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Standalone DBT Group Skills Training Versus Standard (i.e. All Modes) DBT for Borderline Personality Disorder

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Standalone DBT group skills training vs standard (i.e. all modes) DBT for borderline personality disorder: A natural quasi-experiment in routine clinical practice

Abstract

We describe a naturally occurring, real-world comparison of outcomes following six months in standalone DBT skills training group for adults with Borderline Personality Disorder (BPD) without recent suicidal or severe self-harming behaviours and standard (all modes) DBT for BPD, regardless of recent risk-related behaviours. 34 patients chose standalone skills over waiting for standard DBT and 54 were offered standard DBT. Dropout was higher for standalone skills than standard DBT (38.2% vs 16.7%). No statistically or clinically significant differences were found among completers between conditions on borderline symptoms, general psychopathology, and suicide ideation. There was a moderate effect for standalone skills on hopelessness and emotion regulation difficulties which may have reflected non-equivalence of treatment groups. Significant methodological factors limit generalisability of findings which offer support for feasibility of standalone DBT skills as an effective alternative to waitlist for standard DBT for at least some patients with BPD in the community.

Keywords: *DBT, Dialectical Behaviour Therapy, standalone skills training group, skills-only, borderline personality disorder*

Introduction

Not all people who could benefit from psychological therapy receive it (Dezetter, Briffault, Lakhdar, & Kovess-Masfety, 2013; Kazdin, 2015). Resources are frequently limited and demand for psychotherapy is high (Hadjipavlou, Sierra Hernandez, & Ogrodniczuk, 2015; Hamm et al., 2015). Community-based psychological treatment for borderline personality disorder (BPD) is no exception. BPD is a prevalent, serious condition associated with severe and enduring functional impairment and a lifetime suicide rate of 10% (Kjaer, Biskin, Vestergaard, Gustafsson, & Munk-Jorgensen, 2016; Zanarini et al., 2007; Grant et al., 2008). Despite clear evidence for the effectiveness of standard Dialectical Behaviour Therapy (DBT: Linehan, 1993, 2015) for BPD (Miga, Neacsiu, Lungu, Heard, & Dimeff, 2019; Stoffers et al., 2012), insufficient standard DBT is available in the community relative to clinical need (Carmel, Rose, & Fruzetti, 2014; Richter, Steinacher, zum Eschenhoff & Bermpohl, 2016). This is the case despite the clear economic and healthcare costs of untreated BDP (Krawitz & Miga, 2019), in addition to personal human suffering (Van Gelder, 2010).

The challenge of disseminating standard DBT for BPD into the community (i.e. the 'real-world' of routine clinical practice) might be exacerbated by some of the defining characteristics of DBT. Standard DBT places a greater-than-usual burden on resources due to requiring the delivery of several parallel modes of treatment (Brodsky & Stanley, 2013). These involve weekly individual therapy (one hour), group skills training (two and a half hours), therapist team consultation meetings (sometimes one, ideally two, hours), and between-session coaching as needed (Swales & Heard, 2017; Rizvi, Steffel, & Carson-Wong, 2013). This comprehensive framework of standard (i.e. all modes) DBT may be seen as outside the capacity of many settings in the "real-world" when resources are limited (Swenson, Torrey, & Koerner, 2002).

One widespread response by services in the community to the perceived cost and complexity of DBT for BPD has been to offer standalone DBT skills training groups without the other DBT treatment modes (McMain, Guimond. Barnhart, Habinski & Streiner, 2016). The introduction of standalone DBT skills training groups for BPD unfolded haphazardly, with little empirical support or uniformity (Cowperthwait, Wyatt, Fang & Neacsiu, 2019; Valentine, Bankoff, Poulin, Reidler & Pantalone, 2015), yet research has belatedly caught up and several recent studies have reported encouraging findings. An independent pair of programme evaluations of standalone DBT group skills training for BPD noted improvements over the duration of treatment (Blackford & Love, 2011; Vickers, 2016). These studies pointed to the viability of standalone DBT skills training for BPD as an intervention, although they were carried out without comparison conditions thus greatly limiting conclusions that could be drawn. However, three independent randomised controlled trials found standalone

DBT group skills training to be more effective than treatment-as-usual for borderline personality disorder (McMain, Guimond, Barnhart, & Steiner, 2016; Soler et al., 2009) or deliberate self-harm (Gibson, Booth, Davenport, Keogh & Owens, 2014). Against their own expectations, in a dismantling trial carried out by treatment developer Marsha Linehan and her team, few differences were found in the effectiveness of standalone DBT skills training group compared to standard DBT (Linehan et al., 2015). However, the putative skills training condition in Linehan et al. (2015) also offered individual case management by a clinician. This consisted of on-demand individual sessions with a non-DBT case worker also trained in the same risk assessment protocol used by therapists in standard DBT. On average, 19 individual case management sessions (range 10.5 to 34.5 sessions) were accessed by participants in the standalone skills training condition over one year of treatment (Linehan et al., 2015, p. 480; See Table 1. below, for a summary of findings on standalone DBT skills training groups for BPD.)

(Insert Table 1. about here)

Despite the increased availability of studies on standalone DBT skills training for BPD, to the best of our knowledge no published data is available from community settings on how outcomes for standalone DBT group skills training for with BPD compare to outcomes for the full, standard DBT treatment package. Standalone DBT skills training groups for BPD may be especially attractive in real world settings since it needs less resources than standard DBT due to dropping the individual therapy mode of treatment. By way of illustration, the delivery of standalone DBT skills training group for ten patients over one week requires a total of five hours of direct clinical contact (two therapists as skills trainers x 2.5 hour skills group) in addition to weekly therapist team consultation meetings. In contrast, standard DBT for ten patients over one week requires a total of 15 hours of planned direct clinical contact (two therapists as skills trainers x 2.5 hour skills group plus ten hour-long individual therapist slots), in addition to weekly therapist consultation meetings and between-session coaching. At the same time, it is also very possible that that there are certain levels of clinical risk among patients in the form of ongoing suicidal and self-harming behaviours where a standalone group may not be appropriate. Indeed this was the explicit rationale behind Linehan et al.'s (2015) decision to include an individual case management provision in their skills group condition, which as noted above, was utilised extensively by patients.

In our study we describe a naturally occurring opportunity in the community to explore standalone DBT group skills training for adults with BPD as an alternative to standard DBT. This opportunity arose during the course of conducting a five-year, multi-site, real-world evaluation of clinical outcomes for standard DBT

among adults with a diagnosis of BPD. Towards the latter part of the lifespan of this project two of the

participating DBT teams at independent sites decided to pilot standalone DBT group skills training for BPD,

while also continuing to offer standard DBT. Encouraged by Linehan et al.'s (2015) then-recently published

findings above, both DBT teams introduced the option of standalone skills training for patients as a pragmatic

response to year-long waiting lists which had accrued due to the limited supply of DBT therapists and high

demand for DBT. Nonetheless, as a new treatment both DBT teams took a cautious approach to patient

recruitment and unlike their standard DBT programmes excluded patients from standalone skills with higher

recent risk profiles (i.e. either a suicide attempt and/or deliberate self-harm that had required treatment by a

physician in the previous six months). At the time the teams rolled out their standalone DBT skills programmes,

McMain et al. (2016) had not yet published their findings on standalone DBT skills for suicidal patients with

BPD which found this treatment modification was both effective and safe, even for high-risk patients. Also

contributing to caution was the inability of the DBT teams involved in our study to provide individual case

managers in their standalone DBT skills training due to limited resources, in contrast to Linehan et al. (2015).

The absence of dedicated case managers may more accurately reflect community practice realities where

services may struggle to provide access to case workers, and indeed it may be the lack of such resources which

leads to a paired-back standalone group adaptation of DBT being offered in the first place.

All of the service developments described above independently to our research. We aimed to explore

this clinically relevant natural quasi-experiment and take advantage of the resulting treatment conditions by

investigating outcomes for adults with BPD and lower-risk profiles in standalone DBT group skills training

compared to outcomes for adults with BPD in standard DBT where risk-profile had not served as an exclusion

from treatment. This would be the first such study to be reported from a real-world setting. Based on the

findings of Linehan et al (2015) we did not expect to find differences in outcomes across treatment conditions.

Methods

Design

A non-equivalent, naturally occurring quasi-experimental design was used which compared outcomes after six months following either a standalone DBT skills training group or standard (i.e. all modes) DBT.

The main inclusion criterion for patients who participated in the study was an existing diagnosis of BPD (DSM-IV-TR: APA, 2000) or the equivalent diagnosis of emotionally unstable personality disorder (Lai, Leung, You, & Cheung, 2012; WHO, 1992), typically by a treating psychiatrist in the community. Since our study was an opportunistic evaluation of community-based interventions rather than a trial where we had control in selecting the parameters of patient characteristics to be offered treatment, the exclusion criteria are those set by the DBT teams for recruitment into their programmes. Firstly, patients with an enduring psychotic disorder or primary (i.e. main reason for seeking treatment) alcohol or substance-abuse disorder were excluded from being offered any services whatsoever by the DBT teams, despite this not featuring as an exclusion-criteria in multiple DBT trials (Miga et al., 2019). In addition, the standalone DBT skills training group condition also excluded patients who had either made a suicide attempt in the previous six months and/or who had ongoing medically serious self-harm, defined as self-harm behaviours which required treatment by a physician in the previous six months. Lastly, patients were excluded from being offered a place on standalone DBT skills training group if they were concurrently attending weekly counselling due to concerns by the teams that different models of therapy could be confusing for patients.

Recruitment, settings and treatment allocation

As noted, the study was carried out at two separate DBT teams based at independent adult mental health services. All patients accepted for treatment by each DBT team were approached to participate in the study. This was carried out by the clinician responsible for the pre-treatment who was trained by the first author to verbally describe the purpose of the research (i.e. gathering information on outcomes for DBT and DBT-informed treatments in the community) and who subsequently shared a Letter of Information approved by the relevant research ethics boards. Each patient was given one week to consider their participation and was followed up by the same clinician as previously, who sought their decision, answered any further questions about the project, and obtained written informed consent. All patients were informed verbally and in writing that treatment decisions were made independently of the research project and their participation, or otherwise, in the research in no way determined or prejudiced what treatment options would be made available by the team. 91% of patients consented to participate in the project. Participants were informed they could withdraw from

the study at any time with no effect on treatment availability. One patient subsequently withdrew from the study in their 9th month of treatment and their data have been excluded from the analyses reported here. No payment was available for involvement in the study.

The first DBT team, Team A, was based in XXXX (information removed for blind review), covering a mixed rural and urban catchment and the second DBT team, Team B, was based in XXXX (information removed for blind review) covering an urban catchment. Data collection for patients in the standard DBT condition commenced between March 2012 and finished in September 2016 where all new patients accepted by both DBT teams were offered standard DBT, the sole treatment option available from each team during that time. Data collection for the standalone DBT skills training group began in May 2015 for Team A and February 2016 for Team B, the dates when standalone skills were introduced at each location and was also completed in September 2016.

In terms of treatment allocation, prior to the introduction of standalone skills patients at each site had only been offered standard DBT. Following the introduction of standalone skills, patients were offered the choice of immediate access to standalone skills group or continue on a lengthy waiting list for standard DBT. Patients were made aware that choosing the standalone DBT skills training group condition would result in surrendering their position on the waiting list for standard DBT and to receive standard DBT in the future they would need to seek re-referral to the DBT team. Due to the long length of waiting times for standard DBT, no patients who elected to wait for standard DBT following the introduction of standalone skills were included in the study as data collection had closed before the completion of their treatment. Of 47 patients offered the choice between standalone skills now or standard DBT later across the two sites, 36 opted for standalone skills, two of whom did not consent to participate in the study.

Participants

In total, there were 88 participants, 83% (73) were women and 17% (15) were men with an average age of 33.32 years ranging from 18 to 59 years. 54 participants received treatment in the standard DBT condition (37 from Team A, 17 from Team B). 34 participants received treatment in the standalone DBT skills training group condition (23 from Team A, 11 from Team B). See Table 2 for a summary of demographic and clinical characteristics of participants who started treatment by condition.

Treatment conditions

Standard DBT. The standard DBT condition offered up to four individual pre-treatment sessions as per Linehan's (1993) protocol, which were conducted by the future individual DBT therapist. Once treatment

commenced, standard DBT involved one hour of weekly individual DBT therapy, 2.5 hours of weekly skills training with two skills trainers, weekly therapist consultation meetings, and between-session telephone coaching as needed. The skills training curriculum used in the standard DBT was "Schedule 1: 24 Weeks, Linehan Standard Adult DBT Skills Training Schedule" (Linehan, 2015, pp. 110-111). The standard DBT condition was delivered as an open, rolling, programme where recruitment of new patients occurred on a continuing basis who could enter the skills training mode of treatment at the beginning of any new module every two months (space permitting) as other patients completed the programme. Consequently, the skills training mode of standard DBT had changing group membership over the course of each patient's treatment. The skills trainers also rotated over the period of treatment, usually delivering one or two modules before rotating. An average of three new group members joined the skills training mode of the standard DBT condition every two months over the course of the study where total group composition at any one time was between a minimum of eight and maximum of ten patients.

       Standalone DBT skills training group. Similar to other studies of standalone DBT skills training group for BPD (Linehan et al., 2015; McMain et al., 2016) each prospective patient for standalone DBT skills training group was provided initially with one individual pre-treatment meeting carried out by one of the skills trainers. Once treatment subsequently commenced the standalone DBT skills training group condition involved two modes of DBT: 2.5 hours of weekly skills training group and weekly therapist team consultation. The same 24-week curriculum was used as for standard DBT (see above). Unlike the standard DBT condition, the DBT skills training group condition was offered as a closed programme. This was a decision made by the treating teams due to the pilot nature of standalone skills which were being offered on a discrete basis until appropriate evaluation had been completed. This differs from both Linehan et al (2015) and McMain et al (2016) who delivered standalone skills on an open basis with new patients entering at the beginning of each module. Patients who dropped out of treatment were not replaced by new group members, and the skills trainers did not rotate. Total group composition for the standalone skills condition at the start of each treatment cohort was between a minimum of 11 and a maximum of 12 patients. The standalone DBT skills training group condition made a sole modification(s) to skills training compared to how skills training was carried out in standard DBT condition. Participants were taught to carry out their own behavioural and solution analysis in the 17th skills group session.

Therapists and treatment fidelity

In total, 12 therapists delivered treatment in the study, four from Team A and eight from Team B, consisting of five psychologists, two social workers, and five mental health nurses. Each therapist had completed no less than ten days Intensive^{TM} training in DBT delivered by a Linehan Institute International Affiliate. All 12 therapists delivered the standard DBT condition of the study. All but two of the therapists had at least four years post-qualification experience working in community mental health services, which included the treatment of BPD, in addition to a minimum of one year's experience in delivering DBT at the onset of the study. The standalone DBT skills training group was delivered by a subset of therapists, two from Team A (a psychologist and a nurse) and two from Team B (a psychologist and a social worker). Formal rating of fidelity to the treatment model was not carried out due to logistical and financial constraints. However, all therapists attended weekly DBT peer-consultation meetings which were intended to promote treatment fidelity through peer-monitoring and encouragement (Linehan, 1993). Monthly evaluation and feedback was also provided by the first author who is an accredited DBT therapist with the Linehan Institute affiliated UK and Irish Society for DBT and also an approved DBT trainer with (XXXXX information removed for blind review), a licensed Linehan Institute International Affiliate. It should be noted that due to the later introduction of the standalone DBT skills training condition in the study the therapists in the standalone skills condition had accumulated more experience in delivering DBT than they had for those participants who enrolled in the earlier years of the standard DBT condition.

Self-report measures and dropout

　　Borderline symptom severity. Borderline Symptom List 23 (BSL23; Bohus et al., 2009) is a 23 item, self-rating assessment of borderline symptom severity with high internal consistency ($\alpha = .94 - .97$) and satisfactory test-retest reliability reported by the test developers.

　　General psychopathology. Global Severity Index (GSI) on the 90 item Symptom Checklist-90-Revised (SCL-90-R; Derogatis, 1994) has been reported by the test developer as the best indicator of current distress on the SCL-90-R with high internal consistency ($\alpha = .93$; Prinz et al., 2013) and satisfactory test-retest reliability (Horowitz, Rosenberg, Baer, Ureno, & Villasenor, 1988).

　　Hopelessness. Beck Hopelessness Scale (BHS; Beck, Weissman, Lester, & Trexler, 1974) is a 20-item scale with internal consistency ($\alpha = .83 - .93$; Dozois & Covin, 2004) and satisfactory test-retest coefficients (Beck & Steer, 1988).

Suicide ideation. Beck Scale for Suicide Ideation (SSI; Beck & Steer, 1991) is a 21 item questionnaire with high internal reliability (α = . 87 - .97) and moderate test-retest reliability (Beck, Steer & Ranieri, 1988).

Difficulties in emotion regulation. The Difficulties in Emotion Regulation Scale: Summary Score (DERS: Summary; Gratz & Roemer, 2004) consists of 36 items and has adequate internal consistency (α = .93) and test-retest reliability (Gratz & Roemer, 2004). DERS was introduced as an amendment to the research protocol after the collection of data had begun. Baseline data on DERS were available on 21 completers of standard DBT and all 21 completers of standalone DBT skills training.

Dropout. Dropout was recorded when patients were prematurely discharged from treatment by their DBT team after missing either skills training group or individual DBT therapy for four weeks in a row for the standard DBT condition or skills training group for four weeks in a row for the standalone DBT skills training condition , consistent with the four miss rule' in DBT (Linehan, 1993). We did not have ethical approval to collect further data once patients had been discharged.

Classification of outcome

We classified outcomes in two ways. The first used pre-post-treatment scores on outcome measures. The second was whether a patient achieved individual change on each self-report measure using Jacobson and Truax's (1991) reliable change index, calculated with software developed by Morley and Dowzer (2014). The index is based on changes between baseline and post-treatment on each measure, instrument reliability, and clinical and nonclinical distributions on the measure. Patients were categorised as 'no change', 'deteriorated', 'improved', or 'recovered'. No change is defined as individual change between baseline and post-treatment on the measure of less than ±1.96 standard deviations from the sample baseline mean score adjusted for measurement error. Deterioration or improvement (i.e. negative or positive reliable change) is defined as individual change between baseline and post-treatment equal or exceeding ±1.96 standard deviations from the sample mean score adjusted for error. Recovery (i.e. clinically significant change) is defined as the presence of positive reliable change plus a post-treatment score closer to the mean of healthy controls than the clinical population. The original validation studies carried out on these measures were used for establishing normative data for each of the measures in addition to data on adults with BPD where available. The deteriorated or improved indices, recovery cut-offs, and sources of normative data were as follows: BSL23 (deteriorated or improved = ± .38, recovery ≤ .72; Bohus et al., 2009); SCL-90-R: GSI (deteriorated or improved = ± .49, recovery ≤ .69; Derogatis, 1994; Schulz et al., 2008); BHS (deteriorated or improved = ± 3.84, recovery ≤ 6.64; Beck & Steer, 1988; Verardi, Nicastro, McQuillan, Keizer, & Rossier, 2008; Greene, 1981); SSI (deteriorated or

improved = ± 8.39, recovery ≤ 1.55; Beck, Kovacs & Weissman, 1979; Beck, Steer, & Brown, 1997); DERS:

Summary (deteriorated or improved = ± 15,73, recovery ≤ 102.24; Gratz et al., 2004; Wilks et al., 2016;

Ritschel, Tone, Schoemann, & Lim, 2015).

Data analysis

Statistical analysis of the data was completed using SPSS version 22.0 (IBM Corp, 2013). Due to the relatively

low numbers in each condition, missing data was handled using listwise deletion. Where missing data was

observed in a case at any timepoint, it was removed from the analysis. Post-treatment data were available for

completers only and final numbers for the analysis included 45 in the standard DBT condition and 21 in the

standalone DBT skills training condition. An exception to this was DERS. As noted above, later inclusion of

DERS in the study meant final numbers for analyses using DERS were 21 for standard DBT and 21 for

standalone skills. Two levels of analysis were conducted. First, a series of one-way between-group analyses of

covariance (ANCOVA) were carried out to compare each of the self-report outcome scores (BSL23, SCL-90-R:

GSI, BHS, SSI, and DERS: Summary) following six months of treatment across conditions among completers.

Patients' baseline scores on the relevant measure were used as the first covariate in each analysis and treatment

team (Team A or B) was included as a second covariate. Although baseline differences had been found between

conditions on variables relating to prior suicide attempts and use of ED for self-injury (see above), these were

not introduced as additional covariates because they were a defining feature of the exclusion criteria for the

standalone DBT skills training group condition. Second, a series of chi-squared tests (with Yates Correction)

and Fisher's exact tests were carried out to compare the proportion of treatment completers who were either

improved or recovered using Jacobson and Truax's (1991) criteria by treatment condition on each self-report

measure. In addition, dropout by condition was compared using a chi-squared test.

Procedure

Baseline demographic and clinical characteristics were recorded by the clinician who carried out the initial

assessment once consent to participate in the study was obtained. The battery of questionnaires was

administered in a one-to-one single sitting on the first week of treatment in both treatment conditions by either

the individual DBT therapist for the standard DBT condition or by one of the skills trainers for the standalone

DBT skills training condition. Six months later, the battery of questionnaires was repeated under the same

conditions as previously for all treatment completers in both conditions. Ethical approval for the project was

granted by XXXX and XXXX (information removed for blind review), with institutional research ethics and

governance approval from XXXX (information removed for blind review). The authors have abided by the

ethical principles of psychologists and code of conduct as set out by the APA https://www.apa.org/ethics/codes/

Results

Baseline demographic and clinical characteristics

89.4% of the sample had a score of at least 2.00 on the Borderline Symptom List (BSL23: Bohus et al., 2009;

see below) and 39.8% of the sample had a score of at least 3.00 on the BSL23, consistent with the presence of

BPD (Glenn, Weinberg, & Klonsky, 2009). Baseline demographic and clinical characteristics of treatment

starters by (condition (see Table 2) were compared using independent-sample t-tests for age and chi-square tests

(with Yates Continuity Correction) for all remaining categorical variables. No significant differences were

found on demographic and clinical characteristics between treatment conditions with the exception of a previous

suicide attempt, χ^2(1, n = 88) = 4.75, p = .03) and prior use of an emergency department (ED) for self-injury, χ^2

(1, n = 88) = 4.61, p = .03), both of which were more often true for participants in the standard DBT condition.

These differences were expected given the exclusion criteria for the standalone DBT skills groups.

(Insert Table 2 about here)

Dropout

38.2% (13) of patients in the standalone DBT skills training condition dropped out of treatment before six

months compared to 16.7% (9) in standard DBT. Dropout was significantly associated with treatment

condition, χ^2 (df = 1, n = 88) = 4.09, p = .04. Since analyses of treatment outcomes were only carried out on

treatment completers due to data availability, baseline demographic and clinical characteristics of treatment

completers and dropouts within each condition and across the combined sample were compared using

independent-sample t-tests for age and chi-square test for remaining variables (see Table 3). No significant

differences were found between treatment completers and dropouts within either treatment condition or across

the entire combined sample on any characteristic with the exception of prior history of use of an emergency

department (ED) for self-injury, χ^2 (1, n = 54) = 5.98, p = .01), which was more often true of treatment

completers in the standard DBT condition.

(Insert Table 3 about here)

Comparing self-report scores at six months by treatment condition

Checks were conducted to confirm there were no violations of the assumptions of normality, linearity,

homogeneity of variances, homogeneity of regression slopes, and reliable measurement of the covariates. All

assumptions were adequately met for each ANCOVA. The analyses found no difference among completers

between conditions following six months of treatment on borderline symptom severity using BSL23 scores,

general psychopathology using SCL-90-R: GSI scores, and suicide ideation using SSI scores after controlling

for covariates (Table 3). Hopelessness using BHS scores and difficulties in emotion regulation using DERS

Summary scores were significantly lower for completers at six months in the standalone DBT skills training

condition after adjusting for the covariates. Partial eta squared (η_p^2) indicated that treatment condition was

associated with a moderate effect size based on Cohen's (1988) criteria for both hopelessness (.09) and

difficulties in emotion regulation (.13)

(Insert Table 4 about here)

Comparing individual change at six months by treatment condition

Figure 1 summarises the proportion of completers by treatment condition who were individually classified as

deteriorated (negative reliable change), no change, improved (positive reliable change), and recovered

(clinically significant change) on each self-report outcome measure using Jacobson and Truax's (1991)

procedure. Rates of individual improvement following six months of treatment were compared by treatment

condition on each outcome measure using a series of chi-squared tests (with Yates Correction). A significant

association was found between individual improvement and treatment condition for difficulties in emotion

regulation, $\chi^2\,(1, n = 42) = 4.68, p = .03$, where the proportion of patients who improved was higher for the

standalone DBT skills training condition. No associations were found between improvement and treatment

condition for borderline symptoms, $\chi^2\,(1, n = 66) = .05, p = .82$; general psychopathology, $\chi^2\,(1, n = 66) = 1.08$,

$p = .30$; hopelessness, $\chi^2\,(1, n = 66) = 1.45, p = .23$, and suicide ideation, $\chi^2\,(1, n = 66) = .03, p = .86$.

Rates of individual recovery following six months of treatment were also compared by treatment

condition on each outcome measure. Chi-squared tests (with Yates Correction) were carried out on BHS and

DERS: Summary and a Fisher's exact test was carried out on SSI scores and there were no incidences of

recovery on borderline symptom severity and general psychopathology for either treatment condition. A

significant association was found between individual recovery and treatment condition for difficulties in

emotion regulation, $\chi^2(1, n = 42) = 3.73, p = .04$, where recovery was higher for the standalone DBT skills

training condition. No significant association between recovery and treatment condition was found for

hopelessness, $\chi^2(1, n = 66) = 2.01, p = .16$) and suicide ideation ($p = .32$).

(Insert Figure 1 about here)

Discussion

Our study, which took advantage of a naturally occurring quasi-experiment in two community outpatient clinic settings, is the first that we know of to compare outcomes for standalone DBT skills and standard (i.e. all treatment modes) DBT in the real world, albeit where the recruitment criteria for the standalone skills condition excluded higher risk patients, unlike the standard DBT condition. Dropout for standalone DBT skills group training was significantly higher than standard DBT. In an analysis of treatment completers only, we found no differences in outcomes across treatment conditions on borderline symptom severity, general psychopathology, and suicide ideation and found lower hopelessness and difficulties in emotion regulation in the standalone DBT skills condition.

These are interesting, tentative findings which point to the promise of standalone DBT skills group training for patients with BPD who have lower risk profiles, although careful and nuanced interpretation is needed. Treatment completion is a crucial variable in psychotherapy (Barrett et al., 2008; Wierzbicki & Pekarik, 1993). We noted a dropout rate of 38% for the standalone DBT skills training condition, comparable to Linehan et al. (2015; 40% dropout from standalone skills over one year) and McMain et al (2016; 31% dropout from standalone skills over six months). Dropout for our standard DBT condition was 17%, significantly lower than standalone skills. However, dropout in studies of standard DBT has varied, ranging from more than half of all patients who start treatment (Priebe et al., 2012) to 25% (Linehan et al., 2006) making it harder to interpret our findings on dropout. Nonetheless, our results raise questions about the suitability of standalone skills for a greater proportion of patients than standard DBT, even when only including those with a lower risk profile in standalone skills. It may be that the experience of attending a standalone skills training group is simply less appealing than standard DBT, possibly due to less personalised or tailored care. Higher attrition in standalone skills may also reflect the absence of 'dropout-blocking' practices of individual DBT therapy sessions, where each patient's motivation to remain in treatment is continuously monitored and addressed (Comtois et al., 2007). At the same time, for eligible, lower-risk patients who persisted with treatment, our findings are consistent with Linehan et al. (2015) where we report no post-treatment difference on several outcome measures across conditions despite the paired-back characteristics of standalone skills. These findings offer support for the feasibility of using standalone DBT skills training as an effective alternative to waitlist for standard DBT in a community mental health setting for at least some patients. More specifically, they may point to the value of a stepped-care model for delivering DBT in resource-deficient community services where standalone DBT skills

training could be offered to patients with BPD whom have less severe levels of high-risk behaviours and standard DBT might be reserved for those with more severe or high-risk behaviours.

One possible interpretation of our findings is that both standalone DBT skills group training and standard DBT share essential active ingredients. The development of new skills has always been framed as a central treatment target in DBT (Lynch, Chapman, Rosenthal, Kuo, & Linehan, 2006). Since DBT skills training is present in both conditions, our findings may reflect the potency of DBT skills, consistent with studies which have found that the use of DBT skills mediates reductions in self-harm among patients in DBT (Neacsiu, Rizvi & Linehan, 2010; Barnicot, Gonzalez, McCabe, & Priebe, 2016). Our finding of lower emotion regulation difficulties and hopelessness among completers of standalone skills was unexpected. Rather than reflecting a treatment advantage for standalone skills, this may be a consequence of the differences in inclusion criteria across conditions. We might speculate that patients in standard DBT prioritised reducing suicidality and self-harm, whereas those in the standalone skills condition with less recent suicidal behaviours or medically serious self-harm had more opportunity to foster hope and reduce emotion dysregulation .

Our findings have implications for service delivery. Standalone DBT skills training groups appear to be an attractive intervention for BPD in the real-world, both clinically justifiable as well as efficient since standalone skills is a less resource intensive intervention than standard DBT. There are nonetheless several crucial caveats to consider. First, the therapists who delivered the standalone DBT skills training group condition in our study were fully trained in standard DBT and had several years of experience in all modes of DBT. In addition, due to the sequence in which data was collected, the standalone skills condition benefitted from more experienced therapists than the earlier patients in the standard DBT condition. Therapist expertise has been shown to influence outcomes for psychological therapies (Wampold & Imel, 2015), including the treatment of personality disorders (Siqueland et al., 2000). Similar findings to those reported here may not be achieved by novice DBT therapists with experience in solely the skills training mode of DBT. Second, patients who engaged in the standalone DBT skills group training condition voluntarily opted for a group-only intervention, having been given the alternative option to wait for standard DBT at a later time. This may not correspond to situations where patients have no choice and are only offered standalone skills. Third, similar outcomes might not be preserved across further treatment in either condition beyond six months, an important consideration given that standard DBT is frequently offered for one year (Rizvi et al., 2013). We cannot discount a possible ceiling effect for standalone skills at six months, unlike standard DBT where continuing gains can be expected across a full year of treatment (Flynn et al., 2017).

The main strength of our study is that it addresses a clinically important question not previously reported in community-based research. There are several serious methodological difficulties which limit the generalisability of findings. Chief among these is the non-equivalence of patients across treatment conditions at two sites where different exclusion criteria were applied. As noted above, patients with recent suicidal or severe self-harming behaviours were excluded from standalone skills. There was also no random allocation to treatment condition. In addition, we only carried out a completers' rather than an intention-to-treat analysis of the data as we were unable to track patients who dropped out. This is problematic, as different rates of attrition across conditions potentially skewed the comparison of outcomes. There is also at least some indication of differences between completers and dropouts at baseline in the standard DBT condition. Furthermore, we relied exclusively on a single source of data, self-report measures. We included no independent assessment of BPD or any symptoms beyond the presence of a clinical diagnosis made previously by a clinician in the community. There were differences in how group was delivered across conditions. Standalone skills was delivered as a closed-group whereas the skills group component of standard DBT was offered in an open-group format, with patients joining at the beginning of each module, roughly every two months. Treatment adherence was only monitored through informal observation and supervision by the first author, a DBT expert, rather than with a formal measure of treatment fidelity due to the associated cost and logistics. There was also inconsistency in therapist levels of experience across conditions. Finally, it was not possible to evaluate the maintenance of post-treatment outcomes due to the challenges of collecting follow-up data in real-world research.

Future research might consider several areas. Factors which predict dropout from standalone DBT skills training groups need investigation and might address both patient and process variables. Additionally, controlled research is needed on the viability and cost-effectiveness of a stepped-care model of DBT where standalone skills could be triaged to lower-risk patients and standard DBT is reserved for higher-risk patients.

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Table 1. Studies reporting outcomes for standalone dialectical behaviour therapy (DBT) skills training groups

for borderline personality disorder (BPD) or deliberate-self harm

Authors	Year	Study Design	DBT Component	Main Findings
Soler et al.	2009	Randomised controlled trial: Modified DBT skills training vs Treatment as usual	13 weeks of 2 hours skills training group (partial curriculum)	DBT group had wide ranging mental health improvements compared with treatment as usual
Blackford & Love	2011	Pre-post design, no control	6 months of 1.5 hours weekly skills training group (full curriculum)	Improvement in depression
Gibson, Booth, Davenport, Keogh, & Owens	2014	Randomised controlled trial: DBT informed skills training vs Treatment as usual	Inpatient group programme offered three times per week (limited curriculum)	Greater reductions in self-harm and emotion dysregulation for DBT informed treatment
Linehan et al.	2015	Randomised controlled trial: Standard DBT vs. DBT skills training vs. Individual DBT Therapy Only	1 year of all modes of standard DBT vs 2.5 hours of weekly skills training group (full curriculum) plus case management vs. individual DBT therapy plus support group	Similar improvements in frequency and severity of suicide attempts, suicidal ideation, use of crisis services across conditions. Skills and standard DBT associated with greater reductions in self-harm.
Vickers	2016	Pre-post design, no control	6 months of weekly skills training (adapted curriculum)	Improvement in anxiety and depression
McMain, Guimond, Barnhart, Habinski & Steiner	2016	Randomised controlled trial: Standalone DBT skills training vs Treatment as usual	20 weeks of 2 hours skills training group (full curriculum)	Greater reductions in self-harm for DBT skills training

Table 2. Demographic and clinical characteristics of all participants who started treatment by condition. Data are given as a percentage (number) unless otherwise specified.

Variable	Standalone Skills Starters		Standard DBT Starters	
Demographic Characteristics	**(n = 34)**		**(n = 54)**	
Age, mean (SD)	33.50	(10.46)	33.20	(8.31)
Gender:				
Female	82.4%	(28)	83.3%	(45)
Male	17.6%	(6)	16.7%	(9)
Education:				
Second level only	79.4%	(27)	70.4%	(38)
Some post-second level	20.6%	(7)	29.6%	(16)
Accommodation:				
Permanent/rented/family	97.1%	(33)	98.1%	(53)
Homeless/sheltered	2.9%	(1)	1.9%	(1)
Employment:				
Employed/In education	29.4%	(10)	25.9%	(14)
Unemployed	70.6%	(24)	74.1%	(40)
Clinical Diagnoses Previously Made by Clinicians in the Community				
BPD	100%	(34)	100%	(54)
Eating disorder	29.4%	(10)	42.6%	(23)
PTSD	23.5%	(8)	35.2%	(19)
Secondary Addiction	29.4%	(10)	35.2%	(19)
History of High-Risk Behaviours				
Previous suicide attempt	67.6.%	(23)	88.9%	(48)
History of self-injury	76.5%	(26)	90.7%	(49)
Use of ED for self-injury	47.1%	(16)	72.2.8%	(39)
Mental Health Care				
Previous hospitalization	52.9%	(18)	63.0%	(34)
Previous therapy	82.4%	(28)	77.8%	(42)
Currently taking medication	91.2%	(31)	87.0%	(47)

Table 3. Demographic and clinical characteristics of participants who completed treatment by condition. Data are given as a percentage (number) unless otherwise specified.

Variable	Standalone Skills Completers		Standard DBT Completers	
Demographic Characteristics	**(n = 21)**		**(n = 45)**	
Age, mean (SD)	34.81	(11.59)	33.36	(8.91)
Gender:				
Female	85.7%	(18)	86.7%	(39)
Male	14.3%	(3)	13.3%	(6)
Education:				
Second level only	76.2%	(16)	71.1%	(32)
Some post-second level	23.8%	(5)	29.9%	(13)
Accommodation:				
Permanent/rented/family	95.3%	(20)	97.8%	(44)
Homeless/sheltered	4.7%	(1)	2.2%	(1)
Employment:				
Employed/In education	19.0%	(4)	22.2%	(10)
Unemployed	81.0%	(17)	77.8%	(35)
Clinical Diagnoses Previously Made by Clinicians in the Community				
BPD	100%	(21)	100%	(45)
Eating disorder	28.6%	(6)	42.6%	(23)
PTSD	19.0%	(4)	40.0%	(18)
Secondary Addiction	33.3%	(7)	37.0%	(17)
History of High-Risk Behaviours				
Previous suicide attempt	61.9.%	(13)	93.3%	(42)
History of self-injury	85.7%	(18)	95.6%	(43)
Use of ED for self-injury	42.9%	(9)	80.0%	(36)
Mental Health Care				
Previous hospitalisation	47.6%	(10)	66.7%	(30)
Previous therapy	90.0%	(19)	82.2%	(37)
Currently taking medication	90.0%	(19)	82.2%	(37)

Table 4. Series of one way between-group analyses of covariance comparing post-treatment scores on several measures among completers of six months of treatment with standalone DBT skills training group (n = 21) and standard DBT (n = 45)[a] after adjusting for baseline scores and treatment team as covariates. Partial

Measure	Means (standard deviation) at baseline				Means (standard deviation) at 6 months				Outcomes at 6 months after controlling for covariates		
	Standalone skills		Standard DBT		Standalone skills		Standard DBT				
	$\bar{x}$	S	$\bar{x}$	S	$\bar{x}$	S	$\bar{x}$	S	F	P	η_p^2
BSL23	2.68	.71	2.97	.54	2.05	.74	2.56	.72	3.47	.07	.05
SCL-90-R: GSI	2.49	.68	2.50	.68	1.77	.76	2.09	.73	3.28	.08	.05
BHS	11.52	4.76	13.44	5.38	8.00	5.51	11.91	4.93	6.06	.02	.09
SSI	12.81	10.06	16.47	8.52	9.00	9.34	13.09	8.72	.70	.41	.01
DERS: Summary	135.86	17.53	135.30	25.87	96.24	26.25	115.12	20.67	5.70	.02	.13

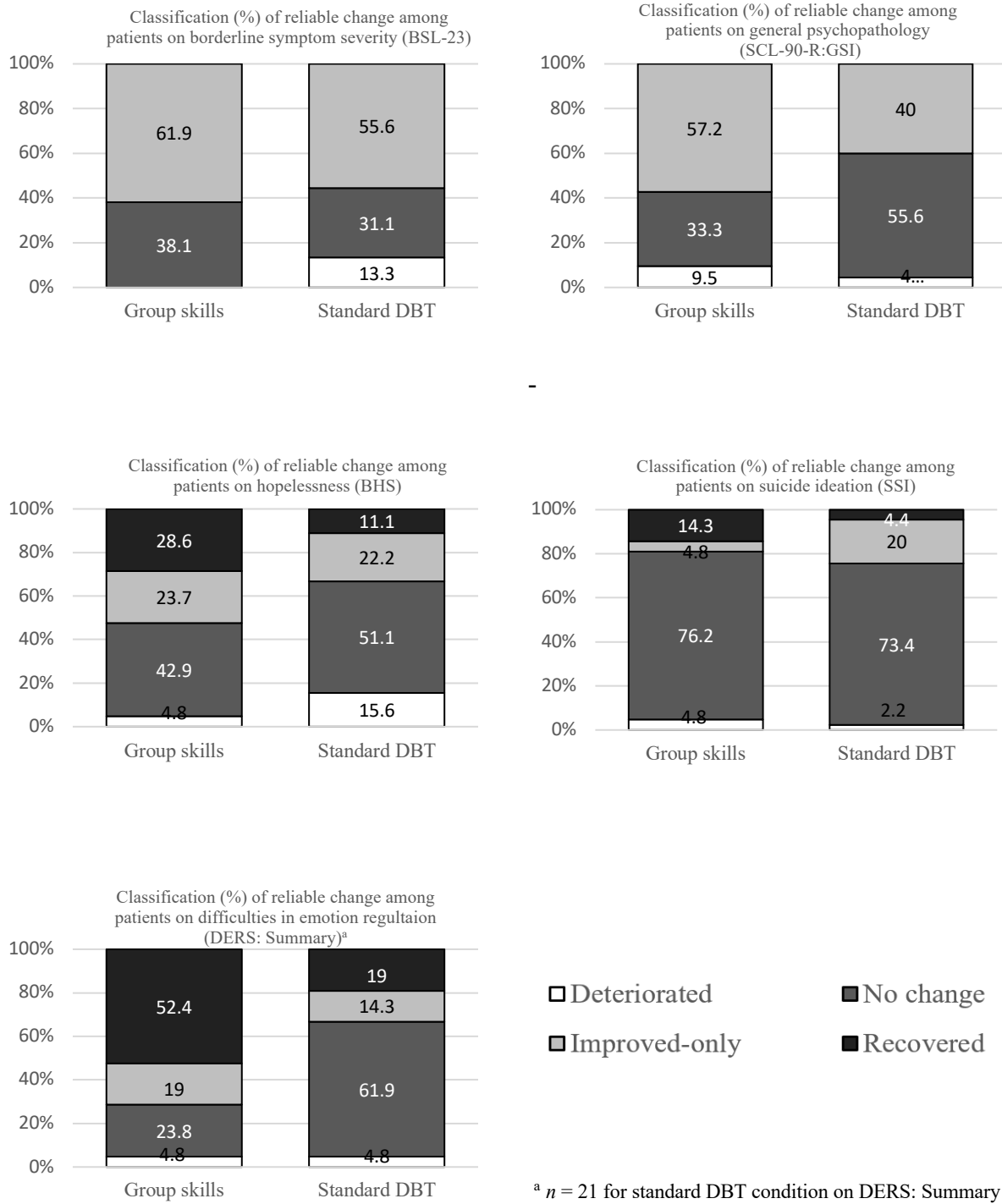[a]DERS: Summary scores are only available for 21 completers of standard DBT

Figure 1. *Classification of rates of individual reliable change using Jacobson and Truax's (1991) procedure on each self-report outcome measure among completers of six months of treatment by condition, standalone DBT skills training group (n = 21) and standard DBT (n = 45).*