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Implementing Dialectical Behaviour Therapy Skills training group (DBT-ST) interventions for borderline personality disorder: Scoping Review

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Abstract

Background: Implementing comprehensive Dialectical Behaviour Therapy (DBT) is resource intensive and challenging. In response, services have widely adopted DBT skills training groups (DBT-ST), as an adapted form of the intervention, which have shown effectiveness in reducing BPD symptoms. However, little is known about how DBT-ST programmes are implemented in routine clinical practice.

Objective: This scoping review aims to examine current literature about how DBT-ST programmes have been implemented in outpatient settings.

Method: A scoping review was conducted between March, 2025 and May, 2026. Six electronic databases (MEDLINE, PsycINFO, EMBASE, CINAHL, Cochrane Library, Epistemonikos) were systematically searched. Independent reviewers screen, select and extract data of relevant papers. For data synthesis a narrative review and summary statistics were used.

Results: 5733 papers were identified with 88 eligible for full-text review. Ultimately, 57 studies were included. Considerable variability was observed across DBT-ST programmes implementation, including difference in programme length, modules and skills covered, group session duration, availability of phone coaching and consultation team meetings, missing-session rule, and the professions and training of therapists.

Conclusion: The findings highlight substantial heterogeneity in the implementation of DBT-ST programmes, suggesting that the intervention can be flexibly adapted to different settings, including low-resource contexts for treating individuals with BPD. However, it remains unclear which implementation approaches are most effective.

Background

Borderline Personality Disorder (BPD) typically emerges during adolescence and is characterised by pervasive emotional dysregulation associated with impulsivity, self-harming and suicidal behaviours, as well as disturbances in identity and interpersonal relationships (1). Its prevalence in the general population is estimated at 1,7% (2). In this context, shorter and simpler adaptations of DBT may be advantageous.

BPD is associated with a substantial burden of disease at the individual, societal, and healthcare system levels, including severe functional impairment, intensive use of outpatient and inpatient mental health services, and elevated societal costs (3–5). Mortality rates are also higher than in the general population - and even with individuals affected by other mental or medical conditions - with suicidal behaviour representing a major contributor to premature death (4,6). These findings highlight the clinical severity and its importance as a public health concern.

Psychotherapy is the mainstay of treatment for BPD, and several evidence-based approaches have demonstrated efficacy (7). Among these, Dialectical Behaviour Therapy (DBT) has the strongest empirical support and highest uptake in clinical settings (8). DBT is a cognitive-behavioural treatment that integrates behavioural change strategies with mindfulness and acceptance practices (9). Standard DBT is typically delivered over one year, usually in two identical 24-week cycles, and includes four treatment modalities: individual therapy, group skills training, telephone coaching, and therapist consultation team meetings. These components are designed to achieve the five DBT functions: improving patients' skills, increasing their motivation to apply these skills, promoting the generalization of skills across contexts, supporting therapist competence and motivation, and structuring the therapeutic environment to promote clinical progress (10). Despite its evidence base, important challenges remain for its implementation.

DBT is also a resource-intensive intervention, typically involving weekly one-hour individual therapy sessions, 2.5-hour group skills training sessions led by two therapists for up to ten patients, telephone coaching for crises on demand, and regular consultation team meetings lasting approximately 1.5 hours (11). Consequently, DBT generally requires more resources than other evidence-based psychotherapies for BPD (12). Its provision is frequently constrained by organizational barriers, such as lack of protected time, budget limitations, staff turnover, inadequate planning, and limited administrative or leadership support (13–16). In this context, shorter and simpler adaptations of DBT may be advantageous.

DBT group skills training (DBT-ST) may represent a feasible option in resource-limited settings. This training includes four modules: mindfulness (attentional control), emotion regulation (modulation of emotional responses), interpersonal effectiveness (managing interpersonal demands), and distress tolerance (coping with crises and intense emotions without resorting to maladaptive behaviours) (11). DBT-ST programmes can be delivered in two formats: as an adjunct (add-on), in which skills training is added to individual psychotherapy that is not DBT-based, or as a stand-alone intervention, in which DBT-ST is offered as the sole psychosocial treatment (17). Preliminary evidence suggests that DBT skills training delivered as a stand-alone intervention may improve a range of mental health outcomes, although methodological limitations in the available evidence have previously been noted (18).

Since then, the evidence base for DBT-ST has expanded to a range of mental health conditions. Meta-analytic findings indicate benefits for eating disorders, depression, anxiety, and emotional dysregulation (19), with preliminary evidence of effectiveness in substance use disorder (20). Evidence specifically for BPD is promising, although still limited. A previous systematic review identified only four trials and reported moderate improvements in BPD severity and psychosocial functioning (21).

Previous reviews of brief psychological interventions for BPD (≤6 meses) have reported moderate-to-large effects of group-based treatments —including Systems Training for Emotional Predictability and Problem Solving (STEPPS), Emotion Regulation Group (ERG), Acceptance and Commitment Therapy (ACT), psychoeducation and DBT-ST— on outcomes such as BPD symptoms, depression, self-harm, anxiety and social functioning. However, DBT-ST was not analysed as a distinct intervention (21). A subsequent meta-analysis examined DBT-ST separately but included only three trials, reporting moderate effects on BPD severity and psychosocial functioning, and moderate-to-large effects on impulsivity, emotional dysregulation, and depression (8). Despite these findings, considerable variability remains in how DBT-ST programmes are delivered, and to date no systematic synthesis has examined the implementation of DBT-ST.

Although evidence supports the effectiveness of DBT-ST, there is still limited understanding of how these programmes are structured and applied in real-world outpatient settings. A better characterization of programme features —such as structure, duration, session format, skills content, telephone coaching, consultation team meetings, and therapist training— could help clinicians and service providers adapt the intervention in settings where full standard DBT cannot be delivered. The aim of this scoping review was therefore to synthesize how DBT-ST interventions for individuals with BPD have been applied in outpatient settings worldwide. Specifically, we aimed to (a) describe the structural characteristics of DBT-ST programmes and (b) identify adaptations of DBT modalities or related interventions intended to fulfill the five core functions of DBT treatment.

Methods

Design

A scoping review was conducted between February, 2022 and May, 2025 following the Preferred Reporting Items for Systematic Reviews and Meta-Analysis extension for Scoping Reviews (PRISMA-ScR) (22). The eligibility criteria, search strategy, and data extraction procedures were defined prior to the literature search, but the protocol was not formally registered

Eligibility Criteria

Eligible studies included outpatient adults with BPD as the primary diagnosis and interventions based on DBT-ST, defined as programmes delivering DBT skills training groups without individual DBT therapy. Telehealth delivery was also included because this scoping review was conceived during the COVID-19 pandemic. Studies were included if they were either interventional or observational primary studies, regardless of the analysis methods (quantitative, qualitative, or mixed-methods). Any study in which intervention incorporated individual DBT psychotherapy or was mixed with another therapeutic technique (e.g., mentalization-based therapy [MBT], good psychiatric management [GPM]) was excluded. Studies of secondary analysis or written in languages other than English or Spanish were also excluded due to feasibility constraints.

Information Sources

A literature search was performed through CINAHL, Cochrane Library, EMBASE, Epistemonikos, PsycINFO, and PubMed. The search was conducted in three periods, on 10 February 2022, 5 April 2023 and 12, May 2025, including records from database inception to May, 2025. The search results were exported into Zotero, and duplicates were removed. The electronic database search was supplemented by scanning the references of all relevant systematic reviews and meta-analyses about DBT or any psychological therapy for adults with a diagnosis of BPD that were found in the same search. No trial registries or grey literature were consulted.

Search and Selection of Sources of Evidence

The search strategy for CINAHL, Cochrane Library, EMBASE, Epistemonikos, PsycINFO, and PubMed can be found in Supplementary Table 1.

Two reviewers (MC, JP) discussed the eligibility criteria and the rationale of the review before beginning the screening, and then both independently screened the same titles and abstracts of records and selected them according to the eligibility criteria, followed by full-text assessment. After independent selection, reviewers resolved inconsistencies through discussion and consensus.

Data Extraction and Charting Process

The first author developed a data-charting form in Excel, informed by the five functions of DBT described above (10), to extract relevant information about each programme. The data-charting form was reviewed by a senior DBT expert (MS). Each selected resource was reviewed independently by the first author and a second experienced DBT therapist (CP, CC, KR, NF, LG, VB, VD or CE), who extracted and charted data into the form. Both reviewers resolved disagreements through discussion and consensus, when necessary a third reviewer was consulted. In addition, since some studies did not report all relevant information in the data-charting form, corresponding authors were systematically contacted via e-mail to request missing data and were given two weeks to respond.

Analysis and Data Synthesis

Data were summarised using descriptive statistics and narrative synthesis. As the aim of this review was to map implementation characteristics rather than evaluate effectiveness, no formal risk-of-bias assessment was performed. The results are presented first according to general aspects of the programmes and then by each of the five functions of DBT. Articles that included more than one DBT-ST programme (N=6), were analysed separately.

Means, standard deviations, ranges, and percentages were calculated based on the available data for each variable. Percentages were calculated using the total number of programmes reporting each variable as the denominator.

Charted variables included: 1) General information: country, diagnosis criteria, clinical setting, type of programme (add-on or stand-alone); 2) Skills training group characteristics (programme length, sessions per week, session duration, modules, skills content, missed-session policies, DBT therapists' profile); 3) Skills generalisation interventions (phone coaching characteristics or other emergency phone assistance); 4) Case management interventions; 5)

Consultation team meetings characteristics and other activities for therapists (supervision, non-DBT team meetings, or training opportunities); 6) Language and cultural adaptations.

With respect to DBT training, two types were differentiated: 1) 5-day foundational DBT training or equivalent or 2) 10-day intensive DBT training or equivalent.

Any additional intervention or adaptation in the DBT-ST programme that aimed to fulfil one of the five DBT functions beyond the four standard modes — individual therapy, skills training group, phone coaching, and consultation team meetings — was extracted, interpreted by a DBT expert reviewer, and charted in quotation marks .

Results

After duplicates were removed, a total of 4,520 papers were identified from searches of electronic databases and reference list screening of relevant systematic reviews and meta-analyses. Based on the title and abstract, 4,433 were excluded, leaving 88 full-text articles for eligibility assessment. Of these, 31 were excluded for the following reasons: 13 did not include DBT-ST, 8 were secondary analysis studies, 4 did not include a BPD sample, 3 articles were not available, 1 was a review article, 1 evaluated an internet-delivered intervention, and 1 was an unauthorised report. The remaining 57 studies were considered eligible for this review (see Figure 1).

Studies characteristics

Most studies were conducted in North America (USA and Canada, 42.1%) and Europe (28.1%), with the remaining studies conducted in other regions (29.8%), including Iran and China. Only one study was conducted in Latin America (Chile). Although all studies included adults with BPD according to the inclusion criteria, only 45.6% focused exclusively on BPD, while the remainder included broader clinical populations such as emotional dysregulation, mixed psychiatric diagnoses, other psychiatric disorders, or suicidal behaviour. Comorbid substance use disorder was reported in 28% of studies and post-traumatic stress disorder in 31.6%. Most programmes were implemented in community mental health services (22.8%), followed by university or college settings (36.8%). In terms of study design, the most common designs were quasi-experimental pre–post studies (42.1%) and randomised controlled trials (26.3%). Detailed study characteristics are presented in Table 1, and a summary is provided in Table 2.

General structure and cultural adaptations

The programme length varied from 4 weeks to 36 weeks, with an average of 16 weeks. Most programmes had 12 or fewer sessions (42.1%), followed by 13-24 sessions (35.1%) and more than 24 sessions (22.8%). Most interventions were delivered as add-on programmes (57.9%), while 35.1% were stand-alone, and in 7% of cases the type could not be determined (Table 3 and 4).

Fifteen studies delivered the intervention to non-English-speaking populations. However, only two of those studies reported cultural adaptations of content beyond language translation of materials to facilitate skills learning (Figure 2).

Function Enhancing Clients' Capabilities

Modules and Skills: Most programmes included all four DBT modules (82.5%), and 10.5% included only one module (Table 3 and 4). Twenty-four studies detailed the skills, and the proportion of each DBT module inside the programme was as follows: general/orientation 1.6%, mindfulness 19.6%, distress tolerance 26.7%, emotion regulation 27.3%, and interpersonal effectiveness 24.7%. Only 35 studies specified the skills taught.

Duration: Group session duration varied from 55 to 180 minutes, with an average of 121.0 minutes (SD 25.5). The most frequent format was 120 minutes (45.6%) (Table 4)

Group-Session Missing-session rule: Rules for withdrawing clients after missed sessions were reported in 68.4% of studies. Of these, 49% provided a clearly defined rule: 15 studies used a three-session rule, 11 used four sessions, and only 2 had a two-session rule; all required consecutive absences (Figure 2).

Therapists: Most studies were conducted by a single professional (50.9%), most commonly psychologists (77.2%), followed by nurses and social workers (Table 4). Most studies reported therapist training (86%) (Figure 2). The type of training consisted of a formal intensive DBT course lasting either 5 or 10 days in 23% and 21% of cases, respectively, while 56% did not report the type of training received.

Other Ways to Increase Clients' Capabilities: Some programmes incorporated other interventions aimed at increasing clients' capacities. Four studies described the use of the DBT diary card, and two perinatal DBT programmes modified session content or material to adapt them to the context.

Function Enhancing Clients' Motivation

Intake interviews (one or two individual sessions before starting DBT-ST) were the most frequent intervention used to improve clients' motivation, mentioned in 15 programmes. Other activities identified through expert review included, attendance follow-up, individual therapist support to review skills or homework, and additional contact availability (Supplementary Table 2).

Function Ensuring Generalisation

Only 23% of studies explicitly reported the use of phone coaching in their programmes; in 11 of these studies, phone coaching was restricted to office hours, while 47% explicitly reported not including this component. Information regarding who provided phone coaching was reported in only 7 studies: in 5, the coach was the group therapist, and in 2 cases it was a case manager. Some studies also described the availability of alternative (non-DBT) telephone support, and 10 studies reported providing access to a 24/7 crisis line.

Additionally, according to expert reviewers, five studies included supplementary strategies to support generalisation, such as between-session therapist contact via alternative communication methods, digital platforms, integration with other clinical services, or practice opportunities (Supplementary Table 3).

Function Structuring Environment

Only three studies described structured case management, and this was not reported in detail. According to expert reviewers, just two studies reported an additional action with the aim of structuring environment for perinatal contexts, such as staff or volunteer support for infant care (Supplementary Table 4).

Function Enhancing Therapists' Capabilities and Motivation

The consultation team meeting (CTM) was included in 47% of the programmes (Figure 2) . T wo studies incorporated non-DBT clinical team meetings instead of CTM. Additionally, 25 studies reported that therapists received supervision. Similarly, two offered additional support, including post-session therapeutic dyad meetings and monthly training (Supplementary Table 5).

Discussion

Main findings

This scoping review identified substantial heterogeneity in the implementation of DBT skills training (DBT-ST) programmes across settings and populations. Most programmes include the four standard DBT skills modules, and are typically delivered in community or university settings; however, their structural characteristics vary widely in terms of length, session duration, and delivery format. Several components intended to address core DBT functions—such as module selection, missed-session rules, and phone coaching—are applied inconsistently, whereas others, such as DBT training, are more consistently reported. Additional activities aimed at addressing DBT functions were identified, including diary cards, adaptations of content for specific populations (e.g., perinatal), intake interviews, attendance follow- up, digital platforms to support generalisation, integration with other services, childcare support, or co-therapist meetings. Cultural adaptations beyond language translation were uncommon. Interestingly, a low proportion of studies included samples with SUD or PTSD. Overall, DBT-ST is widely implemented, with high heterogeneity depending on local resources, settings, and populations. This variability highlights the flexibility of DBT-ST but also limits the identification of core components necessary for effective implementation.

Interpretation and comparison with previous literature

Flexibility among settings

A key finding of this review is the flexibility of DBT-ST across implementation contexts. A previous systematic review reported preliminary evidence of the efficacy of DBT-ST as an independent intervention across settings, although with important methodological limitations (18). Consistent with our findings both reviews identified marked heterogeneity in implementation, including variations in structure and module delivery, suggesting that this intervention is adaptable to a range of contexts. Many programmes were delivered in public and community mental health services, where constraints such as limited budgets and time often reduce the feasibility of standard DBT (13,15,16). Furthermore, implementation beyond health facilities -such as rural areas, universities, colleges or perinatal services- may extend access through a more ecological approach, promoting mental health in underserved populations (23), in the community of students (24), school-based prevention (25) or contexts addressing both maternal and infant needs.

Flexibility across populations

Another aspect of flexibility concerns the target population. Although the review was focused on BPD, many programmes included broader clinical groups characterised by emotional dysregulation, BPD traits, or suicidality. This extension of DBT-ST resembles development in standard DBT, which has shown effectiveness for self-harming across personality disorders (26), as well as transdiagnostic populations such as depression and anxiety (27,28) and in individuals with emerging BPD symptoms (29). Some studies also included clients with PTSD or SUD - common comorbidities in BPD- although this groups were often excluded, suggesting both potential applicability and gaps in evidence. However, it may raise concerns due to the absence of individual therapists when treating severe behavioural dysregulation. An RCT suggests that a 20-week DBT-ST programme may reduce suicidal and self-harming behaviours compared with a waiting list (30). Nevertheless, no studies have directly compared DBT-ST without individual therapy with standard DBT, making it unclear whether outcomes are comparable . DBT-ST may therefore be considered a potential alternative or stepped-care option when standard DBT is not available.

Modules

DBT is a multimodal treatment that aims to achieve the five DBT core functions (10), with treatment modes overlapping to support this goals . This review identified key aspect in DBT-ST that may promote these functions, including module selection, programme length, professional training, phone coaching, consultation team meetings, and adjunctive strategies such as diary cards.

DBT skills acquisition has been proposed as both a mediator (31), and a central mechanism of therapeutic change (32). Dismantling studies indicate that DBT-ST reduce suicidal behaviour and non-suicidal self-injury (33), may outperform standard therapy groups in effectiveness and dropout rates (34), and that improvements in skills across modules are associated with reduction in symptoms and suicidal behaviour (35). This evidence supports the importance of skills. However, recent large pragmatic randomised trial of 18,882 adult outpatients with frequent suicidal ideation, found that neither care management nor a brief online DBT-skills reduced self-harm over 18 months (36).

For instance, most programmes include all four modules, although some delivered only a single module. This may be problematic particularly for mindfulness, which is considered foundational to other skills (37). Delivering mindfulness only once, especially in open or brief programmes, may weaken the internal logic of the skills curriculum (37). On the other hand, modular approaches may also reflect a more targeted or tailored intervention, such as single module program, focus to cover the main skills deficiency of clients (12). For example, a RCT of single-module skills training group (Emotion-regulation skills or Mindfulness) were effective by themselves in reducing BPD symptoms (38–40), although comparative evidence across modules, algorithm and selection criteria remains limited. Therefore, there is a lack of comparative evidence identifying when modular DBT-ST is sufficient.

Length and duration

Programme length determines the number of skills that can be taught to achieve the function of enhancing clients' capabilities. Skills are key change mechanisms of change in DBT-ST (41,42). Although minimum duration recommendation has been established, previous reviews suggest that programmes up to 13 or 20 weeks are effective (43), while other studies support shorter formats, including 5-day intensives or 12 weeks programmes (44). Both 12- and 20- weeks schedules are described in Linehan's manual (37). In this scenario, it seems reasonable to shorten from four to three or two sessions the missing-session rule to leverage time constraint. Overall, literature suggests briefer formats can be effective, but no universal minimum dose may be defined yet.

Shorter programmes may require adjustments, such as reducing the missed-session threshold to account for time constraints. However, reducing session duration may also require limiting content, shortening key components (e.g., homework review or skills practice), or reducing therapeutic intensity. These changes may affect skill acquisition, particularly in more severe populations. Evidence is mixed: some studies suggest that greater skill use is associated with better outcomes (31,32), also DBT skill used increase and mediate suicide attempt, depression an anger (32). whereas others indicate that shorter formats may be more appropriate for less severe populations or that high-risk patients require more intensive support (33,45).

Professionals and training

Therapist qualifications and training varied widely across programmes, and between facilitators within the same program, ranging from formal accredited to informal education. Although there is limited evidence linking training type to DBT-ST effectiveness, competency-based training, supervision, and consultation team meetings are considered important for treatment fidelity. Although, no clear evidence is available on training type on DBT-ST effectiveness, structures competency-based training, supervision, consultation team meetings consider important to fidelity. In standard DBT, these elements have been associated with improved clinical outcomes (46). Evidence suggests that intensive 5-day training or interactive online training can improve knowledge and retaining (47–49). The involvement of multiple professional backgrounds may also increase implementation flexibility (Linehan, 2015), particularly in resource-constrained settings Overall, this evidence is in line with flexibility, particularly in resource constraint settings.

Generalization and phone coaching

Phone coaching, intended to promote skills generalization, was reported in fewer than one-third of studies, likely because it is typically delivered by individual therapists in standard DBT rather than skills trainers. Existing research has examined its use, implementation, and impact on therapists (50–52), yet evidence for DBT-ST remains limited, and often adapted to improve feasibility such as limiting availability to office hours that may reduce burnout impact on therapist (52), little evidence was found for DBT-ST, and often adapted to improve feasibility such as limiting availability to office hour that may reduce burnout impact on therapist (52) or assign a skill group therapist instead of individual. Although ideally delivered by an individual therapist aware of the client, these adaptations may increase accessibility but should be studied if generalization function is preserved. The available literature on phone coaching focuses more on use and implementation than on outcome effects, so this remains a major unresolved question for DBT-ST (13,53).

Consultation Team meetings

Consultation team meetings are considered a core element for the function of enhancing therapists' capabilities, motivation and fidelity. In this review, almost half of the programme included CTMs, while others used alternative formats such as dyadic meetings. Although their theoretical rationale is well described (54,55), empirical evidence on their specific contribution remains limited (56). This is particularly relevant given that lack of time and administrative support is a common implementation barrier (13,15,16).

Other strategies

Additional interventions identified by reviewers included diary cards (capabilities), intake interviews (motivation), and crisis lines or online groups (generalisation). Although these were often poorly described, limiting replicability, they may support implementation across diverse settings if aligned with DBT principles.

Cultural adaptation

Cultural adaptations infrequently reported, with only two non-English programmes describing adaptations beyond translation. Although previous research indicates that 40% of participants in an RCT belonged to ethnic minority groups, differences in outcomes are rarely analysed (57). Most adaptations involve language or cultural metaphors rather than structural modifications of the treatment model (58), and adaptations to format and language may improve

retention and effectiveness (59). A systematic review of cultural adaptations identified common barriers that required adaptations, such as language, metaphors, methods, and delivery, while also underscoring challenges including stigma, difficulties understanding written materials, transportation, and mismatch between intervention framing and local explanatory frameworks (58).

Limitations

The findings of this Scoping review do not allow us to determine the efficacy or effectiveness of each of the programmes reviewed, nor comparative between programmes. Additionally, adherence to the DBT model was not systematically assessed, which is important given that some programmes lacked consultation team meetings. Finally, incomplete reporting in primary studies limited the analysis of implementation characteristics.

Future research

Future research should evaluate active components of DBT-ST, including modules, delivery formats, session duration, and specific elements such as phone coaching or consultation team meetings. Direct comparisons with standard DBT, particularly through non-inferiority trials in low-resource settings, would be valuable. Additionally, protocols should clearly specify how the five DBT functions are addressed to improve replication and scalability.

Conclusion

These findings suggest several practical implications. First, DBT-ST has been implemented across resource-constrained and routine-care settings, suggesting potential feasibility; however, the effectiveness and safety of specific implementation models require further evaluation. Second, implementation may explicitly consider all five DBT functions and how programme adaptations address each. Third, programmes may clearly report structural decisions—including module selection, training, attendance rules, phone coaching, consultation structures, and adjunctive strategies—to support fidelity and replication.

Abbreviations

ACT
Acceptance and Commitment Therapy
ADM
Administrative classification
AO
Add-on programme
BPD
Borderline personality disorder
BPD-S
Borderline personality disorder spectrum
BSL-23
Borderline Symptom List-23
CC
Clinical criteria
CCT
Controlled clinical trial
CI
Clinical interview
CMH
Community mental health service
COMM
Community-based service
CTM
Consultation team meeting
DBT
Dialectical behaviour therapy
DBT-ST
Dialectical behaviour therapy skills training
DERS
Difficulties in Emotion Regulation Scale
DIB-R
Diagnostic Interview for Borderlines-Revised
DT
Distress tolerance
ER
Emotion regulation

ERG
Emotion Regulation Group
GPM
Good psychiatric management
IE
Interpersonal effectiveness
IPDE
International Personality Disorder Examination
MBT
Mentalization-based therapy
MEDLINE
Medical Literature Analysis and Retrieval System Online
MF
Mindfulness
NSSI
Non-suicidal self-injury
OT
Occupational therapist
PED
Personality and emotion dysregulation
SA
Stand-alone programme
SCED
Single-case experimental design
SCID-5
Structured Clinical Interview for DSM-5
SCID-II
Structured Clinical Interview for DSM-IV Axis II Personality Disorders
SI
Structured diagnostic interview
SPEC
Specialised service
SS
Symptom scale
STEPPS
Systems Training for Emotional Predictability and Problem Solving
SUD
Substance use disorder

Declarations

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Not applicable.

Consent to Participate declaration
Not applicable.

Consent to Publish declaration
Not applicable.

Data Availability declaration
All data generated or analysed during this study are included in this published article and its supplementary information files.

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The authors declare that they have no competing interests.

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Authors' Contributions
MC-R conceived the review, coordinated the study, developed the data-charting form, contributed to screening, data extraction, analysis, and drafted the manuscript. FJV contributed to the study design, data synthesis, interpretation of findings, and manuscript drafting and revision. CE, JP, CC, VDS, NF, CPdL,

LG, and VB contributed to screening, data extraction, data charting, and manuscript revision. KR, MN-H, MAS, and SR contributed expert input on DBT implementation, interpretation of findings, and critical revision of the manuscript. All authors read and approved the final manuscript.

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Tables

Table 1. Characteristics of included studies.

This table details the main characteristics of studies evaluating DBT-ST. Variables include study identification, country, clinical setting, diagnostic assessment method, diagnostic instrument or criteria used, primary diagnosis, comorbid substance use disorder (SUD) and post-traumatic stress disorder (PTSD), and study design. Abbreviations: CMH = community mental health service; HOSP = hospital outpatient or day hospital service; UNI = university or college counselling service; SPEC = specialised service (e.g., perinatal or veterans programmes); COMM = community-based service; NR = not reported; SI = structured diagnostic interview; CI = clinical interview; SS = symptom scale; CC = clinical criteria; ADM = administrative classification; BPD = borderline personality disorder; BPD-S = borderline personality disorder spectrum (including BPD traits or related emotion dysregulation presentations); SUD = substance use disorder; PTSD = post-traumatic stress disorder; RCT = randomised controlled trial; CCT = controlled clinical trial; SCED = single-case experimental design.

ID	Study	Country	Setting	Diag. method	Instrument / criteria	Main diagnosis	Su
1	Aafjes-van Doorn 2020	USA	COMM	NR	NR	BPD-S	NI
2	Blackford 2011	USA	CMH	CI	DSM-IV-TR Axis I / BPD	BPD-S	Ye
3	Carmona i Farrés 2018	Spain	NR	NR	NR	BPD	Ye
4	Carmona i Farrés 2019	Spain	NR	SI	SCID-II	BPD	Ye
5	Carmona i Farrés 2019	Spain	NR	SI	SCID-II	BPD	Ye
6	Chugani 2013	USA	UNI	CC	Cluster B PD	BPD-S	NI
7	Conrad 2017	Australia	NR	CC	Cluster B PD / mood disorder after NSSI	BPD-S	NI
8	Davarani 2019	Iran	UNI	SS	DERS >2 SD	BPD-S	NI
9	Decker 2019	USA	SPEC	CC	Suicidal ideation / emotion dysregulation	BPD-S	Ye
10	Denckla 2015	USA	NR	CC	Suicide	Other	NI
11	Dixon-Gordon 2015	USA	NR	SI	SCID-II	BPD	NI
12	Dobbs-Marsh 2018	USA	NR	CI	Axis I or BPD needing DBT	BPD-S	Ye
13	Elices 2016	Spain	NR	SI	SCID-II	BPD	Ye
14	Gayner 1998	USA	NR	CI	DSM-IV clinical interview	BPD	No
15	Giordano 2021	Italy	NR	CI	DSM-IV	BPD	NI
16	Harley 2007	USA	NR	SI	SCID-II	BPD	Ye
17	Hart-Mitchell 2010	Canada	HOSP	CC	DBT symptoms	BPD-S	Ye
18	Heath 2021	USA	NR	CI	Axis I or BPD needing DBT	BPD-S	NI
19	Heerebrand 2021	Australia	CMH	CI	Clinical interview	BPD	NI
20	Holens 2021	Canada	NR	CC	Emotion regulation / distress tolerance difficulties	BPD-S	NI
21	Hong 2003	USA	UNI	SI	SCID-II	BPD-S	NI
22	Hunnicutt Hollenbaugh 2018	USA	HOSP	CI	Axis I diagnosis	BPD-S	No
23	Kells 2020	Ireland	HOSP	CI	Clinical interview	BPD / BPD-S	NI
24	Keng 2021	Malaysia	NR	SI	SCID-II	BPD	NI
25	Kramer 2016	Switzerland	UNI	SI	SCID-II	BPD	Ye
26	Lee 2019	USA	UNI	CI	Axis I diagnosis	BPD-S	NI
27	Lin 2019	Taiwan	UNI	SS	BPD-S	BPD	No
28	Lyng 2019	Ireland	CMH	NR	DNA	BPD	No
29	Martin 2017	USA	NR	CC	Emotion dysregulation	BPD-S	NI
30	McMain 2016	Canada	CMH	SI	IPDE	BPD	Ye
31	Meaney-Tavares 2013	Australia	UNI	NR	DNA	BPD	Ye
32	Mitchell 2018	Australia	CMH	SI	SCID-II	BPD	No
33	Mohamadizadeh 2017	Iran	NR	CI	Clinical interview	BPD	No
34	Mueller-Theisen 2006	USA	COMM	NR	DNA	BPD	NI
35	Muhomba 2017	USA	UNI	CI	Linehan dysregulation domains	BPD-S	Ye
36	Murphy 2018	England	NR	ADM	NHS Mental Health Clustering Tool	BPD-S	NI
37	Neacsiu 2014	USA	NR	SS	DERS	BPD-S	Ye
38	Ramaiya 2017	Nepal	NR	CC	Suicide / self-harm	BPD-S	No
39	Rizvi 2014	USA	NR	SS	DERS	BPD-S	NI
40	Sambrook 2006	England	UNI	NR	DNA	BPD-S	NI
41	Soler 2005	Spain	SPEC	SI	SCID-II	BPD	NI
42	Soler 2009	Spain	UNI	SI	SCID-II	BPD	No
43	Soler 2022	Spain	UNI	SI	SCID-II	BPD	NI

44	Steffel 2014	USA	CMH	CC	Emotion dysregulation	BPD-S	NI
45	Sved-Williams 2021	Australia	CMH	CC	BPD traits / emotion dysregulation	BPD-S	No
46	Tobon 2020	Canada	CMH	CC	Emotion dysregulation	BPD-S	No
47	Uliaszek 2016	Canada	SPEC	CC	Severe emotion dysregulation	BPD-S	Ye
48	Vickers 2016	England	UNI	CC	Severe mental illness	BPD-S	Ye
49	Wieczorek 2021	Australia	CMH	CI	PED + self-harm behaviours	BPD-S	No
50	Williams 2010	Australia	CMH	CI	Clinical interview	BPD	No
51	Wilson 2018	England	SPEC	CI	Clinical interview	BPD-S	No
52	Yang 2020	China	CMH	CC	High suicide risk	BPD-S	No
53	Correa-Ramírez 2023	Chile	CMH	CI	DSM-5 psychiatric assessment	BPD	NI
54	Dyson 2023	Australia	CMH	SI	SCID-5	BPD	No
55	Agako 2022	Australia	COMM	CI	Semi-structured interview (emotion dysregulation)	BPD-S	No
56	Safarzadeh 2023	Iran	COMM	SI	SCID-II	BPD	No
57	Schmidt 2024	Spain	NR	SI	SCID-II + DIB-R + BSL-23	BPD	No

Table 2. Summary of characteristics

Table summarizes the distribution of key characteristics of studies evaluating DBT-ST. Variables include country of origin, clinical setting, diagnostic assessment method, primary diagnosis category, and study design. Percentages are calculated based on the total number of studies included in the review (N = 57) unless otherwise indicated. COMM = community-based service; CMH = community mental health service; HOSP = hospital outpatient or day hospital service; UNI = university or college counselling service; SPEC = specialised service (e.g., perinatal or veterans programmes); NR = not reported; CI = clinical interview; SI = structured diagnostic interview; SS = symptom scale; CC = clinical criteria; ADM = administrative classification; BPD = borderline personality disorder; BPD-S = borderline personality disorder spectrum; SUD = substance use disorder; PTSD = post-traumatic stress disorder; RCT = randomised controlled trial; CCT = controlled clinical trial; SCED = single-case experimental design.

Country	**N (%)**	**Setting**	**N (%)**	**Diag. Method**	**N (%)**	**Diagnosis**	**N (%)**	**Design**	**N (%)**
USA	19 (33.3%)	COMM	4 (7.0%)	CI	16 (28.1%)	BPD-S	29 (50.9%)	Pre-post	24 (42.1%)
Spain	8 (14.0%)	CMH	13 (22.8%)	SI	16 (28.1%)	BPD	26 (45.6%)	Naturalistic	1 (1.8%)
Australia	9 (15.8%)	UNI	21 (36.8%)	CC	14 (24.6%)	Other	1 (1.8%)	RCT	15 (26.3%)
Iran	3 (5.3%)	SPEC	12 (21.1%)	SS	4 (7.0%)	BPD / BPD-S	1 (1.8%)	CCT	7 (12.3%)
Italy	1 (1.8%)	HOSP	4 (7.0%)	ADM	1 (1.8%)	**SUD. n (%)**		Retrospective	3 (5.3%)
Canada	5 (8.8%)	NR	3 (5.3%)	NR	6 (10.5%)	Yes	16 (28.1%)	SCED	2 (3.5%)
Ireland	2 (3.5%)					No	18 (31.6%)	NR	5 (8.8%)
Malaysia	1 (1.8%)					NR	23 (40.4%)		
Switzerland	1 (1.8%)					**PTSD. n (%)**			
Taiwan	1 (1.8%)					Yes	18 (31.6%)		
England	4 (7.0%)					No	2 (3.5%)		
Nepal	1 (1.8%)					NR	37 (64.9%)		
China	1 (1.8%)								
Chile	1 (1.8%)								

Table 3. Characteristics of DBT skills training programmes.

This table summarises key characteristics of the DBT-ST programmes described in the included studies, including programme length, session duration, DBT modules incorporated, whether specific skills were described, therapist profession and DBT training, cultural adaptations, programme type, attendance rules, and the presence of BPD psychoeducation. When studies reported two different programmes, the modules corresponding to each programme are separated

by “/”. MF = mindfulness; DT = distress tolerance; ER = emotion regulation; IE = interpersonal effectiveness; Psy = psychologist; Nrs = nurse; SW = social worker; Coun = counsellor; OT = occupational therapist; Res = psychiatry resident; MD = psychiatrist/physician; AO = add-on programme; SA = stand-alone programme; C = consecutive sessions; NR = not reported; N/A = not applicable.

ID	Modules	Length (weeks)	Session duration (min)	Skills described	Cultural adap.	Type	Missing rule (n sessions; type)	Psycho
1	MF, ET, ER, IE	20	120		N/A	AO	X	X
2	MF, DT, ER, IE	24	90		N/A	AO	X	X
3	MF, DT, ER, IE	13	150	X	NR	AO	(4)	X
4	MF/IE	10	120		NR	SA	(4)	X
5	MF/IE	10	150		NR	SA	(4)	X
6	MF, DT, ER, IE	11	90		N/A	AO	NR	X
7	MF, DT, ER, IE	10	60		N/A	SA	NR	X
8	MF, DT, ER, IE	4	120		N/A	NR	NR	X
9	MF, DT, ER, IE	26	120	X	N/A	AO	(3)	X
10	DT	4	55		N/A	AO	X	X
11	ER	7	120		N/A	NR	(4)	X
12	MF, DT, ER, IE	36	90		N/A	AO	(3)	X
13	MF / IE	10	150		NR	SA	(4)	X
14	DT, ER, IE	14	120		N/A	AO	(2)	X
15	MF, DT, ER, IE	16	90	X	NR	AO	NR	X
16	MF, DT, ER, IE	28	105	X	N/A	AO	(4)	X
17	MF, DT, ER, IE	8	150		N/A	AO	NR	X
18	MF, DT, ER, IE	28	75	X	N/A	AO	(3)	X
19	MF, DT, ER, IE	20	150	X	N/A	AO	(4)	X
20	MF, DT, ER, IE	19	120		N/A	AO	(3)	X
21	MF, DT, ER, IE	39	DNA	X	N/A	DNA	(3)	X
22	MF, DT, ER, IE	24	90	X	N/A	AO	X	X
23	MF, DT, ER, IE	24	150		N/A	SA	(2)	X
24	MF, DT, ER, IE	14	120			AO	(3)	X
25	MF, DT, ER, IE	20	90	X	NR	AO	(3)	X
26	MF, DT, ER, IE	4	90		N/A	SA	X	X
27	MF, DT, ER, IE	8	120		NR	SA	NR	X
28	MF, DT, ER, IE	24	150		N/A	SA	(4)	X
29	MF, DT, ER, IE	22	150		N/A	SA	(4)	X
30	MF, DT, ER, IE	20	120		N/A	AO	(3)	X
31	MF, DT, ER, IE	8	120	X	N/A	AO	NR	X
32	MF, DT, ER, IE	20	150	X	N/A	AO	X	X
33	MF, DT, ER, IE	16	90	X	NR	NR	NR	X
34	MF, DT, ER, IE	24	DNA	X	N/A	AO	NR	X
35	MF, DT,	10	90		N/A	SA	(3)	X
36	MF, DT, ER, IE	19	150	X	N/A	AO	X	X
37	MF, DT, ER, IE	16	120		N/A	AO	(4)	X
38	MF, DT, ER, IE	10	180			SA	X	X
39	ER	8	120	X	N/A	SA	NR	X
40	MF, DT, ER, IE	18	120	X	N/A	AO	NR	X
41	MF, DT, ER, IE	12	150	X	NR	SA	NR	X
42	MF, DT, ER, IE	13	120		NR	SA	(3)	X
43	MF, DT, ER, IE	24	120	X	NR	SA	NR	X

44	MF+ER / ER	8	120	X	N/A	SA	NR	X
45	MF, DT, ER, IE	25	150		N/A	AO	X	X
46	MF, DT, ER, IE	12	120		N/A	AO	(4)	X
47	MF, DT, ER, IE	12	120		N/A	AO	X	X
48	MF, DT, ER, IE	24	150		N/A	AO	(3)	X
49	MF, DT, ER, IE	15	150	X	N/A	AO	(3)	X
50	MF, DT, ER, IE	20	120	X	N/A	AO	NR	X
51	MF, DT, ER, IE	12	120		N/A	AO	(3)	X
52	MF, DT, ER, IE	12	120			AO	(3)	X
53	MF, DT, ER, IE	13	120			AO	(3)	(3)
54	MF, DT, ER, IE	12	120	X	N/A	SA	NR	NR
55	MF, DT, ER, IE	7	120		N/A	SA	NR	X
56	MF, DT, ER, IE	14	120			SA	NR	NR
57	MF, DT	10	150		X	SA	X	NR

Table 4. Summary of program

Table summarises the structural characteristics of DBT-ST programmes reported in the included studies. ariables include programme length (number of sessions), session duration, DBT modules incorporated, programme type (add-on or stand-alone), therapist professional background, and the number of professional disciplines involved in programme delivery. Percentages are calculated based on the number of programmes reporting information for each variable. Abbreviations: MF = mindfulness; DT = distress tolerance; ER = emotion regulation; IE = interpersonal effectiveness; AO = add-on programme; SA = stand-alone programme; EA = enhanced or adapted DBT-ST programme; NR = not reported; DNA = data not available; Psy = psychologist; Nrs = mental health nurse; SW = social worker; Res = psychiatry resident; Trainee = therapist in training; Coun = counsellor; MD = psychiatrist or physician; OT = occupational therapist.

Sessions	**N (%)**	**Modules**	**N (%)**	**Type**	**N (%)**	**Professions**	**N (%)**	**No. Professions**	**N (%)**
12 or less	24 (42.1%)	MF	53 (93.0%)	AO	33 (57.9%)	Psy	44 (77.2%)	1	29 (50.9%)
13 to 23	20 (35.1%)	DT	51 (89.5%)	SA	20 (35.1%)	Nrs	14 (24.6%)	2	10 (17.5%)
24 or more	13 (22.8%)	ER	51 (89.5%)	EA	0 (0.0%)	SW	9 (15.8%)	3	9 (15.8%)
		IE	51 (89.5%)	NR	4 (7.0%)	Res	2 (3.5%)		
Duration		**N Modules**				Trainee	2 (3.5%)		
Less than 120	13 (22.8%)	1	6 (10.5%)			Coun	2 (3.5%)		
120 min	26 (45.6%)	2	2 (3.5%)			MD	2 (3.5%)		
More than 120	16 (28.1%)	3	2 (3.5%)			OT	1 (1.8%)		
DNA	2 (3.5%)	4	47 (82.5%)			NDA	9 (15.8%)		

Figures

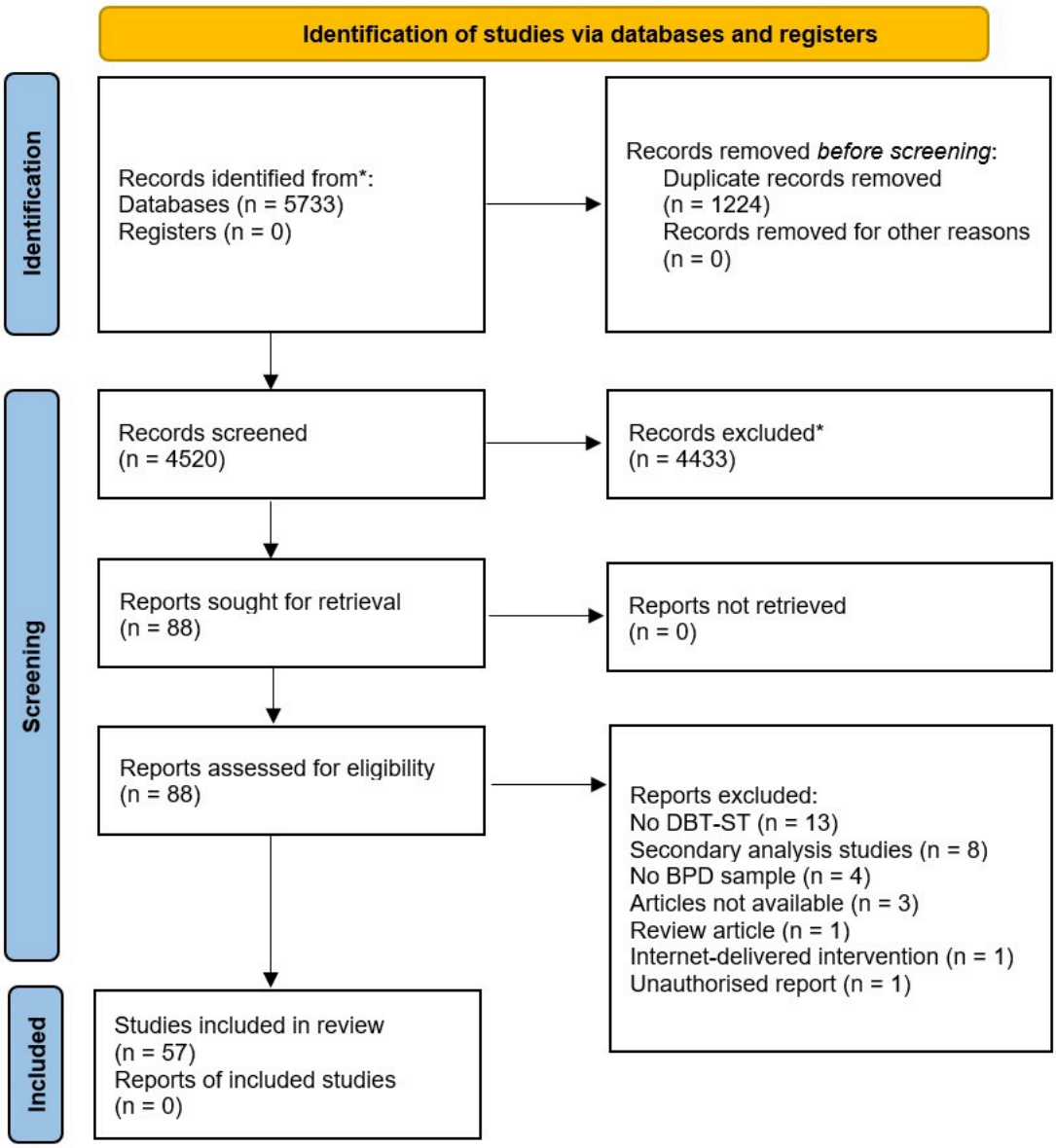


Figure 1

PRISMA Flowchart

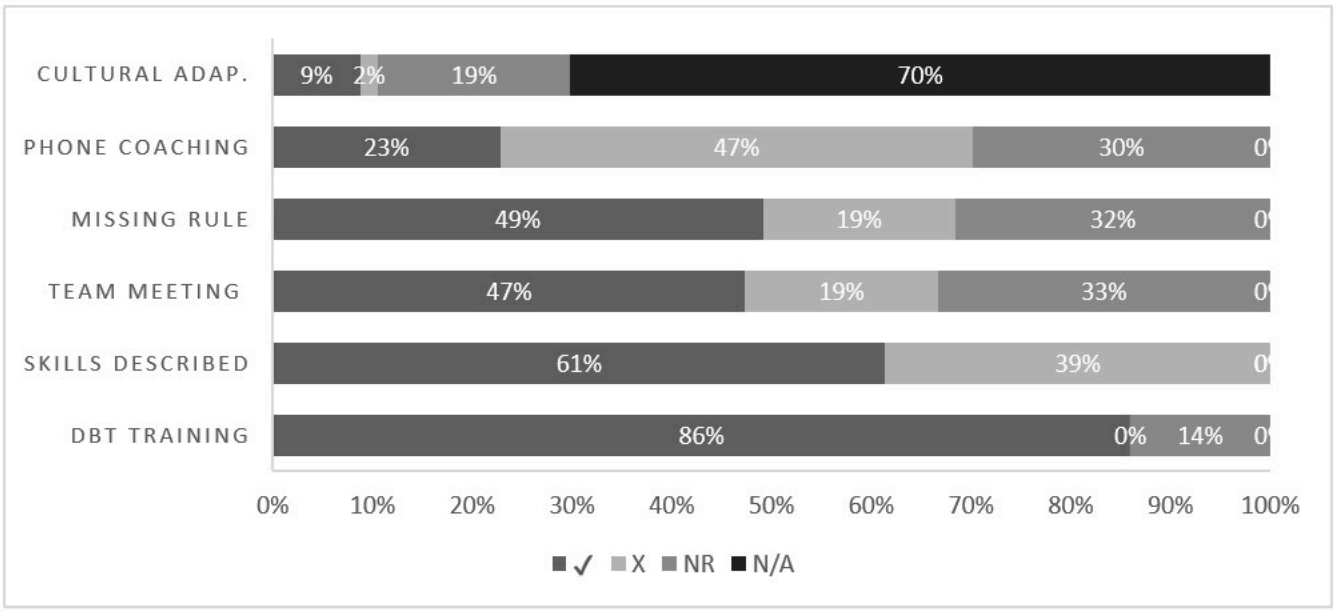


Figure 2

Proportion of programmes reporting the five standard components of DBT-ST.

Proportion of programmes reporting the five standard components of DBT-ST, including phone coaching, the missing-session rule, consultation team meetings, explicit declaration of skills included in the programme, and DBT training for the treatment team. Cultural adaptation was also assessed for programmes implemented outside the UK or USA. Not applied (N/A) indicates that adaptation was not required. ✓ = Included; X = Not included; NR = Not reported; N/A = Not applicable.

Supplementary Files

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