Randomized effectiveness-implementation trial of dialectical behavior therapy interventions for young people with borderline personality disorder symptoms

Received: 21 June 2023 | Accepted: 22 May 2024

DOI: 10.1002/jclp.23725

RESEARCH ARTICLE

WILEY

Randomized effectiveness-implementation trial of dialectical behavior therapy interventions for young people with borderline personality disorder symptoms

Dominique de Andrade[1,2,3] | Lily Davidson[1] | Carlie Robertson[4,5] | Philip Williams[4,5] | Janni Leung[1] | Zoe Walter[1] | Julaine Allan[5] | Leanne Hides[1]

[1]National Centre for Youth Substance Use Research, University of Queensland, Brisbane, Queensland, Australia

[2]School of Psychology, Deakin University, Geelong, Victoria, Australia

[3]Griffith Criminology Institute, Griffith University, Brisbane, Queensland, Australia

[4]Headspace Southport, Gold Coast, Queensland, Australia

[5]Lives Lived Well, Brisbane, Queensland, Australia

Correspondence

Dominique de Andrade, Griffith Criminology Institute, Griffith University, Bldg M10, Mount Gravatt Campus, Messines Ridge Rd, Mt Gravatt, Brisbane, QLD 4122, Australia.
Email: d.deandrade@griffith.edu.au

Funding information

Lives Lived Well; Gold Coast Primary Health Network; University of Queensland and National Health and Medical Research Council (NHMRC) fellowships; ARC DECRA Fellowship

Abstract

Objectives: Dialectical behavior therapy (DBT) is an evidence-based treatment for people with emerging borderline personality disorder (BPD). In "real world" clinical settings, standard DBT is resource intensive. Emerging evidence suggests that group-based DBT skills training alone can lead to promising outcomes. This hybrid type 1 effectiveness-implementation trial directly compared the effectiveness of an 8-week group DBT-skills training program and a 16-week DBT-informed program including individual treatment and group-based skills training.

Methods: This pragmatic trial employed a staggered, parallel-groups design. We recruited 104 participants, aged 16–25 years, with emotion dysregulation or emerging BPD symptoms. Participants were randomized to receive either program at a youth mental health service located in the Gold Coast, Australia. Data was collected via online surveys at baseline, 8-week, 16-week, and 24-week follow-up. Mixed effect linear models compared groups on the primary outcomes of emotion dysregulation and BPD

symptoms, and secondary outcomes of suicidal ideation, coping skills, depression, anxiety, and stress.

Results: Across groups there were significant and sustained improvements relating to emotion dysregulation, BPD symptoms, stress, depression, and emotion-focused coping; but not suicide risk, anxiety, or task-focused coping. There was no significant time by group differences between the 8-week and 16-week interventions on any primary or secondary outcome.

Conclusion: The more intensive mode of delivering DBT was not more effective than the brief group-based skills training. Both interventions resulted in significant improvements across both primary and most secondary outcomes. These results have implications for clinical practice regarding length and intensity of DBT treatment in young people.

KEYWORDS

borderline personality disorder, dialectical behavior therapy, emotion dysregulation, randomized controlled trial, young people

1 | INTRODUCTION

1.1 | Background and rationale

Adolescence and emerging adulthood are high-risk periods for the development of psychiatric problems (Ibraheim et al., 2017). Borderline personality disorder (BPD) typically presents in early adulthood, and is characterized by high levels of emotion dysregulation, instability in interpersonal relationships and self-image, and marked impulsivity (American Psychiatric Association, 2013; Ibraheim et al., 2017). A longitudinal study on the emergence of BPD in a large community sample (n = 568) found that 0.9% of 14-year-olds met diagnostic criteria, increasing to 1.4% by age 16, and 3.2% by age 22 (Johnson et al., 2008).

Dialectical behavior therapy (DBT) is an evidence-based treatment for BPD developed by Linehan (1993). Skills modules generally focus on building acceptance-oriented skills or change-oriented skills. The standard model for DBT is a 12-month multimodal treatment program (i.e., individual and group therapy) that includes group-based skills training, individual psychotherapy, telephone coaching, and regular consultation meetings among the therapist team (Linehan, 1993). Originally developed for adults, DBT has been adapted to treat adolescents (Rathus & Miller, 2014) with a defining feature being parental participation. Reviews of controlled and uncontrolled studies (μ age = 15 years) suggest that adolescent-specific DBT programs (DBT-A) can lead to significant reduction in self-harm, suicidal ideation and BPD symptoms (Hunnicutt Hollenbaugh & Lenz, 2018; Kothgassner et al., 2021); and can be a superior treatment for emotion dysregulation and/or BPD symptoms when compared to an alternative therapy (Jørgensen et al., 2021). Among the small number of controlled studies in outpatient settings, DBT-A (≥16 weeks) has been shown to have superior outcomes with regard to suicidal and self-harm behaviors when compared to individual and supportive group therapy—a manualised client-focused treatment that includes individual, supportive group, and parent sessions, weekly therapist team consultation as well as office hour telephone support from therapists (McCauley et al., 2018). DBT-A (19 weeks) has also been compared to enhanced treatment-as-usual (i.e., the addition of ≥1 weekly treatment session per patient), resulting in

long-term improvements across both groups for all outcomes expect self-harm behavior for which the DBT-A group reported significantly better and sustained improvements (Mehlum et al., 2019). Santamarina-Perez et al. (2020) also compared DBT-A with treatment-as-usual which included at least one bi-weekly individual session of counseling and elements of CBT or psychoeducation, and the addition of weekly DBT skills group training sessions. Findings showed that while both conditions were effective in reducing suicidal ideation and depression symptoms, DBT-A was more effective at improving functioning and reducing self-harm behavior (Santamarina-Perez et al., 2020).

Although they are highly effective, standard DBT treatment programs (DBT or DBT-A) that include both individual and group therapy are resource intensive and require well-trained clinicians, often leading to extensive waitlists (McMain et al., 2017). Consequently, group-based DBT-skills training is frequently used as a stand-alone treatment in clinical settings (McMain et al., 2017; Valentine et al., 2015). A small number of controlled studies have investigated the effectiveness of group-based DBT-skills training as a stand-alone intervention for BPD in adult populations. Brief DBT-skills training (3–6 months) has been found to result in similar or superior outcomes to control groups (including waitlist and standard group therapy) (Lyng et al., 2020; McMain et al., 2017; Soler et al., 2009). However, Linehan et al. (2015) 12-month trial of DBT skills-training resulted in improvements in suicidal behaviors similar to those of more intensive options including standard DBT or DBT individual therapy plus activities. More high-quality research is required to investigate the effectiveness of DBT-skills training as a stand-alone intervention, particularly for adolescents and young adults.

This study aimed to: (1) investigate the effectiveness of group-based DBT-skills training as a stand-alone intervention for young people (16–25 year-old); (2) compare outcomes of group-based DBT-skills training to more intensive group plus individual DBT; and (3) investigate the effectiveness of short DBT-informed programs (i.e., ≤16 weeks). We hypothesized that: (1) participants in both groups (8- and 16-week DBT programs) would experience significant improvements across primary and secondary outcomes when comparing baseline to 24-week follow-up; and (2) participants in the 16-week group would experience significantly greater improvements across primary and secondary outcomes when compared with participants in the 8-week group. Findings are expected to have clinical implications, informing the use of different DBT treatment modalities in practice (i.e., progressive stepped-care treatment), resource investment, and treatment accessibility for at-risk young people.

2 | METHODS

2.1 | Trial design

This hybrid type 1 effectiveness implementation trial employed a staggered, parallel group design in which participants were randomized to one of two treatment conditions (equal allocation): (1) an 8-week group-based DBT-informed skills training program; or (2) a 16-week intensive program that included individual DBT-informed sessions atop group-based skills training. This pragmatic trial was specifically designed to compare the effectiveness of two DBT-informed interventions of different lengths and modalities currently being delivered in the participating clinical service; these differences may affect the interpretability of findings. Primary outcomes were emotion dysregulation and BPD symptoms. Secondary outcomes were suicidality, coping, depression, anxiety, and stress. All outcomes were assessed at baseline and 8, 16, and 24-week follow-up. The trial reporting follows CONSORT guidelines (Boutron et al., 2017).

2.2 | Participants

2.2.1 | Eligibility criteria

Individuals were eligible for participation in the study if they were aged 16–25 years old and scored ≥40 on the Difficulties with Emotion Regulation Scale 16-item measure (DERS-16) (Bjureberg et al., 2016) and/or

answered "true" to three or more items on the BPD subscale of the International Personality Disorders Examination Screening Questionnaire (IPDE-SQ) (Loranger et al., 1997). These age parameters were chosen as "young people" are defined by the World Health Organisation and United Nations as those aged 15–24 years. In this study, some young people turned 25 years old while on the waiting list for treatment. We were unable to include individuals aged 15 years for ethical reasons, given 16 is the minimum age that individual consent can be obtained from a mature minor (without requiring parental consent, which may not be appropriate in their living situation). Participants were not eligible if they had participated in DBT before, were not fluent in spoken or written English, had an unmodified hearing impairment, had a current serious medical problem or traumatic injury, were in a current episode of psychosis, had a moderate to severe intellectual impairment, or were currently experiencing acute withdrawal from alcohol or drugs.

2.2.2 | Study setting

This study was conducted in South-East Queensland, through a national, nongovernment organisation delivered in the primary care sector. This organisation provides information, mental health, physical health (including sexual health), work and study services to young people aged 12–25 years, and their families. It offers over 150 services in Australia which provide both individual and group treatment programs to young people, delivered by case workers, allied health professionals, general practitioners, and psychiatrists.

2.3 | Interventions

Treatment conditions included: (1) an 8-week group-based DBT-skills training program; and (2) a 16-week multimodal program that included individual DBT-informed sessions atop group-based skills training. The interventions differed in terms of duration, provision of individual DBT-informed treatment, and DBT skills-group size (slightly smaller groups in the 16-week program, due to constraints on clinician capacity for individual treatment); which may affect the interpretability of findings. Program content, materials, and location of treatment delivery were consistent across groups. Clinicians completed checklists at the end of each session to monitor adherence to DBT protocols during the group-based and individual DBT-informed sessions. These checklists were monitored and compared to apriori-defined adherence criteria for treatment fidelity by the lead DBT clinician, during supervision (see Supporting Information S1: Material 1 for fidelity checklist for individual DBT-informed sessions). The programs were delivered in three waves over 12 months (May 2018 to May 2019). For each wave, the DBT-trained clinicians facilitated the groups on a roster system that rotated clinicians between the 8-week program and 16-week program, to reduce clinician "burnout" and "therapist effects."

2.3.1 | Precommitment work

Precommitment work is the first stage of treatment in DBT (Linehan, 1993). It was conducted in the 2 weeks before the DBT program commenced to prepare a client for DBT. Participants in the 16-week condition received up to three contacts by their assigned DBT clinician to complete a DBT commitment contract, which outlined treatment expectations. Participants in the 8-week condition did not receive precommitment work, but were made aware of the DBT commitment requirements during recruitment. An important requirement conveyed was that missing three consecutive DBT appointments (group or individual therapy) without reasonable excuse and/or notifying clinicians would result in their discontinuation in the program (Linehan, 1993).

2.3.2 | 8-week DBT-informed group skills program

Participants were expected to attend eight consecutive weekly group-based DBT-skills training sessions. The maximum group size was 15 participants. Group facilitators were provided with PowerPoint slides, run sheets, and a DBT group skills training manual. The training manual was developed by the lead facilitator and was adapted from Linehan's "DBT Group Skills Training Manual" (Linehan, 2015), Rathus and Miller's (2014) "DBT Skills Manual for Adolescents," and "The Expanded Dialectical Behavior Therapy Skills Training Manual," 2nd ed (Pederson & Pederson, 2017). DBT content was standardized (same content delivered weekly across different treatment waves) and adapted to suit the 8-week and 16-week conditions (see Supporting Information S2: Material 2 for program outlines). Each of the 16 sessions covered the same topics but in more depth. All participants received a booklet containing all session handouts developed by the lead facilitator. Participants in the 8-week program were not prohibited from accessing other private clinicians at headspace or elsewhere, for ethical reasons, but could not receive individual DBT outside the trial. Unlike the 16-week group, the 8-week group did not receive homework tasks.

Group sessions were 90 min each, and covered one topic each week, including Introduction, Mindfulness, Distress Tolerance, Emotion Regulation, Interpersonal Effectiveness, and "Walking the Middle Path" (dialectics). Each session commenced with a 5-min mindfulness exercise. For further details on the modules in the group-based DBT skills-training program, see Linehan (1993).

2.3.3 | Sixteen-week DBT-informed program

Participants in the 16-week program attended 1 weekly group-based DBT-skills training session (90 min) and 1 weekly (50-min) individual, DBT-informed treatment session for 16 consecutive weeks. DBT-informed individual sessions followed the DBT hierarchy (Linehan, 1993), covering specific topics in order of importance including: life-threatening behavior, therapy-interfering behavior, quality of life interfering behavior, and increasing positive behavioral skills. DBT was delivered using standard DBT tools including the use and review of diary cards and chain analysis (Linehan, 1993). During the 16 weeks, participants also had access to DBT-trained clinicians (not necessarily their treating clinician) for DBT-skills phone coaching between 8 a.m. and 8 p.m. daily. Group sessions followed a similar format to the 8-week DBT program (see Supporting Information: Material 2 for program outlines). The 16-week group received tasks that were reviewed every week following the mindfulness exercise. Noncompletion of the homework was followed up in individual sessions.

2.3.4 | Clinical training and supervision

Clinicians received 4 days of intensive DBT training before the start of the program and 2 days of follow-up training 6 months later. Training was provided through the Centre for Mental Health Education Academy and the Australian DBT Institute. The lead clinician had extensive DBT training and has delivered DBT programs in clinical settings since 2008 for over a decade before the program. It was mandatory for all clinicians to attend a fortnightly, 90-min consultation group, facilitated by the lead clinician on the project. In consultation groups, clinicians sought input from one another, practiced DBT-provision skills, and re-visited DBT training as necessary (Linehan, 1993).

2.4 | Outcomes

At baseline, participants reported on several demographic variables including age, sex, birth country, Aboriginal/Torres Strait Islander status, highest level of education, student status, employment status,

TABLE 1 Assessment schedule.

Measures	Screen	Baseline (−t1)	8-week (t1)	16-week (t2)	24-week (t3)
Demographics		X			
Emotion regulation (DERS-16)	X		X	X	X
Borderline personality disorder (IPDE-SQ-BPD subscale)	X		X	X	X
Coping skills (CISS-SF)		X	X	X	X
Suicidality (MINI-SS)		X	X	X	X
Depression, anxiety, stress (DASS-21)		X	X	X	X

Abbreviations: CISS-SF, coping in stressful situations-short form; BPD, borderline personality disorder; DASS-21, depression anxiety stress-21 item scale; DERS-16, Difficulties with Emotion Regulation Scale 16-item measure; IPDE-SQ, International Personality Disorder Examination; MINI-SS, Mini International Neuropsychiatric Interview-Suicidality Screen.

relationship status, childhood trauma, family history of mental illness, and recent mental health treatment. Primary outcomes were emotion dysregulation and BPD symptoms. Secondary outcomes were suicidality, coping, depression, anxiety, and stress. Primary and secondary outcomes were measured at baseline and each follow-up time point (8, 16, and 24-week post-baseline) via an online survey (see Table 1 for the assessment schedule). For the 16-week treatment group, this meant the 8-week follow-up was mid-treatment. Participants were also asked about their use of psychotropic medications (yes/no) in each survey.

2.5 | Primary outcomes

2.5.1 | Emotion dysregulation

Emotion dysregulation was measured using the DERS-16 which assesses five dimensions of emotion regulation difficulties (emotional clarity and understanding, acceptance of emotions, engaging in goal-directed behavior when experiencing emotions, refraining from impulsive behaviors when experiencing emotions, and access to effective and situationally appropriate strategies to regulate emotions) (Bjureberg et al., 2016). The DERS-16 uses a five-point Likert scale ranging from 1 "Almost Never" to 5 "Almost Always." Higher final scores (range 16–80) indicate greater difficulty regulating emotions. The measure has good internal consistency, test–retest reliability, and convergent and discriminant validity (Bjureberg et al., 2016). In this sample, internal consistency for the DERS-16 was excellent ($\alpha = 0.98$).

2.5.2 | BPD symptoms

BPD symptoms were measured using the 5-item BPD subscale (ICD-10 version) of the IPDE-SQ, a standardized diagnostic tool for identifying personality disorders (Loranger et al., 1997). The scale uses a dichotomous (true/false) scoring procedure to identify personality traits indicative of a personality disorder. Each item measures one borderline trait. Higher scores (range 0–5) indicate greater BPD symptoms, and a score of three or higher indicates the potential presence of BPD. This measure was found to be a satisfactory screen for BPD in an Australian representative sample (Lewin et al., 2005). In this sample, internal consistency for the IPDE-SQ BPD subscale was poor ($\alpha = 0.37$), however, this may be due to there being fewer than 10 items (Pallant, 2011), and the variability across items.

2.6 | Secondary outcomes

2.6.1 | Coping skills

Coping skills were measured using the Coping Inventory for Stressful Situations-Short Form (Endler & Parker, 1999). The CISS-SF was designed to measure the different ways individuals handle stressful situations through three different coping styles (task-oriented, emotion-oriented, avoidance). To maintain brevity, the two most reliable and valid subscales were included in the current study: emotion-focused and task-focused coping subscales (each 7 items) (Cohan et al., 2006). Respondents rate their coping styles on a 5-point Likert scale ranging from 1 "Not at all" to 5 "Very much" (total score of 35 per subscale; higher scores indicate greater use of this coping style). In this sample, internal consistency for the CISS task-focused subscale was excellent ($\alpha = 0.91$) and acceptable for the CISS emotion-focused subscale ($\alpha = 0.78$)

2.6.2 | Suicidality

Mini International Neuropsychiatric Interview (M.I.N.I.) suicidality screen is a validated short screening measure for recent suicidal ideation and plans, and recent and historic suicide attempts (Sheehan et al., 1998). The M.I.N.I-Plus includes six weighted, dichotomous questions (yes/no) relating to suicidal ideation and behavior in the past month (e.g., "In the past month, did you think about suicide"; yes = 6 points). High scores (range 0–33) indicate higher suicide risk (Roaldset et al., 2012). The M.I.N.I. Plus has demonstrated excellent concordance with clinician-rated diagnoses (Zandee & de Jong, 2018), and prospective validity with clinical samples (Roaldset et al., 2012). In this sample, internal consistency for the M.I.N.I.-Plus was poor using Cronbach's α ($\alpha = 0.55$), but acceptable using inter-item correlation ($r = 0.28$), which is a better indicator of internal consistency for measures with fewer than 10 items (Pallant, 2011).

2.6.3 | Depression, anxiety, and stress

This study used the 21-item Depression Anxiety Stress Scale (DASS-21) which comprises three 7-item subscales measuring depression (DASS-D), anxiety (DASS-A), and stress (DASS-S). Items are scored using a 4-point scale ranging from 0 "Did not apply to me at all" to 3 "Applied to me very much, most of the time." Higher scores on each subscale (range 0–21) indicate higher symptom severity. Subscale scores were doubled to be comparable to DASS-42 scores (Lovibond, 2014). The DASS-21 has demonstrated reliability and validity (Lovibond & Lovibond, 1995). In this sample, internal consistency for the three subscales was excellent (DASS-D: $\alpha = 0.96$; DASS-A: $\alpha = 0.89$; DASS-S: $\alpha = 0.92$).

2.7 | Sample size

A power analysis was conducted using a general linear mixed model power and sample size program (GLIMMPSE) (Kreidler et al., 2013), for a mixed effect repeated measures model. The analysis employed a power of 0.8, Type I error rate of 0.05, and previously published mean and standard deviation estimates using DERS-16 scores for young people with BPD symptoms (Bjureberg et al., 2016). A medium between groups effect of DBT on emotion dysregulation is supported by the closest available literature, including a study of DBT versus a waitlist group for young adults with BPD (Cohen's $d = 0.76$ at 12-month follow-up) (Goodman et al., 2014), and a meta-analysis which showed small-to-medium effects of DBT for reducing emotion dysregulation symptoms compared with control and alternative treatment (Hunnicutt Hollenbaugh & Lenz, 2018). While we expected both groups to improve on emotion dysregulation, we expected a medium between group

treatment effect (Cohen's $d = 0.5$) between the 8-week and 16-week groups at 16-weeks follow-up (and for treatment effects to remain stable at 24-week follow-up). We required 146 participants to achieve moderate treatment effects (73 per condition). Estimating a 20% attrition rate (McCauley et al., 2018), the ideal sample size was calculated at 183 participants. Due to common constraints of running RCTs in a clinical setting, we aimed to recruit 150 participants to achieve a final sample size of 120 participants after attrition (60 per condition).

2.8 | Recruitment

Participants were referred to the DBT programs via three avenues: (1) internally through service staff; (2) healthcare services in the Gold Coast area that were advised of the trial through the primary health network; and (3) self-referral. A research assistant embedded in the service phoned all referred participants 2–6 weeks before program commencement to provide further information, obtain informed consent, and screen for eligibility. Participants completed the baseline survey before being randomized. A link to the baseline survey was emailed to participants 5 days before their first DBT group session. Participants were followed up in the 24 h before their first session if they had not completed measures.

2.9 | Allocation

Once all participants of a treatment wave had been enrolled and completed the baseline survey, an independent researcher managed the randomization via computer-generated sequence (in Excel) to either conditions. Randomization was stratified by sex. The researcher emailed the client treatment allocation to the lead DBT clinician. The allocated treating clinician then contacted the client by phone to arrange the first DBT session for the 16-week program and/or advise on the start date of the DBT group skills program.

2.10 | Blinding

All research team members involved in data collection, data analysis, and outcome assessment were blind to participants' treatment allocation. Any tasks that required knowledge of a participant's DBT-group allocation were assumed by a clinician, to maintain blinding among the investigators. It was not possible to blind participants or therapists to treatment allocation, due to the differences in the modality, duration, and intensity of the alternative DBT programs.

2.11 | Statistical methods

Data was screened for normality, outliers, nonsense responding, or timing deemed implausible (<5 min). All analyses were conducted on an intention-to-treat basis, using a $p < .01$ to indicate statistical significance (accounting for Bonferroni correction). To determine differences between DBT treatment modalities on primary and secondary outcomes from baseline to follow-ups we used a series of mixed effects linear models and included a random intercept to account for the hierarchical nature of the data. Time, group, and time-by-group interactions were the independent variables as fixed effects. All analyses adjusted for a range of covariates that were identified in the planning stage as variables that could affect the findings (age, sex, family history of mental health, highest education, and childhood trauma). Missing values analysis revealed less than 7% missing data at random on all variables included in the study. Therefore, missing data were imputed in 5 data sets using multiple imputation (following guidelines from Jakobsen et al., 2017). For significant findings, Cohen's d was used for effect sizes with the relevant method used for between-group and repeated measures comparisons.

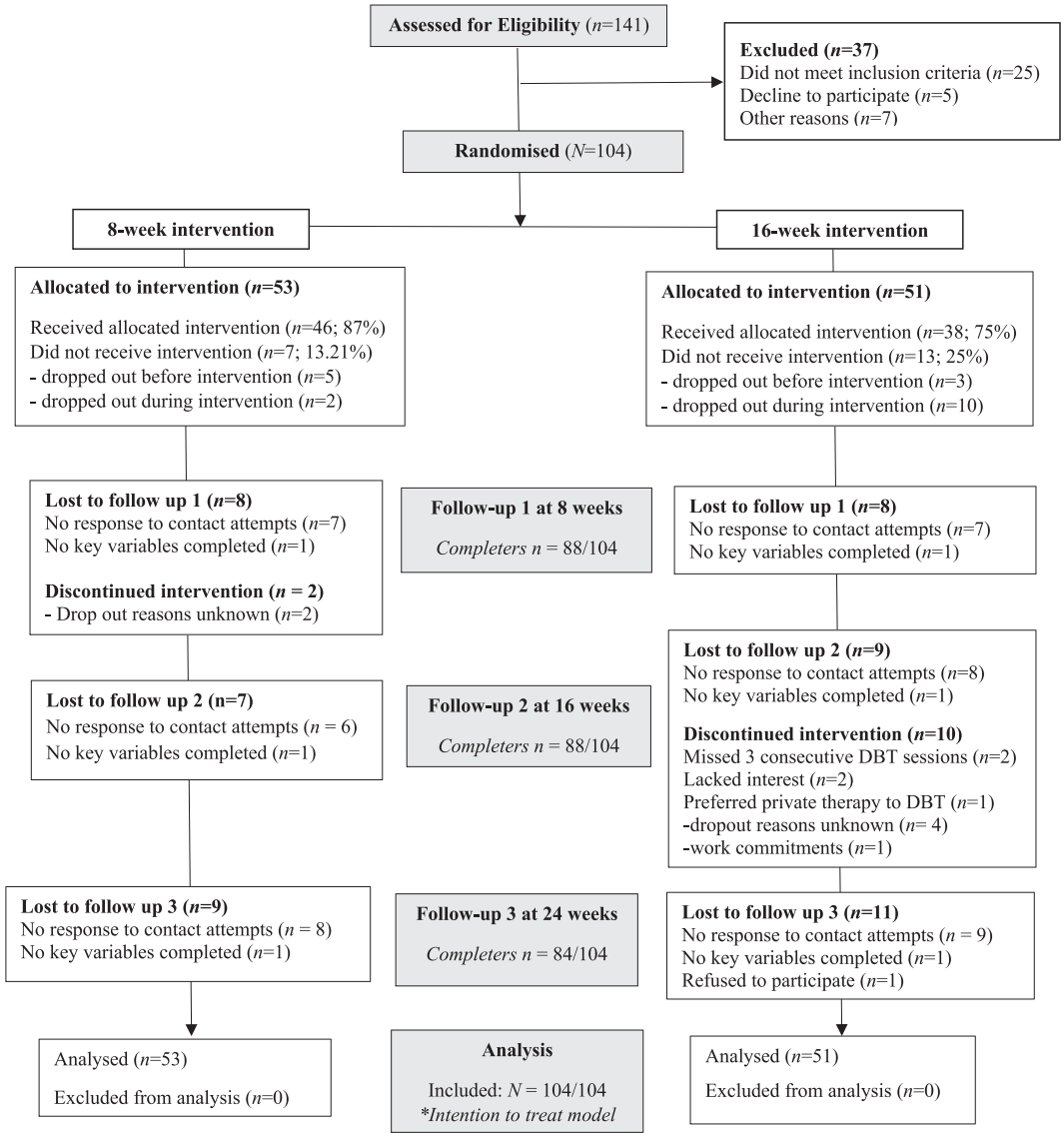

FIGURE 1 CONSORT diagram of participant recruitment, participation, and follow-up.

3 | RESULTS

3.1 | Participants

A total of 169 individuals were referred to the study (see Figure 1 for CONSORT diagram). Of those, 141 agreed to be screened, 108 were eligible for inclusion in the study, and 105 consented to participation. Of those who consented, 104 participants (96% of those eligible) completed baseline measures and were randomized. Just over 86% of the participants allocated to the 8-week group completed the intervention, compared to 75% of those allocated to the 16-week group. At the 24-week follow-up (primary timepoint), 83% of the 8-week group and 78% of the 16-week group completed the survey. There were no significant differences in dropout rates between conditions ($\chi^2 = 0.35$, $p = 0.55$).

TABLE 2 Baseline participant characteristics.

Demographics	8-week *N* = 53	16-week *N* = 51	Total *N* = 104	*p* Value
Sex, *n* (%)				.526
Male	12 (22.6)	9 (17.6)	21 (20.2)	
Female	37 (71.7)	41 (80.4)	79 (76.0)	
Nonbinary	3 (5.7)	1 (2.0)	4 (3.8)	
Age, *M* (SD)	20.4 (3.6)	20.1 (2.5)	20.2 (3.1)	.268
Birth country, *n* (%)				.966
Australia	45 (84.9)	43 (84.3)	88 (84.6)	
Other	8 (15.1)	8 (15.7)	16 (15.4)	
Indigenous status, *n* (%)				.157
Yes	5 (9.4)	2 (4.0)	7 (6.7)	
No	48 (90.6)	49 (96.0)	97 (93.3)	
Employment status, *n* (%)				.327
Not working	35 (66.0)	30 (58.9)	65 (62.5)	
Casual/part time	13 (24.5)	17 (33.3)	30 (28.8)	
Full time	5 (9.5)	4 (7.8)	9 (8.7)	
Highest education, *n* (%)				.615
Secondary school incomplete	15 (28.3)	13 (25.8)	28 (27.0)	
Secondary school complete	12 (22.6)	16 (31.3)	28 (26.8)	
Certificate/diploma	23 (43.4)	17 (33.3)	40 (38.5)	
Bachelor degree	2 (3.8)	5 (9.6)	7 (6.7)	
Missing	1 (1.9)	-	1 (1.0)	
Relationship status, *n* (%)				.378
Not in a relationship	21 (39.6)	27 (52.9)	59 (56.7)	
In a relationship	32 (60.4)	24 (47.1)	45 (43.3)	
Student status, *n* (%)				.372
Yes	18 (33.9)	21 (41.1)	39 (37.5)	
No	35 (66.1)	30 (58.9)	65 (62.5)	
Family history mental health, *n* (%)				.029
Yes	45 (84.9)	35 (68.6)	80 (76.9)	
Unsure	8 (15.1)	16 (31.4)	24 (23.1)	

The 104 randomized participants were predominantly female (76%). The mean age was 20 years (SD = 3.1; range = 16–25). At baseline, approximately 72% had attempted suicide in their lifetime. Based on the DASS-21 scores at baseline, 50% met cut-offs for severe/extremely severe depression, 52% for severe/extremely severe stress, and 91.8% for severe/extremely severe anxiety. Participant characteristics across the cohort and by treatment group are detailed in Table 2. Treatment groups did not differ on any demographic or outcome variables at baseline except for a family history of mental health problems.

3.2 | Primary outcomes

3.2.1 | Emotion regulation

Analysis of the DERS-16 score using linear mixed models revealed a significant effect for time, with significant differences between baseline and the 8-week follow-up $F(1, 104) = -8.01$, $p < .01$, 16-week follow-up $F(1, 104) = -9.55$, $p < .01$, and 24-week follow-up $F(1, 104) = -9.90$, $p < .01$. There was no time by group interaction at any follow-up. Across groups, there was a significant decrease in DERS-16 score at each follow-up compared to baseline, with the mean difference at 24-week follow-up versus baseline being 13.2 (95% CI [9.86, 16.54], $d = 1.11$) (Table 3).

TABLE 3 Adjusted marginal estimates of the primary and secondary outcomes by treatment condition and time points for mixed effects repeated measures models, using multiply imputed data.

Variables	Follow-up	Adjusted estimates	95% CI	Adjusted estimates	95% CI
		8-week DBT program		16-week DBT program	
DERS-16 total	8-week	55.20	(50.80, 59.70)	54.90	(50.70, 59.20)
	16-week	53.70	(49.40, 58.00)	50.20	(46.10, 54.30)
	24-week	53.30	(48.90, 57.70)	49.00	(43.60, 54.50)
IPDE (BPD subscale)	8-week	3.47	(3.01, 3.93)	3.01	(2.58, 3.43)
	16-week	3.32	(2.84, 3.79)	2.86	(2.43, 3.28)
	24-week	3.17	(2.70, 3.63)	2.64	(2.15, 3.13)
Task focused coping	8-week	45.10	(40.80, 49.40)	48.60	(44.50, 52.70)
	16-week	44.20	(40.00, 48.50)	47.80	(43.50, 52.20)
	24-week	43.10	(38.80, 47.50)	49.50	(45.20, 53.70)
Emotion focused coping	8-week	52.40	(48.50, 56.30)	54.00	(50.20, 57.90)
	16-week	52.40	(48.30, 56.40)	52.20	(48.10, 56.40)
	24-week	51.40	(47.20, 55.70)	48.60	(44.30, 53.00)
Suicidality (MINI-SS)	8-week	14.30	(11.27, 17.30)	13.70	(10.53, 17.00)
	16-week	15.10	(12.01, 18.20)	14.80	(11.94, 17.70)
	24-week	13.50	(10.57, 16.50)	12.50	(9.58, 15.50)
DASS-21 depression	8-week	25.70	(22.40, 29.00)	23.90	(20.60, 27.20)
	16-week	26.40	(23.10, 29.60)	24.40	(21.20, 27.50)
	24-week	24.50	(21.00, 28.00)	22.90	(19.40, 26.30)
DASS-21 anxiety	8-week	23.90	(20.40, 27.40)	22.30	(18.80, 25.70)
	16-week	24.80	(21.30, 28.30)	23.50	(20.20, 26.70)
	24-week	24.10	(20.80, 27.50)	22.60	(19.30, 26.00)
DASS-21 stress	8-week	24.70	(21.60, 27.90)	23.30	(20.20, 26.40)
	16-week	21.60	(18.40, 24.70)	21.20	(18.10, 24.30)
	24-week	20.00	(16.60, 23.30)	18.70	(15.30, 22.00)

Abbreviations: BPD, borderline personality disorder; DASS-21, depression, anxiety and stress 21-item scale; DERS-16, Difficulties with Emotion Regulation Scale 16-item measure; IPDE, international personality disorders examination; MINI-SS, Mini International Neuropsychiatric Interview (M.I.N.I.) suicidality screen.

3.2.2 | BPD symptoms

Linear mixed models of the IPDE-SQ BPD score revealed an effect for time between baseline and the 8-week follow-up $F(1, 104) = -0.88$, $p < .01$, 16-week follow-up $F(1, 104) = -1.03$, $p < .01$, and 24-week follow-up, $F(1, 104) = -1.18$, $p < .01$. There was no time by group interaction at any follow-up. Across groups there was a significant decrease in IPDE-SQ BPD score at each follow-up compared to baseline, with the mean difference at 24-week follow-up being 1.9 (95% CI [1.56, 2.24], $d = 1.56$).

3.3 | Secondary outcomes

3.3.1 | Suicidality

Analysis of the M.I.N.I. score using linear mixed models revealed no significant effect for time, nor any time by group interaction at any follow-up. There was no significant decrease in M.I.N.I. score when comparing baseline to any follow-up timepoint.

3.3.2 | Coping

Linear mixed models of the CISS task-focused coping score revealed no effect for time at any follow-up, nor any time by group interaction at any follow-up. Analysis of the CISS emotion-focused coping score using linear mixed models revealed a significant effect for time, with significant differences between baseline and the 8-week follow-up $F(1, 104) = -7.18$, $p < .01$, 16-week follow-up $F(1, 104) = -7.23$, $p < .01$, and 24-week follow-up, $F(1, 104) = -8.16$, $p < .01$. There was no time by group interaction at any follow-up. Across groups, there was a decrease in CISS emotion-focused coping score at each follow-up compared to baseline, with the mean difference at the 24-week follow-up being 12.71 (95% CI [9.61, 15.81], $d = 1.15$).

3.3.3 | Depression, anxiety, stress

Linear mixed models of the DASS-21 anxiety scores revealed no significant effects for time at any follow-up, nor any time by group interaction. There was a significant improvement in depression scores when comparing baseline to the 24-week follow-up, $F(1, 104) = -3.74$, $p = .04$, but no time by group interactions. Linear mixed models of the Stress subscale revealed a significant effect for time between baseline and the 8-week follow-up, $F(1, 104) = -3.87$, $p = .03$, 16-week follow-up, $F(1, 104) = -7.03$, $p < .01$, and 24-week follow-up, $F(1, 104) = -8.64$, $p < .01$, but no time by group interaction at any follow-up. Across groups, there was an improvement in stress score observed from baseline to 24-week follow-up, with a mean difference of 8.95 (95% CI [6.52, 11.38], $d = 1.00$).

4 | DISCUSSION

This randomized implementation-effectiveness trial is one of the first studies to compare group-based DBT-skills training (8 weeks) with a more intensive program combining DBT-group skills training and individual therapy (16 weeks) in young people (16–25 year-old). Results supported hypothesis 1, showing that across groups, there were significant and sustained improvements over time on the primary outcome measures of emotion dysregulation and BPD symptoms, with large effect sizes at the 24-week follow-up. The effect size for emotion regulation ($d = 1.11$)

was significantly greater than that reported in the most comparable controlled studies on young adults, including Goodman et al. (2014) who reported the effect of DBT after 12 months ($d = 0.76$), and McMain et al. (2017) who report the effect of DBT skills training after 32 weeks ($d = 0.5$). These findings suggest that participants acquired skills related to emotion regulation and distress tolerance—a particular focus of the group sessions. Results also suggest that participants acquired coping skills with significant improvements in emotion-focused coping (CISS-SF) across both groups that were sustained at every follow-up. Significant improvements in depression levels were reported at the 24-week follow-up as well as improvements in stress levels at the 8-week follow-up and sustained at the 16 and 24-week follow-ups.

We did not find support for hypothesis 2, with no significant between-group differences observed for any primary or secondary outcome variables at any follow-up time point. Our results support previous findings that demonstrate the effectiveness of longer standard DBT programs targeting young people (Hunnicutt Hollenbaugh & Lenz, 2018; Kothgassner et al., 2021) in reducing BPD symptoms, as well as less resource-intensive brief group-based DBT-skills training (McMain et al., 2017; Soler et al., 2009). Moreover, both controlled studies that have investigated the effectiveness of group-based DBT-skills training as a stand-alone intervention for BPD in adult populations have found brief training (13–20 weeks) to be superior to control groups such as standard group therapy (Soler et al., 2009) and waitlists (McMain et al., 2017). Further, our results are similar to Mehlum et al. (2019) findings of long-term improvements across both groups of their RCT (19 weeks of DBT-A or enhanced usual care) for all outcomes except self-harm behavior (DBT-A group reported significantly better and sustained improvements).

The more resource-intensive 16-week DBT-informed program was not found to be more effective than the 8-week group-based DBT-skills training. Participants in both groups reported significant improvements in the primary outcomes of emotion dysregulation and BPD symptoms (among other positive psychological outcomes). However, this study was underpowered, and further research is needed to determine if the outcomes of DBT-informed interventions differ by the duration, and/or format of treatment.

4.1 | Clinical implications

This trial has widespread practical implications, providing further evidence for the effectiveness of DBT for reducing BPD symptoms and emotion dysregulation among young people. It is also one of a small number of studies to provide good evidence that a brief DBT group skills program can deliver similar outcomes to a more intensive DBT-informed program for this age group (16–25-year-old). Addressing this knowledge gap is particularly important given the differences in the clinical training and resources required to deliver these two DBT treatment modalities, and the popularity of delivering group-based DBT skills training in "real-world" clinical settings. Moreover, clinical settings for young people can have greater confidence in delivering the group-based DBT-skills training programs as a stand-alone intervention—providing an effective treatment while reducing waitlists and increasing reach. These findings support what is often the mode of treatment delivered in clinical settings already, given the practical and resource investments required for more intensive DBT programs, and support the use of a progressive stepped-care treatment approach.

The reductions in emotion dysregulation and BPD symptoms found among young people in both DBT treatment conditions provide evidence of treatment effects. However, the lack of a significant reduction in suicidality in either treatment group over time is concerning, with the average participant remaining at high risk (≥10) of suicidal ideation and behavior at 24 weeks follow-up. DBT has been found to reduce suicidal behaviors in young people with BPD across a range of therapeutic settings (Kothgassner et al., 2021). The reason for these discrepant findings is unclear and may indicate the trialed interventions were not effective in reducing suicide risk, or reflect the poor internal consistency of the MINI suicidality screen used. This finding highlights the need for clients with BPD symptoms to be regularly monitored for suicidality, and for additional support and/or more comprehensive DBT to be provided for those that are considered high-risk.

4.2 | Strengths and limitations

This study has several strengths. First, this study used a randomized hybrid type 1 effectiveness-implementation trial—a gold standard design for trials conducted in clinical settings (Hariton & Locascio, 2018). Second, the delivery of the trial was by trained clinicians who received regular supervision. However, the fidelity of the treatment delivery was not formally assessed apart from treatment checklists used in supervision. Third, conducting this trial in a "real-world" clinical setting increases the clinical relevance and translation potential of results. Fourth, we had low attrition, likely due to the programs being short (compared to standard DBT/DBT-A) and reimbursement for survey completion. Fifth, this study fills a critical gap in the literature given the limited methodologically rigorous studies on the effectiveness of short-term DBT group skills training for young people with emotion dysregulation and BPD symptoms (Valentine et al., 2015).

We also acknowledge the limitations of this trial. First, there is the risk of responder bias. However, online self-report surveys on mental health are less susceptible to responder bias than face-to-face surveys among young adult Australians (Klein et al., 2021). Second, we did not monitor and control for other individual or group treatment received by participants during the trial among the 8-week participants, nor the amount of DBT-skills phone coaching accessed by the 16-week group participants. Third, it was not possible to offer 24-h standard DBT coaching with the treating clinician as this was not available at the service. Fourth, we did not achieve our optimal sample size, leaving the study underpowered, and increasing the risk of type II error. The lack of differences between groups may be explained by a lack of true differences, or some effects might have been small and thus undetectable. Fifth, while the study used validated measures, the MINI suicidality scale and IPDE-SQ subscale had low levels of internal consistency in our sample. Findings on these measures need to be interpreted with caution. Sixth, the suicide risk management procedure was consistent across the conditions, and was not implemented unless risk was elevated. Elevated risk may have been easier to identify between follow-ups in the 16-week group given their access to individual therapy. Seventh, the clinical service where this study was conducted does not separate adolescents and young adults into different group programs, indicating differences in the developmental stages of these two age groups may have influenced results. Finally, this trial was not a double blinded RCT, as it was not possible to blind clinicians or participants to the treatment allocation. Although rigorous efforts were made to maintain blinding of the research team, no integrity tests regarding the success of blinding were performed. Further, given the difficulties experienced in recruiting participants within the trial timeframe, we did not include an inactive control condition (e.g., waitlist). As such, we cannot rule out the possibility that findings were due to nonspecific treatment effects. The identified limitations are common challenges of running RCTs of psychological therapies for adolescents with BPD/BPD features under "real-world" conditions (Jørgensen et al., 2021).

4.3 | Future directions

Future research could replicate this study, using an RCT design that includes an inactive control condition to more reliably determine the effectiveness and treatment effect sizes for these two DBT modalities. The mechanisms of change in this study should also be investigated to determine whether reductions in emotion dysregulation/BPD symptoms are related to changes in mindfulness, distress tolerance, or other specific skills trained in DBT. Future research is also required to determine which young people are most likely to benefit from brief versus more intensive DBT treatment programs to inform the development of stepped-care models of healthcare for BPD.

5 | CONCLUSION

We conducted an RCT to evaluate and compare the effectiveness of two DBT-informed interventions that aimed to improve emotion regulation skills and decrease BPD symptoms in young people. Our findings provide further evidence for the effectiveness of both DBT treatment modalities for young people. Findings

also support the use of a progressive stepped-care treatment approach to DBT, with the initial delivery of the 8-week group-based skills training increasing treatment access in low-resource clinical settings with waitlists.

ACKNOWLEDGMENTS

This project was funded by the Gold Coast Public Health Network and Lives Lived Well. The funding representatives were regularly informed of progress, however decisions about trial design were made by the independent research team. This trial was designed by the Lives Lived Well Research Group, based at University of Queensland, in Brisbane, Australia. The research team was responsible for maintaining methodological rigor, analysing and reporting results. Therapy was administered by DBT-trained clinicians at Headspace Southport. Clinicians were trained by Peter King. J. L. is supported by a University of Queensland and National Health and Medical Research Council (NHMRC) fellowships. L. H. is supported by a NHMRC Senior Research Fellowship. D. D. is supported by an ARC DECRA Fellowship. Funding bodies played no role in the decision to publish this research. The outcomes of this trial reflect the clinical outcomes of programs run by staff salaried by the funding representative, Lives Lived Well (LLW). Open access publishing facilitated by Griffith University, as part of the Wiley - Griffith University agreement via the Council of Australian University Librarians.

CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

ETHICS STATEMENT

This trial was approved by the Human Research Ethics Committee at the University of Queensland (#2018000419) and prospectively registered with the Australian and New Zealand Clinical Trials Registry (ACTRN12618001023246).

ORCID

Dominique de Andrade https://orcid.org/0000-0003-2674-5740

PEER REVIEW

The peer review history for this article is available at https://www.webofscience.com/api/gateway/wos/peer-review/10.1002/jclp.23725.

REFERENCES

American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV)* (5th ed.). American Psychiatric Press.

Bjureberg, J., Ljótsson, B., Tull, M. T., Hedman, E., Sahlin, H., Lundh, L. G., Bjärehed, J., DiLillo, D., Messman-Moore, T., Gumpert, C. H., & Gratz, K. L. (2016). Development and validation of a brief version of the difficulties in emotion regulation scale: The DERS-16. *Journal of Psychopathology and Behavioral Assessment*, *38*(2), 284–296. https://doi.org/10.1007/s10862-015-9514-x

Boutron, I., Altman, D. G., Moher, D., Schulz, K. F., Ravaud, P., & CONSORT NPT Group. (2017). CONSORT statement for randomized trials of nonpharmacologic treatments: A 2017 update and a consort extension for nonpharmacologic trial abstracts. *Annals of Internal Medicine*, *167*(1), 40–47. https://doi.org/10.7326/M17-0046

Cohan, S. L., Jang, K. L., & Stein, M. B. (2006). Confirmatory factor analysis of a short form of the Coping Inventory for Stressful Situations. *Journal of Clinical Psychology*, *62*(3), 273–283. https://doi.org/10.1002/jclp.20211

Endler, N. S., & Parker, J. D. A. (1999). Coping Inventory for Stressful Situations-Short Form (CISS-SF) [database record]. *APA PsycTests*. https://doi.org/10.1037/t67919-000

Goodman, M., Carpenter, D., Tang, C. Y., Goldstein, K. E., Avedon, J., Fernandez, N., Mascitelli, K. A., Blair, N. J., New, A. S., Triebwasser, J., Siever, L. J., & Hazlett, E. A. (2014). Dialectical behavior therapy alters emotion regulation and amygdala activity in patients with borderline personality disorder. *Journal of Psychiatric Research*, *57*(1), 108–116. https://doi.org/10.1016/j.jpsychires.2014.06.020

Hariton, E., & Locascio, J. J. (2018). Randomised controlled trials - the gold standard for effectiveness research: Study design: randomised controlled trials. *BJOG: An International Journal of Obstetrics and Gynaecology*, *125*(13), 1716. https://doi.org/10.1111/1471-0528.15199

Hunnicutt Hollenbaugh, K. M., & Lenz, A. S. (2018). Preliminary evidence for the effectiveness of dialectical behavior therapy for adolescents. *Journal of Counseling & Development*, *96*(2), 119–131. https://doi.org/10.1002/jcad.12186

Ibraheim, M., Kalpakci, A., & Sharp, C. (2017). The specificity of emotion dysregulation in adolescents with borderline personality disorder: Comparison with psychiatric and healthy controls. *Borderline Personality Disorder and Emotion Dysregulation*, *4*(1), 1. https://doi.org/10.1186/s40479-017-0052-x

Jakobsen, J. C., Gluud, C., Wetterslev, J., & Winkel, P. (2017). When and how should multiple imputation be used for handling missing data in randomised clinical trials—A practical guide with flowcharts. *BMC Medical Research Methodology*, *17*, 162. https://doi.org/10.1186/s12874-017-0442-1

Johnson, J. G., Cohen, P., Kasen, S., Skodol, A. E., & Oldham, J. M. (2008). Cumulative prevalence of personality disorders between adolescence and adulthood. *Acta Psychiatrica Scandinavica*, *118*(5), 410–413. https://doi.org/10.1111/j.1600-0447.2008.01231.x

Jørgensen, M. S., Storebø, O. J., Stoffers-Winterling, J. M., Faltinsen, E., Todorovac, A., & Simonsen, E. (2021). Psychological therapies for adolescents with borderline personality disorder (BPD) or BPD features—A systematic review of randomized clinical trials with meta-analysis and trial sequential analysis. *PLoS One*, *16*(1), e0245331.

Klein, J. W., Tyler-parker, G., & Bastian, B. (2021). Measuring psychological distress among Australians using an online survey. *Australian Journal of Psychology*, *72*(3), 276–282. https://doi.org/10.1111/ajpy.12283

Kothgassner, O. D., Goreis, A., Robinson, K., Huscsava, M. M., Schmahl, C., & Plener, P. L. (2021). Efficacy of dialectical behavior therapy for adolescent self-harm and suicidal ideation: A systematic review and meta-analysis. *Psychological Medicine*, *51*(7), 1057–1067. https://doi.org/10.1017/S0033291721001355

Kreidler, S. M., Muller, K. E., Grunwald, G. K., Ringham, B. M., Coker-Dukowitz, Z., Sakhadeo, U. R., Baron, A. E., & Glueck, D. H. (2013). GLIMMPSE: Online power computation for linear models with and without a baseline covariate. *Journal of Statistical Software*, *54*(10), 1–26. https://doi.org/10.18637/jss.v054.i10

Lewin, T. J., Slade, T., Andrews, G., Carr, V. J., & Hornabrook, C. W. (2005). Assessing personality disorders in a national mental health survey. *Social Psychiatry and Psychiatric Epidemiology*, *40*(2), 87–98. https://doi.org/10.1007/s00127-005-0878-1

Linehan, M. M. (1993). *Cognitive-behavioral treatment of borderline personality disorder*. Guilford Press.

Linehan, M. M. (2015). *DBT skills training manual* (2nd ed.). Guilford Press.

Linehan, M. M., Korslund, K. E., Harned, M. S., Gallop, R. J., Lungu, A., Neacsiu, A. D., McDavid, J., Comtois, K. A., & Murray-Gregory, A. M. (2015). Dialectical behavior therapy for high suicide risk in individuals with borderline personality disorder: A randomized clinical trial and component analysis. *JAMA Psychiatry*, *72*(5), 475–482. https://doi.org/10.1001/jamapsychiatry.2014.3039

Loranger, A. W., Janca, A., Sartorius, N., Loranger, A. W., Janca, A., & Sartorius, N, World Health Organization. (1997). *Assessment and diagnosis of personality disorders: The ICD-10 International Personality Disorder Examination (IPDE-SQ)*. Cambridge University.

Lovibond, P. F. (2014). *Depression Anxiety and Stress Scales (DASS)*. https://www2.psy.unsw.edu.au/groups/dass/

Lovibond, S. H., & Lovibond, P. F. (1995). *Manual for the depression anxiety stress scales* (2nd ed.). Psychology Foundation of Australia.

Lyng, J., Swales, M. A., Hastings, R. P., Millar, T., Duffy, D. J., & Booth, R. (2020). Standalone DBT group skills training versus standard (i.e. all modes) DBT for borderline personality disorder: A natural quasi-experiment in routine clinical practice. *Community Mental Health Journal*, *56*, 238–250. https://doi.org/10.1007/s10597-019-00485-7

McCauley, E., Berk, M. S., Asarnow, J. R., Adrian, M., Cohen, J., Korslund, K., Avina, C., Hughes, J., Harned, M., Gallop, R., & Linehan, M. M. (2018). Efficacy of dialectical behavior therapy for adolescents at high risk for suicide a randomized clinical trial. *JAMA Psychiatry*, *75*(8), 777–785. https://doi.org/10.1001/jamapsychiatry.2018.1109

McMain, S. F., Guimond, T., Barnhart, R., Habinski, L., & Streiner, D. L. (2017). A randomized trial of brief dialectical behaviour therapy skills training in suicidal patients suffering from borderline disorder. *Acta Psychiatrica Scandinavica*, *135*(2), 138–148. https://doi.org/10.1111/acps.12664

Mehlum, L., Ramleth, R. K., Tørmoen, A. J., Haga, E., Diep, L. M., Stanley, B. H., Miller, A. L., Larsson, B., Sund, A. M., & Grøholt, B. (2019). Long term effectiveness of dialectical behavior therapy versus enhanced usual care for adolescents with self-harming and suicidal behavior. *Journal of Child Psychology and Psychiatry*, *60*(10), 1112–1122. https://doi.org/10.1111/jcpp.13077

Pallant, J. (2011). *SPSS survival manual* (4th ed.). Allen & Unwin.

Pederson, L., & Pederson, C. S. (2017). *The expanded dialectical behavior therapy skills training manual: Practical DBT for self-help, and individual and group treatment settings* (2nd ed.). PESI Publishing & Media.

Rathus, J. H., & Miller, A. L. (2014). *DBT skills manual for adolescents*. Guilford Publications.

Roaldset, J. O., Linaker, O. M., & Bjørkly, S. (2012). Predictive validity of the MINI suicidal scale for self-harm in acute psychiatry: A prospective study of the first year after discharge. *Archives of Suicide Research*, *16*(4), 287–302.

Santamarina-Perez, P., Mendez, I., Singh, M. K., Berk, M., Picado, M., Font, E., Moreno, E., Martínez, E., Morer, A., Borràs, R., Cosi, A., & Romero, S. (2020). Adapted dialectical behavior therapy for adolescents with a high risk of suicide in a community clinic: A pragmatic randomized controlled tria. *Suicide and Life-Threatening Behavior*, *50*(3), 652–667. https://doi.org/10.1111/sltb.12612l

Sheehan, D. V., Lecrubier, Y., Sheehan, K. H., Amorim, P., Janavs, J., Weiller, E., Hergueta, T., Baker, R., & Dunbar, G. C. (1998). The Mini-International Neuropsychiatric Interview (M.I.N.I): The development and validation of a structured diagnostic psychiatric interview for DSM-IV and ICD-10. *The Journal of Clinical Psychiatry*, *59*(Suppl 20), 22–33.

Soler, J., Pascual, J. C., Tiana, T., Cebrià, A., Barrachina, J., Campins, M. J., Gich, I., Alvarez, E., & Pérez, V. (2009). Dialectical behaviour therapy skills training compared to standard group therapy in borderline personality disorder: A 3-month randomised controlled clinical trial. *Behaviour Research and Therapy*, *47*(5), 353–358. https://doi.org/10.1016/j.brat.2009.01.013

Valentine, S. E., Bankoff, S. M., Poulin, R. M., Reidler, E. B., & Pantalone, D. W. (2015). The use of dialectical behavior therapy skills training as stand-alone treatment: A systematic review of the treatment outcome literature. *Journal of Clinical Psychology*, *71*(1), 1–20. https://doi.org/10.1002/jclp.22114

Zandee, M. E., & de Jong, K. (2018). The inter-rater reliability of the MINI-Plus. *Tijdschrift voor psychiatrie*, *60*(10), 693–698.

SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

How to cite this article: de Andrade, D., Davidson, L., Robertson, C., Williams, P., Leung, J., Walter, Z., Allan, J., & Hides, L. (2024). Randomized effectiveness-implementation trial of dialectical behavior therapy interventions for young people with borderline personality disorder symptoms. *Journal of Clinical Psychology*, *80*, 2117–2133. https://doi.org/10.1002/jclp.23725