

Dialectic Behaviour Therapy: A 12-Month Collaborative Program in a Local Community Setting

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This study focuses on examining the efficacy of dialectic behaviour therapy (DBT) on female clients who meet the criteria of borderline personality disorder (BPD) within a community setting. A clinical sample of 11 women with BPD was provided with a 6-month DBT program that was collaboratively developed and delivered by Logan Women's Health service and Logan Central Adult Mental Health. Results indicate that DBT is an effective treatment for parasuicidal behaviour and decreased the frequency of medically severe suicide attempts. In addition, the duration of telephone contact, face-to-face contact and number and duration of hospital admissions decreased during the DBT program. The participants' psychological, social and occupational functioning improved. Of significance, depression levels also decreased on completion of the program. Future studies would benefit from a larger sample and a control group. This study demonstrates that DBT is an effective treatment for BPD clients within an Australian community setting and has many clinical benefits.

Borderline personality disorder (BPD) is a serious mental disorder that is characterised by affective instability, impulsivity, fear of abandonment, patterns of unstable or intense interpersonal relationships, identity disturbance and recurrent suicidal behaviours (APA; American Psychiatric Association, 1994). The prevalence of BPD in the general population ranges from 0.7% in Norway to 1.8% in America (Swartz, Blazer, George, & Winfield, 1990; Torgerson, Kringlen, & Cramer, 2001). Australian prevalence rates have been identified as 1.8% of 19- to 55-year-olds (Krawitz & Watson, 2000). Widiger & Weissman (1991) found 70% to 77% of who met the diagnostic criteria for BPD were women. This diagnosis also carries a high mortality rate. Up to 10% of clients successfully commit suicide, which is a rate almost 50 times higher than in the general population (APA, 2001).

Clients with BPD represent up to 20% of the inpatient population and 10% of the outpatient population (Marshall & Serin, 1997; Swartz et al., 1990; Torgerson et al., 2001). In reviewing effective treatment of clients with a diagnosis of BPD, there is also growing evidence of high rates of comorbidity. Studies have found a link between BPD and Axis I disorders, such as bipolar affective disorder (Deltito et al., 2001; Henry et al., 2001). For instance, Grilo, Walker, Becker, Edell and McGlashan (1997) found that 86% of adolescents who meet the criteria for major depression and substance abuse also met the criteria for BPD. Of note is the rate

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of suicide for this population. Jacobs, Brewer and Klein-Benheim (1999) and Tanney (2000) found that suicide attempts increase dramatically in BPD clients with comorbid disorders of major depression and substance abuse. There is a growing need to provide effective treatment for the growing population of clients with BPD due to the high rate and cost of acute hospital admissions and lack of appropriate treatment options.

There is growing empirical support for dialectic behaviour therapy (DBT) as an efficacious treatment of BPD (Lieb, Zanarini, Schmahl, Linehan, & Bohus, 2004). DBT was developed by Marsha Linehan in the 1980s. DBT is a structured psychotherapy aimed at treating self-harm or suicide attempts, particularly in women with BPD (Swales, Heard, & Williams, 2000). DBT has drawn on cognitive behaviour therapy and Eastern meditative philosophy, with the focus on reducing life-threatening and suicidal behaviours, behaviours that interfere with treatment, maladaptive behaviours; and increasing coping skills (Linehan, Tutek, Heard, & Armstrong, 1994). These areas are addressed by the modules of core mindfulness, distress tolerance, interpersonal effectiveness and emotion regulation (Linehan, 1993a).

It is important to note that critical reviews of current DBT literature have identified limitations in many studies with small sample sizes, a lack of control groups and the fact that most of the research in this area has been led by Linehan's own research group (Koerner & Linehan, 2000; Scheel, 2000). Hence, the evidence for the efficacy of DBT published so far should be regarded as preliminary. Despite these limitations, there is still evidence that DBT is more effective than treatment as usual in a community setting (Swales et al., 2000; Verheul et al., 2003). In particular, DBT is effective in reducing self-harm, hospitalisations and high-risk behaviours, and improving social adjustment (Linehan, Heard & Armstrong, 1993; Linehan et al., 1994). There is, however, limited empirical evidence of the effectiveness of DBT within the Australian community setting. Cultural differences in the Australian clinical population when compared to the American clinical population may suggest that research findings can only be tentatively generalised to the Australian population at present.

Local recognition of the lack of an evidence-based therapeutic service available to women with a BPD diagnosis and the strain this caused on services has been identified. With this in mind, a collaborative DBT program was developed using the strengths and capacities from both the Logan Women's Health Service (LWHC) and Logan Central Adult Mental Health Service (LCAMH). The program broadly aimed to improve functioning of clients diagnosed with BPD, enhance service capacity to meet the needs of this target group and build a collaborative partnership model of service delivery.

This study focuses on examining the efficacy of DBT on female clients who meet the criteria of BPD within a community setting. The findings of the present study will assist in the generalisability of previous findings to provide a basis for future research in Australia.

We hypothesised that first, participants would have a reduction in the frequency and intensity of self-harming behaviours. Second, we hypothesised that the frequency and duration of inpatient admissions of participants would be reduced. Third, we hypothesised that the psychological wellbeing of participants would be improved.

Method

Participants

The completing 11 participants' mean age was 36.35 years ($SD = 7.42$, range = 23.1–47.2). Most were unemployed ($N = 8$, 73%) and were either single ($N = 4$, 36%) or in a married or de facto relationship ($N = 5$, 45%). Most participants had one comorbid Axis I diagnosis ($N = 7$, 64%). Three had two comorbid Axis I diagnoses and one had no Axis I diagnosis. The most frequent primary diagnoses were dysthymia ($N = 5$, 45%), major depressive disorder ($N = 2$, 18%), posttraumatic stress disorder ($N = 1$, 9%) and bipolar affective disorder ($N = 1$, 9%). Additional diagnoses included generalised anxiety disorder and dissociative identity disorder.

Procedure

Both LWHC and LCAMH provided clinicians to assume the role as either individual therapist or group facilitator within the skills based group. Individual therapy was delivered by 12 female therapists (5 psychologists, 2 occupational therapists, 2 counsellors, 1 clinical psychiatric nurse, and 1 social worker). Group treatment was delivered by two female therapists (a psychologist and a clinical psychiatric nurse in the 2003 program and two psychologists in the 2004 program). All therapists had undergone intensive training in DBT.

Eight places were available for each DBT group, with participants canvassed from the service current client load as well as from alternative community services and GPs in the local area. Flyers for the DBT program were given to all clinicians at both centres, with attached referral forms. Participants were required to meet the inclusion criteria, of the DSM-IV for borderline personality disorder (BPD) and be over 18 years of age. Due to the high female prevalence of BPD and the involvement of the LWHC, only females were assessed for inclusion. Exclusion criteria included people who did not meet the set diagnostic criteria, were experiencing a current psychotic episode and clients who were unable to commit to abstain from alcohol or illicit drugs 24 hours prior to the skills group or individual therapy. Clients who met the criteria were then offered an interview to determine suitability for the program. Four clinicians completed the interviews for each group. During the interview, clients were given a thorough explanation of the DBT program and expectations of them as a participant. All clients gave written consent to participate. Clients who were not offered a position in the DBT group were offered alternate support options in a post interview, via telephone (e.g., case management, alternate counselling options and were encouraged to apply for the next DBT program). Sixteen women were accepted into two DBT programs conducted in 2003 and 2004.

Treatment involved 24 sessions of weekly 60 to 90 minutes of individual psychotherapy and 24 sessions of weekly 150-minute group therapy (skills-based group). All participants were provided with a 'shadow therapist' to ensure continuity and increased access to support. Treatment was adapted from *Linehan's Skills Training Manual for Treating Borderline Personality Disorder* (Linehan, 1993b) and *Cognitive Behavioural Therapy of Borderline Personality Disorder* (Linehan, 1993a). Major adaptations to Linehan's DBT program included having a closed group involving only female participants, the provision of telephone support outside of clinic hours from the local hospital Extended Hours Service and a reduction in the duration of the program to 6 months due to service policy and resource constraints.

Changes were also made to incorporate language and cultural variations for the Australian context.

Clinician training and supervision was provided for both DBT programs. The 2003 DBT program supervision was held weekly for 1½ hours, and was facilitated internally by two senior clinicians from Logan Child and Youth Mental Health Service. For the 2004 DBT program, all clinicians attended fortnightly 2-hour supervision sessions with a clinician from Griffith University.

Measures

Principal service providers and participants conducted assessments at pretreatment and posttreatment. The principal service providers included psychiatrists, general practitioners, psychologists, case managers and counsellors at pretreatment and were the DBT individual therapists involved in the study at posttreatment. In five (45%) cases pre- and posttreatment measures were completed by the same clinician as the principal service provider.

Depression. Depression was measured by the widely used Beck Depression Inventory (BDI: Beck, Ward, Medelson, Mock, & Erbaugh, 1961), which had an observed Cronbach's α of 0.86.

Anger. The State-Trait Anger Expression Inventory-2 (STAXI-2: Spielberger, 1999) measures the experience, expression, and control of anger. The State-Anger and Trait-Anger scales of the STAXI-2 measured state anger and trait anger over time and situations, respectively. High scores on the Anger Expression-Out scale indicate higher frequency of expressing anger in aggressive behaviour toward other persons or objects in the environment. High scores on the Anger Expression-In scale indicate higher frequency of experiencing intense angry feelings, but suppressing these feelings. High scores on the Anger Control-Out scale indicate attempts to monitor and prevent the outward experience and expression of anger. Percentile scores over 75 indicate the experience, expression and/or control of angry feelings may interfere with optimal functioning.

Coping strategies. Coping strategies were assessed using the Coping Scale for Adults (Frydenberg & Lewis, 1997). Participants rated on a 5-point scale how often they used 18 distinctive coping strategies in general. In addition, a Not Cope scale measured the inability to cope and the occurrence of psychosomatic illness. Higher adjusted scores indicated higher use of a strategy. The four subscales derived by Frydenberg and Lewis (1997) were examined: the Dealing with the Problem subscale encompasses working hard and solving the problem with a social dimension, the Optimism subscale comprises focusing on the positive, the Sharing subscale comprises strategies which focus on sharing problems with others, while the Non-productive Coping subscale comprises a range of strategies associated with not coping. Cronbach's α values ranged from 0.91 for Nonproductive Coping to 0.77 for Optimism.

Interview schedule. A semistructured interview schedule was used to collect information from principal service providers on participants' biographies, and their usual level of occupational, household, academic, interpersonal, sexual and recreational functioning over a 6-month period.

Global functioning. The Global Assessment of Functioning (GAF: APA, 1994) scale is a report of a clinician's judgment of an individual's overall level of psychological, social and occupational functioning. The GAF scale is rated from 0 to 100 with higher levels indicating superior functioning. The participants' principal service provider for the preceding 6-month period rated the average and lowest GAF for clients over that period.

Parasuicidality and suicidality. Principal service providers were asked questions on the frequency, medical severity and intent of parasuicidal and suicidal behaviours of participants over the preceding 6 months including all threats, gestures and actions associated with self-injury and suicide. Suicidal intent was rated from 0 to 6 with higher levels indicating more serious intent toward death. The medical severity of parasuicidal and suicidal incidents was rated from 0 to 7 with higher levels indicating greater medical severity.

Psychiatric hospitalisations. The number and length of hospitalisations of participants to psychiatric units over the preceding 6-month period was obtained from client files held at LCAMH, local hospital records and from clinical interviews with participants.

Service contact. The number and duration of telephone and face-to-face contact involving group members was taken from the Queensland Health clinician computer log of client contact (CESA). Therefore, data was only available on group members from LCAMH, that is $N = 7$. The contact could have involved case managers, allied health professionals involved in client care, community mental health intake officers, psychiatrists or DBT therapists.

Results

One-tailed t tests were used to analyse outcome data with a significance level set at 0.05.

Five clients (31%) did not complete the study: one due to an exacerbation of psychotic symptoms; two dropped out of treatment before the 4-month point due to environmental stressors and need for long-term hospitalisation; and two were excluded before the 2-month point due to failure to comply with program commitments.

No significant differences were found between clients who completed the program ($N = 11$) and clients who did not complete the program ($N = 5$) for most pretreatment variables. However, noncompleters were significantly younger than completers, with mean ages of 27.15 years compared to 36.35 years, $t(11) = 2.13$, $p < .03$. There was also a significant trend toward noncompleters having more hospital admissions in the 6 months prior to the DBT group starting compared with completers; non-completers = 1.6, completers = 0.72, $t(11) = -1.74$, $p < .06$).

No significant differences were found between participants in the two DBT programs on demographic variables and therefore the results were combined for analysis. However, participants in the 2004 DBT group had significantly less days in hospital, $t(7) = 1.96$, $p < 0.05$, less face-to-face contact, $t(5) = 3.41$, $p < .04$, and used more optimism coping strategies, $t(7) = -3.81$, $p < .002$, in the 6 months prior to the groups starting compared with participants in the 2003 group.

The results on outcome measures for treatment completers are presented in Table 1.

TABLE 1

Pre- and Posttreatment Measures of Depression, Hospitalisation, Anger, Global Functioning, Parasuicidality, Coping and Service Contact for 11 Clients Completing a 6-month DBT Program

Measure	Pretreatment		Posttreatment		Analysis	
	Mean	SD	Mean	SD	<i>t</i>	<i>p</i> ^e
Beck Depression Inventory score	36.18	10.72	26.27	13.65	2.72	0.01
Psychiatric Hospitalisation ^a						
Number of admissions	0.72	1.01	0.27	0.47	1.84	0.04
Number of hospital days	6.09	10.17	1.73	3.47	1.84	0.04
State-Trait Anger Expression Inventory-2 subscale scores ^b						
State-anger	72.64	27.65	75.36	20.41	-0.38	0.35
Trait-anger	79.18	19.52	78.36	17.28	0.15	0.44
Anger expression-out	71.36	15.32	63.72	19.50	1.31	0.11
Anger expression-in	78.36	20.06	69.72	29.54	0.89	0.19
Anger control out	12.18	9.35	24.00	17.37	-2.45	0.02
Global Assessment of Functioning score ^c	55.82	6.94	62.72	8.08	-2.76	0.01
Coping Scale for Adults scale subscale score						
Dealing with the problem	54.97	15.69	57.16	11.73	-0.51	0.31
Optimism	50.64	11.65	55.91	12.88	-2.10	0.03
Sharing	44.32	25.10	55.91	16.86	-2.19	0.02
Nonproductive coping	72.82	7.97	68.43	9.19	2.24	0.02
Parasuicidality ^d						
Frequency of average incident	1.95	2.91	1.85	3.22	0.08	0.47
Medical severity of average incident	2.30	1.89	1.50	1.08	1.46	0.09
Intent of average incident	2.20	1.48	1.45	1.07	1.72	0.06
Face-to-face contact ^a						
Number of contacts	26.29	6.60	19.71	11.13	1.51	0.09
Duration of contact (hours)	28.09	10.80	17.36	10.14	2.02	0.04
Telephone contact ^a						
Number of contacts	11.43	12.84	7.86	6.07	1.04	0.17
Duration of contact (hours)	4.23	5.21	2.06	2.02	1.59	0.08

Note: ^aOver previous 6-month period

^bPercentile scores

^cAverage GAF over previous 6-month period

^dOver 1-month period

^eOne-tailed tests

Depression. BDI total scores reduced significantly following the DBT program, $t(11)=2.72$, $p < .01$. Of the 11 participants, 6 obtained scores in a lower depression range with 'severe' ratings falling to minimal, mild or moderate ratings, and 'moderate' ratings falling to mild or minimal ratings post-DBT. Two participants obtained a score in a higher depression range post-DBT, that is, from 'moderate' to 'severe' depression. Three participants remained stable in the 'severe' depression range post-DBT. Overall, this indicates a reduction in depressive symptomatology following the DBT program.

Anger. There were no significant differences in State anger, Trait anger, Anger Expression-Out and Anger Expression-In percentile ratings between pre- and post-

DBT. Six participants obtained clinically elevated scores in the State anger and Trait anger scales pre-DBT. After DBT two of these participants obtained reduced scores in State anger and Trait anger to 'normal' levels, while the other four participants' scores remained clinically elevated. One participant obtained clinically elevated scores in State anger post-DBT and three participants obtained clinically elevated scores in Trait anger post-DBT, when their pre-DBT scores were within 'normal' levels. 'Anger control out' percentile scores increased significantly post-DBT from 12.18% to 24% on average, $t(11) = -2.45, p < .02$, indicating an increase in attempts to control angry feelings by calming down or cooling off.

Coping strategies. There was a significant increase in the use of Optimism, $t(11) = -2.10, p < .03$, and 'Sharing', $t(11) = -2.19, p < .02$, coping strategies post-DBT, but no difference in the use of Dealing with the Problem. Eight (72.7%) participants showed increased use of strategies post-DBT on Dealing with the Problem, Optimism and Sharing coping factor scales, respectively, whereas three had decreased their use of these strategies. There was a significant decrease in the use of Nonproductive Coping strategies, $t(11)=2.24, p < .02$. Seven (63.6%) participants used Nonproductive Coping strategies less post-DBT, whereas four used these more over the 6 months of the group.

Global functioning. Average GAF scores increased significantly post-DBT, $t(11) = -2.76, p < .01$. Average levels of functioning (average GAF) were higher for seven participants, stable for three participants and lower for one participant after DBT. Lowest levels of functioning (worst GAF) were higher for six participants, lower for three and stable for two participant's post-DBT. These results indicate improved overall psychological, social and occupational functioning for most participants following DBT.

Parasuicidality and suicidality. The frequency of average parasuicidal/suicidal incidents remained stable post-DBT at 1.85 incidents per month, $t(11) = 0.08, p < .47$. There was a significant trend toward a reduction in intent, $t(10) = 1.72, p < .06$, and medical severity, $t(10)=1.46, p < .09$, for these incidents over the 6 months of the group. Average intent levels reduced significantly for five participants, increased for one and remained stable for five. Average medical severity levels reduced for five participants (down to 'no danger'), increased slightly for two and remained stable for four.

Psychiatric hospitalisations. The number and length of admissions reduced significantly post-DBT from 0.72 to 0.27 admissions, $t(11) = 1.84, p < .04$, and 6.09 to 1.73 days admission on average over 6 months, respectively, $t(11)=1.84, p < .04$.

Service contact. The number of telephone calls did not change significantly over the 6 months. However, there was a significant trend in the reduction in the duration of telephone calls from 4.23 hours to 2.06 hours over 6 months, $t(7)=1.59, p < .08$. The number of face-to-face contacts did not change significantly over the six months (26.29 pre-DBT versus 19.71 post-DBT). However, the duration of face-to-face contact with participants reduced significantly post-DBT from 28.09 to 17.36 hours spent on contact over 6 months, $t(7) = 2.02, p < .04$. Thus, the DBT program resulted in less client contact by telephone and face to face compared to treatment as usual.

Discussion

As demonstrated in previous studies, DBT is an efficacious treatment for women with BPD that can be easily applied to clients within a local community setting.

Furthermore, this study showed that DBT can be effectively applied in an Australian context with limited content changes incorporating cultural differences. This finding is significant as most previous studies have been completed in America, Britain or the Netherlands (Verhuel et al., 2003). In addition, this study was completed independently of the founder of DBT, as opposed to much of the available body of research to date.

The hypothesis that participants would have a reduction in the frequency and intensity of self-harming behaviours was partially supported with a significant trend towards a reduction in the intent and medical severity of attempts. However, participants demonstrated no change in the frequency of incidents of self-harm during the program from 6 months prior to the group. These findings support past research which found that DBT was an effective treatment for parasuicidal behaviour and decreased the frequency of medically severe suicidal attempts (Linehan, Armstrong et al., 1991). Of note is that 45% of participants had a significant reduction in the severity of self-harming incidents, in that all attempts during the group met the criteria of 'no danger' at all (e.g., scratching). This finding has great merit in that, as previously mentioned, clients with BPD have a higher mortality rate (APA, 2001), and most participants in the program also had comorbid disorders, which have been found in previous studies to increase the medical severity of suicide attempts (Jacobs et al., 1999; Tanney, 2000). Hence, it appears that if women with a BPD diagnosis are provided with DBT the prevalence of successful suicide in this population may be reduced.

The second hypothesis of a significant reduction in the number and length of hospital stays during the program was also supported. The number and length of hospital stays decreased over both groups, from 62 days to 19 days, saving the local hospital system \$49,520 during the 6-month DBT program. This reduction can be attributed to the DBT structure of limited hospital stay, increased coping skills and structured support for participants. In addition, DBT therapists liaised with hospital and emergency psychiatric staff at the local hospital to encourage a DBT focus to admissions, and recommended brief crisis admissions of 1 to 2 days when appropriate. In many cases hospitalisation was avoided by the use of distress tolerance skills during stressful situations. These findings have been supported by previous studies (Linehan et al., 1991).

With the decrease in hospitalisation there was also a decrease in telephone and face-to-face contact in community clinics. Telephone contact was stable throughout the program as compared to 6 months prior to participants attending the DBT group. However, there was a trend in the reduction of the duration of phone calls, from 29 hours of contact 6 months prior to the group, down to 14.4 hours of telephone contact during the DBT program. This finding could be attributed to the structure of the telephone calls, as clinicians provided assistance to find skills to use, rather than to solve problems. In addition, telephone calls were limited to 10 to 15 minutes, which was highlighted to clients prior to the program starting. Clients also demonstrated increased use of coping strategies in crisis situations and were readily able to identify them during telephone contact with their individual therapist.

The number of face-to-face contacts with participants remained stable 6 months prior to the group compared with during the program. This finding may be attributed to the fact that more than half of the participants were receiving weekly counselling sessions with a clinician prior to beginning the program, which is a similar format to the DBT program. However, there was a significant reduction in the

duration of face-to-face contact by a total of 76 hours. This finding could be due to the structured DBT format, in which participants were provided with weekly contact for 60 to 90 minutes, according to DBT guidelines on the nature and duration of individual therapy. That is, individual therapy was for a maximum of 1½ hours duration involving discussion of target behaviours, use of DBT skills in everyday life and therapy interfering behaviours. Participants attended the weekly skills group for 2½ hours (Linehan, 1993b).

The third hypothesis that participants' psychological well-being would be improved was supported.

Specifically, GAF results indicate significantly improved overall psychological, social and occupational functioning of participants' following DBT.

Levels of depression decreased significantly for participants who completed the program. Of particular interest is the finding that 54% of participants, who had 'severe' depression prior to the group, completed the group within the range of 'moderate' to 'minimal' depression. This contradicts other studies that have found that DBT had no short-term effect on depression (Scheel, 2000). It is predicted that the DBT skills of 'emotion regulation' were central to this reduced depression as these skills incorporated building positive experiences and being mindful of these experiences. There was a significant increase in participants using strategies that focus on the positive, increased self-care, relaxing diversions, seeking spiritual support and focus on sharing problems with others, including professionals post-DBT. Inversely, participants used less 'nonproductive' coping strategies and felt better able to deal with problems after DBT; for example, tension reduction, ignoring the problem, criticising oneself or withdrawing from others. In summary, participants used more positive coping strategies to deal with problems after DBT compared with before. The DBT modules of distress tolerance and emotion regulation may have contributed to these results since components of these modules specifically target the use of adaptive coping strategies delineated in the Coping Scale for Adults, such as 'mindfulness of positive experiences', 'improve the moment', 'distraction' and 'pros and cons'.

There was no significant difference in state or trait anger. However, qualitative feedback identified a trend in participants describing being 'more aware of anger', 'not feeling numb anymore', and 'being able to name emotion' in postgroup feedback. Anger Control-Out was significantly increased after DBT, which demonstrated that participants were attempting to control angry feelings by more often calming down or cooling off.

Finally, participants who did not complete the group had more hospitalisations for 6 months prior to the group starting and were younger in age. This may be useful to consider in the future recruitment of clients to the program.

There were some limitations to this study, including the absence of non-randomisation to groups. This prevented a comparison between DBT and treatment as usual or with an alternate therapy to assess the comparative efficacy. Moreover, it would be of benefit to have a randomised sample to ensure that results are valid. The sample size was small, so future studies would benefit from a larger sample to provide further data.

Overall, the collaboratively run DBT program developed by LWHC and LCAMH showed promising results in the prognosis and treatment of clients with BPD. This study demonstrates that DBT is an effective treatment for clients within an Australian community setting and has many clinical benefits.

Acknowledgments

Special thanks to Vedran Vladusich who provided invaluable input regarding the analysis of statistical data, and to Sonja Mahs for her editorial work on the manuscript.

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