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Crisis interventions for adults with borderline personality disorder (Review)

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[Intervention Review]

Crisis interventions for adults with borderline personality disorder

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ABSTRACT

Background

People diagnosed with borderline personality disorder (BPD) frequently present to healthcare services in crisis, often with suicidal thoughts or actions. Despite this, little is known about what constitutes effective management of acute crises in this population and what type of interventions are helpful at times of crisis. In this review, we will examine the efficacy of crisis interventions, defined as an immediate response by one or more individuals to the acute distress experienced by another individual, designed to ensure safety and recovery and lasting no longer than one month. This review is an update of a previous Cochrane Review examining the evidence for the effects of crisis interventions in adults diagnosed with BPD.

Objectives

To assess the effects of crisis interventions in adults diagnosed with BPD in any setting.

Search methods

We searched CENTRAL, MEDLINE, Embase, nine other databases and three trials registers up to January 2022. We also checked reference lists, handsearched relevant journal archives and contacted experts in the field to identify any unpublished or ongoing studies.

Selection criteria

Randomised controlled trials (RCTs) comparing crisis interventions with usual care, no intervention or waiting list, in adults of any age diagnosed with BPD.

Data collection and analysis

We used standard methodological procedures expected by Cochrane.

Main results

We included two studies with 213 participants.

Crisis interventions for adults with borderline personality disorder (Review)

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One study (88 participants) was a feasibility RCT conducted in the UK that examined the effects of joint crisis plans (JCPs) plus treatment as usual (TAU) compared to TAU alone in people diagnosed with BPD. The primary outcome was self-harm. Participants had an average age of 36 years, and 81% were women. Government research councils funded the study. Risk of bias was unclear for blinding, but low in the other domains assessed. Evidence from this study suggested that there may be no difference between JCPs and TAU on deaths (risk ratio (RR) 0.91, 95% confidence interval (CI) 0.06 to 14.14; 88 participants; low-certainty evidence); mean number of self-harm episodes (mean difference (MD) 0.30, 95% CI -36.27 to 36.87; 72 participants; low-certainty evidence), number of inpatient mental health nights (MD 1.80, 95% CI -5.06 to 8.66; 73 participants; low-certainty evidence), or quality of life measured using the EuroQol five-dimension questionnaire (EQ-5D; MD -6.10, 95% CI -15.52 to 3.32; 72 participants; very low-certainty evidence). The study authors calculated an Incremental Cost Effectiveness Ratio of GBP -32,358 per quality-adjusted life year (QALY), favouring JCPs, but they described this result as "hypothesis-generating only" and we rated this as very low-certainty evidence.

The other study (125 participants) was an RCT conducted in Sweden of brief admission to psychiatric hospital by self-referral (BA) compared to TAU, in people with self-harm or suicidal behaviour and three or more diagnostic criteria for BPD. The primary outcome was use of inpatient mental health services. Participants had an average age of 32 years, and 85% were women. Government research councils and non-profit foundations funded the study. Risk of bias was unclear for blinding and baseline imbalances, but low in the other domains assessed. The evidence suggested that there is no clear difference between BA and TAU on deaths (RR 0.49, 95% CI 0.05 to 5.29; 125 participants; low-certainty evidence), mean number of self-harm episodes (MD -0.03, 95% CI -2.26 to 2.20; 125 participants; low-certainty evidence), violence perpetration (RR 2.95, 95% CI 0.12 to 71.13; 125 participants; low-certainty evidence), or days of inpatient mental health care (MD 0.70, 95% CI -14.32 to 15.72; 125 participants; low-certainty evidence). The study suggested that BA may have little or no effect on the mean number of suicide attempts (MD 0.00, 95% CI -0.06 to 0.06; 125 participants; very low-certainty evidence).

We also identified three ongoing RCTs that met our inclusion criteria. The results will be incorporated into future updates of this review.

Authors' conclusions

A comprehensive search of the literature revealed very little RCT-based evidence to inform the management of acute crises in people diagnosed with BPD. We included two studies of two very different types of intervention (JCP and BA). We found no clear evidence of a benefit over TAU in any of our main outcomes. We are very uncertain about the true effects of either intervention, as the evidence was judged low- and very low-certainty, and there was only a single study of each intervention.

There is an urgent need for high-quality, large-scale, adequately powered RCTs on crisis interventions for people diagnosed with BPD, in addition to development of new crisis interventions.

PLAIN LANGUAGE SUMMARY

Crisis interventions for people with borderline personality disorder

What is borderline personality disorder?

Borderline personality disorder (BPD) is a complex and severe mental disorder that affects about 2% of the general population. Many people diagnosed with BPD have unstable relationships and distressing and rapid changes in emotions, leading to frequent crises. These crises are critical periods, as they may lead to increased drug and alcohol use, fewer contacts with health professionals and self-harm, which may be life-threatening.

What did we want to find out?

To date, little is known about what might help people diagnosed with BPD when they are experiencing an acute crisis. In this review, we wanted to discover whether crisis interventions are effective for people diagnosed with BPD by looking at evidence from randomised controlled trials (where some participants (intervention group) are randomly assigned to receive an experimental treatment, and the others (control group) are randomly assigned to receive a dummy treatment (placebo), no treatment or the usual treatment).

What did we find?

We searched medical databases and found two studies that addressed this issue.

In one study, the intervention group had a joint crisis plan (a document explaining their treatment preferences for the management of future crises, which they could carry with them and refer to in the event of a crisis). This document is similar to a wellness recovery action plan, but is written with a mental health professional, rather than only by the individual. The intervention group also had access to usual care, which was provided by a community mental health team and included regular contact with an allocated member of the team. The control group received usual care only.

In the other study, the intervention group could choose to be admitted to a mental health hospital for up to three days at a time of crisis (brief admission), in addition to receiving usual care. The control group received usual care only.

Government research councils and non-profit foundations funded the studies.

Main results

In the joint crisis plan study, there was no clear evidence of an effect on death, self-harm, time spent in a mental health hospital, and quality of life. The written document may be more cost-effective than usual treatment, but the study authors were not confident about this.

The brief admission study showed no clear evidence of a difference between brief admission and the usual treatment for death, self-harm, suicide attempts, violence perpetration, and admission to a mental health hospital.

What are the limitations of the evidence?

We have little confidence in the evidence, because it does not cover all the people we were interested in, it was based on only one study, and the participants reported some results themselves.

Given that crises in people diagnosed with BPD are distressing and potentially dangerous periods associated with increased risk of suicide, further research is urgently needed to enhance the evidence base in this area. This research should be in the form of large, well-designed trials so that we can be confident in the effect of the intervention.

How up-to-date is this review?

The searches were completed in January 2022.

SUMMARY OF FINDINGS

Summary of findings 1. Joint crisis plan plus treatment as usual versus treatment as usual alone

Joint crisis plan plus treatment as usual versus treatment as usual alone

Patient/population: community-dwelling adults with a diagnosis of borderline personality disorder

Settings: all settings

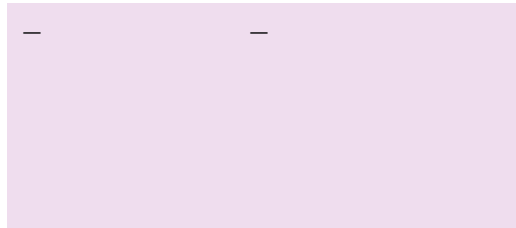
Intervention: joint crisis plan plus treatment as usual

Comparison: treatment as usual alone

Outcomes	Anticipated absolute effects (95% CI)*		Relative effect (95% CI)	Number of participants (RCTs)	Certainty of the evidence (GRADE)	Comments
	Risk in control group	Risk in intervention group				
Death^a Timing of outcome assessment: 6 months	n = 1/42	n = 1/46	RR 0.91 (0.06 to 14.14)	88 (1 RCT)	⊕⊕⊕⊖ Low^{b,c}	—
Self-harm: mean number of self-harm episodes Timing of outcome assessment: 6 months	The mean number in the control group was 20.3	The mean in the intervention group was 0.30 higher (−36.27 to 36.87)	—	72 (1 RCT)	⊕⊕⊕⊖ Low^{b,c}	—
Suicidality	—	—	—	—	—	Not measured
Violence perpetration	—	—	—	—	—	Not measured
Hospital admissions: inpatient mental health nights Timing of outcome assessment: 6 months	The mean number in the control group was 4.3	The mean in the intervention group was 1.80 higher (−5.06 to 8.66)	—	73 (1 RCT)	⊕⊕⊕⊖ Low^{b,c}	—
Quality of life Measured with EQ-5D: higher scores mean lower quality of life Timing of outcome assessment: 6 months	The mean score in the control group was 53.1	The mean score in the intervention group was 6.10 lower (−15.52 to 3.32)	—	72 (1 RCT)	⊕⊕⊕⊖ Very low^{b,c,d}	—

Cost-effectiveness

Timing of outcome assessment: 6 months



ICER GBP
-32,358 per
QALY

73
(1 RCT)

⊕⊕⊕⊕
Very low^{b,e}

Study reports
this result as
"hypothe-
sis-generating
only"

***The risk in the intervention group** (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: confidence interval; **EQ-5D:** EuroQol five-dimension quality of life questionnaire; **GBP:** British Pound Sterling; **ICER:** incremental cost-effectiveness ratio; **n:** number of events; **QALY:** quality-adjusted life year; **RCT:** randomised controlled trial; **RR:** risk ratio.

GRADE Working Group grades of evidence

High certainty: we are very confident that the true effect lies close to that of the estimate of the effect.

Moderate certainty: we are moderately confident in the effect estimate: the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.

Low certainty: our confidence in the effect estimate is limited: the true effect may be substantially different from the estimate of the effect.

Very low certainty: we have very little confidence in the effect estimate: the true effect is likely to be substantially different from the estimate of effect.

^aNumbers presented as raw values for n (events) in study population (intervention and control groups), and not modelled on RR. We have used the number of participants randomised as the denominator, rather than the number with complete follow-up data, which assumes that those not followed up did not have the outcome.

^bDowngraded one level due to indirectness because participants are from a subgroup of people with previous self-harm.

^cDowngraded one level due to imprecision (wide confidence intervals).

^dDowngraded one level due to concerns about risk of bias relating to self-reported outcomes.

^eDowngraded two levels due to significant concerns about precision of results. This result is reported as "hypothesis-generating only".

Summary of findings 2. Brief admission to psychiatric hospital by self-referral plus treatment as usual versus treatment as usual alone

Brief admission to psychiatric hospital by self-referral plus treatment as usual versus treatment as usual alone

Patient/population: adults meeting 3 or more diagnostic criteria for borderline personality disorder

Settings: all settings

Intervention: brief admission by self-referral plus treatment as usual

Comparison: treatment as usual alone

Outcomes	Anticipated absolute effects (95% CI)*		Relative effect (95% CI)	Number of participants (RCTs)	Certainty of the evidence (GRADE)	Comments
	Risk in control group	Risk in intervention group				

Death^a	n = 2/62	n = 1/63	RR 0.49 (0.05 to 5.29)	125 (1 RCT)	⊕⊕○○ Low ^{b,c}	The individual in the intervention group died before receiving the intervention.
Timing of outcome assessment: 12 months						
Self-harm: mean number of self-harm episodes	The mean number in the control group was 4.44	The mean in the intervention group was 0.03 lower (−2.26 to 2.20)	—	125 (1 RCT)	⊕⊕○○ Low ^{b,c}	—
Timing of outcome assessment: 12 months						
Suicidality: mean number of suicide attempts over the preceding 2 weeks	The mean score in the control group was 0.03	The mean in the intervention group was the same (−0.06 to 0.06)	—	125 (1 RCT)	⊕○○○ Very low ^{b,c,d}	—
Timing of outcome assessment: 12 months						
Violence perpetration: number of participants who perpetrated violence ^a	n = 0/62	n = 1/63	RR 2.95 (0.12 to 71.13)	125 (1 RCT)	⊕⊕○○ Low ^{b,c}	—
Timing of outcome assessment: 12 months						
Hospital admissions: days of inpatient mental health care	The mean number in the control group was 29.44	The mean in the intervention group was 0.70 higher (−14.32 to 15.72)	—	125 (1 RCT)	⊕⊕○○ Low ^{b,c}	—
Timing of outcome assessment: 12 months						
Quality of life	—	—	—	—	—	Not measured
Cost-effectiveness	—	—	—	—	—	Not measured

***The risk in the intervention group** (and its 95% CI) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: confidence interval; **n:** number of events; **RCT:** randomised controlled trial; **RR:** risk ratio.

GRADE Working Group grades of evidence

High certainty: we are very confident that the true effect lies close to that of the estimate of the effect.

Moderate certainty: we are moderately confident in the effect estimate: the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.

Low certainty: our confidence in the effect estimate is limited: the true effect may be substantially different from the estimate of the effect.

Very low certainty: we have very little confidence in the effect estimate: the true effect is likely to be substantially different from the estimate of effect.

^aNumbers presented as raw values for n (events) in study population (intervention and control groups), and not modelled on RR. We have used the number of participants randomised as the denominator, rather than the number with complete follow-up data, which assumes that those not followed up did not have the outcome.

^bDowngraded one level due to indirectness because participants are from a subgroup of people with current self-harm episodes and recent hospital admission or emergency department attendance.

^cDowngraded one level due to imprecision (wide confidence intervals).

^dDowngraded one level due to concerns about risk of bias relating to missing outcome data and reporting of this outcome.

BACKGROUND

Description of the condition

Borderline personality disorder (BPD) is a complex and severe mental disorder that manifests in a pervasive pattern of instability in interpersonal relationships and self-image, impulsive behaviour, repeated self-injury, chronic suicidal thoughts and impaired functioning (APA 2013; Bohus 2021). Approximately 2% of the general population, 10% of psychiatric outpatients and 20% of psychiatric inpatients meet the diagnostic criteria for BPD (APA 2013; Winsper 2020). BPD is diagnosed more frequently in women than in men, although this association is less evident in community samples (Eaton 2018; Stoffers 2012).

The aetiology of BPD is multifactorial, with current theories focusing on the interplay between environmental factors (particularly adverse childhood experiences) and potential genetic factors; there is also emerging research into neurobiological factors (Bohus 2021). People diagnosed with BPD are 13 times more likely to report childhood adversity (Porter 2019). It is thought that these factors affect the development of emotional regulation, identity and social cognition (Bohus 2021; Winsper 2018).

While diagnostic criteria include a heterogeneous set of symptoms (APA 2013; WHO 2016; WHO 2019), experts agree on the core features, which include emotional dysregulation, impulsivity and interpersonal dysfunction (Fonagy 2017; Gunderson 2018). These symptoms contribute to significant psychological suffering and impact on individuals' lives in a number of ways (Zanarini 1998). People with BPD have a range of vocational and social difficulties (Hastrup 2019a; Niesten 2016; Paris 2014), and their carers can feel considerable distress (Bateman 2019). People diagnosed with BPD often experience other mental health problems, particularly anxiety, depression, substance use disorders and self-harm (Bohus 2021; Leichsenring 2011). Some studies have reported suicide rates of 10% (Paris 2019), and suicide rates in prospective cohorts range from 2% to 6% (Temes 2019). A diagnosis of BPD is also associated with increased all-cause mortality (Fok 2012; Kjær 2020).

Many people diagnosed with BPD make frequent use of acute psychiatric and primary healthcare services (Cailhol 2015; Coid 2009; Comtois 2016; Sansone 2011), and the overall societal and economic costs of BPD are substantial (Gunderson 2011; Hastrup 2019b; Sansone 2012). Individuals diagnosed with BPD may frequently present to healthcare services in crisis (Stoffers 2010). Factors commonly associated with the onset of a crisis include a clear precipitating event causing distress, an acute reduction in motivation and problem-solving abilities, and an increase in help-seeking behaviour (Sansone 2004).

Crises in people diagnosed with BPD are frequently related to suicidal or homicidal thoughts, gestures or actions, and the experience of crisis can be extremely distressing, with a range of precipitating factors (Warrender 2021). To relieve intolerable feelings brought on by a crisis (Zanarini 2013), people may engage in recurrent self-harm, which can lead to repeat hospitalisation (Bohus 2021; Lieb 2010; NICE 2009).

Description of the intervention

The priority in a crisis for people diagnosed with BPD is to address high-risk behaviours, including self-harm, suicide attempts and harm to others (Bohus 2021). Crisis interventions for individuals

with other severe mental illness include home-based care, intensive case management and initial crisis intervention (Dieterich 2017; Murphy 2015). Other options that have been explored include joint crisis plans (JCPs; Henderson 2004), advance treatment statements (Campbell 2009), contact with community mental health teams (Malone 2007), and women's crisis houses (Howard 2010). These measures could also help people diagnosed with BPD. However, there is limited research into crisis interventions for individuals with any severe mental illness; one Cochrane Review from 2015 included a small number of studies and found low- to moderate-certainty evidence (Murphy 2015).

It is possible that people diagnosed with BPD may benefit from interventions similar to those designed for individuals with other severe mental illness. It is also possible that different individuals may benefit from crisis intervention involving several different teams (e.g. home treatment teams, intensive case management teams and community mental health teams). Specific intervention at the time of crisis may help to reduce the distress and risk associated with these events.

For the purposes of this review, we have adopted the following definition of a crisis intervention: an immediate response, by one or more individuals, to the acute distress experienced by another individual, designed to ensure safety and recovery, and lasting no longer than one month (although could be accessed multiple times over an extended period). Given the limited research in the field, the previous version of this review established the definition to distinguish between short-term crisis interventions and interventions delivered over a longer period of time (e.g. an intervention lasting three months per episode; Borschmann 2012). The definition has since been adopted by other reviews on the topic (Shaikh 2017; Warrender 2021).

We included studies examining any form of crisis-oriented intervention, conducted either during or outside standard business hours. Interventions may have included any services provided by ward-based or community-based teams, with a specific remit to intervene at times of acute distress (such as crisis resolution teams, home treatment teams or crisis intervention teams), working alongside community mental health teams. These interventions may have taken place in hospital, in the community or at home. Interventions may also have included the provision of crisis plans or any other service user-held tools designed for use in a crisis to ameliorate its effects.

How the intervention might work

There is limited research exploring how crisis interventions work (Murphy 2015). However, effective crisis management requires an understanding of the contributing factors and an attempt to address them (e.g. understanding behaviour, identifying triggers and modifying external factors; Bohus 2021). Given the potentially heterogeneous nature of crisis interventions, different interventions may act in different ways.

Internal factors contributing to effective crisis resolution partly depend on levels of intrinsic and extrinsic motivation, as well as the receptivity of the individual in crisis (Oudeyer 2007). If motivation is sufficiently high, the individual may be capable of re-evaluating their situation and modifying dysfunctional behaviour, for example through a change in motivation and problem-solving ability (Sansone 2004).

External factors contributing to effective crisis resolution may include the temporary removal of an individual from a risky or distressing environment (e.g. to hospital for a brief stay), but some experts question whether this approach is helpful in the longer term (Paris 2019). Facilitating immediate access to appropriate services (such as health, housing or legal advice) may also alleviate distress and reduce the risk of impulsive behaviour by addressing social problems (Bohus 2021).

Crisis intervention may facilitate the management of acute distress, helping people to access longer-term psychological treatment, which has a larger evidence base in the management of BPD (Storebø 2020).

Why it is important to do this review

People diagnosed with BPD frequently present to healthcare services in crisis, but there is limited evidence on how to support them (Borschmann 2012; Murphy 2015; Stoffers 2012). The consequences of people not receiving appropriate crisis intervention are potentially lethal, and cause significant distress to individuals and their families. Furthermore, crises occurring within this population are associated with substantial social and economic costs. The nature and potential impact of these crises justify the need to identify and make use of effective crisis management interventions (NICE 2009).

One Cochrane Review of psychological therapies for people diagnosed with BPD examined the evidence for efficacy of long-term psychological treatments such as dialectical behaviour therapy (DBT) and mentalisation-based treatment (MBT), each of which includes a component of crisis management (Storebø 2020). However, the review authors did not assess the efficacy of the crisis management component, as they formed part of a complex intervention. Another Cochrane Review explored the related topic of psychosocial interventions for self-harm in adults, but was also mainly focused on longer-term or complex interventions and did not examine crisis interventions specifically (Witt 2021).

This review is an update of a previous Cochrane Review examining the evidence for the effectiveness of crisis interventions in adults diagnosed with BPD (Borschmann 2012). Despite the frequent crises experienced by this population and the associated health risks, the previous review did not identify any randomised controlled trial (RCT)-based evidence for inclusion, but did identify ongoing studies.

OBJECTIVES

To assess the effects of crisis interventions in adults diagnosed with BPD in any setting.

METHODS

Criteria for considering studies for this review

Types of studies

We included RCTs and quasi-RCTs, where participants are allocated through quasi-random methods such as alternation. We excluded non-randomised trials.

Types of participants

Adults aged 18 years and older with a primary diagnosis of BPD, whether they received the diagnosis before or within a trial. We also included participants meeting three or more diagnostic criteria for BPD, and acknowledge this is a lower threshold for diagnosis than the five criteria required by the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (DSM-5; APA 2013). We took this decision to increase the yield of papers included in the review, although we note that meeting just one or more of the BPD criteria has been associated with increased psychosocial morbidity (Harford 2015; Zimmerman 2012).

We also included individuals with other disorders (e.g. substance misuse disorders) comorbid with BPD, and individuals with other comorbid psychiatric diagnoses, if the primary diagnosis was BPD. We excluded individuals registered in studies focusing on a separate mental disorder (some of whom could also meet the criteria for BPD), as such studies were not primarily about the treatment of BPD.

Types of interventions

All crisis interventions compared with treatment as usual (TAU), no intervention or waiting list. Eligible interventions could last up to one month. We excluded longer-term complex psychological interventions (e.g. DBT) that could include a crisis management component, as complex psychological interventions were the subject of a previous Cochrane Review (Storebø 2020), and do not constitute stand-alone crisis interventions. We included interventions delivered by any individual or group of individuals in any setting, such as primary care, community mental health services or inpatient mental health services.

Types of outcome measures

We included any length of follow-up, and we analysed outcomes after treatment where possible, examining the effect of assignment to the intervention (i.e. the intention-to-treat effect).

Primary outcomes

1. Death: sudden and unexpected death and death from natural causes in a seemingly healthy individual who is a participant in an RCT or has recently completed an RCT
2. Self-harm and suicidality (including dying by suicide), for example, frequency of self-harm, number of participants reporting self-harm or mean score on a suicide risk scale such as the Beck Scale for Suicidal Ideation (BSSI; Beck 1979)
3. Violence perpetration, for example, number of participants perpetrating violence or number of incidences of violence
4. Hospital admissions (either mental health admission or general admission), for example, number of nights of inpatient care or number of admissions to hospital
5. Quality of life assessed on an instrument such as the World Health Organization Quality of Life questionnaire (WHOQOL; WHOQOL 1994), or the EuroQol five-dimension questionnaire (EQ-5D; Herdman 2011)

Secondary outcomes

1. Satisfaction with services, measured on an instrument such as the Client Satisfaction Questionnaire (CSQ; Larsen 1979)

2. Engagement with services, measured on an instrument such as the Service Engagement Scale (SES; [Tait 2002](#))
3. Perceived coercion, measured on an instrument such as the Admission Experience Survey (AES; [Gardner 1993](#))
4. Social functioning, measured on an instrument such as the Social Functioning Questionnaire (SFQ; [Tyrrer 2005](#)), or the Work and Social Adjustment Scale (WSAS; [Mundt 2002](#))
5. Well-being and symptom severity, measured on a standardised instrument such as the Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS; [Tennant 2007](#)), or the Zanarini Rating Scale for Borderline Personality Disorder (ZAN-BPD; [Zanarini 2003](#))
6. Cost-effectiveness, measured by a statistic such as the incremental cost-effectiveness ratio (ICER)
7. Utilisation of services, as recorded in healthcare service records such as hospital, primary or secondary care records

We included the outcome measures death, self-harm, suicidality, violence perpetration, hospital admissions, quality of life and cost-effectiveness in summary of findings tables ([Schünemann 2022](#)).

Search methods for identification of studies

Electronic searches

We ran searches for this update in May 2021 and again in January 2022. We updated the previous search methods by including additional search terms in the population and intervention sections ([Borschmann 2012](#)). We revised the list of electronic sources by replacing some with databases that were previously unavailable, and adding some new ones. Where possible, we limited searches to the period since the last update (2011 onwards). For newly added databases, searches were conducted since database inception. We did not restrict the search by language or type of publication. We reported the changes in [Differences between protocol and review](#). We searched the following electronic databases and trial registers.

1. Cochrane Central Register of Controlled Trials (CENTRAL; 2021, Issue 12) in the Cochrane Library, which includes the Cochrane Developmental, Psychosocial and Learning Problems Specialised Register (searched 24 January 2022).
2. Ovid MEDLINE (1946 to January week 2 2022).
3. Ovid MEDLINE In Process & Other Non-indexed Citations (24 January 2022).
4. Ovid MEDLINE Epub ahead of print (24 January 2022).
5. Embase (1974 to 21 January 2022).
6. PsycINFO (1806 to January week 3 2022).
7. CINAHL (Cumulative Index to Nursing and Allied Health Literature; 1937 to 26 January 2022).
8. Social Services Abstracts ProQuest (1979 to 24 January 2022).
9. Social Policy and Practice Ovid (1981 to 24 January 2022).
10. Web of Science (WoS) Clarivate Core databases (1970 to 26 January 2022).
11. LILACS (Latin American and Caribbean Health Sciences Literature; searched 26 January 2022)
12. Cochrane Database of Systematic Reviews (CDSR; 2022, Issue 1) in the Cochrane Library (searched 24 January 2022).
13. Proquest Dissertations and Theses Global (PQDT) searched 26 January 2022).
14. Epistemonikos ([epistemonikos.org/en](#); searched 26 January 2022).

15. ClinicalTrials.gov ([clinicaltrials.gov](#); searched 26 January 2022).
16. World Health Organization International Clinical Trials Registry Platform (WHO ICTRP; [trialsearch.who.int](#); searched 26 January 2022).
17. ISRCTN Registry ([www.isrctn.com/](#); searched 31 January 2022).

The detailed strategies for each database are presented in [Appendix 1](#).

Searching other resources

We scrutinised the reference lists of relevant published reviews to locate additional publications not identified by the database searches ([Bozzatello 2020](#); [Paris 2019](#); [Shaikh 2017](#); [Stoffers-Winterling 2018](#); [Storebø 2020](#); [Town 2011](#); [Warrender 2021](#); [Witt 2021](#)). We then searched the complete archives of the six journals that returned the largest number of relevant citations: *American Journal of Psychiatry* (up to volume 179 issue 1); *British Journal of Psychiatry* (up to volume 220 issue 1); *Journal of Clinical Psychiatry* (up to volume 82 issue 6); *Psychological Medicine* (up to volume 52 issue 2); *Journal of Personality Disorders* (up to volume 35 issue 6); and *Archives of General Psychiatry* (up to volume 69 issue 12), which was renamed *JAMA Psychiatry* in 2013 (searched to volume 79 issue 1). We contacted some of the most published researchers in the field of BPD (as indexed by Expert Scape), in addition to authors contacted for the previous version of this review ([Borschmann 2012](#)), and topic experts Anthony Bateman and Mike Crawford, about ongoing trials and unpublished data. See [Appendix 2](#).

Data collection and analysis

Review authors RB, CH, JO and PM were involved in one of the included studies ([Borschmann 2013](#)). The remaining review authors (JMC, AM, JG) performed the eligibility assessment, data extraction, risk of bias assessment and GRADE assessment for this trial.

Selection of studies

Two review authors (JMC and AM) independently screened the titles and abstracts of all records, discarding those that were clearly irrelevant. Next, they retrieved the full-text reports of potentially eligible records and assessed them against the inclusion and exclusion criteria. When the two review authors did not agree, they consulted a third review author (PM) to reach a consensus. PM was not contacted in relation to [Borschmann 2013](#). We recorded our selection process in detail in a PRISMA diagram ([Moher 2009](#)).

Data extraction and management

Using a data extraction form specifically designed for this review, two review authors (JMC and JG) independently extracted data from [Borschmann 2013](#), and another pair of review authors (JMC and JO) independently extracted data from the other included study. We assessed the data collected and compared to original sources. We extracted data related to:

1. sample size;
2. study design, setting, location;
3. year of publication;
4. participant information, including age and gender distributions, comorbidities;
5. inclusion criteria, exclusion criteria, diagnostic criteria;

6. number of intervention groups;
7. intervention type, length, setting;
8. comparator characteristics;
9. assessment of risk of bias;
10. primary and secondary outcome measures; and
11. methods of statistical analysis.

We discussed any disagreements to reach consensus. We contacted study authors to obtain missing outcome data.

Main comparisons

We planned to compare crisis interventions to TAU or another comparator. Given the clinical heterogeneity of interventions identified, we included the following comparisons:

1. JCP plus TAU versus TAU alone
2. Brief admission to psychiatric hospital by self-referral (BA) plus TAU versus TAU alone

Assessment of risk of bias in included studies

Using the Cochrane risk of bias tool RoB 1 (Higgins 2011) two review authors (JMC, AM) independently assessed the risk of bias in Borschmann 2013, and another two review authors (JO, CH) assessed the risk of bias in the other included study. Specifically, we answered the following questions.

1. Was the allocation sequence adequately generated?
2. Was allocation adequately concealed?
3. Were both participants and personnel blinded to which intervention a participant received?
4. Were outcome assessors blinded from knowledge of which intervention a participant received?
5. Were incomplete outcome data adequately addressed?
6. Are reports of the study free of suggestion of selective outcome reporting?
7. Was the study apparently free of other problems that could put it at a high risk of bias (including fraud, baseline imbalances or deviations from protocol)?

We gave ratings of low, high or unclear risk of bias for each of the domains described above. Differences in opinions were resolved by discussion.

Measures of treatment effect

We calculated measures of treatment effect for individual studies but could not complete any meta-analyses due to the clinical heterogeneity of the two included studies. Unused methods are presented in Appendix 3 (Borschmann 2011).

Dichotomous outcomes

For dichotomous outcomes, we calculated risk ratios (RRs) and their 95% confidence intervals (CIs).

Continuous outcomes

For continuous outcomes, we calculated mean differences (MDs) and their 95% CIs.

Count outcomes

We extracted count data in the form in which they were reported, and treated count outcomes of common events (e.g. mean number of self-harm episodes) as continuous data, calculating MDs with 95% CIs (Borschmann 2011; Higgins 2022).

Timing of outcome assessment

The primary endpoint was after the intervention. If studies reported more than one time point for an intervention, we used the data from the last assessment of this outcome.

Unit of analysis issues

We found no cluster randomised trials and no trials with multiple treatment arms (see Appendix 3; Borschmann 2011).

Dealing with missing data

Where studies used an intention-to-treat analysis (analysing participants according to the group they were randomised to), we used the same principle.

We did not impute data for the outcomes death and violence perpetration in our primary analysis. We did complete sensitivity analyses for these outcomes, assuming all participants lost to follow-up had a negative result (Analysis 1.2; Analysis 2.2; Analysis 2.6). While this is in keeping with our protocol, it does not necessarily model a realistic scenario, given the low prevalence of our outcomes. Further information on incomplete outcome data is reported in the risk of bias section for each study (Borschmann 2013; Westling 2019).

Assessment of heterogeneity

In view of the substantial clinical heterogeneity between the interventions used in the two included studies, it was not appropriate to combine data in meta-analyses, so we were unable to assess statistical heterogeneity (see Appendix 3; Borschmann 2011).

Assessment of reporting biases

We could not assess reporting bias as planned due to the small number of included studies (see Appendix 3; Borschmann 2011).

Data synthesis

We did not pool the data in a meta-analysis as there were only two included studies with clinically heterogeneous interventions. Instead, we provided a narrative description of: sample size; age and gender distribution; study design; setting and location; details of the intervention group and control group; direction of effect of the intervention; size of the effect; and consistency of effect (if information in these domains was available for assessment).

Subgroup analysis and investigation of heterogeneity

We could not conduct any of our preplanned subgroup analyses due to the small number of included studies (see Appendix 3; Borschmann 2011).

Sensitivity analysis

We completed sensitivity analyses for the outcomes of death and violence perpetration, assuming all participants lost to follow-up had a negative result (assuming they died or perpetrated violence).

While this is in keeping with our protocol, it does not necessarily model a realistic scenario, given the low prevalence of these outcomes. We could not conduct any of our other preplanned sensitivity analyses due to the small number of included studies (see [Appendix 3](#); [Borschmann 2011](#)).

Summary of findings and assessment of the certainty of the evidence

We created summary of findings tables for our two main comparisons: JCP plus TAU versus TAU alone ([Summary of findings 1](#)) and BA plus TAU versus TAU alone ([Summary of findings 2](#)), using data from the last assessment for each outcome.

Two review authors (JMC, AM) independently assessed the certainty of the evidence for outcomes included in the summary of findings tables (death, self-harm, suicidality, violence perpetration, hospital admissions, quality of life, cost-effectiveness) using the GRADE approach, which assesses the five GRADE considerations (risk of bias, consistency of effect, imprecision, indirectness and publication bias; [Schünemann 2022](#)). We began with the assumption that there was a high certainty of evidence, and downgraded by one level for concerns about any of the GRADE domains, or by two levels if there were significant concerns for any of the domains. This gave one of the following levels of certainty.

1. High certainty: we are very confident that the true effect lies close to that of the estimate of the effect.
2. Moderate certainty: we are moderately confident in the effect estimate: the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.
3. Low certainty: our confidence in the effect estimate is limited: the true effect may be substantially different from the estimate of the effect.

4. Very low certainty: we have very little confidence in the effect estimate: the true effect is likely to be substantially different from the estimate of effect.

We constructed the summary of findings tables using Review Manager Web ([RevMan Web 2022](#)). These tables provide: key information about the best estimate of the magnitude of the effect in relative terms and absolute differences for each relevant comparison of alternative management strategies; the numbers of participants and studies addressing each important outcome; and our ratings of the overall confidence in effect estimates for each outcome ([Schünemann 2022](#)).

RESULTS

Description of studies

Results of the search

We did not include any studies in the previous version of this review ([Borschmann 2012](#)). Searching of electronic databases, trial registers and other resources generated a total of 2911 records for the update to this review, 960 of which were identified as duplicates. After screening the titles and abstracts of the remaining 1951 records, we excluded 1927 records, and retrieved 24 full-text reports for further examination. Eleven studies (from 13 reports) were excluded because they did not meet the inclusion criteria (see [Excluded studies](#); [Characteristics of excluded studies](#)), and three studies (from four reports) were ongoing (see [Characteristics of ongoing studies](#)). We included two studies (from seven reports; see [Included studies](#); [Characteristics of included studies](#)). [Figure 1](#) shows the study flow diagram.

Figure 1. PRISMA flow diagram. RCT: randomised controlled trial.

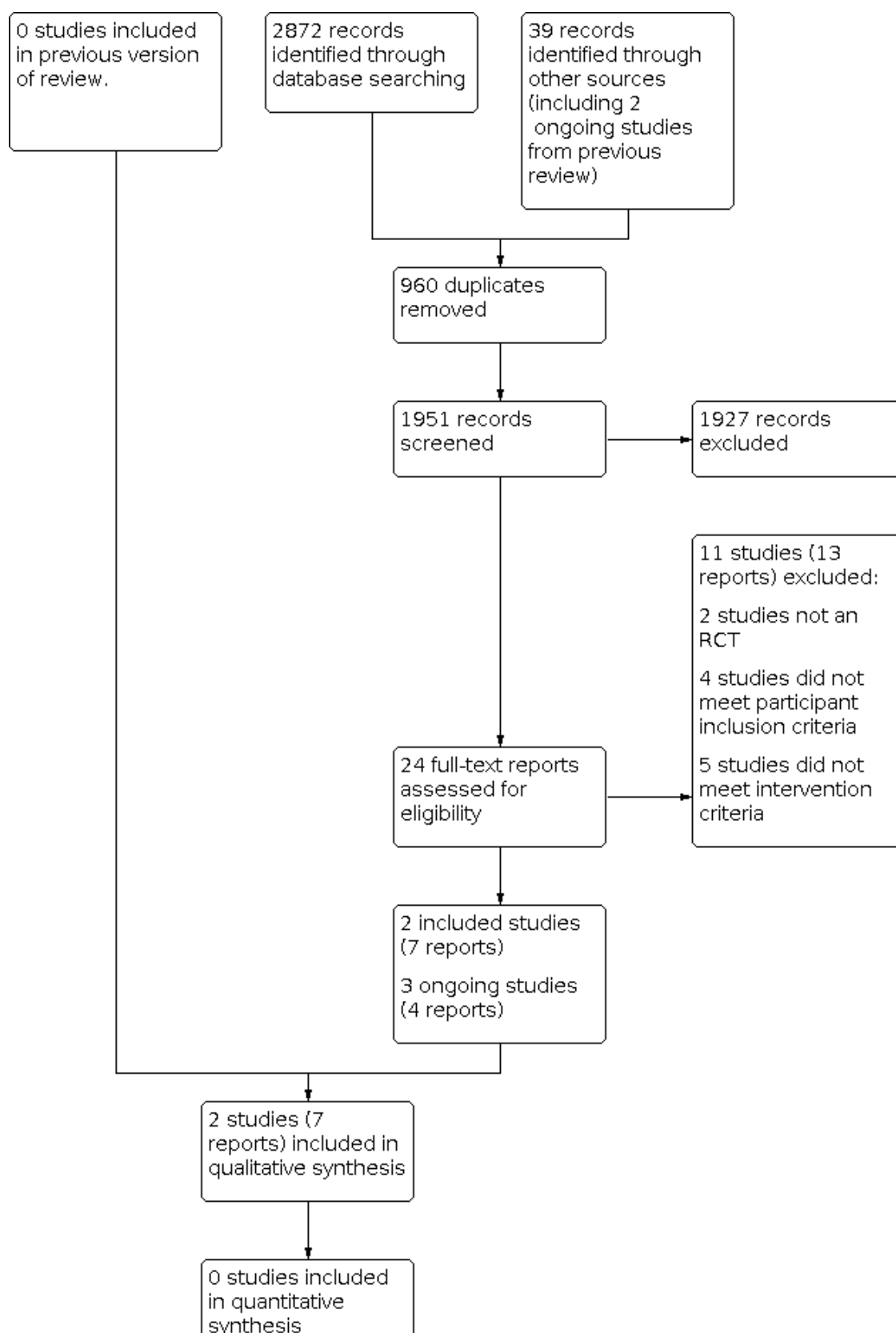


Figure 1. (Continued)

in quantitative
synthesis
(meta-analysis)

Included studies

We identified two studies that met the inclusion criteria.

Design

[Borschmann 2013](#) and [Westling 2019](#) were both single-blind RCTs.

Sample size

[Borschmann 2013](#) had a sample size of 88, and [Westling 2019](#) had a sample size of 125.

Setting

[Borschmann 2013](#) was conducted in community mental health teams in London (UK), and [Westling 2019](#) was conducted in four psychiatric healthcare facilities in southern Sweden.

Participants

[Borschmann 2013](#) included community-dwelling adults with a diagnosis of BPD (measured using the Structured Clinical Interview from the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision* (DSM-IV-TR)) who had self-harmed in the previous 12 months and were under the ongoing care of a community mental health team.

[Westling 2019](#) included adults referred to four psychiatric healthcare facilities, with current episodes of self-harm or recurrent suicidal behaviour; seven or more days of hospital admission or three or more emergency department visits in the last six months; and three or more diagnostic criteria for BPD. The inclusion criterion of three or more diagnostic criteria for BPD is a lower threshold for diagnosis than that required by DSM-5 (at least five criteria; [APA 2013](#)). Therefore, some individuals in this study may not have met the DSM-5 criteria for BPD.

Age

Participants in [Borschmann 2013](#) had a mean age of 36 years. Participants in [Westling 2019](#) had a mean age of 32 years.

Gender

In [Borschmann 2013](#), 81% of participants were women. In [Westling 2019](#), 85% of participants were women.

Intervention and comparator

In [Borschmann 2013](#), the intervention group (n = 46) received JCPs plus TAU, while the comparison group (n = 42) received TAU only.

The JCP was a written document that indicated the participant's preferences for treatment during future crises, and included topics such as 'Positive things I can do in a crisis' and 'Useful telephone numbers'. The document was produced after a facilitated meeting between the participant, his or her treating mental health professional, any other person the participant invited, and a mental health professional acting as an independent facilitator. The JCP was not legally binding, and differed from a wellness recovery

action plan in that a mental health professional was involved in its development ([Copeland 2002](#); [Henderson 2008](#)).

TAU in [Borschmann 2013](#) was standard care from the participant's community mental health team. This included the provision for service users to receive written copies of their care plan, including a brief 'crisis contingency plan', in addition to regular contact with a care co-ordinator or allocated member of the clinical team.

In [Westling 2019](#), the BA group (n = 63) had access to a standardised brief admission to a psychiatric hospital for a maximum of three nights, in addition to TAU, while the comparison group (n = 62) received TAU only.

BA was offered for a period of 12 months. Participants negotiated a contract that applied during the admissions, including goals (e.g. preferred approach from staff and stress-reducing activities) and responsibilities (e.g. the need to bring and administer medication and not to harm oneself or others).

TAU in [Westling 2019](#) included access to all psychiatric care the participant would have had if they had not participated in the study (including general admission to hospital).

Outcomes

[Borschmann 2013](#) was designed as a feasibility study to assess recruitment to a trial of JCPs, but did intend to be powered to detect a clinically meaningful effect for its primary outcome measure of the occurrence of self-harming behaviour over the six-month period following randomisation. However, it did not meet the required sample size and so was underpowered for this outcome. Secondary outcomes included depression, anxiety, engagement and satisfaction with services, quality of life, well-being and cost-effectiveness.

In [Westling 2019](#), prespecified primary outcome measures were days admitted to hospital, including voluntary admission, BA, and compulsory admission. It was powered to detect differences for these main outcomes.

We contacted the study authors about missing data relating to the outcome 'satisfaction with services' and received unpublished data, which is included in [Analysis 2.8](#) ([Westling 2021 \[pers comm\]](#)).

Excluded studies

We excluded 13 studies from the previous version of this review, and 11 studies from this update. One study was not an RCT, four studies did not meet the participant inclusion criteria, and six studies did not meet the intervention criteria. From these 24 excluded studies, we selected nine that readers might expect to be included in this review, and reported the details in the [Characteristics of excluded studies](#) table.

Ongoing studies

We identified three ongoing studies. See [Characteristics of ongoing studies](#).

[Pham-Scottez 2010](#) is an ongoing study investigating the impact of a 24-hour telephone service on suicide attempts in adults diagnosed with BPD. It was identified in the previous version of this review. We attempted to contact the study authors for an update but received no response. [NCT04211753](#) is an RCT examining the effectiveness of a mobile app for managing emotional crisis in people diagnosed with BPD. [NCT04779099](#) is a pilot RCT of a brief psychological

intervention for people diagnosed with BPD presenting to the emergency department with suicidal ideation or self-harm.

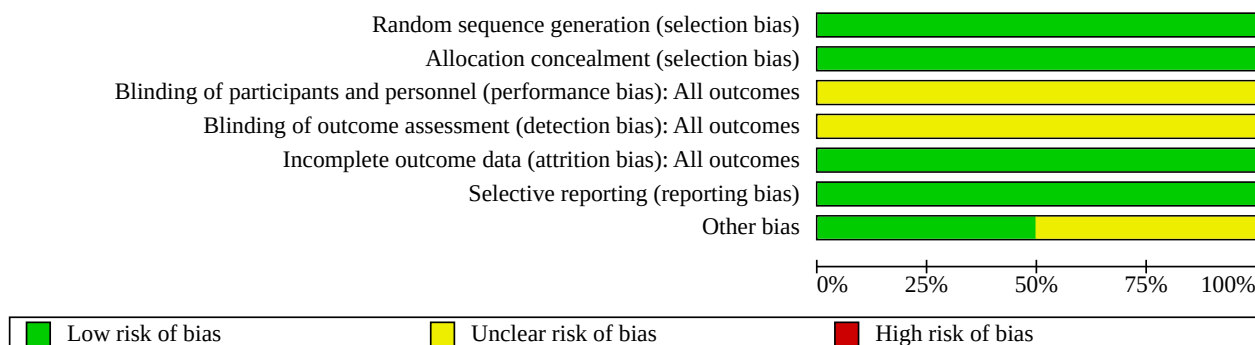
Risk of bias in included studies

We carried out the risk of bias assessment according to the methods set out in [Assessment of risk of bias in included studies](#) and described in the protocol for this review ([Borschmann 2011](#)), using RoB 1 ([Higgins 2011](#)). A narrative description of the results is presented below and in the risk of bias tables ([Characteristics of included studies](#)), and a graph and summary of the results can be found in [Figure 2](#) and [Figure 3](#).

Figure 2. Risk of bias summary: review authors' judgements about each risk of bias item for each included study.

	Random sequence generation (selection bias)	Allocation concealment (selection bias)	Blinding of participants and personnel (performance bias): All outcomes	Blinding of outcome assessment (detection bias): All outcomes	Incomplete outcome data (attrition bias): All outcomes	Selective reporting (reporting bias)	Other bias
Borschmann 2013							
Westling 2019							

Figure 3. Risk of bias graph: review authors' judgements about each risk of bias item presented as percentages across all included studies.



Allocation

Random sequence generation (selection bias)

We rated risk of bias related to random sequence generation as low for both studies. In [Borschmann 2013](#), the institution's clinical trials unit managed randomisation electronically. [Westling 2019](#) used a random sequence for allocation.

Allocation concealment (selection bias)

We rated risk of bias related to allocation concealment as low for both studies. In [Borschmann 2013](#), participants were unaware of their allocation until after they had been enrolled to the trial, and randomisation was managed centrally. In [Westling 2019](#), participants learned their allocation after initial assessments, and were randomised with consecutively numbered, sealed envelopes.

Blinding

Blinding of participants and research staff (performance bias)

We rated risk of performance bias as unclear for both studies. Owing to the nature of the interventions, participants and staff were aware of their allocation, which may have had an impact on outcomes.

Blinding of outcome assessment (detection bias)

We rated risk of detection bias as unclear for both studies. While most outcomes were collected by a researcher masked to treatment allocation, both studies included some self-reported measures (e.g. quality of life in [Borschmann 2013](#) and frequency of self-harm in [Westling 2019](#)). The fact that participants were unmasked to their group allocation may have introduced bias in the reporting of these outcomes, although [Borschmann 2013](#) did assess masking at the end of the study.

Incomplete outcome data

We rated risk of attrition bias as low: while there were incomplete outcome data in both studies, they were similar between groups and not considered to affect the results ([Borschmann 2013](#); [Westling 2019](#)). Both studies also employed intention-to-treat analyses.

Selective reporting

We detected no signs of reporting bias for either study, as both reported results in accordance with prespecified and published protocols ([Borschmann 2013](#); [Westling 2019](#)). [Westling 2019](#) could not complete their full intended analysis of suicide attempts, but the reasons for this are clear (low numbers of participants completing the outcome reporting in both groups).

Other potential sources of bias

We rated 'other' risk of bias as low for [Borschmann 2013](#), as we identified no other important sources of bias (including fraud, baseline imbalances or deviations from protocol). In [Westling 2019](#), there were baseline imbalances for anxiety disorders and days of compulsory admission, though there were no important differences in overall days of admission or other covariates. We therefore considered that [Westling 2019](#) was at unclear risk of bias from other sources.

Effects of interventions

See: [Summary of findings 1 Joint crisis plan plus treatment as usual versus treatment as usual alone](#); [Summary of findings 2 Brief admission to psychiatric hospital by self-referral plus treatment as usual versus treatment as usual alone](#)

Comparison 1: joint crisis plan plus treatment as usual versus treatment as usual alone

Outcomes for [Borschmann 2013](#) were reported at six months postintervention. See [Summary of findings 1](#)

Primary outcomes

Death

[Borschmann 2013](#) did not explore mortality as a main outcome, but two participants (one from each trial arm) died during follow-up. The trial authors considered that neither of these deaths were related to the intervention. There was no clear evidence of a difference between JCP plus TAU and TAU alone (RR 0.91, 95% CI 0.06 to 14.14; 88 participants; low-certainty evidence; [Analysis 1.1](#)). Worst case scenario sensitivity analysis (assuming all participants lost to follow-up had died) also showed no clear difference between JCP plus TAU and TAU alone (RR 1.37, 95% CI 0.53 to 3.52; 88 participants; low-certainty evidence; [Analysis 1.2](#)).

Self-harm and suicidality

[Borschmann 2013](#) found no clear difference between the groups in the proportion of participants who reported self-harming (odds ratio (OR) 1.86, 95% CI 0.53 to 6.51) or the frequency of self-harming behaviour (rate ratio 0.74, 95% CI 0.34 to 1.63). According to the results of our analysis, there may be no difference between JCP plus TAU and TAU alone in terms of mean number of self-harm episodes at the end of treatment (MD 0.30, 95% CI -36.27 to 36.87; 72 participants; low-certainty evidence; [Analysis 1.3](#)).

Violence perpetration

[Borschmann 2013](#) did not measure violence perpetration.

Hospital admissions

[Borschmann 2013](#) provided no evidence of a clear difference between JCP plus TAU and TAU alone on nights of inpatient mental health care over a six-month period (MD 1.80, 95% CI -5.06 to 8.66; 73 participants; low-certainty evidence; [Analysis 1.4](#)).

Quality of life

Evidence from [Borschmann 2013](#) suggested that JCP plus TAU may not reduce the EQ-5D score for quality of life at six months' follow-up compared to TAU alone (MD -6.10, 95% CI -15.52 to 3.32; 72 participants; very low-certainty evidence; [Analysis 1.5](#)). Lower scores in the EQ-5D reflect a better quality of life.

Secondary outcomes

Satisfaction with services

[Borschmann 2013](#) provided no evidence of a clear difference between JCP plus TAU and TAU alone on satisfaction measured using the Client Satisfaction Questionnaire (CSQ) at the end of treatment (MD 0.33, 95% CI -0.45 to 1.11; 73 participants; [Analysis 1.6](#)). Higher scores in the CSQ reflect higher satisfaction with services.

Engagement with services

Evidence from [Borschmann 2013](#) suggested that JCP plus TAU may not reduce scores in the Service Engagement Scale (SES) at the end of treatment compared with TAU alone (10.88 in control group, 2.25 lower in intervention group; MD -2.25, 95% CI -5.35 to 0.85; 55 participants; [Analysis 1.7](#)). Higher scores in the SES reflect greater difficulty in engaging with services.

Perceived coercion

[Borschmann 2013](#) provides evidence that JCP plus TAU may result in slightly higher scores in the Treatment Experience Scale at the end of treatment compared with TAU alone (16 in control group, 1.68 higher in intervention group; MD 1.68, 95% CI 0.27 to 3.09; 73 participants; [Analysis 1.8](#)). Higher scores reflect higher perceived coercion.

Social functioning

Evidence from [Borschmann 2013](#) suggested that JCP plus TAU may not reduce scores in the Work and Social Adjustment Scale (WSAS) at the end of treatment compared with TAU alone (26.1 in control group, 0.25 lower in intervention group; MD -0.25, 95% CI -4.16 to 3.66; 72 participants; [Analysis 1.9](#)). Higher scores in the WSAS reflect a higher level of impairment.

Well-being and symptom severity

[Borschmann 2013](#) provided evidence that JCP plus TAU may not increase scores in the Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS) at the end of treatment compared with TAU alone (35.3 in control group, 0.93 lower in intervention group; MD -0.93, 95% CI -5.97 to 4.11; 71 participants; [Analysis 1.10](#)). Higher scores in the WEMWBS reflect a higher level of well-being.

Cost-effectiveness

[Borschmann 2013](#) reported total costs over six months of GBP 5308 for the JCP plus TAU group and GBP 5631 for TAU alone. The trial authors calculated an ICER of GBP -32,358 per quality-adjusted life year (QALY) favouring JCP plus TAU, but they reported this result as hypothesis-generating only, and we rated this evidence as very low-certainty.

Utilisation of services

[Borschmann 2013](#) reported a number of different measures of how many contacts participants had with all health, social care and criminal justice sector services. The results suggest that JCP plus TAU may not reduce community mental health contacts (32.2 in control group, 9.7 lower in intervention group; MD -9.70, 95% CI -27.68 to 8.28; 73 participants; [Analysis 1.12](#)).

Comparison 2: brief admission to psychiatric hospital by self-referral plus treatment as usual versus treatment as usual alone

Outcomes for [Westling 2019](#) were reported at 12 months postintervention.

Primary outcomes

Death

[Westling 2019](#) did not explore mortality as a main outcome, but reported deaths as adverse events. During the trial, three participants died by suicide: two were randomised to the control group, and one was randomised to the intervention group. We included the participant who died in the intervention group, although they died before receiving the intervention. There was no clear evidence of a difference between BA plus TAU and TAU alone (RR 0.49, 95% CI 0.05 to 5.29; 125 participants; low-certainty evidence; [Analysis 2.1](#)). Worst case scenario sensitivity analysis (assuming all participants lost to follow-up had died) produced similar results (RR 0.87, 95% CI 0.36 to 2.12; 125 participants; low-certainty evidence; [Analysis 2.2](#)).

Self-harm and suicidality

[Westling 2019](#) found that BA plus TAU had little or no effect on the number of self-harm acts compared to TAU alone (latent growth curve modelling (LGCM) -0.41; $z = 1.70$; $P = 0.09$). Our analysis showed that BA plus TAU had little or no effect on the mean number of self-harm episodes at the end of treatment compared to TAU alone (4.44 in control group, 0.03 lower in intervention group; MD -0.03, 95% CI -2.26 to 2.20; 125 participants; low-certainty evidence; [Analysis 2.3](#)).

[Westling 2019](#) also found that BA plus TAU may result in little to no difference in the mean number of suicide attempts over the preceding two weeks at the end of treatment compared to TAU alone (0.03 in both groups; MD 0.00, 95% CI -0.06 to 0.06; 125 participants; very low-certainty evidence; [Analysis 2.4](#)). They had

planned to perform LGCM for this outcome but were unable to do so, as low numbers of participants completed the outcome at all time points.

Violence perpetration

[Westling 2019](#) did not explore violence as a main outcome but reported it as an adverse event. One individual in the BA group was violent to others in the ward. There was no clear evidence of a difference between BA plus TAU and TAU alone (RR 2.95, 95% CI 0.12 to 71.13; 125 participants; low-certainty evidence; [Analysis 2.5](#)). Worst case scenario sensitivity analysis (assuming all participants lost to follow-up had perpetrated violence) also showed no clear evidence of a difference between BA plus TAU and TAU alone (RR 0.98, 95% CI 0.42 to 2.31; 125 participants; low-certainty evidence; [Analysis 2.6](#)).

Hospital admissions

[Westling 2019](#) showed that there may be no clear difference between BA plus TAU and TAU alone on days of inpatient mental health care over a six-month period (29.44 in control group, 0.7 higher in intervention group; MD 0.70, 95% CI -14.32 to 15.72; 125 participants; low-certainty evidence; [Analysis 2.7](#)).

Quality of life

[Westling 2019](#) did not report quality of life.

Secondary outcomes

Satisfaction with services

[Westling 2019](#) reported that BA results in little or no difference in the Client Satisfaction Questionnaire (CSQ) between groups at any time point, but did report a within-group difference over time for the intervention group, suggesting BA may improve CSQ scores ($F(2, 54) = 3.92, P = 0.026$). This result comes from unpublished data received in correspondence with the study author ([Westling 2021 \[pers comm\]](#)). Our analysis suggested that BA plus TAU may result in a slightly lower CSQ score at the end of treatment compared to TAU alone (25.88 in control group, 1.2 lower in intervention group; MD -1.20, 95% -1.52 to -0.88; 125 participants; [Analysis 2.8](#)). Higher CSQ scores reflect higher satisfaction with services.

Engagement with services

[Westling 2019](#) did not report engagement with services.

Perceived coercion

[Westling 2019](#) did not report perceived coercion.

Social functioning

[Westling 2019](#) reported the World Health Organization Disability Assessment Schedule (WHODAS). This is a measure of disability with six domains, three of which relate to social functioning ([Westling 2019](#) used getting along, domestic responsibilities and participation). LGCM showed little to no difference between groups when these items were used as a covariate.

Well-being and symptom severity

[Westling 2019](#) reported changes in the Hospital Anxiety and Depression Scores, but did not report symptom measures for people diagnosed with BPD, or measures of well-being.

Cost-effectiveness

[Westling 2019](#) did not report cost-effectiveness.

Utilisation of services

[Westling 2019](#) also found little to no difference between BA plus TAU and TAU alone in the number of admissions to the emergency department (LGCM 0.19; $z = 1.54; P = 0.12$) and number of days with compulsory admission (LGCM -0.33; $z = -1.06; P = 0.29$).

DISCUSSION

Summary of main results

We identified two RCTs investigating crisis interventions for people diagnosed with BPD. [Borschmann 2013](#) investigated joint crisis plans (JCPs) and [Westling 2019](#) investigated brief admission to psychiatric hospital by self-referral (BA). We did not pool the results of the two studies or complete a meta-analysis, as we considered they were distinct interventions.

[Borschmann 2013](#) compared JCPs plus TAU to TAU alone. They assessed the use of a written document containing a mental health service user's treatment preferences for the management of future crises. They included 88 adults diagnosed with BPD who had self-harmed in the previous 12 months. They found no evidence of a difference between groups at six-months' follow-up for the primary outcomes of this review: death, mean number of self-harm episodes, nights of inpatient mental health care or quality of life. They reported that JCP may be more cost-effective than TAU, but noted that this result was hypothesis-generating only. We graded the certainty of the evidence as being low for all outcomes other than quality of life and cost-effectiveness, which we assessed as very low-certainty.

While [Borschmann 2013](#) did not establish efficacy of JCPs, the results did confirm the feasibility of recruiting and retaining people diagnosed with BPD to trials of JCPs, which was the aim of the study. The trial authors highlighted a need for further investigation to determine efficacy because their study was underpowered to detect a clinically meaningful difference in its primary outcomes.

[Westling 2019](#) compared BA plus TAU to TAU alone. Participants had access to standardised brief admission to psychiatric hospital for a maximum of three nights, for a period of 12 months. The trial randomised 125 adults who exhibited current self-harm or suicidal behaviour, three or more diagnostic criteria for BPD, and recent hospital admission or emergency department attendance. The trial authors found no evidence of a difference between groups at 12 months for the primary outcomes of this review, including death, mean number of self-harm episodes, mean number of suicide attempts, violence perpetration, or days of inpatient mental health care. We graded the certainty of evidence for these outcomes as low, except for mean number of suicide attempts, which we assessed as very low-certainty. [Westling 2019](#) did not establish efficacy of BA and the authors recommended further research into the intervention. The study was sufficiently powered to identify differences for its main outcomes, although not for all outcomes included in this review.

Based on the currently available evidence, we were unable to draw any clear conclusions about the efficacy of crisis interventions for people diagnosed with BPD.

We identified three ongoing trials. [Pham-Scottez 2010](#) has been ongoing since the previous version of this review, but no update was available. The other studies explore a mobile app and a brief psychological intervention in the emergency department ([NCT04211753](#), [NCT04779099](#)). In total, these three studies intend to recruit 740 people. We plan to include the results in future updates of this review.

Overall completeness and applicability of evidence

Only two studies met the criteria for inclusion in this review. We believe our review includes the currently available evidence, but due to the small number of relevant trials, there are very significant gaps in the literature.

The participants in both studies came from a subgroup of people with prior self-harm, and in [Westling 2019](#), all participants also had recent hospital admission or emergency department attendance. This may have excluded individuals experiencing a crisis for the first time, individuals who experience infrequent crises, and those not seeking hospital treatment. It also excludes individuals who experience crises that do not result in self-harm. Both studies took place in Western Europe, and participants in [Borschmann 2013](#) were predominantly White British. In both studies, most participants were women. We only included studies in adults, and there may be evidence for interventions in adolescents that are relevant to adult populations as well, although we found no studies in adolescents that would have met the other inclusion criteria for this review.

[Westling 2019](#) included individuals with three or more diagnostic criteria for BPD, which is a lower threshold for diagnosis than required by DSM-5 (at least five criteria; [APA 2013](#)). Therefore, we may have included data in our review from individuals who do not meet the DSM-5 criteria for BPD. We made this decision to increase the yield of papers included in the review, although we note that meeting just one or more of the BPD criteria has been associated with increased psychosocial morbidity ([Harford 2015](#); [Zimmerman 2012](#)).

We also included individuals with other disorders (e.g. substance misuse disorders) comorbid with BPD, and individuals with other comorbid psychiatric diagnoses, if the primary diagnosis was BPD. We excluded individuals registered in studies focusing on a separate mental disorder (some of whom also meet the criteria for BPD), as such studies were not primarily about the treatment of BPD.

Our review focused on BPD, but we may have identified more studies if we had explored the broader category of crisis interventions for any personality disorder, which could apply to people diagnosed with BPD ([Grenyer 2018](#)).

We used a broad definition of crisis interventions in this review, including different types of intervention (JCP and BA). Other types of crisis interventions are being investigated by ongoing studies. These ongoing studies will eventually contribute to the evidence base, which is currently very slender.

Our inclusion criteria limited interventions to one month because we aimed to assess crisis-specific interventions. Consequently, we excluded longer-term psychological therapies that may include a crisis management element (e.g. DBT) but are not specific interventions for crises. One Cochrane Review published in 2020 assessed psychological therapies for people diagnosed with BPD,

and found that these therapies (many of which are complex interventions, such as DBT) may reduce self-harm, which may reflect a reduction in the number of crises ([Storebø 2020](#)).

Both of the studies included in our review compared crisis interventions plus TAU to TAU alone. TAU varies significantly between geographic areas, with service provision varying between different settings. TAU may be more helpful for managing crises than no treatment, which was not assessed in either of the included studies.

The two studies had different follow-up periods, with [Borschmann 2013](#) reporting outcomes at six months and [Westling 2019](#) at 12 months. Given the short-term nature of crisis interventions, the differences in follow-up periods may have an important effect on results.

Our review included no studies on the use of medication as a crisis management strategy in people diagnosed with BPD. The broader use of medication in people diagnosed with BPD is covered in a separate Cochrane Review ([Stoffers-Winterling 2018](#)).

Inclusion of non-RCT evidence would increase the number of studies available for this review, but may not increase the certainty of the evidence.

Certainty of the evidence

We assessed the certainty of the evidence for each outcome using the GRADE approach. We rated the evidence for all outcomes as either low- or very low-certainty. Both studies were conducted in clinical populations that may not be representative of the entire population of people diagnosed with BPD, so we downgraded for indirectness. Only one study was available for each comparison, and the numbers of participants in these were relatively low. The available results had large confidence intervals, so we downgraded for imprecision. We had significant concerns about the precision of the results on the cost-effectiveness of crisis interventions, and we downgraded the certainty of the evidence by two levels for this reason. Some outcomes were assessed on the basis of self-reported information, so we downgraded the evidence on these outcomes by one level for risk of bias. Future trials should aim to obtain more information from objective sources.

Potential biases in the review process

RB, CH, JO and PM were involved in one of the included studies ([Borschmann 2013](#)). The remaining review authors (JMC, AM, JG) performed the eligibility assessment, data extraction, risk of bias assessment and eligibility assessment for this trial. For [Westling 2019](#), two review authors worked independently to assess eligibility, extract data, assess the risk of bias and assess the certainty of the evidence. We resolved any disagreements by discussion.

We have acknowledged that our eligibility criteria excluded longer-term therapies that may have components of crisis management, and we have also acknowledged that the inclusion of non-RCT evidence may have provided further data.

To increase the yield of eligible papers, we included participants meeting three or more diagnostic criteria for BPD, which is a lower threshold for diagnosis than required by DSM-5 ([APA 2013](#)).

Agreements and disagreements with other studies or reviews

This review is an update of a version published in 2012 (Borschmann 2012). The original review identified no studies for inclusion, whereas this update included two studies. However, the low certainty of available evidence means that we were unable to reach any definitive conclusions about the effectiveness of crisis interventions.

There are very few other studies or reviews exploring crisis interventions for people diagnosed with BPD. Shaikh 2017 synthesised the available published evidence on crisis interventions for people diagnosed with BPD in the emergency department, including all observational and interventional studies. The authors acknowledged the lack of RCT evidence, but concluded that psychotherapy may lead to a small reduction in BPD-related symptoms in these settings. Our review did not include any crisis-specific psychotherapy interventions. Shaikh 2017 also discussed the use of medication for people diagnosed with BPD who present with significant agitation, but we did not include any studies exploring the use of medication as a crisis intervention. Paris 2019 is a review article about suicidality in people diagnosed with BPD. The review authors concluded that hospital admission was not supported by the evidence, but could be justified in specific circumstances. They suggested focusing on existing evidence-based psychological treatments. Our review suggested that brief admission to psychiatric hospital by self-referral has little to no effect on the outcomes we explored.

One Cochrane Review of psychological therapies for people diagnosed with BPD found that self-harm may improve with psychological work (Storebø 2020). All interventions in that review occurred over a longer period of time than the crisis interventions we explored. Another Cochrane Review, which evaluated psychosocial interventions for self-harm, found that psychological work may be helpful for reducing self-harm (Witt 2021). We did not include any longer-term psychological therapies in this review, but it is possible that psychological work, by reducing self-harm, also reduces the frequency of crises. We identified one ongoing study exploring the use of a brief psychological intervention in the emergency department (NCT04779099).

Our review is consistent with the findings of Murphy 2015 on crisis interventions for people with severe mental illness, in that we identified a low number of studies on crisis interventions, with low-certainty evidence.

AUTHORS' CONCLUSIONS

Implications for practice

There remains a lack of high-certainty evidence from randomised clinical trials (RCTs) on the efficacy of crisis interventions for people diagnosed with borderline personality disorder (BPD). This review included two studies of two very different types of crisis intervention (joint crisis plans and brief admission to psychiatric hospital by self-referral), and found no clear evidence of a benefit over treatment as usual in any of our main outcomes.

Crisis points are distressing for patients and their families, and are difficult to manage for clinicians, due to the lack of evidence on the effectiveness of crisis-specific interventions. The evidence base

has changed little in the 10 years since the original version of this review was published, and there is a pressing need for research into appropriate interventions that can guide practice (Borschmann 2012).

Implications for research

This review has highlighted the ongoing dearth of evidence from RCTs investigating the efficacy of crisis interventions for people diagnosed with BPD. In order to develop and implement effective, evidence-based interventions, there remains an urgent need for high-quality RCTs in this field.

Existing research may have excluded individuals experiencing a crisis for the first time, those who experience infrequent crises, those not seeking hospital treatment, and those who experience crises that do not result in self-harm. Both included studies enrolled adults in Western Europe, and most participants were women. It is important that the individuals included in future trials reflect the wider population of people diagnosed with BPD living in the community, in terms of their age, gender, ethnicity and comorbidity.

Existing research has investigated two possible crisis interventions (joint crisis plans and brief admission to psychiatric hospital by self-referral), and ongoing research is exploring other types of intervention. In addition to researching existing interventions, it may be beneficial to develop new interventions for implementation at times of crisis.

Future trials must be adequately powered for a variety of primary and secondary outcomes, including self-harm, BPD symptom severity, social functioning, quality of life and healthcare service use. To focus future research, it will be helpful to identify the outcomes that are most important to people diagnosed with BPD at the time of crises. To reduce potential biases, self-reported outcomes (e.g. frequency of self-harm) should be supplemented with objective measures (such as information from medical notes). To facilitate future meta-analyses, reports of such trials should comply fully with the latest CONSORT guidance (Schulz 2010).

The certainty of the evidence could be improved by addressing the points described in Quality of the evidence relating to the directness and the potential bias of existing research. The studies included in this review show that it is feasible to recruit people diagnosed with BPD to RCTs at a crisis point, despite previous concerns that this may be challenging (Bateman 2004). The current evidence base includes a low number of participants, and more trials with larger sample sizes would improve the precision of the evidence.

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* Indicates the major publication for the study

CHARACTERISTICS OF STUDIES

Characteristics of included studies [ordered by study ID]

Borschmann 2013

Study characteristics

Methods	Design: a parallel group, single blind, TAU-controlled, randomised trial Unit of randomisation: individual Date of study: 1 October 2009–1 November 2011
Participants	Location/setting: community mental health teams in London (UK) Sample size: 88 Sex: 81% women Age: mean 36 years Inclusion criteria 1. Aged ≥ 18 years 2. Meeting diagnostic criteria for BPD (according to DSM-IV-TR criteria and measured using the SCID-II, BPD subsection) 3. Had self-harmed in the previous 12 months (defined as ≥ 1 act with a non-fatal outcome in which the individual had initiated a behaviour (such as self-cutting) or ingested a toxic substance or object with the intention of causing harm to themselves) 4. Under the ongoing care of a CMHT 5. Able to provide written informed consent Exclusion criteria 1. Currently an inpatient 2. Primary diagnosis of a psychotic illness 3. Unable to read or write in English

Borschmann 2013 (Continued)

4. Unable to provide written informed consent

Interventions	Intervention: the intervention group (n = 46) received JCPs plus TAU. The JCP was a written document produced after a facilitated meeting between the participant, his or her treating mental health professional, any other person the participant invited, and a mental health professional acting as an independent facilitator, during which the participant's preferences for treatment during future crises were documented. The JCP included topics such as 'Positive things I can do in a crisis' and 'Useful telephone numbers'. TAU was standard care from the participant's community mental health team. This included the provision for service users to receive written copies of their care plan, including a brief 'crisis contingency plan', in addition to regular contact with a care co-ordinator or allocated member of the clinical team. Comparator: the comparison group (n = 42) received TAU only.	
Outcomes	Primary outcome 1. Occurrence of self-harming behaviour over the 6-month period following randomisation Secondary outcomes 1. Depression and anxiety, measured using the HADS 2. Working alliance, measured using the WAI 3. Satisfaction with services, measured using the CSQ 4. Engagement with services, measured using the SES 5. Well-being, measured using the WEMWBS 6. Social functioning, measured using the WSAS 7. Perceived coercion, measured using the TES 8. Health-related quality of life, measured using the EQ-5D 9. Resource-use, measured using the AD-SUS Timing of outcome assessment: baseline, 6 months	
Notes	Funding source: the trial was supported by a Medical Research Council. Authors were partly funded by the NIHR Specialist Biomedical Research Centre for Mental Health at the South London and Maudsley NHS Foundation Trust and King's College London. Conflicts of interest: none declared Study authors' comments: it is feasible to recruit and retain people diagnosed with BPD to a trial of JCPs, and the intervention appears to have high face validity with this population. However, this feasibility study found no evidence of clinical efficacy.	
Risk of bias		
Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	Comment: randomisation was managed electronically and centrally. Quote: "After consent and baseline assessment, randomisation was conducted at the level of the individual and was stratified by alcohol use (as measured by scores on the Alcohol Use Disorders Identification Test (AUDIT); low <8; medium 8–15; high >15) and depression (as measured by scores on the Hospital Anxiety and Depression Scale (HADS)depression subscale; low <8, medium 8–10, high >10), both of which have been shown to be predictive of future self-harm. Randomisation was managed electronically by the Clinical Trials Unit at the King's College London Institute of Psychiatry, UK." (p 358)
Allocation concealment (selection bias)	Low risk	Comment: randomisation occurred after consent and baseline evaluations, and was managed centrally.

Borschmann 2013 (Continued)

		Quote: "Furthermore, randomisation was not an influential factor during the recruitment phase, as only one potential participant declined to participate because he could not be guaranteed of being randomised to the JCP + TAU arm of the trial." (p 157) Quote: "Randomisation was managed electronically by the Clinical Trials Unit at the King's College London Institute of Psychiatry, UK." (p 358)
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Comment: it was not possible to blind participants and research staff due to the nature of the intervention. Quote: "The nature of the intervention meant that neither participants nor staff members could be masked to allocation; however, all follow-up data were collected by a research worker who was masked to treatment allocation and all data analyses were conducted by a statistician who was also masked to treatment allocation." (p 358)
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Comment: most outcomes were objective measures; however, some were self-reported (e.g. quality of life). Since these could be affected by the participants being unmasked, we deemed the risk of this to be unclear. Quote: "Fourth, although the trial could not have utilised a double-blind methodology, all data analyses were conducted masked to treatment allocation and follow-up data were collected by a researcher masked to treatment allocation and this masking was maintained in 62 of 73 cases (85%)." (p 363)
Incomplete outcome data (attrition bias) All outcomes	Low risk	Comment: there were some missing data, but we felt this was unlikely to have affected most outcomes. Quote: "Thirteen participants (14.7%) dropped out of the trial prior to follow-up; 8/46 (17.4%) from the JCP + TAU group and 5/42 (11.9%) from the TAU group. This figure was higher than the 10% we had estimated and contributed to the trial being underpowered. Additionally, there were two serious adverse events as two participants (one from each trial arm) died during the follow-up period; neither of these deaths was related to the intervention." (p 360)
Selective reporting (reporting bias)	Low risk	Comment: reported in accordance with the prespecified and published protocol.
Other bias	Low risk	Comment: no other significant sources of bias identified (including fraud, baseline imbalances or deviations from protocol). Quote: "Demographic data were evenly matched across the TAU and JCP + TAU arms, reflecting the effectiveness of the stratified randomisation process." (p 359)

Westling 2019

Study characteristics

Methods	Design: single-masked RCT Unit of randomisation: individual Date of study: 1 September 2015–10 August 2018
Participants	Location/setting: 4 psychiatric healthcare facilities in southern Sweden Sample size: 125

Westling 2019 (Continued)

Sex: 85% women

Age: mean 32 years

Inclusion criteria

1. Current episodes of self-harm or recurrent suicidal behaviour
2. 3 or more diagnostic criteria for BPD
3. 7 or more days of hospital admission or presenting to an emergency department 3 or more times in the last 6 months
4. Aged 18–60 years

Exclusion criteria

1. Absence of regular contact with an outpatient psychiatric clinic
2. Unstable housing (e.g. homeless, imprisoned)
3. A nonpsychiatric disorder that significantly affects the inclusion criteria (e.g. self-harm only occurs during hypoglycaemia amongst individuals with diabetes)

Interventions	Intervention: the intervention group (n = 63) had access to standardised brief admission to psychiatric hospital by self-referral for a maximum of 3 nights, in addition to TAU. This was offered for a period of 12 months. Participants negotiated a contract that applied during the admissions, including goals (e.g. preferred approach from staff and stress-reducing activities) and responsibilities (e.g. the need to bring and administer medication and not to harm oneself or others). TAU included access to all psychiatric care the participant would have had if they had not participated in the study (including general admission to hospital). Comparator: the comparison group (n = 62) received TAU only.	
Outcomes	Primary outcome 1. Days admitted to hospital, including voluntary admission, BA and compulsory admission Secondary outcomes 1. Frequency of compulsory measures (e.g. restraints, forced treatment and shielding) 2. Scores on the WHODAS II 3. Scores on the 5 Self-harm Behavior Groupings Measure Timing of outcome assessment: baseline, 6 months, 12 months	
Notes	Funding source: the study was supported by grants from the Mats Paulsson Foundation, the Swedish Research Council, the Swedish National Self-Injury Project, regional research funds (Södra Regionvårdsnämnden), the Söderström-Königska Foundation, the Ellen and Henrik Sjöbring Foundation, the OM Persson Foundation and the Maggie Stephens Foundation. The funders had no role in the design and conduct of the study; collection, management, analysis, and interpretation of the data; preparation, review, or approval of the manuscript; and decision to submit the manuscript for publication. Conflicts of interest: none declared	
Risk of bias		
Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	Quote: "Participants were randomized at the individual level (allocation ratio 1:1) to either BA and TAU (BA group) or TAU (control group). Block randomization was applied, using tables of random numbers in blocks of 4, stratified according to the inpatient unit where BA was provided. One of us (D.D.) generated the allocation sequence, and a research nurse prepared consecutively

Westling 2019 (Continued)

		numbered randomization envelopes containing information on allocation." (p 4)
Allocation concealment (selection bias)	Low risk	Quote: "One of us (D.D.) generated the allocation sequence, and a research nurse prepared consecutively numbered randomization envelopes containing information on allocation." (p 4) Quote: "Recruitment staff were masked to participants' randomization status. One of us (S.W.) enrolled participants and gave eligible participants their randomization envelope, which they opened and signed. Participants learned their treatment assignment after eligibility assessment." (p 4)
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Comment: the trial could not have utilised a double-blind methodology. Participants and ward staff were aware of their allocation to the BA group.
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Comment: standardised self-report measures were used to assess some outcomes (e.g. self-harm), but participants were not blinded to their allocation. The research assistant retrieving data from medical records was unmasked (based on the protocol Testing schedule 8b); however, they were collecting objective measures (e.g. number of nights in hospital).
Incomplete outcome data (attrition bias) All outcomes	Low risk	Quote: "The completion rate was 86.4%. Attrition analyses were conducted, and no significant differences were found between the groups on baseline scores for any variable. The reasons for discontinuation and number of adverse events were similar in both groups." (p 6) Comment: some outcomes (e.g. suicide attempts) had lower response rates than others, but responses were similar between groups.
Selective reporting (reporting bias)	Low risk	Comment: results reported in accordance with prespecified and published protocol. The trial authors did not complete the full intended analysis of suicide attempts, but reasons for this are clear (low numbers of participants completing the outcome reporting).
Other bias	Unclear risk	Comment: no other significant sources of bias identified (including fraud or deviations from protocol). There were baseline imbalances for anxiety disorders and days of compulsory admission, but not for overall days of admission or for other co-variables. Quote: "No significant differences were observed at T1 between the groups other than that the BA group contained more individuals with anxiety disorders and more days of compulsory admission." (p 6)

AD-SUS: Adult Service Use Schedule; AUDIT: Alcohol Use Disorders Identification Test; BA: brief admission to psychiatric hospital by self-referral; BPD: borderline personality disorder; CMHT: community mental health team; CSQ: Client Satisfaction Questionnaire; DSM-IV-TR: *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision*; EQ-5D: EuroQol five-dimension questionnaire; HADS: Hospital Anxiety and Depression Scale; JCP: joint crisis plan; NIHR: National Institute for Health Research; RCT: randomised clinical trial; SCID-II: Structured Clinical Interview for DSM-IV Axis II Disorders; SES: service engagement scale; TES: Treatment Experience Scale; TAU: treatment as usual; WAI: Working Alliance Inventory; WEMWBS: Warwick-Edinburgh Mental Wellbeing Scale; WSAS: Work and Social Adjustment Scale; WHODAS II: World Health Organization Disability Assessment Schedule II.

Characteristics of excluded studies [ordered by study ID]

Study	Reason for exclusion
Andreoli 2016	Ineligible intervention (lasted 3 months)

Study	Reason for exclusion
Bateman 2009	Ineligible intervention (complex psychological intervention lasting 18 months)
Grenyer 2018	Ineligible participants (any diagnosis of PD, not specifically BPD)
Laddis 2010	Ineligible design (not randomised)
Mehlum 2014	Ineligible participants (aged 12–18) and ineligible intervention (lasting 19 weeks)
Nadort 2009	Ineligible intervention (complex psychological intervention lasting 18 months)
NCT05023447	Ineligible intervention (not a crisis intervention)
Reneses 2013	Ineligible intervention (lasting 20 weeks)
Tyrer 2004	Ineligible intervention (complex psychological intervention lasting 3 months); ineligible participants (< 70% had diagnosis of BPD)

BPD: borderline personality disorder; PD: personality disorder; RCT: randomised controlled trial

Characteristics of ongoing studies *[ordered by study ID]*

[NCT04211753](#)

Study name	Public title: Effectiveness and security testing of a mobile app (B-RIGHT) for emotional crisis in borderline personality disorder (B-RIGHT) Scientific title: Effectiveness and security testing of a mobile app (B-RIGHT) for self-managing emotional crises in people with borderline personality disorder: a pragmatic randomized controlled trial
Methods	Design: RCT
Participants	Location: Barcelona, Spain Sample size: estimated enrolment 80 participants Sex: all eligible Age: 18–60 years Inclusion criteria 1. DSM-5 diagnosis of BPD 2. Age 18–60 years Exclusion criteria 1. Comorbidity with mental retardation 2. Comorbidity with psychotic disorder 3. Comorbidity with antisocial personality 4. Comorbidity with autism spectrum disorder
Interventions	Intervention: mobile app for self-managing emotional crisis plus TAU (weekly group psychotherapy and bimonthly individual psychotherapy) Control: TAU (weekly group psychotherapy and bimonthly individual psychotherapy)
Outcomes	Primary outcomes

NCT04211753 (Continued)

1. Number of psychiatric emergencies and hospitalisations, as reported by computerised clinical charts
2. Severity of smartphone addiction, as measured by the Spanish version of the SAS (range 10–60; increasing scores represent increasing smartphone addiction severity)

Timing of outcome measures: 9 months

Starting date	Estimated June 2022
Contact information	Name 1: Mireia Bolivar Email 1: mbolivar@csgdm.cat Name 2: Pere Clave Email 2: pclave@csgdm.cat Affiliation: Consorci Sanitari del Maresme
Notes	Funding source: not reported Conflicts of interest: not reported

NCT04779099

Study name	Trial of a brief psychological intervention for suicidal patients with borderline personality disorder in the emergency department
Methods	Design: pilot RCT
Participants	Location: EDs, Australia Sample size: estimated enrolment 60 participants Sex: all eligible Age: ≥ 16 years Inclusion criteria 1. Age ≥ 16 years 2. Presenting to ED with self-harm or suicidal ideation, or both 3. Meeting criteria for BPD on the SCID-5-PD Exclusion criteria 1. Unable to give informed consent 2. Meeting DSM-5 criteria for severe substance use disorder, schizophrenia spectrum disorder or bipolar disorder I mania based on the SCID-5 3. IQ < 70 based on the WTAR
Interventions	Intervention: brief 4-session intervention in the ED for BPD, consisting of weekly 50-minute 1:1 sessions focused on psycho-education, here-and-now problem-solving and safety planning, in addition to TAU (described below) Control: TAU, comprising access to psychiatric assessment, medication review, and unscheduled sessions with allied health professionals using a drop-in model of care
Outcomes	Primary outcomes 1. Mean group difference in frequency of ED visits on the CSRI

NCT04779099 (Continued)

Timing of outcome measures: 1, 3 and 6 months of follow-up

Starting date	Estimated September 2021
Contact information	Name: Anne Sonley Email: anne.sonley@camh.ca Affiliation: Centre for Addiction and Mental Health
Notes	Funding source: not reported Conflicts of interest: not reported

Pham-Scottez 2010

Study name	Impact of a 24/7 telephone service on suicide attempts of borderline patients [Evaluation de l'efficacité d'une permanence téléphonique sur l'incidence des tentatives de suicide des patients borderline]
Methods	Design: single blind, multicentre RCT
Participants	Location: multiple centres in France, both inpatient and outpatient Sample size: estimated enrolment 600 participants Sex: all eligible Age: 18–40 years Inclusion criteria: 1. Age 18–40 years 2. Inpatient or outpatient at one of the recruiting centres 3. BPD diagnosis according to DSM-IV-TR 4. Able to provide written informed consent Exclusion criteria 1. Age < 18 or > 40 years 2. Diagnosis of schizophrenia 3. Diagnosis of severe somatic disorder 4. Consent not provided 5. Participation in another intervention study
Interventions	Intervention: 1 year of access to a 24-hour crisis phone line (with a team of psychiatrists specialised in BPD), plus TAU (not described) Control: TAU (not described)
Outcomes	Primary outcomes 1. Rate of suicide attempts Secondary outcomes 1. Rate of self-injurious behaviours Timing of outcome measures: 12 months

Pham-Scottez 2010 (Continued)

Starting date	November 2008
Contact information	Name 1: Alexandra Pham-Scottez Email 1: a.pham@ch-sainte-anne.fr Name 2: Daniel Guelfi Email 2: jd.guelfi@ch-sainte-anne.fr Affiliation: Hôpital St. Anne, Paris, France
Notes	Funding source: Ministry of Research (Hospital Clinical Research Project) Conflicts of interest: not available Comment: this study was included as an ongoing study in the previous review. We could not find any updates on its progress and received no response after contacting the study authors.

BPD: borderline personality disorder; CSRI: Client Service Receipt Inventory; DSM-IV-TR: *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision*; DSM-5: *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition*; ED: emergency department; IQ: intelligence quotient; RCT: randomised controlled trial; SAS: Smartphone Addiction Scale; SCID-5: Structured Clinical Interview for DSM-5; SCID-5-PD: Structured Clinical Interview for DSM-5 Personality Disorders; TAU: treatment as usual; WTAR: Wechsler Test of Adult Reading.

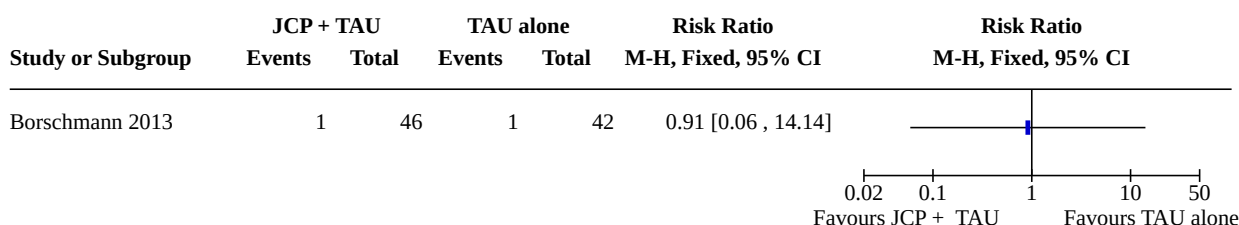
DATA AND ANALYSES

Comparison 1. Joint crisis plan (JCP) plus treatment as usual (TAU) versus TAU alone

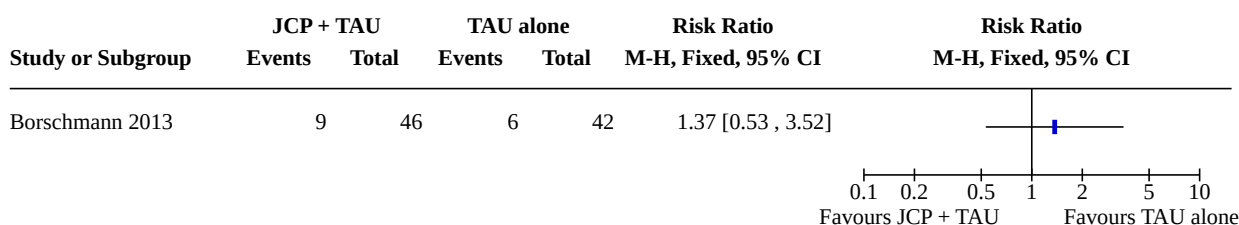
Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1.1 Death: number of deaths during study period	1		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
1.2 Death: number of deaths during study period (worst-case scenario; sensitivity analysis)	1		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
1.3 Self-harm (SH): mean number of SH episodes at 6 months	1		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
1.4 Mean number of inpatient mental health nights	1		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
1.5 Quality of life: EQ-5D score at six months	1		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
1.6 Satisfaction with services: Client Satisfaction Questionnaire at end of treatment	1		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
1.7 Engagement with services: Service Engagement Scale at end of treatment	1		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
1.8 Perceived coercion: Treatment Experience Scale at end of treatment	1		Mean Difference (IV, Fixed, 95% CI)	Totals not selected

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1.9 Social functioning: Work and Social Adjustment Scale at end of treatment	1		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
1.10 Wellbeing and symptom severity: Warwick-Edinburgh Mental Wellbeing Scale at end of treatment	1		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
1.11 Cost-effectiveness	1		Other data	No numeric data
1.12 Utilisation of services: community mental health contacts over 6 months' follow-up	1		Mean Difference (IV, Fixed, 95% CI)	Totals not selected

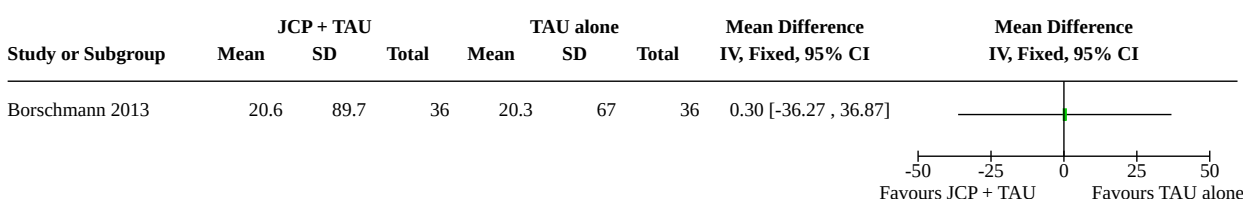
Analysis 1.1. Comparison 1: Joint crisis plan (JCP) plus treatment as usual (TAU) versus TAU alone, Outcome 1: Death: number of deaths during study period



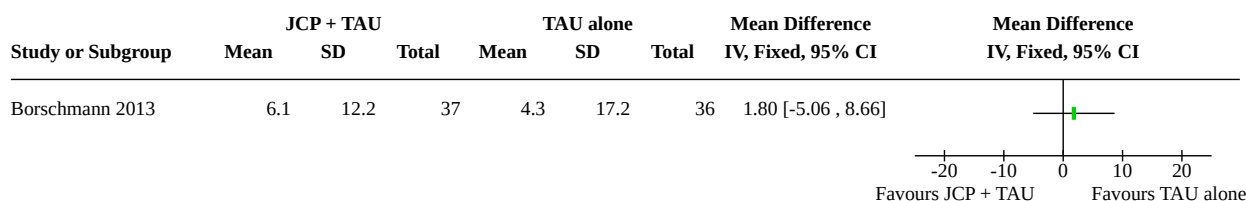
Analysis 1.2. Comparison 1: Joint crisis plan (JCP) plus treatment as usual (TAU) versus TAU alone, Outcome 2: Death: number of deaths during study period (worst-case scenario; sensitivity analysis)



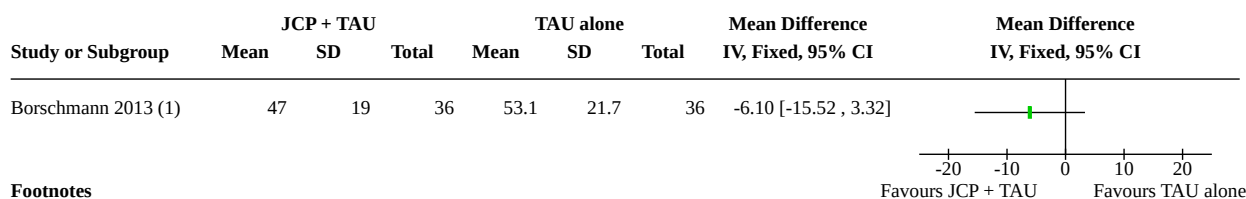
Analysis 1.3. Comparison 1: Joint crisis plan (JCP) plus treatment as usual (TAU) versus TAU alone, Outcome 3: Self-harm (SH): mean number of SH episodes at 6 months



Analysis 1.4. Comparison 1: Joint crisis plan (JCP) plus treatment as usual (TAU) versus TAU alone, Outcome 4: Mean number of inpatient mental health nights



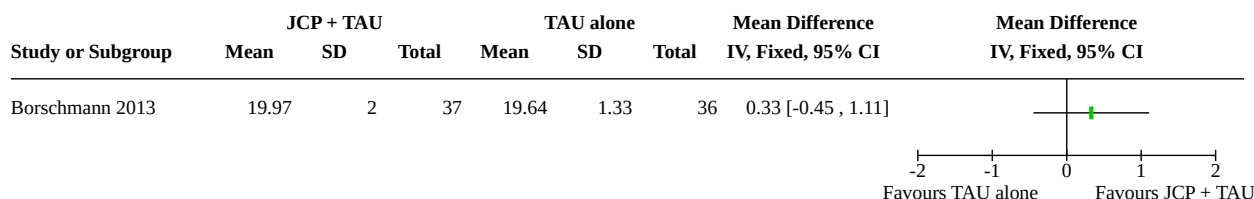
Analysis 1.5. Comparison 1: Joint crisis plan (JCP) plus treatment as usual (TAU) versus TAU alone, Outcome 5: Quality of life: EQ-5D score at six months



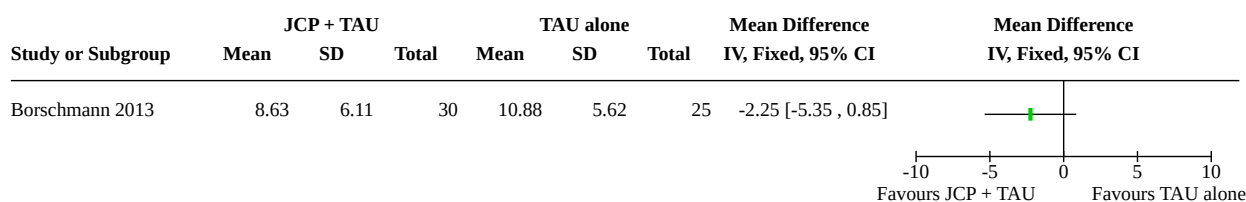
Footnotes

(1) Number of participants assumed but not confirmed for intervention and control groups

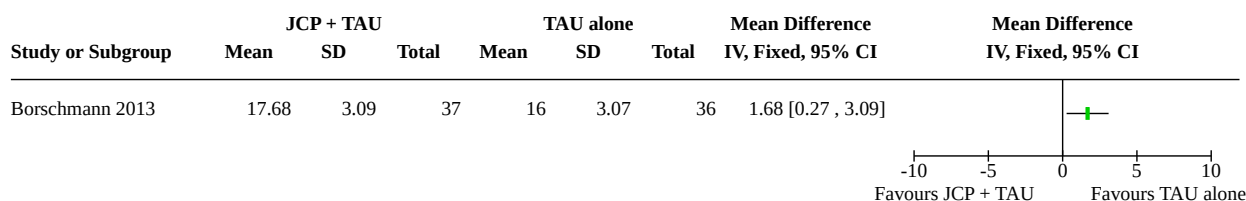
Analysis 1.6. Comparison 1: Joint crisis plan (JCP) plus treatment as usual (TAU) versus TAU alone, Outcome 6: Satisfaction with services: Client Satisfaction Questionnaire at end of treatment



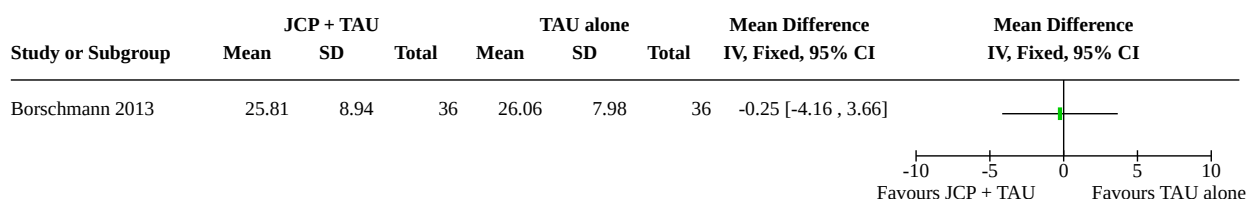
Analysis 1.7. Comparison 1: Joint crisis plan (JCP) plus treatment as usual (TAU) versus TAU alone, Outcome 7: Engagement with services: Service Engagement Scale at end of treatment



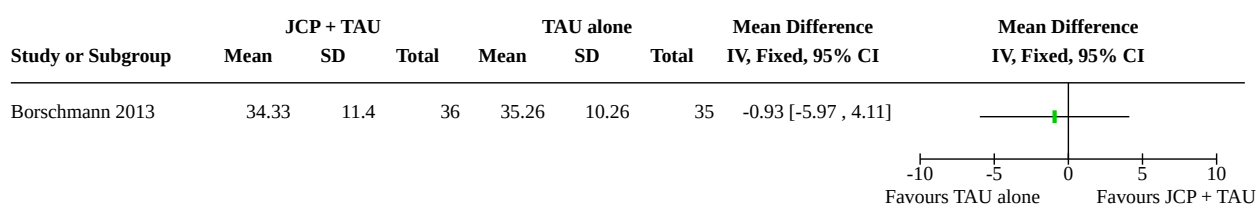
Analysis 1.8. Comparison 1: Joint crisis plan (JCP) plus treatment as usual (TAU) versus TAU alone, Outcome 8: Perceived coercion: Treatment Experience Scale at end of treatment



Analysis 1.9. Comparison 1: Joint crisis plan (JCP) plus treatment as usual (TAU) versus TAU alone, Outcome 9: Social functioning: Work and Social Adjustment Scale at end of treatment



Analysis 1.10. Comparison 1: Joint crisis plan (JCP) plus treatment as usual (TAU) versus TAU alone, Outcome 10: Wellbeing and symptom severity: Warwick-Edinburgh Mental Wellbeing Scale at end of treatment

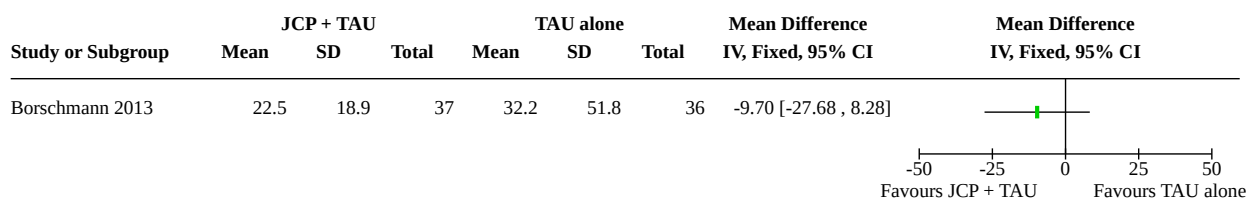


Analysis 1.11. Comparison 1: Joint crisis plan (JCP) plus treatment as usual (TAU) versus TAU alone, Outcome 11: Cost-effectiveness

Cost-effectiveness

Study	Incremental Cost-Effective-ness Ratio	N in intervention group	N in control group	Total number of participants
Borschmann 2013	GBP -32,358 per QALY	37	36	73

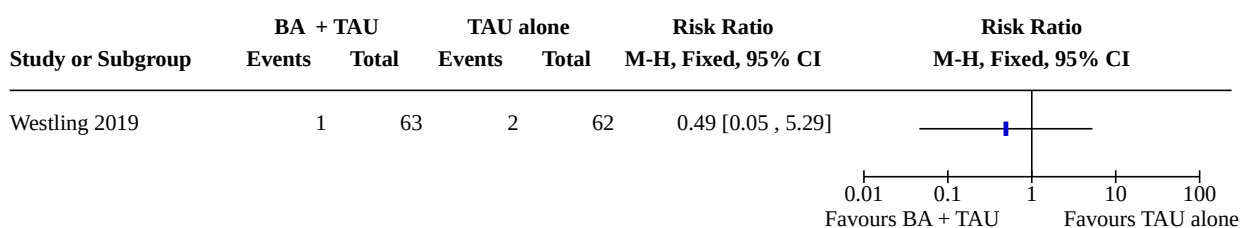
Analysis 1.12. Comparison 1: Joint crisis plan (JCP) plus treatment as usual (TAU) versus TAU alone, Outcome 12: Utilisation of services: community mental health contacts over 6 months' follow-up



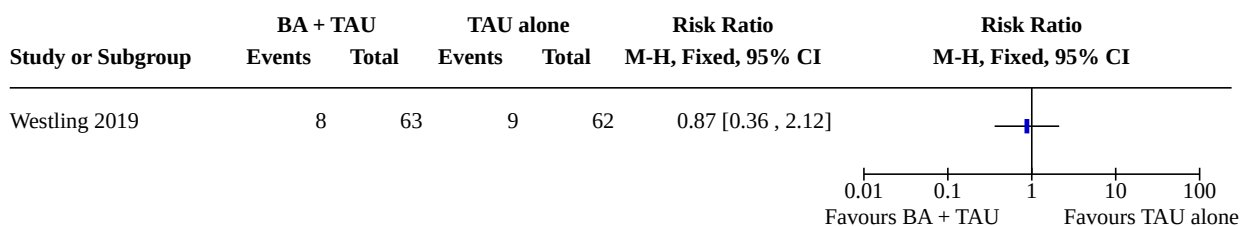
Comparison 2. Brief admission to psychiatric hospital by self-referral (BA) plus treatment as usual (TAU) versus TAU alone

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
2.1 Death: number of deaths during study period	1		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
2.2 Death: number of deaths during study period (worst-case scenario; sensitivity analysis)	1		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
2.3 Self-harm (SH): mean number of SH episodes at 12 months	1		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
2.4 Suicidality: mean number of suicide attempts over preceding 2 weeks at 12 months	1		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
2.5 Violence perpetration: number of participants who perpetrated violence during study period	1		Risk Ratio (IV, Fixed, 95% CI)	Totals not selected
2.6 Violence perpetration: number of participants who perpetrated violence during study period (worst case scenario; sensitivity analysis)	1		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
2.7 Mean number of days of inpatient mental health care	1		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
2.8 Satisfaction with services: Client Satisfaction Questionnaire at end of treatment	1		Mean Difference (IV, Fixed, 95% CI)	Totals not selected

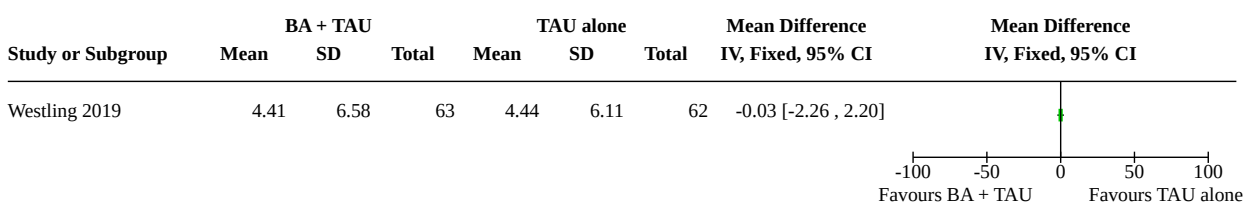
Analysis 2.1. Comparison 2: Brief admission to psychiatric hospital by self-referral (BA) plus treatment as usual (TAU) versus TAU alone, Outcome 1: Death: number of deaths during study period



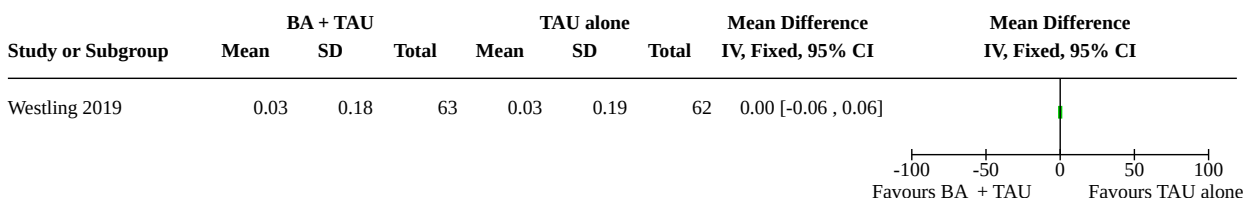
Analysis 2.2. Comparison 2: Brief admission to psychiatric hospital by self-referral (BA) plus treatment as usual (TAU) versus TAU alone, Outcome 2: Death: number of deaths during study period (worst-case scenario; sensitivity analysis)



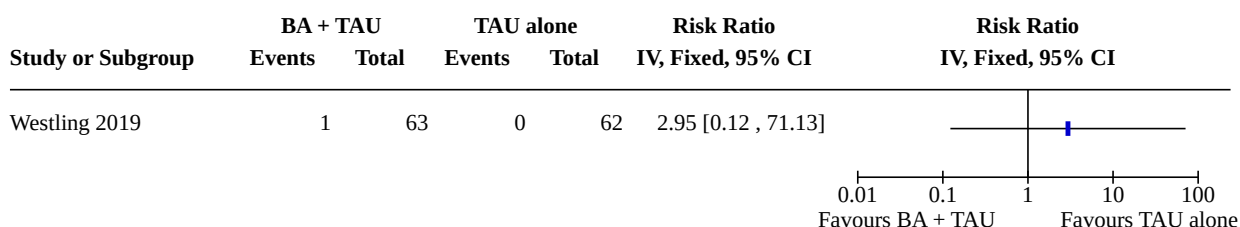
Analysis 2.3. Comparison 2: Brief admission to psychiatric hospital by self-referral (BA) plus treatment as usual (TAU) versus TAU alone, Outcome 3: Self-harm (SH): mean number of SH episodes at 12 months

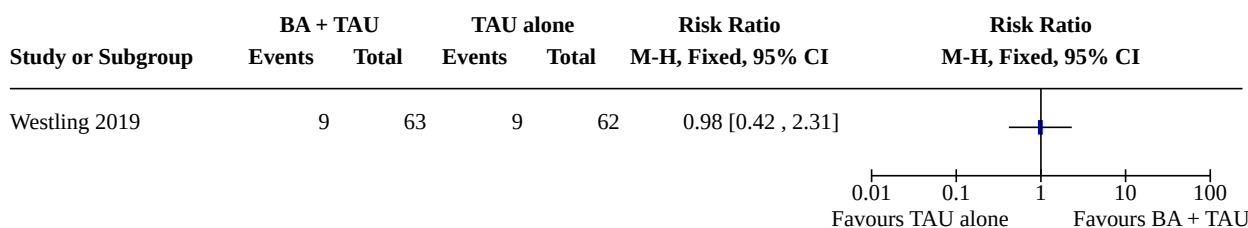
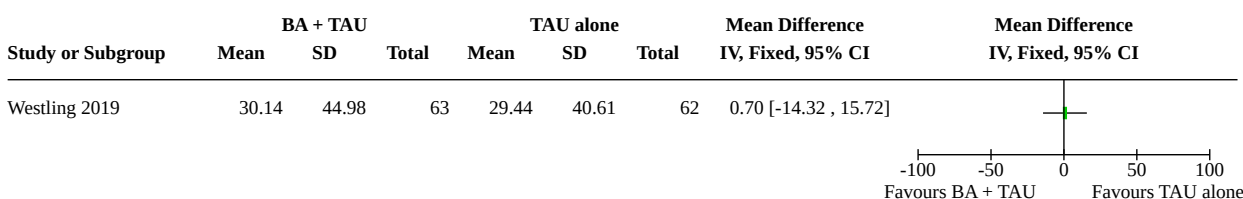
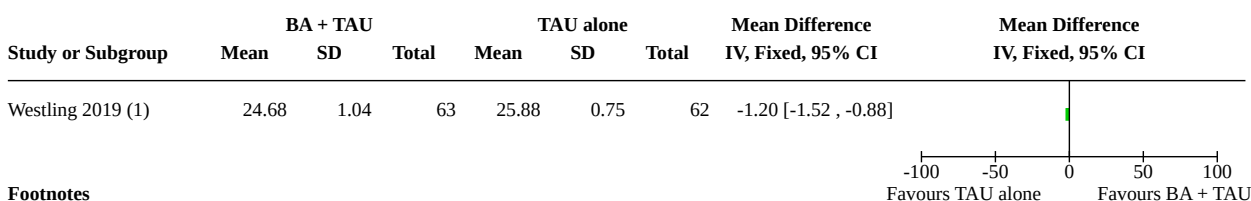


Analysis 2.4. Comparison 2: Brief admission to psychiatric hospital by self-referral (BA) plus treatment as usual (TAU) versus TAU alone, Outcome 4: Suicidality: mean number of suicide attempts over preceding 2 weeks at 12 months



Analysis 2.5. Comparison 2: Brief admission to psychiatric hospital by self-referral (BA) plus treatment as usual (TAU) versus TAU alone, Outcome 5: Violence perpetration: number of participants who perpetrated violence during study period



Analysis 2.6. Comparison 2: Brief admission to psychiatric hospital by self-referral (BA) plus treatment as usual (TAU) versus TAU alone, Outcome 6: Violence perpetration: number of participants who perpetrated violence during study period (worst case scenario; sensitivity analysis)**Analysis 2.7. Comparison 2: Brief admission to psychiatric hospital by self-referral (BA) plus treatment as usual (TAU) versus TAU alone, Outcome 7: Mean number of days of inpatient mental health care****Analysis 2.8. Comparison 2: Brief admission to psychiatric hospital by self-referral (BA) plus treatment as usual (TAU) versus TAU alone, Outcome 8: Satisfaction with services: Client Satisfaction Questionnaire at end of treatment****Footnotes**

(1) Data received through private correspondence with author

APPENDICES**Appendix 1. Search strategies****Cochrane Central Register of Controlled Trials (CENTRAL) in the Cochrane Library**

- #1 MeSH descriptor: [Borderline Personality Disorder] this term only
- #2 MeSH descriptor: [Personality Disorders] this term only
- #3 (borderline near/5 (person* or client* or patient* or PD or PDs or state* or disorder*))
- #4 (BPD or BPDs)
- #5 personality near/5 disorder*
- #6 (emotional* next unstable near/5 (person* or client* or patient* or PD or PDs or state* or disorder*))
- #7 ("axis II" or "cluster B" or "F60.3" or "F60.30" or "F60.31")
- #8 #1 or #2 or #3 or #4 or #5 or #6 or #7
- #9 MeSH descriptor: [Crisis Intervention] this term only
- #10 MeSH descriptor: [Emergencies] this term only
- #11 MeSH descriptor: [Emergency Treatment] this term only
- #12 MeSH descriptor: [Emergency Services, Psychiatric] this term only
- #13 MeSH descriptor: [Emergency Service, Hospital] this term only
- #14 MeSH descriptor: [Emergency Medical Services] this term only

- #15 MeSH descriptor: [Life Change Events] this term only
- #16 (life near/1 event*)
- #17 first respon* or ((safety or contingency) near/1 plan*)
- #18 (crisis or crises or acute or emergency or emergencies or critical)
- #19 #9 or #10 or #11 or #12 or #13 or #14 or #15 or #16 or #17 or #18
- #20 #8 and #19 in Trials

Ovid MEDLINE

- 1 Borderline Personality Disorder/
- 2 Personality Disorders/
- 3 (borderline adj5 (person\$ or client\$ or patient\$ or PD or PDs or state\$ or disorder\$)).tw,kf.
- 4 (BPD or BPDs).tw,kf.
- 5 (personality adj5 disorder\$).tw,kf.
- 6 (emotional\$ unstable adj5 (person\$ or client\$ or patient\$ or PD or PDs or state\$ or disorder\$)).tw,kf.
- 7 ("axis II" or "cluster B").tw,kf.
- 8 ("F60.3" or "F60.30" or "F60.31").tw,kf.
- 9 or/1-8
- 10 Crisis Intervention/
- 11 Emergencies/
- 12 Emergency Treatment/
- 13 Emergency Services, Psychiatric/
- 14 Emergency Service, Hospital/
- 15 Emergency Medical Services/
- 16 Life Change Events/
- 17 (life adj1 event\$).tw,kf.
- 18 first respon\$.tw,kf.
- 19 (crisis or crises or acute or emergency or emergencies or critical).tw,kf.
- 20 ((safety or contingency) adj1 plan\$).tw,kf.
- 21 or/10-20
- 22 randomized controlled trial.pt.
- 23 controlled clinical trial.pt.
- 24 randomi#ed.ab.
- 25 placebo\$.ab.
- 26 drug therapy.fs.
- 27 randomly.ab.
- 28 trial.ab.
- 29 groups.ab.
- 30 or/22-29
- 31 exp animals/ not humans.sh.
- 32 30 not 31
- 33 9 and 21 and 32
- 34 (201108\$ or 201109\$ or 201110\$ or 201111\$ or 201112\$ or 2012\$ or 2013\$ or 2014\$ or 2015\$ or 2016\$ or 2017\$ or 2018\$ or 2019\$ or 2020\$ or 2021\$).dt,ez,da.
- 35 33 and 34
- 36 (2021052\$ or 2021053\$ or 202106\$ or 202107\$ or 202108\$ or 202109\$ or 202110\$ or 202111\$ or 202112\$ or 2022\$).dt,ez,da.
- 37 33 and 36

Ovid MEDLINE In-Process & Other Non-Indexed Citations

- 1 (borderline adj5 (person\$ or client\$ or patient\$ or PD or PDs or state\$ or disorder\$)).tw,kf.
- 2 (BPD or BPDs).tw,kf.
- 3 (personality adj5 disorder\$).tw,kf.
- 4 (emotional\$ unstable adj5 (person\$ or client\$ or patient\$ or PD or PDs or state\$ or disorder\$)).tw,kf.
- 5 ("F60.3" or "F60.30" or "F60.31").tw,kf.
- 6 ("axis II" or "cluster B").tw,kf.
- 7 or/1-6
- 8 (life adj1 event\$).tw,kf.
- 9 first respon\$.tw,kf.
- 10 (crisis or crises or acute or emergency or emergencies or critical).tw,kf.
- 11 ((safety or contingency) adj1 plan\$).tw,kf.
- 12 or/8-11
- 13 7 and 12

14 (random\$ or RCT or trial\$ or control\$ or group\$ or placebo\$ or blind\$ or prospectiv\$ or longitudinal\$ or meta-analys\$ or systematic review\$).tw,kf.

15 13 and 14

Ovid MEDLINE Epub ahead of print

1 (borderline adj5 (person\$ or client\$ or patient\$ or PD or PDs or state\$ or disorder\$)).tw,kf.

2 (BPD or BPDs).tw,kf.

3 (personality adj5 disorder\$).tw,kf.

4 (emotional\$ unstable adj5 (person\$ or client\$ or patient\$ or PD or PDs or state\$ or disorder\$)).tw,kf.

5 ("F60.3" or "F60.30" or "F60.31").tw,kf.

6 ("axis II" or "cluster B").tw,kf.

7 or/1-6

8 (life adj1 event\$).tw,kf.

9 first respon\$.tw,kf.

10 (crisis or crises or acute or emergency or emergencies or critical).tw,kf.

11 ((safety or contingency) adj1 plan\$).tw,kf.

12 or/8-11

13 7 and 12

14 (random\$ or RCT or trial\$ or control\$ or group\$ or placebo\$ or blind\$ or prospectiv\$ or longitudinal\$ or meta-analys\$ or systematic review\$).tw,kf.

15 13 and 14

Embase Ovid

1 borderline state/

2 personality disorder/

3 (borderline adj5 (person\$ or client\$ or patient\$ or PD or PDs or state\$ or disorder\$)).tw,kw.

4 (BPD or BPDs).tw,kw.

5 (personality adj5 disorder\$).tw,kw.

6 (emotional\$ unstable adj5 (person\$ or client\$ or patient\$ or PD or PDs or state\$ or disorder\$)).tw,kw.

7 ("axis II" or "cluster B").tw,kw.

8 ("F60.3" or "F60.30" or "F60.31").tw,kw.

9 or/1-8

10 crisis intervention/

11 emergency/

12 emergency treatment/

13 emergency health service/

14 life event/

15 (life adj1 event\$).tw,kw.

16 first respon\$.tw,kw.

17 (crisis or crises or acute or emergency or emergencies or critical).tw,kw.

18 ((safety or contingency) adj1 plan\$).tw,kw.

19 or/10-18

20 Randomized controlled trial/

21 Controlled clinical study/

22 random\$.ti,ab.

23 randomization/

24 intermethod comparison/

25 placebo.ti,ab.

26 (compare or compared or comparison).ti.

27 ((evaluated or evaluate or evaluating or assessed or assess) and (compare or compared or comparing or comparison)).ab.

28 (open adj label).ti,ab.

29 ((double or single or doubly or singly) adj (blind or blinded or blindly)).ti,ab.

30 double blind procedure/

31 parallel group\$1.ti,ab.

32 (crossover or cross over).ti,ab.

33 ((assign\$ or match or matched or allocation) adj5 (alternate or group\$1 or intervention\$1 or patient\$1 or subject\$1 or participant \$1)).ti,ab.

34 (assigned or allocated).ti,ab.

35 (controlled adj7 (study or design or trial)).ti,ab.

36 (volunteer or volunteers).ti,ab.

37 human experiment/

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38 trial.ti.
39 or/20-38
40 (random$ adj sampl$ adj7 ("cross section$" or questionnaire$1 or survey$ or database$1)).ti,ab. not (comparative study/ or controlled
study/ or randomi?ed controlled.ti,ab. or randomly assigned.ti,ab.)
41 Cross-sectional study/ not (randomized controlled trial/ or controlled clinical study/ or controlled study/ or randomi?ed
controlled.ti,ab. or control group$1.ti,ab.)
42 (((case adj control$) and random$) not randomi?ed controlled).ti,ab.
43 (Systematic review not (trial or study)).ti.
44 (nonrandom$ not random$).ti,ab.
45 "Random field$.ti,ab.
46 (random cluster adj3 sampl$).ti,ab.
47 (review.ab. and review.pt.) not trial.ti.
48 "we searched".ab. and (review.ti. or review.pt.)
49 "update review".ab.
50 (databases adj4 searched).ab.
51 (rat or rats or mouse or mice or swine or porcine or murine or sheep or lambs or pigs or piglets or rabbit or rabbits or cat or cats or
dog or dogs or cattle or bovine or monkey or monkeys or trout or marmoset$1).ti. and animal experiment/
52 Animal experiment/ not (human experiment/ or human/)
53 or/40-52
54 39 not 53
55 9 and 19 and 54
56 limit 55 to yr="2011 -Current"
57 limit 55 to yr="2021 -Current"
58 limit 55 to dc=20210520-20220121
59 57 or 58

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PsycINFO

```

1 Borderline Personality Disorder/
2 Personality Disorders/
3 (BPD or BPDs).tw.
4 (personality adj5 disorder$).tw.
5 Borderline States/
6 (borderline adj5 (person$ or client$ or patient$ or PD or PDs or state$ or disorder$)).tw.
7 (emotional$ unstable adj5 (person$ or client$ or patient$ or PD or PDs or state$ or disorder$)).tw.
8 ("axis II" or "cluster B").tw.
9 ("F60.3" or "F60.30" or "F60.31").tw.
10 or/1-9
11 exp crisis intervention services/
12 exp crisis intervention/
13 emergency services/
14 life changes/
15 (life adj1 event$).tw.
16 first respons$.tw.
17 (crisis or crises or acute or emergency or emergencies or critical).tw.
18 ((safety or contingency) adj1 plan$).tw.
19 or/11-18
20 clinical trials/
21 randomized clinical trials/
22 (randomis* or randomiz*).tw.
23 (random$ adj3 (allocat$ or assign$)).tw.
24 ((clinic$ or control$) adj trial$).tw.
25 ((singl$ or doubl$ or trebl$ or tripl$) adj3 (blind$ or mask$)).tw.
26 (crossover$ or "cross over$").tw.
27 random sampling/
28 Experiment Controls/
29 Placebo/
30 placebo$.tw.
31 exp program evaluation/
32 treatment effectiveness evaluation/
33 ((effectiveness or evaluat$) adj3 (stud$ or research$)).tw.

```

34 or/20-33
35 10 and 19 and 34
36 limit 35 to up=20110801-20210524
37 limit 35 to yr="2011 -Current"
38 36 or 37
39 limit 35 to up=20210520-20220117
40 limit 35 to yr="2021 -Current"
41 39 or 40

CINAHL (Cumulative Index to Nursing and Allied Health Literature)

S1 MH randomized controlled trials
S2 MH double-blind studies
S3 MH single-blind studies
S4 MH random assignment
S5 MH pretest-posttest design
S6 MH cluster sample
S7 TI (randomised OR randomized)
S8 AB (random*)
S9 TI (trial)
S10 MH (sample size) AND AB (assigned OR allocated OR control)
S11 MH (placebos)
S12 PT (randomized controlled trial)
S13 AB (control W5 group)
S14 MH (crossover design) OR MH (comparative studies)
S15 AB (cluster W3 RCT)
S16 MH animals+
S17 MH (animal studies)
S18 TI (animal model*)
S19 S16 OR S17 OR S18
S20 MH (human)
S21 S19 NOT S20
S22 S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S12 OR S13 OR S14 OR S15
S23 S22 NOT S21
S24 (MH "Crisis Intervention")
S25 "first respons*" or ((safety or contingency) N1 plan*)
S26 (life N1 event*)
S27 (MH "Emergency Service")
S28 (MH "Psychiatric Emergencies")
S29 (MH "Emergencies")
S30 (crisis or crises or acute or emergency or emergencies or critical)
S31 (MH "Personality Disorders") or (MH "Borderline Personality Disorder")
S32 (emotional* unstable N5 person*) or (emotional* unstable N5 client*) or (emotional* unstable N5 patient*) or (emotional* unstable N5 "PD") or (emotional* unstable N5 "PDs") or (emotional* unstable N5 state*) or (emotional* unstable N5 disorder*)
S33 (borderline N5 person*) or (borderline N5 client*) or (borderline N5 patient*) or (borderline N5 "PD") or (borderline N5 "PDs") or (borderline N5 state*) or (borderline N5 disorder*)
S34 (personality N5 disorder*)
S35 (BPD or BPDs)
S36 "axis II" or "cluster B" or "F60.3" or "F60.30" or "F60.31"
S37 S24 OR S25 OR S26 OR S27 OR S28 OR S29 OR S3
S38 S31 OR S32 OR S33 OR S34 OR S35 OR S36
S39 S23 AND S37 AND S38
S40 EM 20110801-
S41 S39 AND S40
S42 EM 20210501-
S43 S39 AND S42

Social Services Abstracts ProQuest

(NOFT("borderline personality disorder") OR NOFT(BPD)) AND NOFT(crisis OR crises OR acute OR emergency OR emergencies OR critical OR "safety plan" OR "safety planning" OR "safety plans" OR "contingency plan" OR "contingency planning" OR "contingency plans" OR "first response" OR "first responses" OR "life change event")

Social Policy and Practice Ovid

- 1 (borderline adj5 (person\$ or client\$ or patient\$ or PD or PDs or state\$ or disorder\$)).mp.
- 2 (BPD or BPDs).mp.
- 3 (personality adj5 disorder\$).mp.
- 4 (emotional\$ unstable adj5 (person\$ or client\$ or patient\$ or PD or PDs or state\$ or disorder\$)).mp.
- 5 ("F60.3" or "F60.30" or "F60.31").mp.
- 6 ("axis II" or "cluster B").mp.
- 7 or/1-6
- 8 (life adj1 event\$).mp.
- 9 first respon\$.mp.
- 10 (crisis or crises or acute or emergency or emergencies or critical).mp.
- 11 ((safety or contingency) adj1 plan\$).mp.
- 12 or/8-11
- 13 7 and 12
- 14 (random\$ or RCT or trial\$ or control\$ or group\$ or placebo\$ or blind\$ or prospectiv\$ or longitudinal\$ or meta analys\$ or systematic review\$).mp.
- 15 13 and 14

Web of Science Clarivate Core databases

```
# 13 #11 AND #10
Indexes=SCI-EXPANDED, SSCI, CPCI-S, CPCI-SSH Timespan=2021-2022
# 12 #11 AND #10
Indexes=SCI-EXPANDED, SSCI, CPCI-S, CPCI-SSH Timespan=2011-2021
# 11 TI=(random* or control* or trial* or group* or blind* or prospectiv* or longitudinal) or AB=(random* or control* or trial* or group* or blind* or prospectiv* or longitudinal or RCT )
Indexes=SCI-EXPANDED, SSCI, CPCI-S, CPCI-SSH Timespan=All years
# 10 #9 AND #5
Indexes=SCI-EXPANDED, SSCI, CPCI-S, CPCI-SSH Timespan=All years
# 9 #8 OR #7 OR #6
Indexes=SCI-EXPANDED, SSCI, CPCI-S, CPCI-SSH Timespan=All years
# 8 TI=("first respon*" or "safety plan*" or "contingency plan*" ) OR AB=("first respon*" or "safety plan*" or "contingency plan*" )
Indexes=SCI-EXPANDED, SSCI, CPCI-S, CPCI-SSH Timespan=All years
# 7 TI= ("life change event*") OR AB=("life changeevent*")
Indexes=SCI-EXPANDED, SSCI, CPCI-S, CPCI-SSH Timespan=All years
# 6 TI=(crisis or crises or acute or emergency or emergencies or critical) or AB=(crisis or crises or acute or emergency or emergencies or critical)
Indexes=SCI-EXPANDED, SSCI, CPCI-S, CPCI-SSH Timespan=All years
# 5 #4 OR #3 OR #2 OR #1
Indexes=SCI-EXPANDED, SSCI, CPCI-S, CPCI-SSH Timespan=All years
# 4 TI= (BPD or BPDs) OR AB=(BPD or BPDs)
Indexes=SCI-EXPANDED, SSCI, CPCI-S, CPCI-SSH Timespan=All years
# 3 TI= ("axis II" or "cluster B" or "F60.3" or "F60.30" or "F60.31") OR AB= ("axis II" or "cluster B" or "F60.3" or "F60.30" or "F60.31")
Indexes=SCI-EXPANDED, SSCI, CPCI-S, CPCI-SSH Timespan=All years
# 2 TI=("emotional* unstable" near/5 (person* or client* or patient* or PD or PDs or state* or disorder* ) ) or AB=("emotional* unstable" near/5 (person* or client* or patient* or PD or PDs or state* or disorder* ) )
Indexes=SCI-EXPANDED, SSCI, CPCI-S, CPCI-SSH Timespan=All years
# 1 TI=(borderline near/5 (person* or client* or patient* or PD or PDs or state* or disorder* ) ) OR AB=(borderline near/5 (person* or client* or patient* or PD or PDs or state* or disorder* ) )
Indexes=SCI-EXPANDED, SSCI, CPCI-S, CPCI-SSH Timespan=All years
```

LILACS

```
((("borderline personality disorder*" OR "axis II" OR "cluster B" OR "F60.3" OR "F60.30" OR "F60.31")) AND ((crisis OR crises OR acute OR emergency OR emergencies OR critical OR "safety plan" OR "safety planning" OR "contingency plan" OR "contingency planning"))) AND (db:("LILACS") AND type_of_study:(("clinical_trials")))
```

CDSR

- #1 MeSH descriptor: [Borderline Personality Disorder] this term only
- #2 MeSH descriptor: [Personality Disorders] this term only
- #3 (borderline near/5 (person* or client* or patient* or PD or PDs or state* or disorder*)):ti,ab
- #4 (BPD or BPDs):ti,ab

- #5 (personality near/5 disorder*):ti,ab
- #6 (emotional* next unstable near/5 (person* or client* or patient* or PD or PDs or state* or disorder*)):ti,ab
- #7 ("axis II" or "cluster B" or "F60.3" or "F60.30" or "F60.31"):ti,ab
- #8 #1 or #2 or #3 or #4 or #5 or #6 or #7
- #9 MeSH descriptor: [Crisis Intervention] this term only
- #10 MeSH descriptor: [Emergencies] this term only
- #11 MeSH descriptor: [Emergency Treatment] this term only
- #12 MeSH descriptor: [Emergency Services, Psychiatric] this term only
- #13 MeSH descriptor: [Emergency Service, Hospital] this term only
- #14 MeSH descriptor: [Emergency Medical Services] this term only
- #15 MeSH descriptor: [Life Change Events] this term only
- #16 (life near/1 event*):ti,ab
- #17 (first next respon*):ti,ab OR ((safety or contingency) near/1 plan*):ti,ab
- #18 (crisis or crises or acute or emergency or emergencies or critical):ti,ab
- #19 #9 or #10 or #11 or #12 or #13 or #14 or #15 or #16 or #17 or #18
- #20 #8 and #19
- #21 #20 with Cochrane Library publication date Between Aug 2011 and May 2021, in Cochrane Reviews, Cochrane Protocols
- #22 #20 with Cochrane Library publication date Between Mar 2021 and Jan 2022, in Cochrane Reviews, Cochrane Protocols

Proquest Dissertations and Theses Global

(TI("borderline personality disorder*") OR NOFT(BPD)) AND TI(crisis or crises or acute or emergency or emergencies or critical or ("safety plan" OR "safety planning" OR "safety plans") or ("contingency plan" OR "contingency planning" OR "contingency plans") or ("first response" OR "first responses" OR "first responsibilities" OR "first responsibility" OR "first responsible") or "life change event") AND NOFT(RANDOM* OR TRIAL* OR CONTROL* OR PLACEBO* OR PROSPECTIV* OR LONGITUDINAL*)

Epistemonikos

(title:((title:("borderline personality" OR BPD* OR "personality disorder" OR "axis II" OR "cluster B" OR "F60.3" OR "F60.30" or "F60.31") OR abstract:("borderline personality" OR BPD* OR "personality disorder"))) AND (title:(acute OR crisis OR crises OR critical OR emergency OR emergencies OR safety OR contingency OR "first response" OR " life change event") OR abstract:(acute OR crisis OR crises OR critical OR emergency OR emergencies OR safety OR contingency OR "first response" OR " life change event")))) OR abstract:((title:("borderline personality" OR BPD* OR "personality disorder" OR "axis II" OR "cluster B" OR "F60.3" OR "F60.30" or "F60.31") OR abstract:("borderline personality" OR BPD* OR "personality disorder"))) AND (title:(acute OR crisis OR crises OR critical OR emergency OR emergencies OR safety OR contingency OR "first response" OR " life change event") OR abstract:(acute OR crisis OR crises OR critical OR emergency OR emergencies OR safety OR contingency OR "first response" OR " life change event"))))

ClinicalTrials.gov

We searched ClinicalTrials.gov for: crisis or acute or emergency or critical OR SAFETY OR CONTINGENCY OR LIFE CHANGE EVENT OR FIRST RESPONSE | Interventional Studies | Borderline Personality Disorder OR "axis II" or "cluster B" or "F60.3" or "F60.30" or "F60.31"

World Health Organization International Clinical Trials Registry Platform (WHO ICTRP)

We searched WHO ICTRP using the terms 'Borderline Personality Disorder OR "axis II" or "cluster B" or "F60.3" or "F60.30" or "F60.31"' (in the 'condition' field) and 'crisis or acute or emergency or critical OR SAFETY OR CONTINGENCY OR LIFE CHANGE EVENT OR FIRST RESPONSE' (in the 'intervention' field).

ISRCTN

We searched ISRCTN using the terms 'borderline' (in the 'condition' field) and 'crisis' (in the 'intervention' field).

Appendix 2. List of experts contacted

Expert	Outcome
Arnoud Arntz	No ongoing or unpublished studies
Anthony Bateman	No ongoing or unpublished studies
Martin Bohus	No ongoing or unpublished studies

(Continued)

Andrew Chanen	No ongoing or unpublished studies
John Clarkin	No ongoing or unpublished studies
Mike Crawford	No ongoing or unpublished studies
Peter Fonagy	No ongoing or unpublished studies
Frances Frankenburg	No ongoing or unpublished studies
Carlos Grilo	No ongoing or unpublished studies
John Gunderson	Died
Sabine Herpertz	No response
Michael Kaess	No ongoing or unpublished studies
Klaus Lieb	No ongoing or unpublished studies
Marsha Linehan	Retired
Paul Links	No ongoing or unpublished studies
Thomas McGlashan	Retired
Joel Paris	No ongoing or unpublished studies
Randy Sansone	No ongoing or unpublished studies
Christian Schmahl	No ongoing or unpublished studies
Carla Sharp	No ongoing or unpublished studies
Andrew Skodol	No ongoing or unpublished studies
Mary Zanarini	No ongoing or unpublished studies

Appendix 3. Table of unused methods

Should more relevant studies be identified in the future, we will conduct any meta-analyses according to the methods detailed in the table below.

Data extraction and management	If we cannot reach consensus on a decision pertaining to data extraction and management, we will contact the study authors for further information.
Measures of treatment effect	Dichotomous outcomes Through a meta-analysis, we will combine comparable dichotomous measures by calculating an overall RR and 95% CI.
	Continuous outcomes

(Continued)

Within a meta-analysis, where studies have used the same outcome measure, we will calculate the MD for comparison; where different measures have been used to assess the same outcome data, we will calculate SMD scores and 95% CI.

Count outcomes

Count data can be extracted as dichotomous data, as continuous data, as time-to-event data or as rate data. We will inspect how each study treated such data and, dependent on the summary statistics presented, we will decide how to combine them in a meta-analysis (for example, if it is found that studies report rates within a meta-analysis, we will combine log RRs).

Unit of analysis issues

Cluster-randomised trials

Where trials identified in the future randomise participants in clusters (e.g. hospital wards, GP surgeries), we will report the RRs and 95% CI if the study authors had analysed the data correctly, using the same unit of allocation as analysis, or had performed appropriate statistical analyses that took the clustering into account. For trials where the unit of allocation (e.g. ward) was different from the unit of analysis (e.g. individuals), we will extract RRs and SEs, and adjust SEs to account for the clustering ([Donner 1980](#)). To make this adjustment, we will need the ICC (an estimate of the relative variability in the outcome within and between clusters). We will extract this value from the published reports if available and, if not, we will contact the study authors to obtain it. If it is still unavailable, we will use external estimates from comparable studies. We will aim to obtain ICCs that are similar in both outcome measures and types of cluster from existing databases of ICCs ([Ukoumunne 1999](#)). We will then perform the meta-analysis using the corrected SEs using Review Manager Web ([RevMan Web 2022](#)) and the generic inverse-variance method.

Multiple intervention groups

In trials identified in the future with more than two intervention arms, for the primary analysis we will combine results across the eligible intervention groups and compare them with the combined results across all eligible control groups to create a single pair-wise comparison. This approach may lead to complications in investigating potential intervention-related sources of heterogeneity. In such circumstances, we will analyse each intervention group separately against a common control group, but divide the sample size for the common control group proportionately across each comparison. This approach will prevent double-counting of individuals and will be conducted in addition to the combined analysis.

Dealing with missing data

We will manage missing continuous data through ITT analysis using imputation. We will use the method of LOCF to the final assessment for imputation of missing observations, if LOCF data were reported by trial authors. This will give boundaries for the observed treatment effect. As the method of LOCF is known to be biased (it can be valid where the measurement is taken very recently), we will conduct a sensitivity analysis using a strategy that assumes that the data are missing at random.

Assessment of heterogeneity

Heterogeneity may be caused by differences in population characteristics and study design such as setting, risk of bias in different domains, nature of the intervention and criteria used to define BPD. Studies need to be sufficiently homogeneous in terms of participants, intervention and outcome to make the summary provided by a meta-analysis meaningful. Should relevant studies be identified in the future, we will formally test heterogeneity with a χ^2 test, which provides evidence of variation in effect estimates beyond that of chance. A small P value provides evidence of heterogeneity; however, since the χ^2 test has low power to assess heterogeneity when there are a small number of participants or trials included, a non-significant result must not be taken as evidence of a lack of heterogeneity. Therefore, we will use a conservative P value of 0.10 to determine statistical significance. We will also assess the impact of heterogeneity on the meta-analysis using the I^2 statistic (which describes the percentage of the variability in effect estimates that is due to heterogeneity rather than chance alone). We will use values of I^2 over 50% to indicate strong heterogeneity. The importance of the observed I^2 statistic depends on the magnitude and direction of effects and strength of evidence for heterogeneity. Therefore, we will further investigate heterogeneity if the χ^2 P value is < 0.10 and the I^2 value is $> 50\%$. We will investigate sources of heterogeneity with the subgroup analyses and sensitivity analyses as described below; if there is considerable hetero-

(Continued)

geneity and the direction of effect is inconsistent, we will not perform a meta-analysis and will only provide a descriptive analysis.

Assessment of reporting bias

In future updates, if we identify a sufficient number of trials to allow a meaningful presentation, we will construct a funnel plot. This plots the treatment effect size against the study size to help identify potential publication bias. We will investigate asymmetry, considering the possibility that asymmetry may be as a result of factors other than publication bias.

Data synthesis

Should we identify more relevant studies and sufficient data in the future, we will perform a meta-analysis. Where it is appropriate to assume the 'true' effect is the same in all studies (that is, there is absence of significant clinical heterogeneity across studies), we will use a fixed-effect model. However, if we find evidence of heterogeneity, to allow for the 'true' effect to differ between studies, we will use a random-effects model.

Subgroup analysis and investigation of heterogeneity

Should we identify more relevant studies in the future, we will investigate clinical heterogeneity by examining the subgroups of:

1. intervention type;
2. setting (for example, primary care, secondary care, hospital); and
3. type of team.

We will restrict subgroup analyses to these characteristics, as multiple subgroup analyses can result in an increase in false negative and false positive results.

Sensitivity analysis

Should more relevant studies be identified in the future, we will conduct sensitivity analyses to examine the effect of including in meta-analysis any of the following studies.

1. Studies that report a high attrition rate.
2. Studies where we have had to use an external ICC value to adjust for the effect of clustering.
3. Studies that we have deemed to be at high risk of bias based on the Cochrane risk of bias tool (Rob 1; Higgins 2011).
4. Studies where we have imputed missing data.

BPD: borderline personality disorder; CI: confidence intervals; GP: general practitioner; ICC: intraclass correlation coefficient; LOCF: last observation carried forward; MD: mean difference; RR: risk ratio; SE: standard error; SMD: standardised mean difference.

WHAT'S NEW

Date	Event	Description
15 February 2022	New citation required and conclusions have changed	Two new studies added. We could not reach any conclusions about the effectiveness of any single crisis intervention; the evidence included was judged as being of low and very low certainty and there was only a single study of each intervention meaning we are very uncertain about the true effects.
24 January 2022	New search has been performed	Updated following a new search in October 2016, and top up searches in May 2021 and January 2022.

HISTORY

Protocol first published: Issue 10, 2011

Review first published: Issue 6, 2012

CONTRIBUTIONS OF AUTHORS

JMC contributed to the conception of the review; design of the review; co-ordination of the review; search and selection of studies for inclusion in the review; collection of data for the review; assessment of the risk of bias in the included studies; analysis of data; assessment of the certainty in the body of evidence; interpretation of data; and writing of the review. JMC is the guarantor for the updated review.

RB contributed to the conception of the review; design of the review; interpretation of data; and writing of the review.

AM contributed to the search and selection of studies for inclusion in the review; assessment of the risk of bias in the included studies; assessment of the certainty in the body of evidence; and writing of the review.

JO contributed to the conception of the review; design of the review; collection of data for the review; assessment of the risk of bias in the included studies; interpretation of data; and writing of the review.

CH contributed to the conception of the review; design of the review; assessment of the risk of bias in the included studies; interpretation of data; and writing of the review.

RP contributed to the conception of the review; design of the review; analysis of data; interpretation of data; and writing of the review.

JG contributed to the collection of data for the review; and writing of the review.

PM contributed to the conception of the review; design of the review; co-ordination of the review; search and selection of studies for inclusion in the review; interpretation of data; and writing of the review.

DECLARATIONS OF INTEREST

RB, CH, JO and PM were involved in the [Borschmann 2013](#) (JOSHUA) study included in this review; the study was supported by a Medical Research Council (MRC) trial platform grant (ID: 85397), and took place at South London and Maudsley NHS Foundation Trust and King's College London Institute of Psychiatry, Psychology and Neuroscience (UK). The funder had no control over the study design, methods, data analysis and reporting.

RB, CH, JO and PM were not involved in assessing the eligibility of [Borschmann 2013](#), extracting data from [Borschmann 2013](#), or assessing the risk of bias or the certainty of the evidence from [Borschmann 2013](#). Each of these tasks was performed independently by two review authors: JMC and AM assessed eligibility and risk of bias and graded the certainty of the evidence; and JMC and JG extracted the data. Although AM and JMC are spouses, they performed these tasks independently.

RB has declared that he has no other conflicts of interest.

CH is an Honorary Consultant Psychiatrist with the South London and Maudsley NHS Foundation Trust (UK). She was a co-applicant of the [Borschmann 2013](#) study. She has no other conflicts of interest.

JO has declared that she has no other conflicts of interest.

PM is a Consultant Psychiatrist and clinical academic working in the field of borderline personality disorders and holds an honorary clinical contract with Avon & Wiltshire Partnership Trust (UK). PM reports grants from the Medical Research Council and the National Institute for Health Research (NIHR); both paid to Bristol Medical School, University of Bristol (UK). PM also reports being a named co-investigator on an NIHR grant awarded to Prof Crawford at Imperial College London (UK).

RP has declared that she has no conflicts of interest.

JG works with people with a diagnosis of personality disorder, including in a crisis setting.

JMC reports working with people with a diagnosis of personality disorder, including in a crisis setting. JMC also reports publishing opinions related to personality disorder epidemiology, but has not previously written about crisis interventions in borderline personality disorder.

AM is a GPST2 (a GP in Speciality Training) at the Severn Deanery (UK). She currently works for Unity Sexual Health, Bristol (UK).

SOURCES OF SUPPORT

Internal sources

- Avon and Wiltshire Mental Health Partnership NHS Trust, UK

JMC worked on the review during office hours

- Higher Education Funding Council for England, UK

PM worked on the review during office hours

External sources

- Australian National Health and Medical Research Council (NHMRC), Australia

RB is funded by an Australian National Health and Medical Research Council (NHMRC) Emerging Leadership-2 Investigator Grant (GNT2008073)

DIFFERENCES BETWEEN PROTOCOL AND REVIEW

Differences between protocol and original review

In the original review, we added Science Citation Index and Social Science Citation Index to the databases listed in the protocol.

The previous version of this review contacted a broader range of topic experts than listed in our protocol ([Borschmann 2011](#); [Borschmann 2012](#)).

Differences between original review and this update

General

While not explicitly stated in our protocol, it was agreed prior to starting the selection process for the review that the review authors RB, CH, JO and PM would not be involved in assessing the eligibility of, extracting data from, assessing the risk of bias or grading the certainty of the evidence from [Borschmann 2013](#).

Criteria for considering studies

We included participants meeting three or more diagnostic criteria for BPD, and we acknowledge this is a lower threshold for diagnosis than required by DSM-5 (at least five criteria; [APA 2013](#)). This decision was made to increase the yield of papers included in the review, although we note that meeting just one or more of the BPD criteria has been associated with increased psychosocial morbidity ([Harford 2015](#); [Zimmerman 2012](#)).

We clarified some specific points related to the types of intervention included in the review.

Search strategy

We updated our search strategy for this review following discussion with the Cochrane Developmental, Psychosocial and Learning Problems (CDPLP) Review Group team. We added ICD-10 codes ("F60.3" or "F60.30" or "F60.31") to the population section, and terms for safety or contingency planning to the intervention section.

For this update, we further revised the list of electronic sources by adding databases that were either not available to us for the earlier review (MEDLINE E-Pub Ahead of Print, Epistemonikos), or not previously routinely searched for DPLPG reviews (*Cochrane Database of Systematic Reviews*, LILACS, Clinical Trials.gov, ISRCTN Registry). We replaced the multiple free sources of theses with a single source of international theses (Proquest Dissertations and Theses Global) and used Social Policy and Practice Ovid to search content from Social Care Online.

See [Appendix 1](#) for full details of the search strategies.

For this update, we contacted a broader range of topic experts than listed in the protocol or previous review.

Data collection and analysis

In this update we used the term 'violence perpetration' rather than 'violence to others'.

We did not impute data for the outcomes of death and violence in our primary analysis. While these are reported as dichotomous data, they are taken from adverse events information, which Cochrane suggests may not be appropriate for intention-to-treat analysis ([Deeks 2022](#)).

We treated count outcomes of common events (e.g. mean number of self-harm episodes) as continuous data and calculated mean differences with 95% confidence intervals ([Higgins 2022](#)).

We prioritised results from postintervention time points. If more than one time point was reported, we used the data from the last assessment of the outcome.

We included fewer outcomes in our summary of findings table, as updated Cochrane guidance suggests a maximum of seven outcomes ([Schünemann 2022](#)). We dropped social functioning and well-being because these were secondary outcomes and were similar measures to quality of life.

We assessed the certainty of the evidence for outcomes included in the summary of findings tables using the GRADE approach ([Schünemann 2022](#)).

We added separate comparisons for joint crisis plans plus treatment as usual (TAU) versus TAU alone, and brief admission to psychiatric hospital by self-referral plus TAU versus TAU alone, based on the clinical heterogeneity of the studies included in the review.

See [Appendix 3](#) for the table of unused methods.

INDEX TERMS

Medical Subject Headings (MeSH)

Borderline Personality Disorder [*therapy]; *Crisis Intervention

MeSH check words

Adult; Humans