy; MOTR: motive-oriented therapeutic relationship; SFT: schema-focused therapy; Std diff: standard difference; STEPPS: systems training for emotional predictability and problem solving; TFP: transference-focused psychotherapy; WHOQOL: WHOQOL-Bref (the World Health Organization quality-of-life assessment instrument).

Forest plot for meta-analysis of controlled psychological intervention studies that included general psychopathology as an outcome measure.[2, 4-7, 15-19, 32]

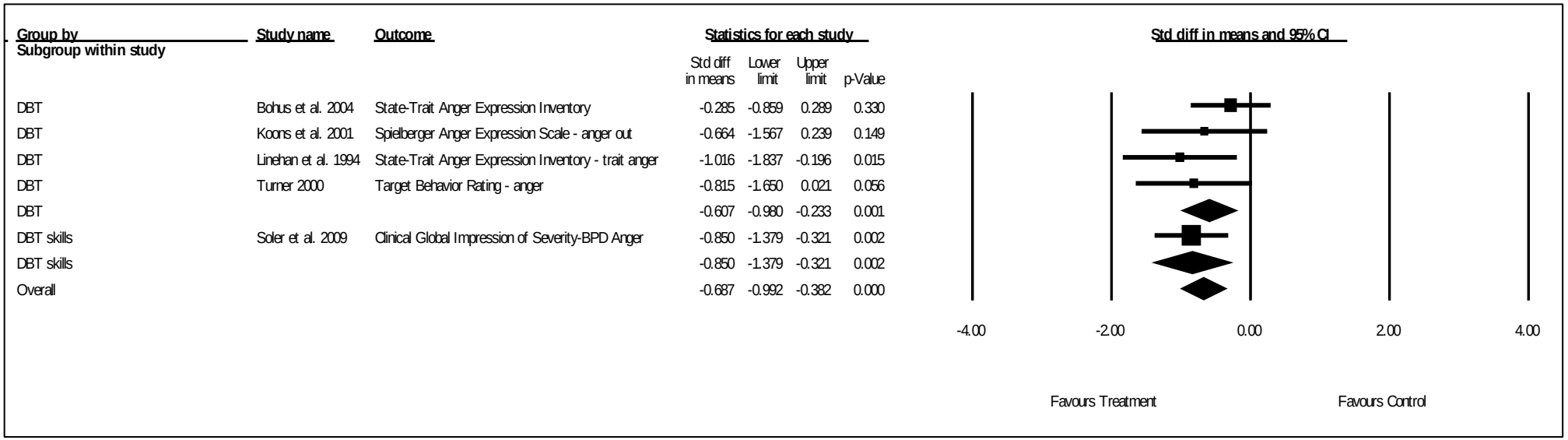
Figure 4: Effect of pharmacotherapy on general psychopathology



GSI: global severity index; Std diff: standard difference.

Forest plot for meta-analysis of placebo-controlled pharmacotherapy studies that included general psychopathology as an outcome measure. [9, 11-14, 20-22]

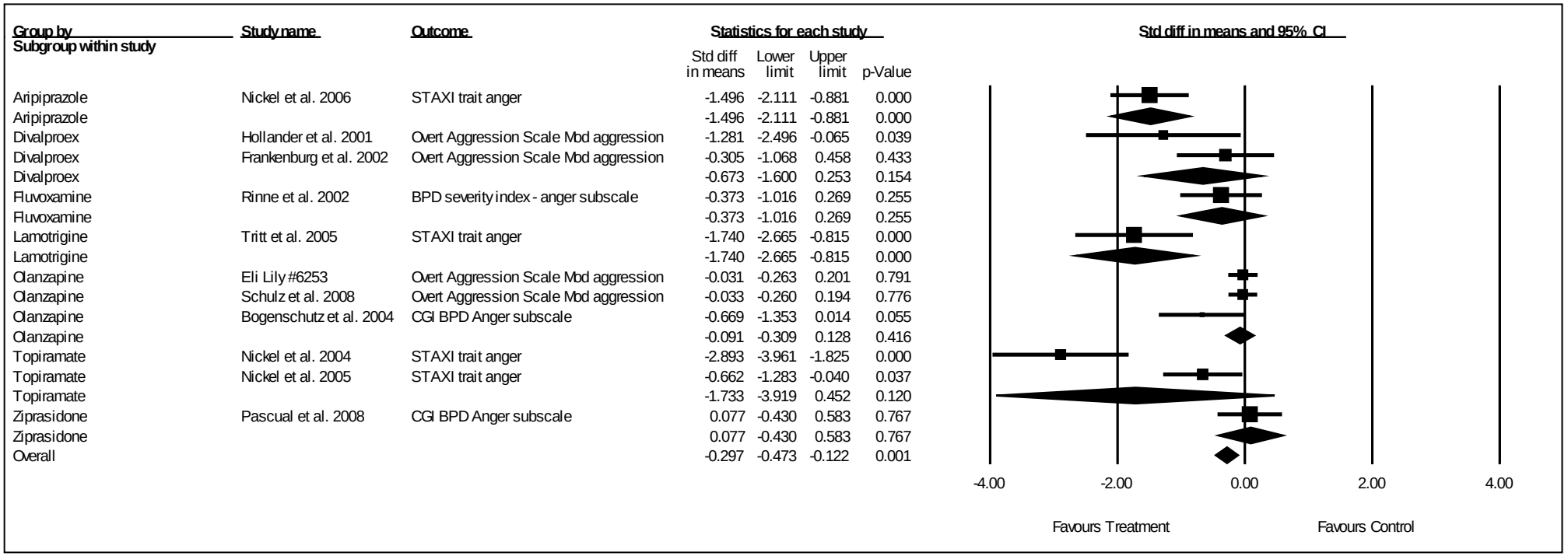
Figure 5: Effect of psychological treatments on anger



Std diff: standard difference; DBT: dialectical behaviour therapy.

Forest plot for meta-analysis of controlled psychological intervention studies that included anger as an outcome measure.[1, 2, 19, 24, 34]

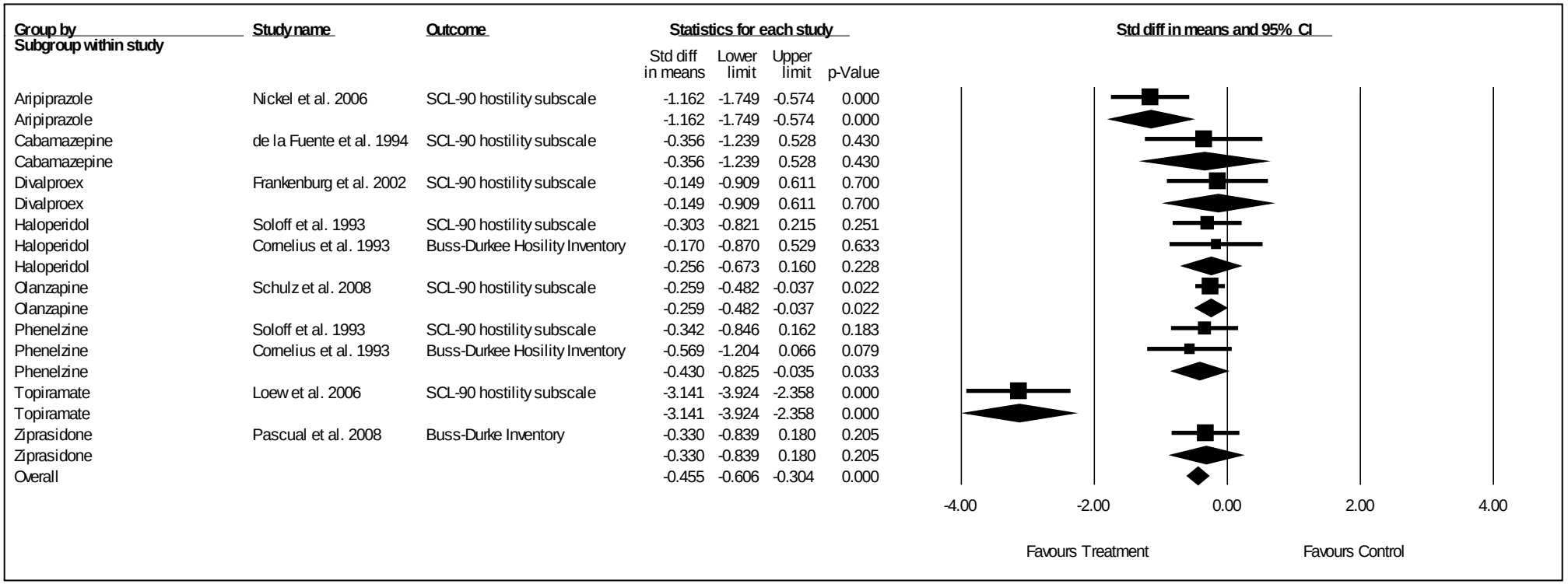
Figure 6: Effect of pharmacotherapy on anger



CGI BPD: Clinical Global Impression-BPD scale; Std diff: standard difference; STAXI: State-Trait Anger Expression Inventory.

Forest plot for meta-analysis of placebo-controlled pharmacotherapy studies that included anger as an outcome measure.[8, 11-13, 20, 25-30]

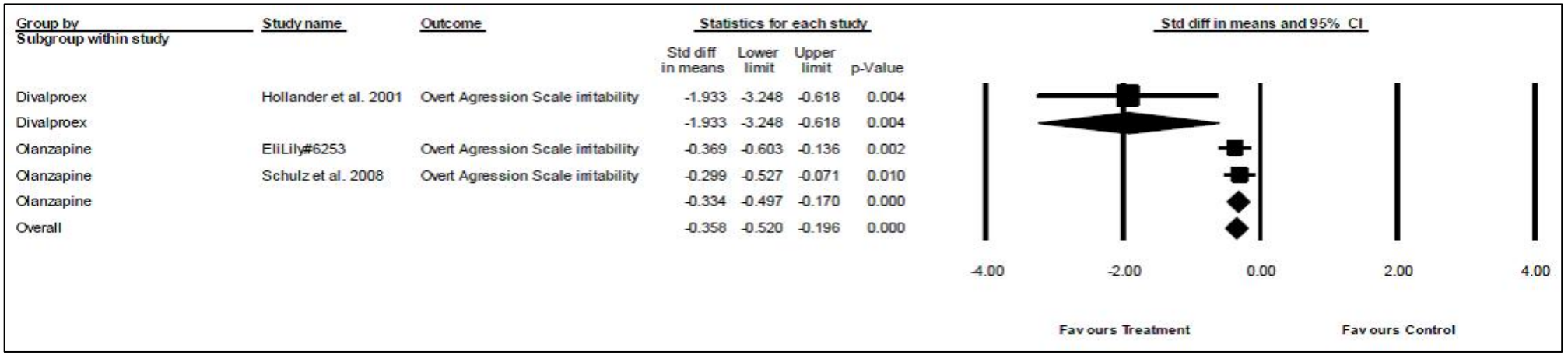
Figure 7: Effect of pharmacotherapy on hostility



SCL-90: Symptom Checklist-90; Std diff: standard difference.

Forest plot for meta-analysis of placebo-controlled pharmacotherapy studies that included hostility as an outcome measure.[9, 12-14, 20-22, 26]

Figure 8: Effect of pharmacotherapy on irritability

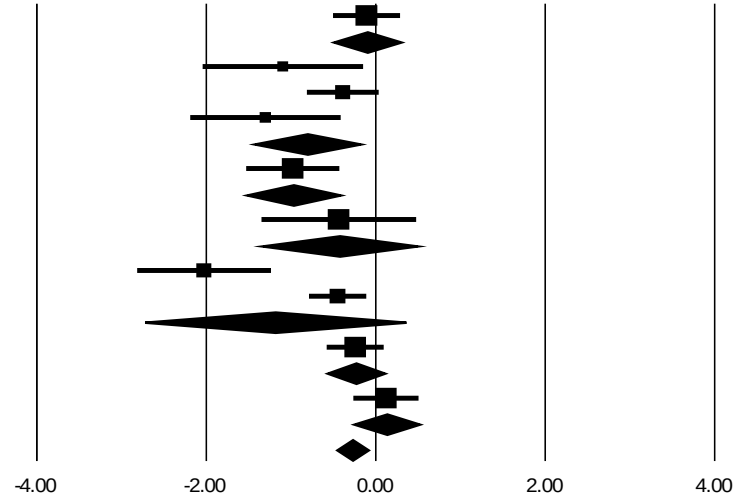


Std diff: standard difference.

Forest plot for meta-analysis of placebo-controlled pharmacotherapy studies that included irritability as an outcome measure.[11, 12, 25]

Figure 9: Effect of psychological treatments on depression

Group by Subgroup within study	Study name	Outcome	Std diff in means	Lower limit	Upper limit	p-Value
CBT	Davidson et al. 2006	Beck Depression Inventory	-0.108	-0.503	0.286	0.590
CBT			-0.108	-0.503	0.286	0.590
DBT	Koons et al. 2001	Beck Depression Inventory	-1.096	-2.043	-0.149	0.023
DBT	Linehan et al. 2006	Hamilton Depression Rating Scale	-0.389	-0.812	0.033	0.071
DBT	Turner 2000	Beck Depression Inventory	-1.302	-2.190	-0.414	0.004
DBT			-0.817	-1.441	-0.193	0.010
DBT skills	Soler et al. 2009	Hamilton Depression Rating Scale	-0.980	-1.529	-0.431	0.000
DBT skills			-0.980	-1.529	-0.431	0.000
DDP	Gregory et al. 2010	Beck Depression Inventory	-0.437	-1.349	0.476	0.348
DDP			-0.437	-1.349	0.476	0.348
MBT	Bateman et al. 1999	Beck Depression Inventory	-2.027	-2.817	-1.237	0.000
MBT	Bateman et al. 2009	Beck Depression Inventory	-0.450	-0.789	-0.111	0.009
MBT			-1.197	-2.740	0.347	0.129
STEPPS	Blum et al. 2008	Beck Depression Inventory	-0.242	-0.578	0.095	0.159
STEPPS			-0.242	-0.578	0.095	0.159
TFP	Doering et al. 2010	Beck Depression Inventory	0.120	-0.265	0.505	0.541
TFP			0.120	-0.265	0.505	0.541
Overall			-0.285	-0.469	-0.100	0.002

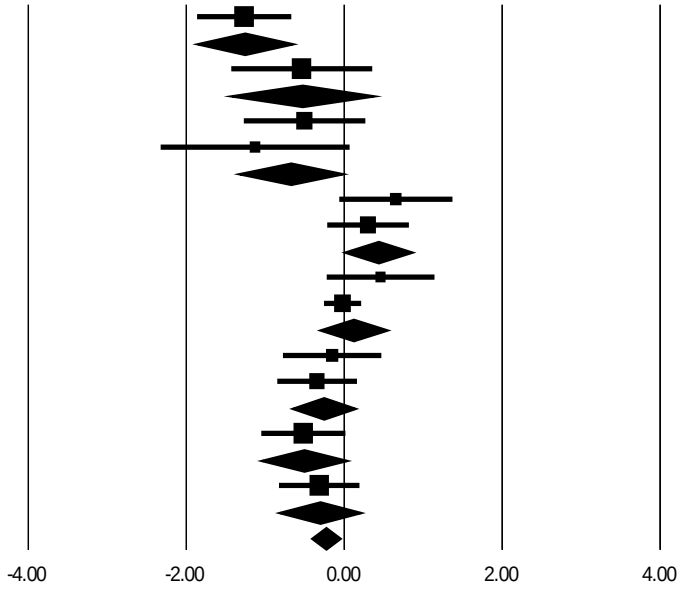


CBT: cognitive–behavioural therapy; DBT: dialectical behaviour therapy; DDP: dynamic deconstructive psychotherapy; MBT: mentalisation-based therapy; Std diff: standard difference; STEPPS: systems training for emotional predictability and problem solving; TFP: transference-focused psychotherapy.

Forest plot for meta-analysis of controlled psychological intervention studies that included depression as an outcome measure.[1-4, 6, 15, 17, 24, 32, 33]

Figure 10: Effect of pharmacotherapy on depression

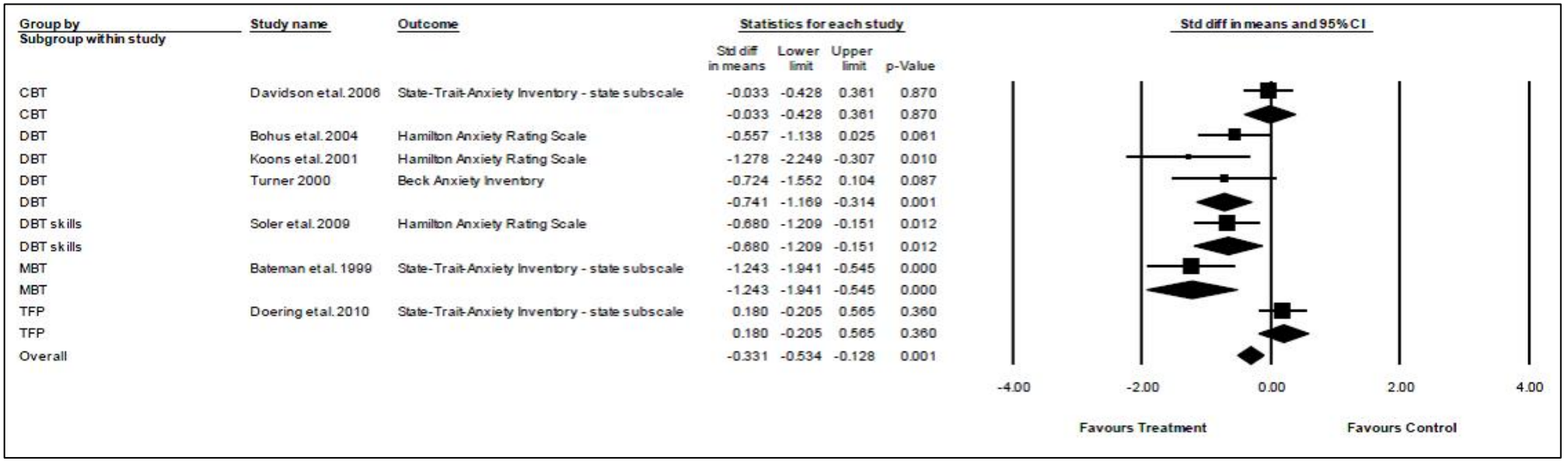
Group by Subgroup within study	Study name	Outcome	Std diff in means	Lower limit	Upper limit	p-Value
Aripiprazole	Nickel et al. 2006	Hamilton Depression Rating Scale	-1.267	-1.862	-0.671	0.000
Aripiprazole			-1.267	-1.862	-0.671	0.000
Cabamazepine	de la Fuente et al. 1994	Hamilton Depression Rating Scale	-0.538	-1.430	0.354	0.237
Cabamazepine			-0.538	-1.430	0.354	0.237
Divalproex	Frankenburg et al. 2002	SCL-90 depression	-0.503	-1.272	0.267	0.201
Divalproex	Hollander et al. 2001	Beck Depression Inventory	-1.127	-2.324	0.070	0.065
Divalproex			-0.685	-1.333	-0.038	0.038
Haloperidol	Cornelius et al. 1993	Beck Depression Inventory	0.655	-0.062	1.371	0.073
Haloperidol	Soloff et al. 1993	Beck Depression Inventory	0.302	-0.216	0.820	0.253
Haloperidol			0.423	0.003	0.843	0.048
Olanzapine	Bogenschutz et al. 2004	SCL-90 depression subscale	0.461	-0.221	1.144	0.185
Olanzapine	Schulz et al. 2008	Montgomery-Asberg Depression Rating Scale	-0.020	-0.255	0.215	0.868
Olanzapine			0.110	-0.309	0.529	0.607
Phenelzine	Cornelius et al. 1993	Beck Depression Inventory	-0.152	-0.776	0.472	0.633
Phenelzine	Soloff et al. 1993	Beck Depression Inventory	-0.343	-0.847	0.160	0.182
Phenelzine			-0.268	-0.660	0.124	0.180
Topiramate	Loew et al. 2006	SCL-90 depression subscale	-0.517	-1.050	0.015	0.057
Topiramate			-0.517	-1.050	0.015	0.057
Ziprasidone	Pascual et al. 2008	Hamilton Depression Rating Scale	-0.316	-0.825	0.194	0.224
Ziprasidone			-0.316	-0.825	0.194	0.224
Overall			-0.241	-0.418	-0.063	0.008



SCL-90: Symptom Checklist-90; Std diff: standard difference.

Forest plot for meta-analysis of placebo-controlled pharmacotherapy studies that included depression as an outcome measure.[9, 12-14, 20-22, 25, 26, 30]

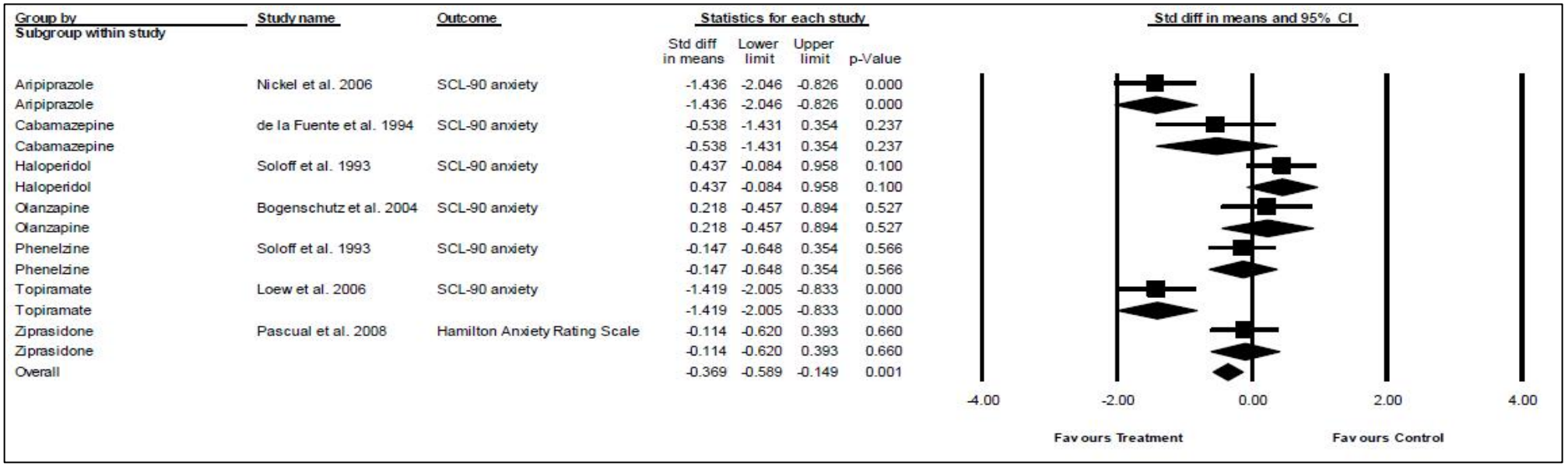
Figure 11: Effect of psychological treatments on anxiety



CBT: cognitive–behavioural therapy; DBT: dialectical behaviour therapy; MBT: mentalisation-based therapy; Std diff: standard difference; TFP: transference-focused psychotherapy.

Forest plot for meta-analysis of controlled psychological intervention studies that included anxiety as an outcome measure.[1, 2, 6, 15, 17, 19, 24]

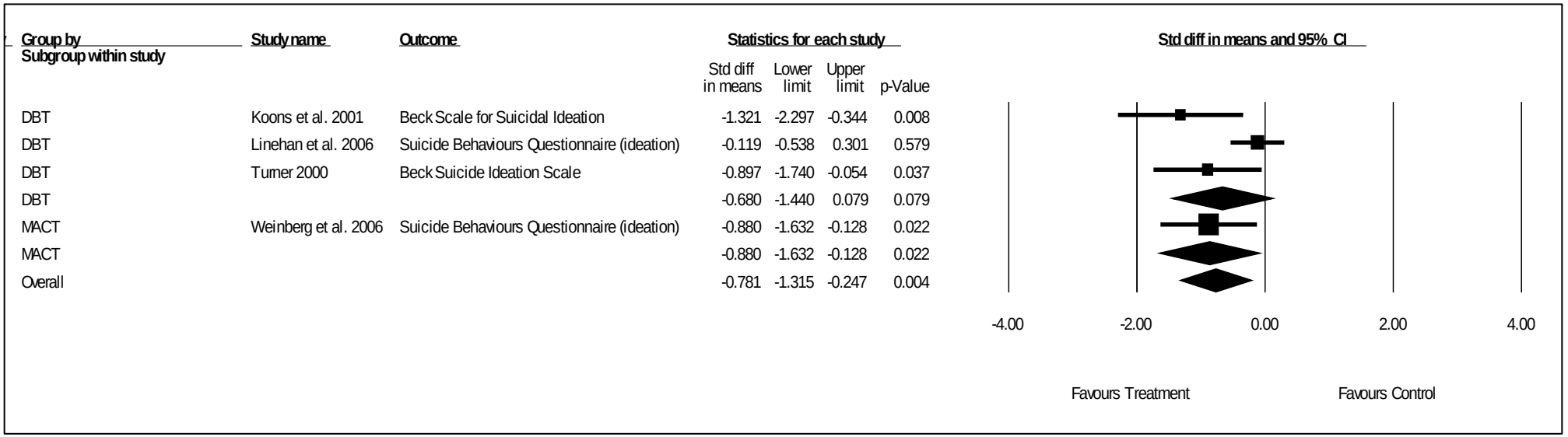
Figure 12: Effect of pharmacotherapy on anxiety



SCL-90-R: Symptom Checklist-90-Revised; Std diff: standard difference.

Forest plot for meta-analysis of controlled psychological intervention studies that included anxiety as an outcome measure.[9, 13, 20-22, 30]

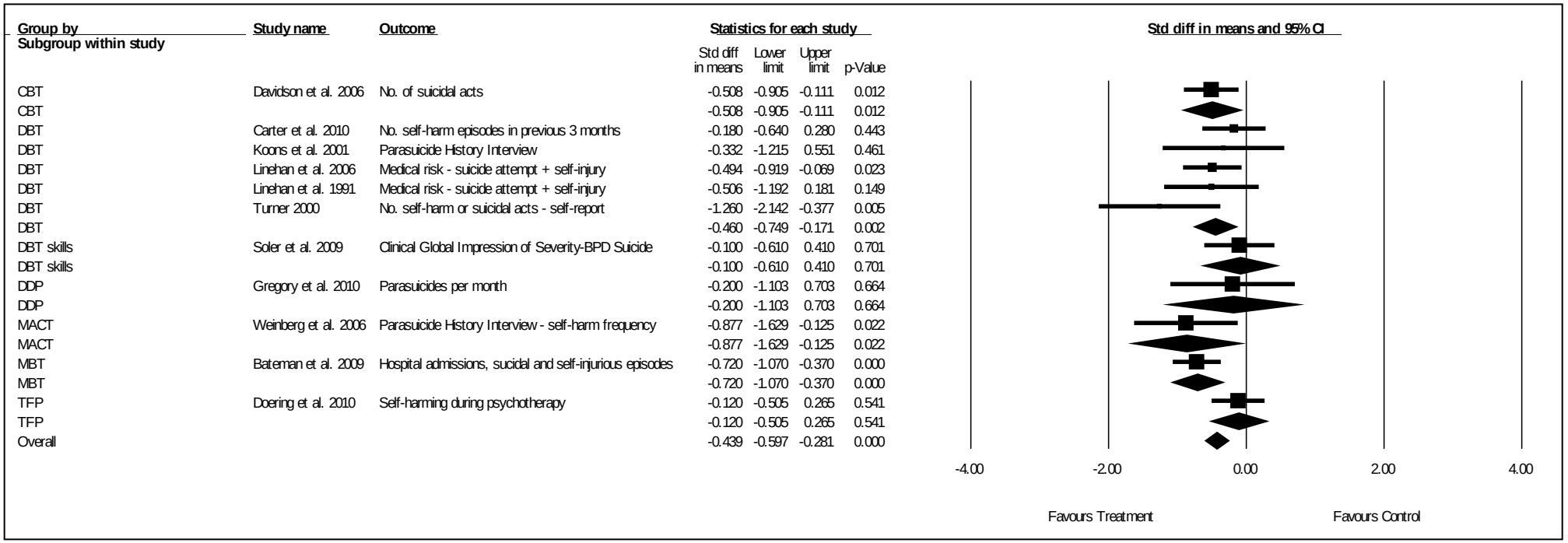
Figure 13: Effect of psychological treatments on suicidal ideation



DBT: dialectical behaviour therapy; MACT: manual-assisted cognitive therapy; Std diff: standard difference.

Forest plot for meta-analysis of controlled psychological intervention studies that included suicidal ideation as an outcome measure.[1, 24, 31, 33]

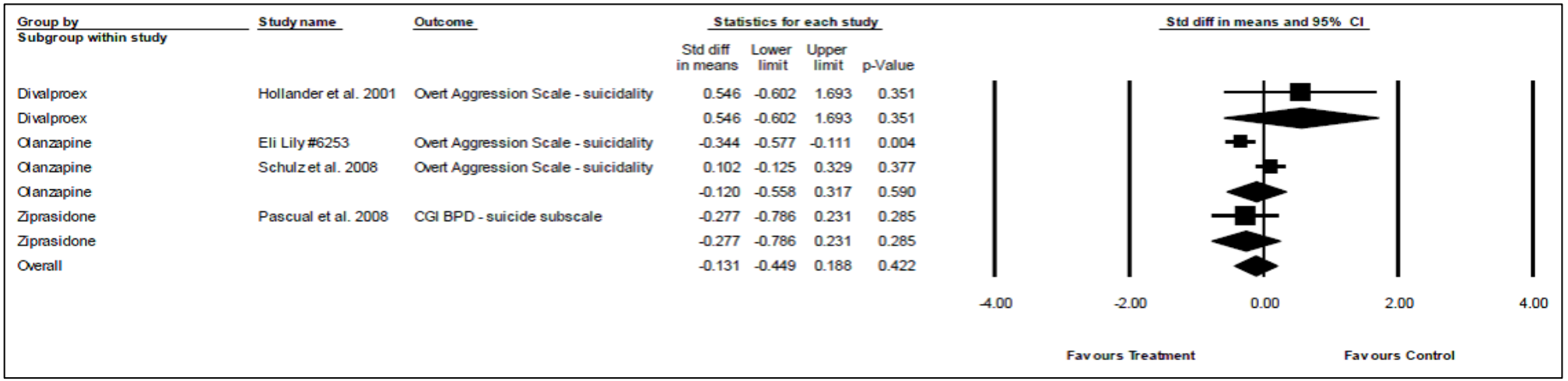
Figure 14: Effect of psychological treatments on suicide and self-harm



CBT: cognitive–behavioural therapy; DBT: dialectical behaviour therapy; DDP: dynamic deconstructive psychotherapy; MACT: manual-assisted cognitive therapy; MBT: mentalisation-based therapy; Std diff: standard difference; TFP: transference-focused psychotherapy.

Forest plot for meta-analysis of controlled psychological intervention studies that included suicide/self harm as outcome measure/s.[1-3, 6, 15, 16, 23, 24, 31-33]

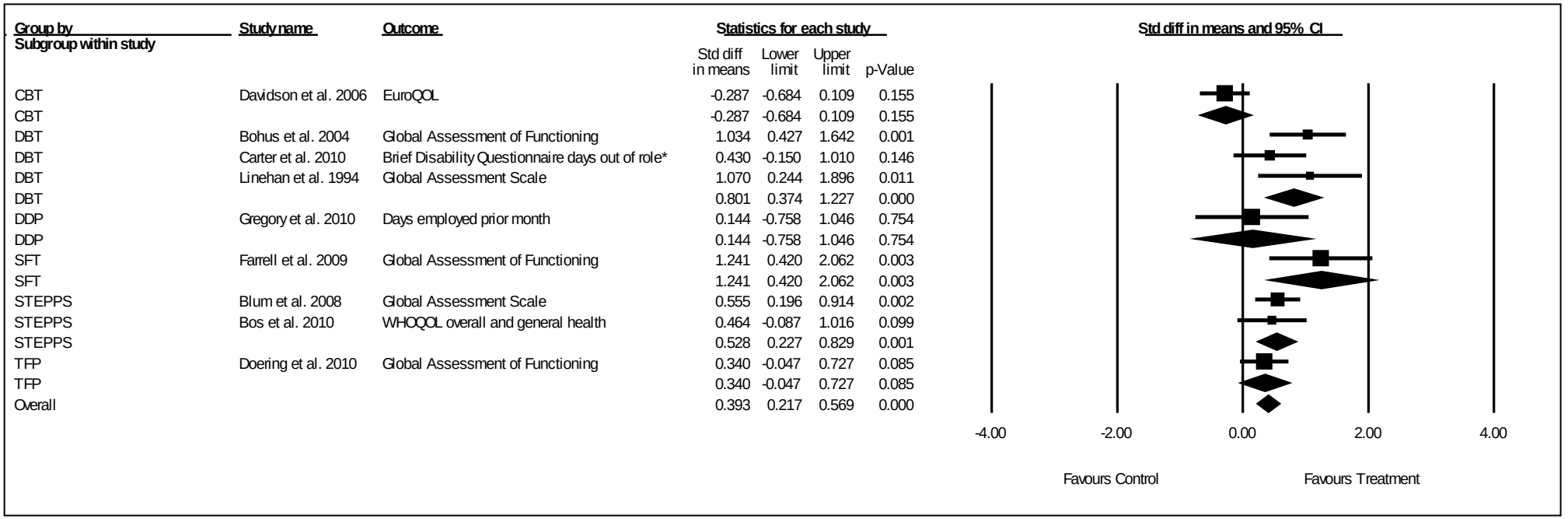
Figure 15: Effect of pharmacotherapy on suicide and self-harm



CGI BPD: Clinical Global Impression-BPD scale; Std diff: standard difference.

Forest plot for meta-analysis of placebo-controlled pharmacotherapy studies that included suicide and self harm as an outcome measure.[11-13, 25]

Figure 16: Effect of psychological treatments on general functioning

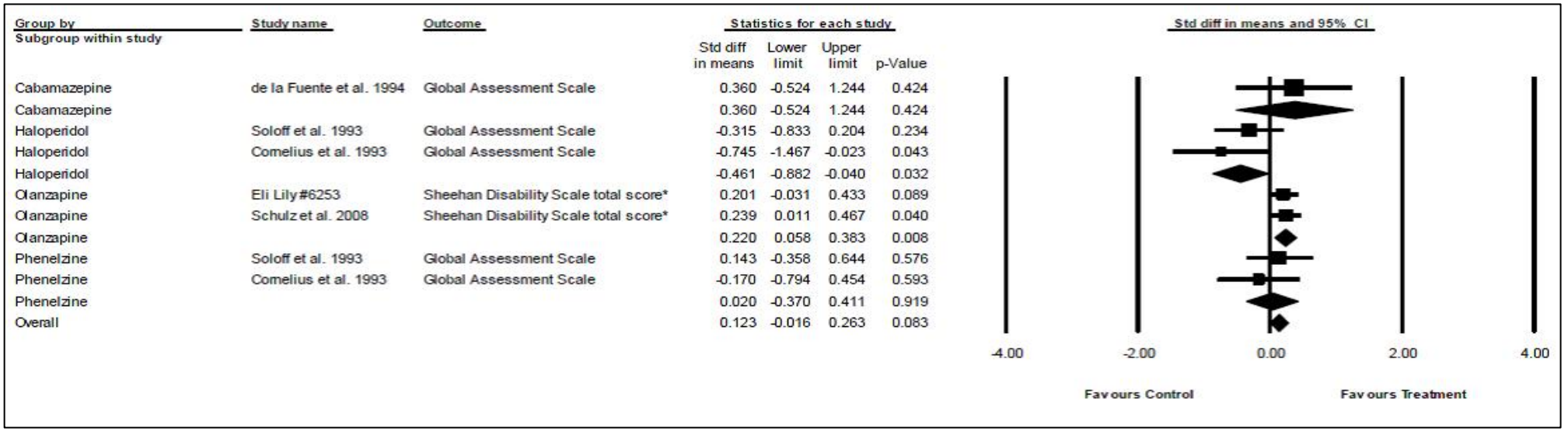


CBT: cognitive–behavioural therapy; DBT: dialectical behaviour therapy; DDP: dynamic deconstructive psychotherapy; EurQOL: EQ-5D (the EurQol Group quality-of-life assessment instrument); SFT: schema-focused therapy; Std diff: standard difference; STEPPS: systems training for emotional predictability and problem solving; TFP: transference-focused psychotherapy; WHOQOL: WHOQOL-Bref (the World Health Organization quality-of-life assessment instrument).

*Note: the effect size for Brief Disability Questionnaire was reversed for analysis

Forest plot for meta-analysis of controlled psychological intervention studies that included general functioning as an outcome measure.[3-7, 15, 16, 19, 34]

Figure 17: Effect of pharmacotherapy on general functioning

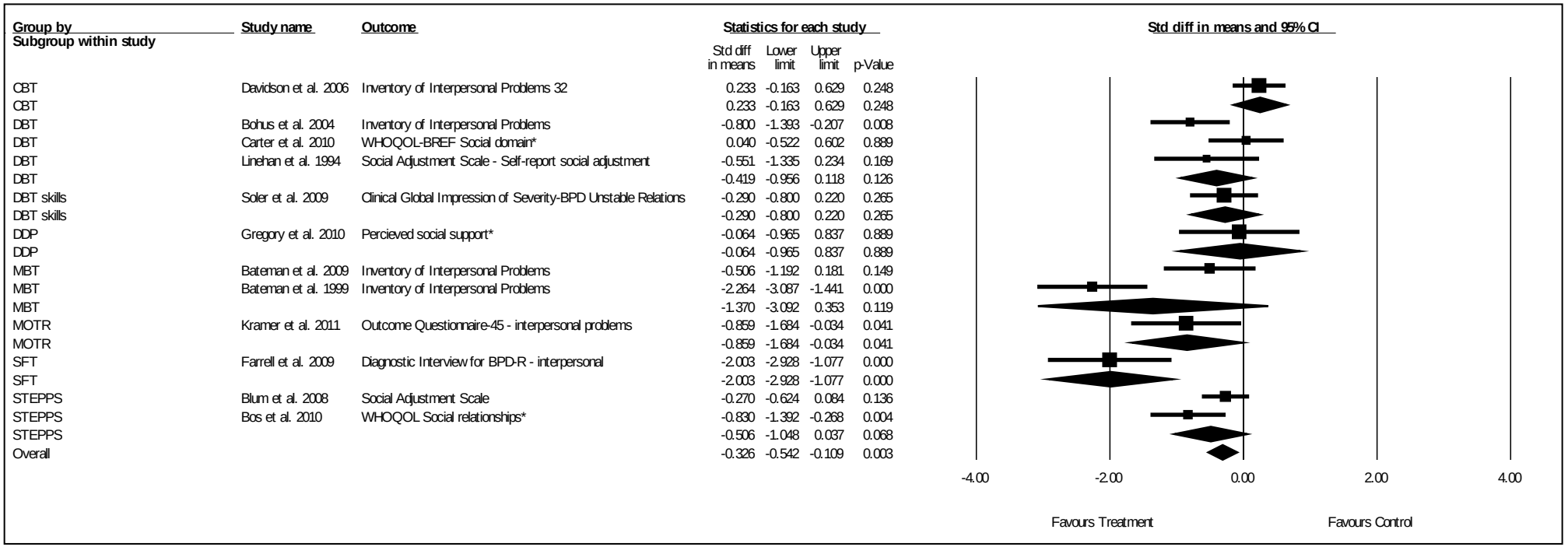


Std diff: standard difference.

Forest plot for meta-analysis of placebo-controlled pharmacotherapy studies that included general functioning as an outcome measure.[9, 11, 12, 14, 21]

*Note: the effect size for the Sheehan Disability Scale total score was reversed for analysis

Figure 18: Effect of psychological treatments on social and interpersonal functioning

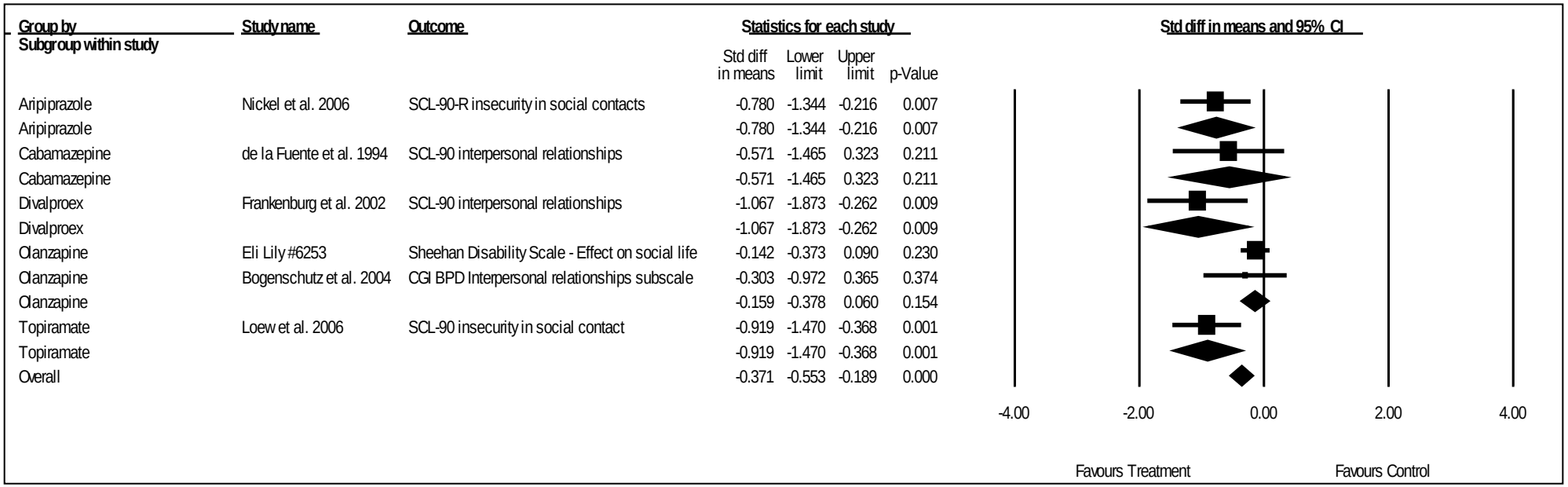


CBT: cognitive–behavioural therapy; DBT: dialectical behaviour therapy; DDP: dynamic deconstructive psychotherapy; MBT: mentalisation-based therapy; MOTR: motive-oriented therapeutic relationship; SFT: schema-focused therapy; Std diff: standard difference; STEPPS: systems training for emotional predictability and problem solving; WHOQOL: WHOQOL-Bref (the World Health Organization quality-of-life assessment instrument)

Forest plot for meta-analysis of controlled psychological intervention studies that included interpersonal and social functioning as an outcome measure.[2-5, 7, 15-19, 32, 34]

*Note: the effect size for WHOQOL-Bref and Perceived social support was reversed for analysis.

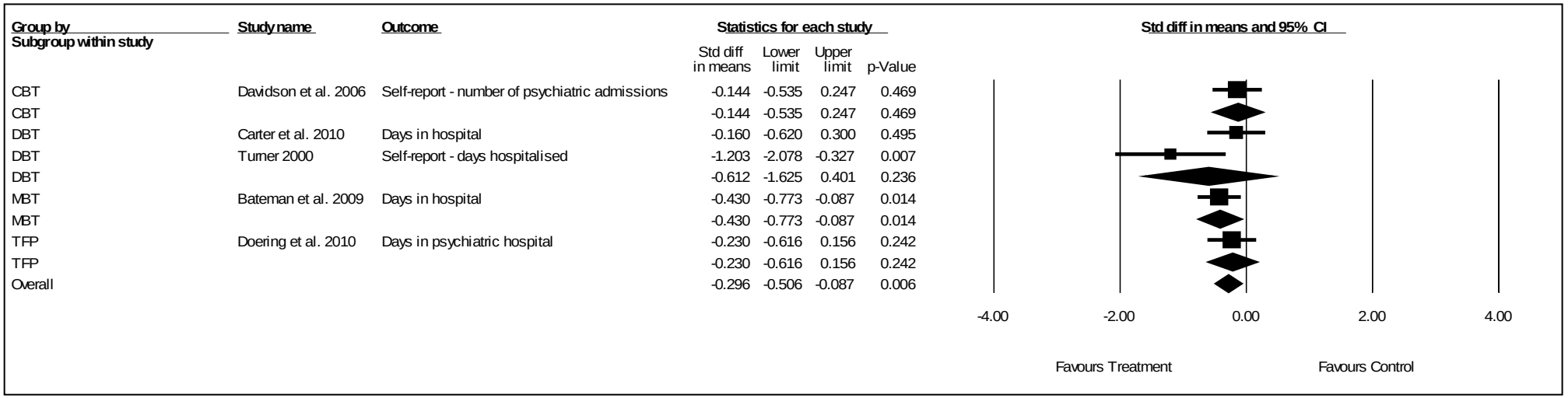
Figure 19: Effect of pharmacotherapy on social and interpersonal functioning



CGI BPD: Clinical Global Impression-BPD scale; SCL-90: Symptom Checklist-90; SCL-90-R: Symptom Checklist-90-Revised; Std diff: standard difference.

Forest plot for meta-analysis of placebo-controlled pharmacotherapy studies that included social and interpersonal functioning as an outcome measure.[11, 20-22, 26, 30]

Figure 20: Effect of psychological treatments on hospitalisation

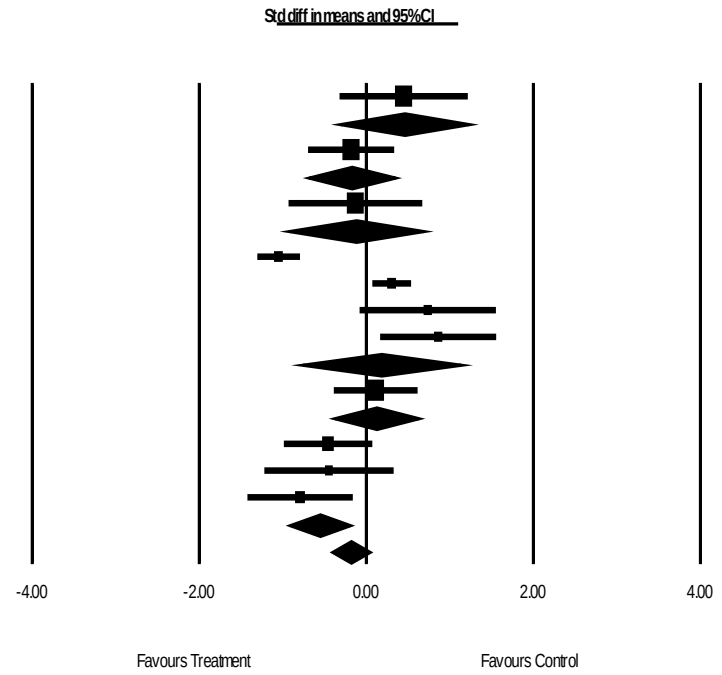


CBT: cognitive–behavioural therapy; DBT: dialectical behaviour therapy; MBT: mentalisation-based therapy; Std diff: standard difference; TFP: transference-focused psychotherapy.

Forest plot for meta-analysis of controlled psychological intervention studies that included hospitalisation as an outcome measure.[6, 15-16, 24, 32]

Figure 21: Pharmacotherapy: Weight

Group by Subgroup within study	Study name	Outcome	Std diff in means	Standard error	Variance	Lower limit	Upper limit	Z-Value	p-Value
Divalproex	Frankenburg et al. 2002	Weight gain (lb)	0.447	0.392	0.153	-0.320	1.215	1.143	0.253
Divalproex			0.447	0.392	0.153	-0.320	1.215	1.143	0.253
Haloperidol	Soloff et al. 1993	Atypical Depression Inventory - weight gain	-0.183	0.263	0.069	-0.699	0.333	-0.695	0.487
Haloperidol			-0.183	0.263	0.069	-0.699	0.333	-0.695	0.487
Lamotrigine	Tritt et al. 2005	Weight (kg)	-0.131	0.409	0.167	-0.932	0.670	-0.321	0.748
Lamotrigine			-0.131	0.409	0.167	-0.932	0.670	-0.321	0.748
Olanzapine	Schulz et al. 2008	Weight (kg)	-1.050	0.130	0.017	-1.305	-0.795	-8.077	0.000
Olanzapine	Eli Lily #6253	Weight gain (kg)	0.303	0.118	0.014	0.072	0.535	2.573	0.010
Olanzapine	Zanarini et al. 2001	Weight gain (kg)	0.737	0.416	0.173	-0.080	1.553	1.769	0.077
Olanzapine	Bogenschutz et al. 2004	Weight gain (kg)	0.860	0.355	0.126	0.165	1.555	2.425	0.015
Olanzapine			0.172	0.483	0.233	-0.774	1.118	0.356	0.722
Phenelzine	Soloff et al. 1993	Atypical Depression Inventory - weight gain	0.113	0.255	0.065	-0.388	0.613	0.441	0.659
Phenelzine			0.113	0.255	0.065	-0.388	0.613	0.441	0.659
Topiramate	Loew et al. 2006	Weight (kg)	-0.458	0.271	0.073	-0.989	0.073	-1.690	0.091
Topiramate	Nickel et al. 2004	Weight (kg)	-0.447	0.395	0.156	-1.222	0.328	-1.132	0.258
Topiramate	Nickel et al. 2005	Weight (kg)	-0.793	0.321	0.103	-1.423	-0.163	-2.467	0.014
Topiramate			-0.565	0.183	0.034	-0.924	-0.205	-3.078	0.002
Overall			-0.194	0.115	0.013	-0.419	0.030	-1.697	0.090



Note: Favouring intervention doesn't necessarily mean weight loss, it could mean that the gain in weight was not as large as the control group

Forest plot for meta-analysis of controlled pharmocotherapy studies that included weight as an outcome measure.[9, 11, 12, 22, 26-30, 35]

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