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Lives Worth Living for All: Efficacy of a

24-week Telehealth-Delivered Pilot DBT Skills Group for Adults

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We have no known conflict of interest to disclose.

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Abstract

The Borderline Personality Disorder Society of British Columbia implemented a 24-week, accessible pilot Dialectical Behaviour Therapy (DBT) skills group for adults with borderline personality disorder (BPD) living in the Province of British Columbia, Canada. Our organization aimed to evaluate the efficacy of our skills group by gathering and analyzing data on N = 10 participants' clinical symptoms and emergency service use at baseline, midpoint, and outcome. Improvements were observed for all clinical symptoms: A large magnitude of change (e.g., effect size estimates exceeding Hedges' g = 0.8) was found for participants' BPD symptoms, emotion regulation difficulties, depression, generalized anxiety, and suicidality. A moderate magnitude of change (e.g., effect size estimates exceeding Hedges' g = 0.5) was found for quality of life and quality of health. A small magnitude of change (e.g., exceeding g = 0.2), was found for participants' reasons for living. Notable changes in emergency and medical service use over the course of DBT are also described. The promising outcomes from our pilot skills group warrant ongoing implementation and empirical evaluation of accessible and virtual DBT skills groups.

Keywords: Dialectical Behaviour Therapy, DBT, 24-week DBT, borderline personality disorder, telehealth.

Background

Dialectical Behaviour Therapy Skills Group Overview

The Borderline Personality Disorder Society of British Columbia (BPD Society of B.C.)

The BPD Society of B.C. is a non-profit charitable organization established in 2012. Our organization's objectives include filling service gaps for persons with BPD and their loved ones,

bringing awareness to the stigma the BPD diagnosis attracts, and promoting and disseminating the current scientific knowledge of BPD. We offer several peer-facilitated support groups throughout B.C., a speaker's bureau for medical and educational settings, and maintain involvement in peer-reviewed research. Our ethos is that persons living with BPD can live rich, productive, and meaningful lives, and through our activities, we offer hope and validation to the BPD community.

Dialectical Behaviour Therapy (DBT)

Our organization holds that hope and recovery are possible for persons with BPD. Aligned with this principle, we embarked on a new objective—bringing accessible evidence-based treatment to persons with BPD in the province of B.C. Our proposed intervention was an anti-oppressive, inclusive, trauma-informed DBT skills group. DBT, initially conceptualized by Dr. Marsha Linehan in the early 1990's (Linehan et al., 1991), is an evidence-based, Cognitive-Behaviour Therapy developed to treat highly suicidal patients with BPD and is understood to be the "gold standard" intervention for this clinical group (Linehan, 2008; Panos, 2014). This therapy synthesizes principles of validation, behaviourism, and cognitive therapy to help emotionally dysregulated individuals tolerate painful emotions and build lives worth living.

Standard DBT programs are comprised of DBT skills groups, individual therapy sessions, between-session 24/7 phone coaching, and DBT consultation teams. In standard DBT, participants attend weekly DBT skills group sessions, where skills are taught in four modules: Mindfulness, Distress Tolerance, Emotion Regulation, and Interpersonal Effectiveness. Individual DBT therapy sessions aim to motivate clients' skills acquisition and use and offer an opportunity to process emotions and problems in depth. Brief phone coaching sessions assist

clients in applying skills to everyday challenges, thereby generalizing skills learned in therapy to their lives (Behavioral Tech, 2019). In DBT consultation team meetings, DBT providers from various settings work collaboratively to conceptualize challenging clinical cases and manage the personal demands of treating clients at high risk of suicide (Behavioral Tech, 2022).

Being a specialized and intensive intervention, outpatient DBT programs remain scarce within the community. Individuals with BPD accessing our organization's services report immobilization by numerous barriers when seeking evidence-based treatment; bound between months-long waitlists for public services and overwhelming financial hardship when attempting to access private care. The purpose of our DBT program was to address this gap in service by bringing lifesaving, evidence-based treatment to an underserved and marginalized community.

In January 2022, we implemented an affordable pilot DBT skills group for persons living with BPD across the province of B.C. Our program was administered virtually over Zoom across a 24-week period between January-June 2022 and made possible through the generosity of private donors and Bell's *Let's Talk* campaign. This report evaluates the efficacy of our DBT skills group, based on changes observed in our participants' clinical symptoms, and medical and emergency service utilization over 24 weeks of intervention.

Methods

Participant Characteristics:

Our DBT cohort contained N = 10 participants with clinically significant BPD features. Participants' mean age was 31.10 (SD = 6.43), with ages ranging from 21- 41 years. Eligible participants were either diagnosed with BPD by a mental health professional (e.g., psychologist, psychiatrist), or self-identified with the BPD diagnosis. Additionally, eligible participants met clinical cut-off scores on the McLean Screening Instrument for BPD (MSI-BPD, Zanarini et al., 2003); a psychometrically robust, brief assessment developed to detect the presence of BPD based on DSM-IV criteria. Given that our DBT skills group is intended to serve individuals in B.C., participants located in B.C. for the program's 24-week duration were deemed eligible.

Exclusionary criteria were relevant to participants' safety or ability to learn and benefit from DBT skills training. Exclusion criteria were: Medical risk associated with rapid substance withdrawal and need for supervised medical detoxification; medical risk associated with an existing eating disorder; having a comorbid and unmanaged bipolar disorder, having a comorbid and unmanaged psychotic spectrum disorder, having a developmental disability with IQ below 70, and not having access to a primary therapist for between-session crisis support while in skills training. To maintain eligibility, participants with one or more recent suicide attempts (within 6 months), or otherwise assessed to be at increased risk of suicide, and participants at increased risk of non-suicidal self-injury (NSSI) were required to see a primary therapist 4 times per month, while participants at lower risk of suicide and NSSI were required to see a primary therapist 2 times per month. Demographic characteristics of our final DBT cohort are summarized in *Table 1* and visually represented in *Figure 1*.

Table 1

Sociodemographic Characteristics of Participants at Baseline

	DBT Cohort $N = 10$ Participants	
Baseline characteristic		
	n	%
Gender		
Women	7.00	70.00
Men	2.00	20.00
Non-binary	1.00	10.00
Sexual Orientation		
Heterosexual/straight	6.00	60.00
Bisexual	1.00	10.00
Gay/Lesbian	2.00	20.00
Prefer not to answer	1.00	10.00
Race		
White	4.00	40.00
Asian	4.00	40.00

Prefer not to answer	1.00	10.00
Prefer to self-describe	1.00	10.00
Cultural Background		
European	5.00	50.00
East Asian	3.00	30.00
Southeast Asian	3.00	30.00
Prefer to self-describe	1.00	10.00
Marital Status		
Single	5.00	50.00
Married	3.00	30.00
Common Law	1.00	1.00
Divorced	1.00	10.00
Highest level of educational		

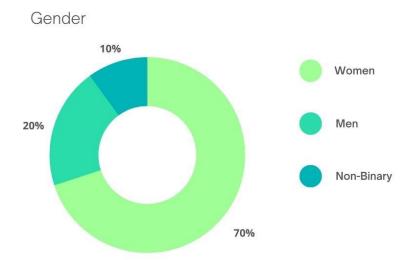
attainment

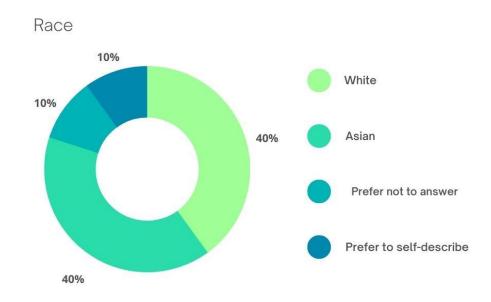
Attended post secondary but did		
not complete degree	4.00	40.00
Occupational/trades certification or		
associates degree	1.00	10.00
Bachelor's degree	4.00	40.00
Master's degree	1.00	10.00
Employment		
Full time	5.00	50.00
Part-time	2.00	20.00
Unemployed	2.00	20.00
Unable to work/disabled	1.00	10.00

Note. N = 10. Participants' $M_{age} = 31.10$ (SD = 6.43). Ages ranged from 21-41 years. Participants could select more than one ethnicity/cultural background so the total sum may equal < 100% for these characteristics.

Figure 1

Participant Characteristics





Measures

At the program's onset, a baseline survey containing validated measures for participants' psychopathological symptoms 12 and 3 months prior to DBT was administered. Follow-up assessments were gathered at the program's midpoint (after 3 months of DBT), and at the program's conclusion (after 6 months of DBT).

Clinical features assessed included: BPD symptomatology, emotion regulation difficulties, depressive symptoms, generalized anxiety, global suicidality, reasons for living, perceived quality of life, and perceived quality of health. These constructs were captured by the following validated inventories.

Borderline Symptom List Short Version (BSL-23; Bohus et al., 2009)

The Borderline Symptom List-23 (BSI-23; Bohus et al., 2009) is a validated, brief selfrating instrument for the assessment of BPD symptomatology. The tool has good psychometric properties, with sensitivity sufficient to detect symptom changes between assessments, making it suitable for detecting treatment efficacy over time.

Difficulties in Emotion Regulation Scale (DERS; Gratz, & Roemer, 2004)

Emotion dysregulation is a keystone feature of BPD; challenges faced by this clinical group are predominantly a consequence of a dysregulated affective system (Linehan, 1993). We sought to assess changes in participants' difficulties in emotion regulation over the course of DBT. The DERS is a validated inventory designed to comprehensively measure difficulties in emotion regulation among adults. Validation studies have demonstrated the scale's high internal consistency, good test-retest reliability, and adequate construct and predictive validity.

Depressive Symptoms: Patient Health Questionnaire 9 (PHQ-9; Kroenke & Spitzer, 2002)

Major depression is frequently experienced by those with BPD, with 83% of persons with BPD meeting criteria for comorbid major depressive disorder within their lifetimes (Zanarini et al., 1998). Accordingly, we aimed to assess changes in depressive symptomatology over time. The PHQ-9 is a widely validated and psychometrically robust, brief inventory developed to measure depressive symptoms within primary care settings.

Anxious Symptoms: General Anxiety Disorder Assessment 7 (GAD-7; Spitzer et al., 2006)

Persons with BPD frequently experience anxiety; around 90% of persons with BPD have been found to meet diagnostic criteria for a comorbid anxiety disorder (Zanarini et al., 1998). We sought to measure participants' anxiety symptoms over the course of therapy using the GAD-7; a well-validated and brief inventory developed to assess symptoms of generalized anxiety. Validation studies have demonstrated the scale's good sensitivity and specificity for symptomatology consistent with anxiety disorders.

Subjective Assessment of Quality of Life

Participants provided a subjective self-assessment of their perceived overall quality of life using a single item on a 5-point Likert Scale. Participants were asked:

"Please read this question, assess your feelings, and circle the number on the scale for each question that gives the best answer for you. How would you rate your quality of life?"

Subjective Assessment of Quality of Health

Participants provided a subjective self-assessment of their perceived overall quality of health using a single item on a 5-point Likert Scale. Participants were asked:

"Please read this question, assess your feelings, and circle the number on the scale for each question that gives the best answer for you. How satisfied are you with your health?"

Suicide Behaviours Questionnaire-Revised (SBQ-R; Osman et al., 2001)

BPD is associated with an exceptional risk of suicide, with suicidal thoughts and behaviours virtually ubiquitous among those with the disorder. Around 70% of people living with BPD will attempt suicide with each individual averaging three lifetime attempts, while 10% will complete suicide (Paris, & Zweig-Frank, 2001). Research utilizing psychiatric autopsy methods found that a post-mortem BPD diagnosis was present in a third of all suicide deaths (Runeson, & Beskow, 1991). We aimed to assess changes in participants' suicidality over the 6-month course of treatment.

The SBQ-R is a brief self-assessment with 4 items, each measuring a different dimension of suicidality: 1) lifetime suicide ideation and/or attempting; 2) frequency of suicidal ideation/attempts; 3) threat of suicide attempt; 4) self-reported likelihood of future suicidal behaviour. The instrument has been validated in adults and adolescents and demonstrates acceptable internal consistency and reliability (Osman et al., 2001).

Brief Reasons for Living Scale (BRFL; Ivanoff et al., 1994)

The BRFL is a 12-item self-report measure intended to assess protective factors against suicide including adaptive beliefs and expectations and reasons for living. The inventory contains six subscales: fear of suicide, responsibility to family, survival and coping beliefs, child-related concerns, moral objections, and fear of social disapproval. The inventory's 12 items are scored on a 6-point Likert scale ranging from (1) "not at all important" to (6) "extremely important". Higher scores on the BRFL scale reflect more reasons for living.

Emergency Service Use and Polypharmacy

Persons with BPD frequently present to emergency psychiatric services when in crisis, regularly present to primary care settings, and are routinely prescribed multiple medications. DBT has been shown to reduce the number of days in inpatient care (Linehan et al., 1991), reduce emergency service utilization, and lower the average cost per patient by 21-35% (O'Sullivan, Murphy, Bourke, 2017). There is also evidence that DBT is effective in reducing psychotropic medication use (Pistorello, 2012).

Although necessary for stabilization, emergency service use is understood to be largely ineffective for treating BPD, and experts recommend minimizing hospitalization when treating this disorder (Linehan, 2008; Paris, 2004). Not only do outpatient DBT programs offer superior clinical gains for persons with BPD, but they also offer a cost-effective alternative to prolonged inpatient care and repeated emergency service use. An objective of our pilot program was to provide our participants with an alternative to inpatient and emergency care, thereby minimizing the impact of untreated BPD on our community's healthcare infrastructure. To this aim, we measured and described changes in emergency service use, primary care use, and polypharmacy over the course of DBT.

Analysis

Effect size estimates assess the magnitude of a group mean difference (Kelley & Preacher, 2012, p. 140); for example, the change in a group average from one assessment time point to another. Generally, effect size estimates are obtained by finding a standardized sample mean difference and dividing this difference by the sample standard deviation.

To evaluate our DBT skills group's efficacy, we assessed the magnitude of change in participants' clinical symptoms over the 6-month course of DBT. The Hedges' g statistic provides a bias-corrected standardized effect size estimate for very small sample sizes (i.e., n < 50; Hedges and Olkin, 1985). Hedges' g was computed as the estimate of between-group effect size for changes from pre-treatment baseline scores to midpoint scores, from mid-point scores to post-treatment scores, and pre-treatment-baseline scores to post-treatment scores for each outcome (BPD symptoms, emotion regulation difficulties, depression, anxiety, suicidality, reasons for living, quality of life, and quality of health). Given our very small sample size (N = 10), p values and their associated standard errors would be unreliable, so our results report Hedges' g effect size estimates as the measure of change.

According to Cohen's conventions (2016), effect size estimates exceeding Hedges' g = 0.20 indicate a small magnitude of difference between means; effect size estimates exceeding Hedges' g = 0.50 indicate a medium magnitude of difference, while effect size estimates exceeding Hedges' g = 0.80 signify a large magnitude of difference. These specifications served as the benchmark for our interpretations.

In addition, changes in emergency and medical service utilization and medication use are described. Given our very small sample size, statistical analyses were not warranted for these

outcomes, and descriptive results were deemed to be more informative when reporting changes in these variables.

Results

Premature Attrition

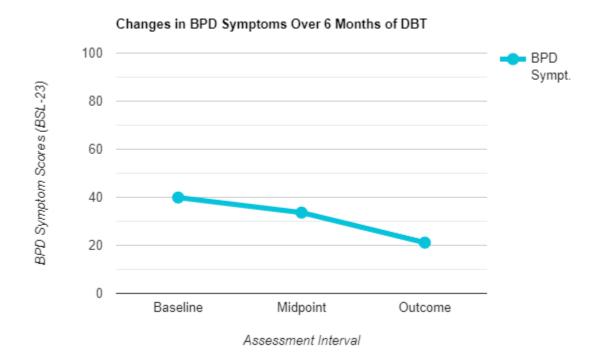
Premature participant drop-out is a notable concern for persons with BPD in DBT and is associated with adverse client outcomes, since many individuals will terminate therapy before benefitting form its effects. In addition to adverse clinical outcomes, therapy attrition drains time and mental health care resources, adding additional constraints on overburdened healthcare services (Barrett et al., 2008). Rates of treatment dropout for persons with BPD in outpatient DBT skills groups have been found to be between 22.3% and 29.9% (Iliakis, Ilagan, & Choi-Kain, 2021).

One notable outcome of our initiative was our excellent participant retention. Our DBT skills group retained 100% of our N = 10 participants, with every participant completing the program from onset to completion. All participants regularly arrived on time, attended group, completed assigned weekly skills practice, and participated fully.

BPD Symptoms

Collectively, our participants' BPD symptoms were alleviated over the course of treatment. A large effect size (Hedges' g = -1.09) was found for the change in group average scores on the BSL-23 between pre-and post-intervention assessments. Changes in BPD symptoms over the 3 assessment intervals are visually represented in *Figure 2*.

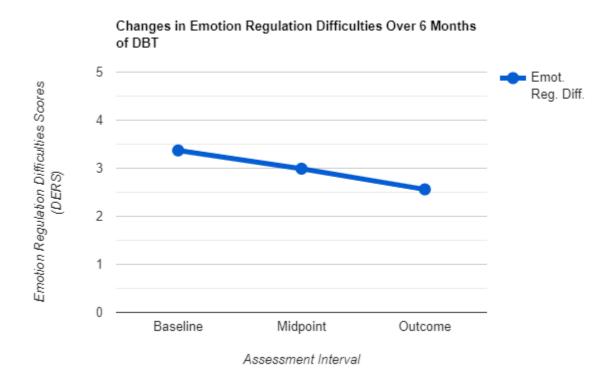
Figure 2



Emotion Regulation Difficulties

Participants reported improvements in emotion regulation over 6 months of DBT skills training. A large effect size (Hedges' g = -1.49) was found for the change in group average DERS scores between pre-and post-intervention assessments. Changes in emotion regulation difficulties across the 3 assessment time points are visually represented in *Figure 3*.

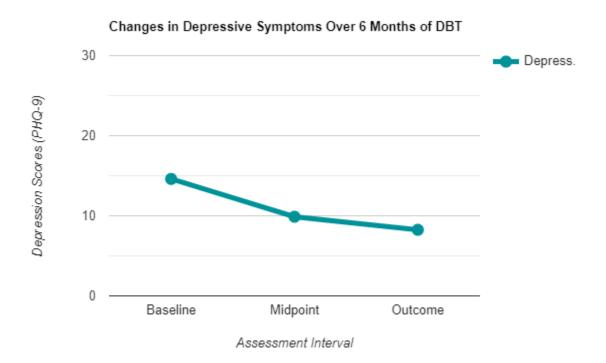
Figure 3



Depressive Symptoms

Participants' reported depressive symptoms diminished over the course of DBT. A large effect size (Hedges' g = -1.00) was found for the group mean difference in PHQ-9 scores between pre-and post-tests. Additionally, participants reported that the subjective impact of their depression was alleviated; a medium effect size estimate (Hedges' g = -0.60) was found for the change in participants' self-assessed depression impact scores. Change in the cohort's depressive symptoms over 6 months of DBT is visually represented in *Figure 4*.

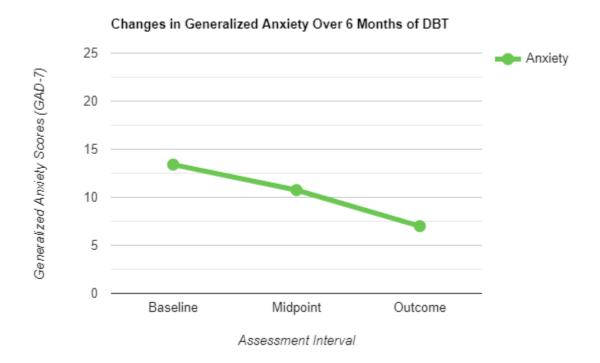
Figure 4



Generalized Anxiety Symptoms

Participants reported substantial clinical gains in generalized anxiety. A large effect size estimate (Hedges' g = -1.16) was found for the group mean difference in GAD-7 scores between pre-and post-intervention assessments. Further, the subjective impact of participants' anxiety was reduced; a large effect size estimate (Hedges' g = -.83) was found for the change in participants' subjective anxiety impact scores. The group's change in generalized anxiety over 3 assessment time points is visually represented in *Figure 5*.

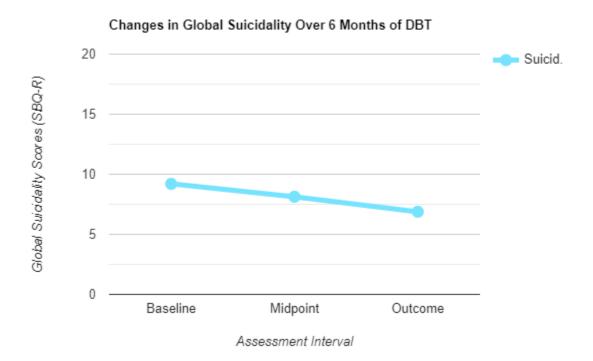
Figure 5



Suicidality

Encouragingly, our participant cohort reported a collective decrease in suicidality. Group mean differences in SBQ-R scores between pre-and post-intervention assessments yielded a large effect size estimate (Hedges' g=-0.82). Changes in suicidality over 6 months of DBT are represented in *Figure* 6.

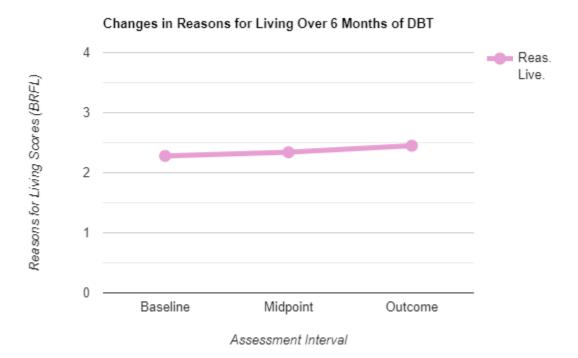
Figure 6



Reasons For Living

Collectively, participants reported an increase in their reasons for living. The group mean difference in BRFL scores pre- and post-DBT yielded a small effect size estimate (Hedges' g = 0.28). Group changes in reasons for living are represented in *Figure 7*.

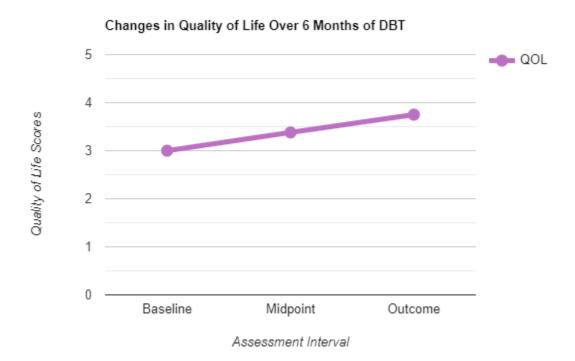
Figure 7



Quality of Life

Our participant cohort reported a general improvement in quality of life. A medium effect size estimate (Hedges' g = 0.72) was found for the magnitude of the difference between group means pre- and post-DBT for the survey item subjectively assessing quality of life. Changes in quality of life across the 6 months of DBT are visually represented in *Figure 8*.

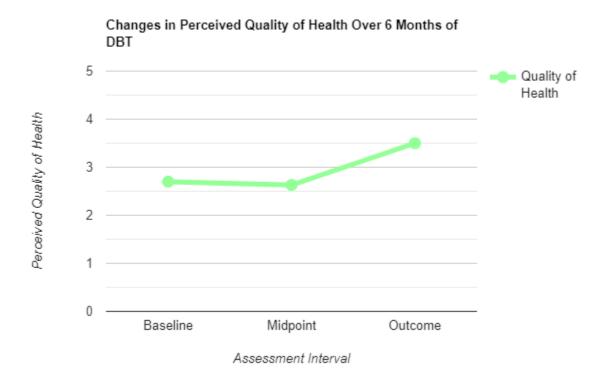
Figure 8



Quality of Health

Our participant cohort reported increases in their overall perceived quality of health. A medium effect size estimate (Hedges' g = 0.71) was found for the mean difference in self-assessed quality of health pre-post intervention. Changes in the group's overall perceived quality of health is visually represented in *Figure 9*.

Figure 9



Emergency Room Utilization

Overall, instances of emergency room utilization decreased by 67% over the 24 weeks of DBT. In the 12 months prior to the baseline assessment, 2 participants experienced a total of 3 hospitalizations, with one of these hospitalizations occurring within 3 months of baseline. Within the first 3 months of DBT, one participant experienced a single hospital admission, and in the latter 3 months of DBT another participant experienced an additional admission.

Number of Days in Hospital

Overall, the number of days spent in inpatient care decreased by 97%. In the 12 months prior to the baseline assessment, 3 participants spent a total of 17.5 days hospitalized, with one of

these days occurring within 3 months of baseline. In the first 3 months of DBT, one participant was hospitalized for one day, and in the final 3 months of DBT another participant was hospitalized for an additional day.

Ambulance Rides

The number of ambulance rides for mental health-related concerns was found to have decreased by 100%. In the 12 months prior to the baseline assessment, 2 participants experienced 3 ambulance rides for mental health-related concerns, with one of these ambulance rides occurring within 3 months of baseline. Participants experienced no additional ambulance rides, a pattern which remained stable throughout the 24 weeks of intervention.

Police Contact

Overall, police contact was reduced by 100%. In the 12 months prior to the baseline assessment, 2 participants experienced 4 instances of police contact for concerns related to their mental health, with none of these instances occurring within 3 months prior to DBT. No additional police contact was experienced in our participant cohort over the 24-weeks of intervention.

Physician Visits

Overall, physician visits were reduced by 78% over 24 weeks of DBT. In the 12 months prior to the baseline assessment, 7 participants collectively experienced 41 physician visits due to mental health-related concerns, and in the 3 months leading up to DBT, 7 participants experienced 14 visits. In the first 3 months of the intervention, this number had diminished, with

4 participants reporting 6 physician visits. In the final 3 months of the intervention, 5 participants reported a total of 9 physician visits.

Psychotropic Medications

Overall, medication use increased by 13%. At baseline, participants reported taking an average of M = 2.00 medications (SD = 1.56). At the midpoint assessment, medication use had diminished slightly, with participants taking an average of M = 1.75 medications. At the outcome assessment, medication use had increased, with participants taking an average of M = 2.25 medications (SD = 1.83).

Discussion

The BPD Society of B.C.'s pilot DBT skills group for adults aimed to bring accessible and evidence-based treatment to persons with BPD living in the province of B.C. while offering participants a cost-effective alternative to emergency service utilization. To evaluate the program's efficacy, we gathered data on participants' clinical symptoms, emergency and medical service use, and polypharmacy, and assessed changes in these measures over 24 weeks of intervention.

For participants' psychopathological symptoms, clinical gains were reported in all outcomes. The greatest magnitude of improvement was observed for BPD symptoms, emotion regulation difficulties, depression, anxiety, and suicidality. Large effect size estimates (exceeding Hedges' g = 0.80) were found for changes between pre-and post-intervention assessments for each of these outcomes. A moderate magnitude of improvement was reported in participants' quality of life and quality of health, with medium effect size estimates (exceeding Hedges' g = 0.80) where g = 0.80 is a participant of life and quality of health, with medium effect size estimates (exceeding Hedges' g = 0.80).

0.50) found for changes in these measures. Finally, participants' reasons for living, an important protective factor against suicide, increased, with a small effect size estimate observed (exceeding Hedges' g = 0.20). Furthermore, emergency service utilization was found to have diminished markedly within our participant cohort: the number of individual hospitalizations was reduced by 67%; days in the hospital were reduced by 97%; physician visits were reduced by 78%; while ambulance rides and police contact for mental health-related concerns were eliminated entirely. Medication use was found to have increased by around 13%. Notably, our DBT program had a 0% rate of premature attrition, with all participants completing DBT skills training while demonstrating engagement and commitment throughout our sessions.

One limitation of our findings is that change in means reflected in effect size estimates at the aggregate group level may be insignificant for individual participants (Schmitt and Di Fabio, 2004, pp. 1008–1009). Changes in group means may result from relatively large changes in select individuals while meaningful change is not experienced by other participants, or conversely, numerous participants may experience small changes individually. Further, our very small sample size (N = 10) precludes firm conclusions about effect size estimates. The findings from this pilot study are preliminary for these reasons.

Despite these limitations, our participant cohort reported encouraging improvements on all psychopathological symptoms, warranting further DBT skills groups and evaluation of their efficacy. Our organization's future objectives include the ongoing implementation of DBT skills groups, including a skills group specialized for adolescents (DBT-A). Additionally, we aim to conduct high-quality, empirical evaluations of our 24-week DBT service and publish our findings, to widen our initiatives impact beyond the immediate community and benefit the

scientific community at large. This research would address a critical gap in the literature—currently, there are few empirical studies evaluating 24-week skills-only DBT groups against more resource-intensive standard DBT (see McMain et al., 2022 for one recent clinical trial). Finally, research on virtual DBT could raise innovative solutions for delivering lifesaving mental health to at risk persons living in medically underserved remote, rural, and First Nations communities.

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