Effectiveness of Dialectical Behaviour Therapy Group Skills Training for Borderline

Personality Disorder in Regional Community Mental Health

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Abstract

Borderline Personality Disorder (BPD) is a complex psychiatric disorder characterised by significant and pervasive impairment in personality and interpersonal functioning. Dialectical Behaviour Therapy (DBT) has been extensively empirically evaluated as an efficacious treatment for BPD. However, the complete DBT protocol has demonstrated constraints which limit its feasibility in public mental health settings, particularly in rural areas where budget and workforce resources are most limited. Recent research has prioritised 'pared-down' treatment approaches for BPD, identifying the minimum essential elements of effective care, offering greater feasibility for implementation in challenging real-world service environments.

Study One provides a systematic review of DBT 'dismantling' studies, offering critical appraisal of five studies comparing standard DBT to standalone DBT skills training and/or individual DBT-only. Findings indicated few or no clinically or statistically significant differences between DBT conditions, and suggest that these approaches may be similarly effective in reducing suicidality and self-harm, and may reduce general psychological distress. Overall, the reviewed studies provide modest, preliminary evidence for the use of DBT skills training as a standalone treatment for BPD in real-world clinical settings.

The effectiveness of standalone DBT skills training as a treatment for BPD when implemented within community mental health services in regional South Australia is examined. Study Two, a randomised controlled trial (RCT) of 34 women with BPD, is presented in two parts. Part I examined outcomes of symptomology, quality of life and satisfaction with services, compared to pre-intervention levels relative to treatment as usual. A statistically significant improvement in BPD-related symptoms was identified, along with increased self-perceived quality of life in the domains of social relationships and

environment. No statistically significant change in quality of life for the domains of psychological or physical health was reported. While participants reported strong satisfaction with services, there was no statistically significant difference between groups. Part II examined impacts on health services usage compared to pre-intervention levels relative to treatment as usual. Results indicated a statistically significant reduction in health services usage for the DBT skills training group participants in the period following the intervention, with significantly fewer emergency mental health presentations, mental health admissions and total days of admission. There was no statistically significant difference between the intervention and control groups for these outcomes.

In Study Three, a pre-post comparison of 12 men with BPD examined outcomes of symptomology, quality of life and client satisfaction with services. A statistically significant improvement in BPD-related symptoms was identified, as was increased self-perceived quality of life in the domain of social relationships. No statistically significant change in quality of life for the domains of psychological or physical health or environment was identified. Participants reported a high level of satisfaction with services.

The results support the effectiveness of group DBT skills training as a treatment for BPD in community mental health settings. These findings are of particular import for rural areas, offering a practical approach to BPD which can be integrated within existing services, without need for increased funding or workforce resources.

Declaration

I certify that this work contains no material which has been accepted for the award of any other degree or diploma in my name, in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. In addition, I certify that no part of this work will, in the future, be used in a submission in my name, for any other degree or diploma in any university or other tertiary institution without the prior approval of the University of Adelaide and where applicable, any partner institution responsible for the joint-award of this degree.

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List of Abbreviations

ABIC   Assessment and Brief Intervention Clinic

ABS   Australian Bureau of Statistics

AIHW   Australian Institute of Health and Welfare

ANZCTR   Australian New Zealand Clinical Trials Registry

APA   American Psychiatric Association

ASGC   Australian Standard Geographical Classification Remoteness Areas

BPD   Borderline Personality Disorder

BPD Co   Borderline Personality Disorder Collaborative

BSL-23   Borderline Symptom List 23 item version

CBIS   Community Based Information System

CCCME   Consolidated Country Client Management Engine

CHSALHN   Country Health SA Local Health Network

CONSORT   Consolidated Standards of Reporting Trials

CSQ-8   Client Satisfaction Questionnaire 8 item version

DBT   Dialectical Behaviour Therapy

DSMC   Data and Safety Monitoring Committee

DSM   Diagnostic and Statistical Manual of Mental Disorders

EMA   Ecological Momentary Assessment

ESM	Experience Sampling Methodology
ETLS	Emergency Triage Liaison Service
fMRI	Functional Magnetic Resonance Imaging
GPM	General Psychiatric Management
ICD	International Classification of Diseases
ITT	Intention to Treat
MBT	Mentalisation-Based Treatment
MMAT	Mixed Methods Appraisal Tool
MSI-BPD	McLean Screening for Instrument for Borderline Personality Disorder
NALHN	Northern Adelaide Local Health Network
NCCMH	National Collaborating Centre for Mental Health
NHMRC	National Health and Medical Research Council
NMHC	National Mental Health Commission
NICE	National Institute for Health and Care Excellence
NRHA	National Rural Health Alliance
NSSI	Non-Suicidal Self Injury
OACIS	Open Architecture and Clinical Information System
PAI	Personality Assessment Inventory
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses

RCT   Randomised Controlled Trial

RRMA   Rural, Remote and Metropolitan Area

SAHHREC SA Health Human Research Ethics Committee

SCID   Structure Clinical Interview for DSM

SCM   Structured Clinical Management

SFT   Schema-Focused Therapy

SSRI   Selective Serotonin Reuptake Inhibitor

STEPPS   Systems Training for Emotional Predictability and Problem Solving

TBN   Temporal Bayesian Network

TAU   Treatment as Usual

TFP   Transference-Focussed Psychotherapy

WHO   World Health Organisation

WHOQOL World Health Organisation Quality of Life

Chapter I: Introduction Part I: Borderline Personality Disorder

This thesis examines the effectiveness of group Dialectical Behaviour Therapy (DBT) skills training as a stand-alone treatment for Borderline Personality Disorder (BPD) in a regional, public community mental health setting. The following chapter considers the history of the BPD diagnosis and the aetiology of the disorder. The central areas of dysfunction in BPD are detailed in light of the biosocial model of borderline psychopathology, including consideration of their expression, theoretical underpinning and research evidence. The comorbidities and course of BPD are presented. The development of treatments for BPD is explored, along with empirical support for evidence-based specialist and generalist approaches. Health cost implications, and the significant challenge the disorder presents to public mental health services are discussed. The particular challenge of service delivery for BPD in the regional context is introduced. Finally, an overview of current directions in BPD research is offered.

Borderline Personality Disorder

BPD is a complex psychiatric disorder characterised by significant and pervasive impairment in personality and interpersonal functioning. Individuals with BPD demonstrate symptoms including emotional dysregulation, separation insecurity, anxiety and depression, in addition to personality traits such as hostility, impulsivity and risk taking (American Psychiatric Association (APA), 2013; Stone, 2019). They also experience the highest rates of self-harm and suicidal behaviours of any patient group (Carmel et al., 2014a; Grant et al., 2008). Between 60 and 70% of people with BPD attempt suicide, with rates of completed suicide estimated to be 10% (Oldham, 2006). Approximately 50% of mental health outpatients who complete suicide have a diagnosis of BPD (APA, 2003).

The Diagnostic and Statistical Manual of Mental Disorders (5th edition; DSM-5; APA, 2013) identifies a diagnosis of BPD when an individual persistently demonstrates five of nine specified criteria and significant functional impairment. The pattern of instability is typically established by late adolescence to early adulthood. This diagnostic approach allows significant variability in clinical presentations, with two individuals with BPD potentially only sharing a single diagnostic feature (Hughes et al., 2012). The complete DSM-5 (APA, 2013) diagnostic criteria for BPD are provided in Table 1.

Table 1

Borderline Personality Disorder Diagnostic Criteria

A pervasive pattern of instability of interpersonal relationships, self-image, and affects, and marked impulsivity, beginning by early adulthood and present in a variety of contexts, as indicated by five (or more) of the following:

1. Frantic efforts to avoid real or imagined abandonment. (**Note:** Do not include suicidal or self-mutilating behaviour covered in Criterion 5).

2. A pattern of unstable and intense interpersonal relationships characterised by alternating between extremes of idealisation and devaluation.

3. Identity disturbance: markedly and persistently unstable self-image or sense of self.

4. Impulsivity in at least two areas that are potentially self-damaging (e.g., spending, sex, substance abuse, reckless driving, binge eating). (**Note:** Do not include suicidal or self-mutilating behaviour covered in Criterion 5).

5. Recurrent suicidal behaviour, gestures, or threats, or self-mutilating behaviour.

6. Affective instability due to a marked reactivity of mood (e.g., intense episodic dysphoria, irritability, or anxiety usually lasting a few hours and only rarely more than a few days).

7. Chronic feelings of emptiness.

8. Inappropriate, intense anger or difficulty controlling anger (e.g., frequent displays of temper, constant anger, recurrent physical fights).

9. Transient, stress-related paranoid ideation or severe dissociative symptoms.

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

Despite this possible diversity in clinical features, individuals with BPD commonly experience dysfunction across four domains; emotional, behavioural, cognitive and interpersonal (Hughes et al., 2012). A detailed consideration of each of these areas is presented in light of the biosocial model of BPD on page 21.

History of Borderline Personality Disorder

In the 1930s, individuals experiencing psychiatric illness were broadly categorised as either 'psychotic', including the modern diagnoses of Schizophrenia and Bipolar and Related Disorders, or 'neurotic', capturing anxiety and depressive presentations (Krawitz & Jackson, 2008). In 1938, American psychoanalyst Adolf Stern described 'borderline personality' in reference to a group of patients who did not appear to fit within either category. These individuals did not respond to traditional treatment approaches and appeared to occupy a diagnostic 'border' between the neurotic and psychotic groups (National Collaborating Centre for Mental Health (NCCMH), 2009). The first research on borderline personality was published in 1968 (Grinker et al., as cited in Knopf, 1968), which included interviews with hospitalised patients with the aim of clarifying the features of the borderline term. Understanding of the term further developed in the 1970s as the features and behaviours of borderline personality became more widely recognised (NCCMH, 2009). In 1975, Kernberg described 'borderline personality organisation' as an unstable psychological self-organisation resulting in a consistent pattern of volatile behaviour. Gunderson and Kolb (1978) compared patients with borderline personality to those with 'neurotic depression', Schizophrenia and other mixed diagnoses to examine discriminating features of the presentation. The characteristics they described underpin the modern diagnosis of BPD (NCCMH, 2009), which was first included in the third edition of the DSM (DSM-III, APA) in 1980, and further refined in subsequent editions.

The diagnosis of BPD is not recognised by the *International Classification of Diseases*, 10th revision (ICD-10; World Health Organization (WHO), 1992). Individuals experiencing instability in emotions, relationships and self-image may be captured in the ICD-10 diagnosis of 'emotionally unstable personality disorder, borderline type' (F 60.31). However, the brief, stress-related paranoid and dissociative symptoms captured in the DSM-5

(APA; 2013) are not included, and comparison of the two classification systems has identified significant divergence between the two approaches (NCCMH, 2009).

Aetiology of Borderline Personality Disorder

Until recently, research into the causes and development of BPD was less well developed than for other psychological diagnoses (such as depression; Kaufman & Charney, 2001) and even other personality disorders (such as antisocial personality disorder; DeLisi et al., 2019). Historically, BPD was considered a disorder of adulthood (Crick et al., 2005; Hughes et al., 2012) and clinicians were reluctant to consider diagnosis before the age of 18 (Crowell et al., 2009). This limited longitudinal research with young people at risk of developing BPD to identify relevant biological and environmental vulnerabilities and protective factors (Crowell, 2009; Crowell et al., 2009). However, empirical investigations increasingly indicate that aetiological antecedents to BPD exist (Crowell et al., 2005), and that BPD can be reliably identified in adolescence (Miller et al., 2008). Understanding the biological and environmental precursors to BPD is essential to the development of targeted and effective treatment interventions (Beauchaine et al., 2008). Since the 1960s several aetiological models of BPD have been proposed (Kernbergy, 1975, see also Fonagy et al., 2000, as cited in Crowell et al., 2009). Of these, Linehan's (1993) influential biosocial theory of borderline pathology is the most comprehensively described (Crowell et al., 2009).

Biosocial Theory of Borderline Personality Disorder. Linehan's (1993) biosocial theory of BPD is a developmental model[1] of borderline psychopathology. Linehan's model posits that individuals with BPD are biologically predisposed to emotional vulnerability. Emotional vulnerability is characterised by increased sensitivity to emotional stimuli,

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[1] Developmental models focus on the progression of human development and the role of early experiences in determining personality (APA, 2020).

extreme emotional responding and difficulty returning to an emotional baseline, leading to significant dysfunction in responding to challenging emotions (Linehan, 1993; see also Crowell et al., 2009). The primary environmental factor is an early childhood setting that is intolerant of emotional expression, invalidating a child's emotions by punishing, ignoring or minimising them (Chapman, 2006). Such environments may simultaneously invalidate and intermittently reinforce intense emotional displays (Crowell et al., 2009). In the absence of skilful parenting, children struggle to develop skills to understand and cope with their emotional experiences, often demonstrating emotional avoidance, maladaptive coping and a lack of emotion regulation skills (Chapman et al., 2006). The interaction between the biological predisposition toward emotional vulnerability and the invalidating early environment increases the likelihood of the individual developing BPD (Linehan, 1993; see also Chapman, 2006). The model emphasises emotional dysfunction, applying a broad definition which includes emotion-dependent behaviours and cognitive processes, action urges, and physiology (Crowell et al., 2009).

The biosocial model of BPD has been well supported by subsequent research, including evidence of the biological underpinnings (Hughes et al., 2012) and heritability of BPD (Torgersen et al., 2008), and the role of disrupted attachment (Levy et al., 2005) and invalidating childhood environments (Beauchaine et al., 2009; Johnson et al., 2002) in the development of the disorder. Explicit testing of the model through a five-year longitudinal evaluation of at-risk young people lends further support to the theory (Arens et al., 2011). The biosocial model was expanded in 2009 to include recognition of impulsivity as one of the earliest identified expressions of vulnerability to BPD (Crowell et al., 2009).

Areas of Dysregulation in Borderline Personality Disorder

BPD is considered a 'disorder of dysregulation' (Carpenter & Trull, 2013), with affected individuals experiencing pervasive impacts across a range of areas: emotional, behavioural, cognitive and interpersonal. The expression, theoretical underpinnings and research evidence for each of these domains is considered below.

Emotional Dysregulation. Emotion dysregulation is commonly conceptualised to be the central area of dysfunction in BPD (Crowell et al., 2009; Linehan, 1993). As detailed in Linehan's (1993) biosocial theory of BPD, emotional dysregulation is difficulty with emotional coping and adaptive emotional responding, arising from the interaction between biological emotional sensitivity and an invalidating early environment. Research evidence suggests four components to emotional dysregulation in BPD; heightened emotional sensitivity, increased negative affect and lability, a lack of adaptive emotion regulation skills, and a reliance upon maladaptive emotion regulation approaches (Bertsch et al., 2017; Carpenter & Trull, 2013).

Heightened emotional sensitivity. As detailed above, emotional sensitivity in BPD is considered to be biologically derived (Crowell et al., 2009; Linehan, 1993) and primarily consists of increased responsivity to negative emotional stimuli, or a 'negativity bias' (Bertsch et al., 2017; Carpenter & Trull, 2013). Emotional sensitivity in BPD has been well explored in the research literature. Emotion recognition studies indicate that, compared to controls, those with BPD are both more likely to attend to negative emotional expressions in others (Domes et al., 2008) and are also less able to correctly identify emotional facial expressions (Guitart-Masip et al., 2009; Minzenberg et al., 2007). Two meta-analyses examining emotion processing in BPD (Daros et al., 2013; Mitchell et al., 2014) identified that, compared to a control group, individuals with BPD were more likely to identify

emotionally neutral faces as negative, and demonstrated an impaired ability to accurately identify strong disgust or anger. Individuals with BPD have demonstrated slowed reaction times (Arntz et al., 2000) and an attentional bias toward negative stimuli (Wingfield at al., 2009) in emotional Stroop tests. These deficits are theorised by Daros and colleagues (2013) to represent a 'threat hypersensitivity' in individuals with BPD, with exposure to emotional stimuli resulting in increased arousal, disrupting the ability to attend to and accurately recognise the emotion. Evidence of such arousal is consistent with findings of neurobiological research, in which heightened sensitivity in BPD has been associated with increased activation of the amygdala (Bertsch et al., 2018). Studies employing functional magnetic resonance imaging (fMRI) have revealed intense and prolonged responding of the amygdala in individuals with BPD when presented with emotional stimuli (Hazlett et al., 2012; Herpertz et al., 2001).

Increased negative affect and lability. Carpenter and Trull (2013) theorise that this emotional sensitivity directly results in increased negative affect, and that increased attending to emotional stimuli (even when only mildly negative) leads to rapidly escalating (labile) mood. Psychophysiological and self-report measures indicate that those with BPD appear to experience more intense negative emotions (Yen et al., 2002), and more emotional instability and reactivity (Kuo & Linehan, 2009). Due to the changeability of emotional states in BPD, some researchers have employed ecological momentary assessment (EMA; Stone & Shiffman, 1994) (also referred to as experience sampling methodology; ESM) to increase the accuracy of self-report data by assessing mood multiple times over many days, in the course of an individual's normal life. A review of 19 studies employing EMA by Nica and Links (2009) summarised findings regarding affective instability in individuals with BPD. Findings included more frequent and intense negative moods compared to non-clinical controls; greater variability (or breadth) of negative affect than both controls and individuals with

depression and; more frequent and sudden changes in mood than controls or those with

depression or anorexia nervosa. Evidence regarding the role of environmental triggers for

affective instability was mixed, and may be related to the number of negative interpersonal

events, and/or apply only to particular mood states (e.g., hostility). Finally, the strength of

negative mood was identified as a risk factor for suicide, with those individuals experiencing

both negative mood and sudden changes in mood identified as being most at risk (Nica &

Links, 2009).

Inadequate adaptive regulation skills. Emotion regulation approaches are commonly

identified as either adaptive (such as problem solving or acceptance), or maladaptive

(including rumination and self-harm) (Aldao & Nolen-Hoeksema, 2012). Difficulty with

emotion regulation is a central characteristic of BPD. As detailed above, the biosocial model

posits that these deficits arise when emotionally vulnerable children are unable to develop the

necessary skills to identify, understand, and control emotions (Carpenter & Trull, 2013;

Linehan, 1993). Individuals with BPD demonstrate reduced awareness of their own

emotional state (Leible & Snell, 2004) and a lessened ability to reliably differentiate between

different emotions (Barrett, 2004). Research findings indicate poorer performance on

measures of emotional clarity and labelling compared to controls (Suvak et al., 2011). In a

multimodal study using both behavioural and self-report measures, those with BPD reported

higher emotional dysregulation and a lessened ability to tolerate emotional distress than

controls (Bornovalova et al., 2008). Similarly, Chapman et al. (2008) administered self-report

measures of psychological symptomology and emotion regulation difficulties along with a

computerised passive avoidance learning task. Individuals with stronger BPD-traits

demonstrated more impulsive emotional responding under negative emotional states such as

nervousness, fear or shame. The generalisability of these findings is limited by reliance upon

an undergraduate student sample, who may demonstrate higher functioning than BPD populations in clinical settings.

A meta-analysis and systematic review of 93 studies of emotion regulation in BPD (Daros & Williams, 2019) found that those with BPD used fewer effective emotion regulation strategies (such as problem solving or cognitive reappraisal) to reduce negative affect than normal controls or those with other psychiatric diagnoses. Further, there is meta-analytic evidence that when emotion regulation strategies are employed by individuals with BPD, they are implemented less skilfully than by those with major depressive disorder or healthy controls (Southward & Cheavens, 2020). Southward and Cheavens (2020) suggest that emotion modulation deficits in BPD may be related to a uniquely poor implementation of skills, rather than the frequency of skills use alone.

Bertsch and colleagues (2017) suggest that deficits in emotion regulation are linked to the lateral and medial prefrontal cortex, regions of the brain concerned with the control and modulation of emotional actions. A meta-analysis by Schulze and colleagues (2016) indicated that, compared to controls, individuals with BPD demonstrate reduced activation of the dorsolateral prefrontal cortex and hyperactivation of the amygdala in response to negative emotional stimuli. The neural underpinnings of emotional dysregulation were further revealed in a 2018 study by Bertsch et al., which employed fMRI during an approach-avoidance task using happy and angry faces. The results indicated that women with BPD were less able to control anger-related emotional actions, with evidence of reduced communication between the lateral prefrontal cortex and the amygdala, compared to non-clinical controls (Bertsch et al., 2018).

Reliance on maladaptive approaches. Linehan's (1993) biosocial theory of BPD holds that "failures to inhibit maladaptive, mood-dependent actions are by definition part of

the borderline syndrome" (Linehan, 1993, p. 43). There is strong evidence that individuals with BPD engage in a range of maladaptive cognitive and behavioural strategies, which Linehan's (1993) model identifies as an attempt to reduce emotional distress or avoid negative affect. Maladaptive behaviours such as substance abuse (Trull et al., 2000), high-risk sexual behaviour (Tull et al., 2011) and binge eating (Sansone et al., 2005) are associated with BPD. Particularly common is the presence of self-harm (or non-suicidal self-injury; NSSI) (Muehlenkamp et al., 2011) including behaviours such as deliberate cutting or burning. Between 50% and 90% of individuals with BPD describe self-harming behaviour (Dulit et al., 1994; Zanarini et al., 2008), which is commonly identified as serving to reduce distress and aid emotion regulation (Klonsky, 2007). Individuals with BPD report minimal pain arising from self-harm, particularly during periods of distress (Bohus et al., 2000).

Findings from two meta-analyses reveal that individuals with BPD use maladaptive emotion regulation strategies more frequently than those with other psychiatric behaviours or healthy controls (Daros & Williams, 2019; Southward & Cheavens, 2020). Those with BPD are more likely to report use of the specific maladaptive strategies of avoidance and rumination than those with other psychiatric diagnoses (Daros & Williams, 2019). The use of maladaptive cognitive strategies such as thought suppression has been shown to increase physiological arousal and emotional intensity, leading to greater distress and dysfunction (Salsman & Linehan, 2012). Similarly, higher levels of rumination in individuals with BPD have been linked with increased NSSI urges and behaviours (Zaki et al., 2013).

The emotional cascade model (Selby et al., 2008) offers a theoretical explanation for the presence of maladaptive regulation strategies. The model describes 'emotional cascades', occurring when negative affect (such as anger) triggers intense rumination, resulting in increasing intensity of the negative affect and prompting the individual to perform maladaptive behaviours (such as alcohol abuse or reassurance seeking) to distract from their

distress. Maladaptive strategies are chosen over adaptive ones, as they may be easier to perform or have more immediate effect. However, while maladaptive strategies may serve to reduce negative affect in the short term, they are more likely to be ineffective in the long-term and/or result in negative consequences (Selby et al., 2008; see also Carpenter & Trull, 2013). Subsequent research by Selby and colleagues (2009) supports the model, evidencing the role of emotional cascades in mediating the relationship between symptoms of BPD and maladaptive regulation strategies. Evidence for the role of rumination as a mediator between emotional dysregulation and maladaptive behaviours in an outpatient clinical BPD sample was also identified by Martino et al. (2018). Ruminations focussed on anger and depressive affect were significantly associated with self-harm and aggression. The emotional cascade model was comprehensively examined by Selby et al. (2021) using Temporal Bayesian Network (TBN) modelling, a complex empirical approach examining the relationship between multiple elements of a model across time, indicating both positive feedback processes and the utility of the model as a whole. EMA data from young people demonstrating self-harming behaviours was examined using TBN over a two-week period. Results found that the emotional cascade model was highly accurate in predicting BPD diagnosis (approximately 90%) and also strongly predicted rumination, negative affect and maladaptive behaviours (Selby et al., 2021).

Behavioural Dysregulation. Behavioural dysregulation includes a broad range of acts which are hard to control, potentially harmful to the individual and can result in significant functional impairment (Selby et al., 2008; Selby, Brandt, Crawford et al., 2010). Dysregulated behaviours observed in individuals with BPD include substance abuse (Dulit et al., 1990), suicidal acts (Mehlum et al., 1994), NSSI (Brown et al., 2002), disordered eating (Selby, Ward & Joiner, 2010), physical aggression (Terzi et al., 2017), stealing and impulsive spending (Selby, Brandt, Crawford et al., 2010) and high-risk sexual activity (Zanarini et al.,

2003). The presence of such acts is also diagnostically significant; two of the nine DSM-5 (APA, 2013) diagnostic criteria for BPD relate to potentially damaging impulsive or self-harming behaviours (Criterion 4 and 5, see page 21). Chronic, dysregulated self-harming and suicidal behaviours are the characteristics most closely associated with BPD by clinicians (Gunderson & Singer, 1975; Sansone et al., 1998). Rates of NSSI are notably high, with between 65% and 80% of individuals with BPD reporting self-harming behaviour (Clarkin et al., 1983; Soloff et al., 1994). In a clinical sample, self-harming behaviours have been shown to peak between the ages of 18 and 24 and remain relatively high through to the ages of 50 to 59, although it is not clear whether this sustained prevalence is also present in those with BPD outside of clinical settings (Sansone et al., 2002). Up to 10% of those with BPD die by suicide (Oldham, 2006). Longitudinal research indicates that, when compared to those with other diagnoses, individuals with BPD report higher suicidality, with severity persisting over time, and are more likely to have a lifetime history of suicide attempts. Further, higher rates of suicidality are associated with poorer long-term outcomes, including significantly lower rates of BPD remission[2] (Mehlum et al., 1994). Both self-harm and suicidal behaviours are commonly employed by individuals with BPD in an attempt to reduce or eliminate distress (Boergers et al., 1998; Brown et al., 2002). However, they are separate acts with a range of overlapping but different triggers and functions. Self-harming behaviours may occur without any suicidal intent, and have been identified as serving to express anger, provide distraction (Brown et al., 2002) or relieve dissociative symptoms (Parker, 1981). In contrast, attempted suicide is commonly identified as an act intended to relieve the perceived burden on others (Brown et al., 2002). Both self-harm and suicide attempts are closely associated with high levels of trait impulsivity (Terze et al., 2017), which has been linked to deficits in 5-HT (serotonin receptor) system and corticolimbic function (Coccaro, 1992; Coccaro et al., 2011).

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[2] Defined as a reduction in, or disappearance of, symptoms of the disorder.

Growing evidence indicates that dysregulated behaviours, including NSSI and other maladaptive regulation strategies, are intimately linked with deficits in emotion regulation in BPD. As explored earlier, both the biosocial model (Linehan, 1993) and the emotional cascade model (Selby et al., 2008) conceptualise a causal relationship between overwhelming emotions, poorly developed emotion regulation strategies and the performance of impulsive or maladaptive behaviours. This relationship is strongly reflected in research findings. In a randomised controlled trial (RCT) of 97 women with BPD, Keuhn and colleagues (2020) identified that those with deficits in emotion regulation skills and problem-focussed coping were more likely to report repeated suicide attempts, even after receiving therapeutic intervention. Emotion regulation has been found to be significantly associated with vulnerability to self-harm (Terzi et al., 2017), and predictive of impulsive aggression, even once controlling for trait impulsivity (Scott et al., 2014).

Finally, dysregulated behaviours may be observable from an early age, with research identifying that the presence of such behaviour in childhood is predictive of later BPD (Wolke et al., 2012). A large prospective study of 5711 children in the United Kingdom examined behavioural and emotional dysregulation, along with environment risk factors including harsh parenting and victimisation by peers, occurring before seven years of age. The presence of stable dysregulated behaviour and peer victimisation was found to be predictive of BPD symptoms in early adolescence. Further, more severe behavioural dysregulation and peer victimisation was found to be associated with more severe BPD symptoms at eleven years of age. The finding lends further support for the biosocial model of BPD (Linehan, 1993), with the authors interpreting findings to evidence the interaction between trait dysregulation and environmental factors in the development of BPD (Wolke et al., 2012).

Cognitive Dysregulation. Theoretical and research literature on cognitive

dysregulation in BPD identifies two primary domains: maladaptive cognitive content and

dysfunctional cognitive processing. Maladaptive cognitions consist of distorted beliefs about

the self and the world (Geiger et al., 2013). Three core beliefs have been theorised to

underpin BPD psychopathology: the self as unacceptable and vulnerable, others as rejecting

and abandoning, and the world as malevolent and dangerous (Baer et al., 2012; Beck &

Freeman, 1990; Pretzer, 1990). Such beliefs distinguish BPD from other personality disorders

and result in cognitive themes including distrust, neediness and fear of rejection (Bhar et al.,

2008). There is a strong bidirectional relationship between cognitive distortions and

emotional distress (Blair, 2004). Maladaptive cognitive content can trigger and worsen

negative affect, while emotional distress can deplete cognitive resources and exacerbate

negative cognitions (Beck et al., 2004; Geiger et al., 2015). In a multi-method examination of

187 undergraduate students with BPD traits, Geiger et al. (2015) sought to explore the

relationship between BPD-specific cognitive distortions, cognitive load and difficulties with

goal-directed behaviour. The researchers found that severity of BPD-related symptoms was

significantly associated with increased cognitive distortions, with the relationship increasing

under cognitive load. Findings indicate the increased challenge for individuals with BPD to

work toward goals when distressed, and highlight the importance of treatment approaches

which teach adaptive skills to manage maladaptive cognitions when upset (Geiger et al.,

2015).

Individuals with BPD also demonstrate a range of dysfunctional cognitive processes

which are strongly associated with emotional dysregulation (Soloff et al., 2015). These

processes include negative attentional and memory biases, thought suppression and

rumination. Individuals with BPD are more likely to attend to threatening or negative stimuli

and interpret ambiguous stimuli as negative. They also demonstrate stronger engagement

with negative memories (Baer et al., 2012; Mathews & MacLeod, 2005; Wilson, MacLeod & Campbell, 2007). Thought suppression and rumination are avoidance-based maladaptive coping strategies. Thought suppression involves pushing distressing thoughts from conscious awareness (Geiger et al., 2013). Rumination is a repetitive engagement with negative cognitions, thought to protect the individual from more distressing cognitive content (Williams, 2006). Both cognitive processes have been shown to worsen psychological distress (Abramowitz et al., 2001; Nolen-Hoeksema et al., 2008). In a study of 85 undergraduates, Geiger et al. (2013) examined the validity of both maladaptive cognitions and dysfunctional cognitive processes in predicting severity of BPD-related symptoms. Results from self-report measures indicated that anger rumination was the strongest predictor of BPD symptom severity. Both rumination and thought suppression were stronger predictors than maladaptive attitudes, negative automatic thoughts or trait negative affect. Findings indicate the importance of treatment interventions for BPD which target rumination and thought suppression (Geiger et al., 2013). However, the study was limited by the reliance upon a student sample and self-report measures. Further investigation of clinical populations using more methodologically rigorous diagnostic interviews is desirable.

As with maladaptive cognitive content, dysfunctional cognitive processing is also closely associated with emotional dysregulation in individuals with BPD. Negative affect is thought to disrupt cognitive tasks, while cognitive processing failures likewise increase the likelihood of aggressive or impulsive responding to distressing emotions (Blair, 2004; Soloff et al., 2015). Soloff and colleagues (2015) employed fMRI to examine the role of neurobiology in cognitive processing interference arising from negative affect. A clinical sample of 23 female participants with BPD was compared to 15 non-clinical controls. Employing a variety of cognitive tasks in a negative affective context, the researchers identified impaired responding among the BPD group, including decreased activation of the

orbital frontal cortex, increased activation of the amygdala, and hyper-activation of the anterior cingulate cortex, superior parietal/precuneus and basal ganglia. Soloff et al. (2015) suggest that the observed functional impairments may result in weakened executive functions (including response inhibition, focussed attention and decision-making) in individuals with BPD in response to negative affect. Evidence also suggests that cognitive biases may interact, leading to greater symptom severity and comorbidity (Mathews & MacLeod, 2005; Riskind & Alloy, 2006). Cognitive distortions can increase the tendency to selectively attend to negative stimuli, and stronger engagement with negative memories can lead to more negative attributions and rumination (Baer et al., 2012).

In a review of the research literature on emotion-related cognitive processes in BPD, Baer and colleagues (2012) noted that empirical examination of cognitive dysfunction in BPD is less advanced than for other diagnoses, longitudinal research is lacking, and the published literature has not yet clarified to what extent cognitive dysregulation causes, or results from, BPD (Baer et al., 2012). Ongoing research is required to expand understanding of cognitive dysregulation in BPD and inform effective treatment approaches.

Interpersonal Dysregulation. Interpersonal dysfunction is a central diagnostic feature of BPD, often presenting as instability and impulsivity in relationships, discomfort with being alone and difficulties with anger expression (APA, 2013; Linehan, 1993; Russell et al., 2007). Individuals with BPD commonly display poor social problem-solving (Bray et al., 2007) and are highly sensitive to perceived interpersonal rejection and abandonment (Dixon-Gordon et al., 2013). They may also demonstrate 'splitting' behaviour; a rapid shifting between highly dichotomised perceptions of the self and others producing sudden changes in behaviour and mood (Horowitz, 2004). For example, individuals with BPD may swing between being highly dependent and appearing detached and avoidant (Gunderson, 1996), or display extreme expressions of anger, or submissive affective over-control

(Linehan, 1993). Emotional dysregulation, detailed above, appears likely to underpin some of the interpersonal challenges in BPD (Dixon-Gordon et al., 2013; Linehan, 1993). Stronger emotion regulation skills have been linked to more positive social interactions (Lopes et al., 2005), and persistent emotional dysregulation has been theorised to weaken an individual's capacity for adaptive responding to interpersonal challenges (Baumeister et al., 1998). Further, interpersonal instability commonly precedes maladaptive coping behaviours (Brodsky et al., 2006). Despite this, research investigations into interpersonal dysregulation are less well developed than for other areas of dysfunction in BPD (Russell et al., 2007).

In a study of interpersonal behaviour in BPD, Russell et al. (2007) employed event-contingent recording methodology over a 20-day period to compare the experiences of those with BPD with a non-clinical control group. Results indicated that those with BPD were more quarrelsome and submissive, and less dominant, than the control group. There was also greater behavioural variability observed in the BPD group. The researchers attributed the findings to a tendency among those with BPD to fluctuate between efforts to achieve and avoid interpersonal connection, consistent with an insecure attachment style (Russell et al., 2007). Gunderson and Lyons-Ruth (2008) theorise that interpersonal dysfunction in BPD may reflect hypersensitivity to perceived rejection or abandonment. Support for this theory is provided by two studies (Dixon-Gordon et al., 2013; Sadikaj et al., 2010). Utilising a laboratory-based task involving exposure to social ostracism, Dixon-Gordon and colleagues (2013) reported that participants with BPD perceived greater threat to social needs following rejection than participants without BPD. Further, emotional regulation capacity was found to mediate the relationship between BPD diagnosis and perceived threat. These findings are consistent with a controlled EMA study of 69 participants by Sadikaj and colleagues (2010) which found that, compared to non-clinical controls, those with BPD perceived greater threat and demonstrated more dysregulated negative affect and reactivity to social situations

involving low warmth and agreeableness by others. The authors suggest that, among individuals with BPD, perceived disagreeableness in others may be interpreted as a threat to the individual's security, triggering strong negative affect (Sadikaj et al., 2010).

Greater understanding of interpersonal dysfunction in BPD may be offered by the social-communicative model posited by Luyten and colleagues (2020). Individuals with BPD report a high prevalence of early life trauma, which Luyten et al. (2020) suggest may disrupt the development of adaptive attachment, social cognition and epistemic trust (being able to trust and integrate new information from social interactions). Communication and social learning are negatively impacted, resulting in less adaptive social functioning and an experience of isolation. Further, this reduced capacity for social learning contributes to the perception among care providers that individuals with BPD are 'resistant' or 'hard to reach' (Luyten et al., 2020).

An alternate model is presented by the interpersonal theory of psychopathology (Horowitz, 2004; Sullivan, 1953, as cited in Sadikaj et al., 2010), which posits that individuals pursue essential human needs (such as attachment and agency) in ways which promote security and self-esteem and minimise anxiety. Primary interpersonal relationships and attachment in early life shape mental representations of the self and others. For those with BPD, where these representations may develop in the context of insecure attachment or trauma, cognitive distortions arise which shape perception based on previous interpersonal experiences. As such, new social interactions may be perceived with a negative bias, leading to misinterpretation, mistrust and hypersensitivity (Sadikaj et al., 2010). While promising, application of interpersonal theory to research examination of dysregulation in BPD is required to determine the utility of the model.

Borderline Personality Disorder and Comorbidity

The diagnosis of BPD is associated with high rates of psychiatric comorbidity (Shah & Zanarini, 2018), to the extent that it is uncommon to encounter 'pure' BPD in clinical services (Fyer et al., 1988; Krawitz & Jackson, 2008). In a study of inpatients with BPD, 91% were found to have one comorbid diagnosis, and 42% had two or more (Fyer et al., 1988). The early conceptualisation of BPD as existing on a 'border' between disorders and potential diagnostic overlap with other presentations (including depression, anxiety and psychotic disorders) may contribute to the high rates observed (NCCMH, 2009). BPD is commonly associated with trauma (particularly childhood trauma), and presents with comorbid Post Traumatic Stress Disorder (PTSD; Pagura et al., 2010) in 25% to 56% of individuals (Silverman et al., 2012; Zanarini et al., 2011). Comorbidity occurs frequently with mood disorders (up to 96% lifetime prevalance; Zanarini et al., 1998) and anxiety disorders (up to 88% of inpatients; Zanarini et al., 1998, and a 74.2% lifetime prevalence; Grant et al., 2008). Substance Use Disorder was identified by Grant and colleagues (2008) in 50.7% of individuals with BPD. A cross sectional study by Khosravi (2020) identified feeding and eating disorders in 65.4% of those with BPD in a clinical setting. BPD may also be diagnostically confused with Bipolar and Related Disorders due to the shared feature of affective instability, which may delay accurate diagnosis and treatment (NCCMH, 2009; Paris & Black, 2015). Increasing comorbidity in individuals with BPD has been found to correlate with poorer prognosis (Bender et al., 2001; Hall et al., 2001).

A high degree of functional impairment and physical illness is also reported (National Institute for Health and Care Excellence (NICE), 2009). Individuals with BPD experience challenges in social and occupational functioning related to affective and interpersonal dysregulation, with the severity of impairment often correlating with the severity of symptoms (NCCMH, 2009). The degree of mental and physical disability is significantly

higher than for the general population, even when controlling for sociodemographic factors and comorbid psychiatric and medical conditions. Further, disability is significantly greater for women than for men (Grant et al., 2008). Individuals with active (unremitted) BPD are more likely to suffer from chronic physical illnesses and make poorer health-related lifestyle decisions (Frankenburg & Zanarini, 2004). Those with BPD may live between 18 and 27.5 years less than the general population, with the increased mortality rate attributed to higher risk of both 'natural' (e.g., cardiovascular disease) and 'unnatural' causes of death including suicide, accidental death and homicide (Calihol et al., 2017; Kjaer et al., 2015; Lee & Jeffery, 2018).

Course of Borderline Personality Disorder

There is increasing empirical evidence supporting the conceptualisation of BPD as a lifetime developmental disorder with onset occurring during adolescence (Chanen & Kaess, 2012; Sharp & Fonagy, 2015). The historical reluctance of clinicians to diagnose BPD in individuals under 18 years of age (Crowell et al., 2009) is more likely due to concepts of incomplete identity development (Shapiro, 1990) and the perceived stigma of the disorder (Kernberg et al., 2000), rather than an absence of identifiable symptoms. The significant social and psychological developmental changes arising during adolescence commonly result in interpersonal conflict, emotional distress, and an incomplete sense of self (NCCMH, 2009; Paris, 2014). As a result, clinicians may seek to avoid unnecessarily pathologising common adolescent experiences. Conversely, young people with emerging BPD may have their symptoms minimised as normal developmental challenges, thus delaying access to appropriate diagnosis and treatment (NCCMH, 2009).

However, there has been a marked increase in research into BPD in adolescence in recent years (Sharo & Fonagy, 2015). Structural brain changes in adolescence relevant to

BPD, including increased activity of the amygdala, have been identified (Hare et al., 2008). Exposure to social-emotional stimuli has been shown to trigger stronger amygdala activation in adolescents than in adults (Monk et al., 2003). Sharp and Fonagy (2015) argue that such physical maturation and social-emotional developmental changes occurring during adolescence may combine with predisposing and environmental factors to create a 'vulnerable period' for the onset of BPD. Essential development tasks of the teenage years (e.g., the establishment of independent peer social relationships) rely on capabilities that are linked to the diagnostic criterion of BPD, thus exposing any underlying vulnerability (Sharp & Fonagy, 2015). Zanarini and colleagues (2001) identified the average age for first clinical presentation with symptoms of BPD to be 18. With a standard deviation of between five and six years, this indicates actual age of onset for the disorder at 13 years (Zanarini et al., 2001). Prevalance estimates in adolescent clinical populations range between 11% (Chanen et al., 2004) and 22% of outpatients (Chanen et al., 2008) and up to 49% of inpatients (Grilo et al., 2001). Finally, younger age of onset has been shown to correlate with increased symptom severity and poorer outcomes across the lifespan (Chanen et al., 2007). Adolescent BPD is highly predictive of poorer outcomes up to 20 years into the future, including later psychiatric diagnosis, increased emotional distress, and decreased quality of life and interpersonal functioning (Cohen et al., 2005; Crawford et al., 2008; Winograd et al., 2008).

Once considered to be a chronic, treatment-resistant condition with poor prognosis, several longitudinal studies of BPD have more recently identified long-term patterns toward symptomatic remission and clinical recovery[3] (Paris & Zweig-Frank, 2001; Zanarini et al., 2012). Prevalence rates of BPD appear to increase throughout adolescence, followed by declining rates with each decade from early adulthood (Chanen & McCutchen, 2013). In a systematic review of the literature, Ng and colleagues (2016) examined 19 longitudinal

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[3] Defined as the sustained reduction of disorder symptoms, below the diagnostic threshold.

studies of BPD, with data indicating that clinical remission rates ranged between 33% and 99% and recurrence rates were low. Higher rates of symptomatic remission were associated with longer periods of follow-up. Recovery, however, was limited to reduction in BPD-related symptoms and was not found to extend to improved interpersonal or emotional functioning or vocational engagement. This finding is consistent with that of Alvarez-Tomas et al. (2017), whose ten-year follow-up study of BPD found that while diagnostic domains such as hostility, impulsiveness and affective symptoms improved over time, social and occupational functioning remained impaired. Comorbidity rates also continued to be high. Soloff and Chiapetta (2019) similarly found that while self-harm, suicidal ideation and suicide attempts reduced significantly in a BPD cohort at ten-year follow-up, 44% of participants continued to demonstrate poor economic, vocational and psychosocial outcomes.

Notably, longitudinal outcome studies of BPD have primarily focussed on symptomatic remission and psychosocial functioning. This clinical definition of recovery has failed to examine the self-perceived recovery journey of individuals with BPD, including self-reported quality of life and attainment of individual recovery goals (Ng et al., 2016).

History of Treatment for Borderline Personality Disorder

Historically, the development of treatments for BPD has been shaped by changing concepts of the diagnosis among health professionals (NCCMH, 2009). Early conceptualisations of borderline personality (Kernberg, 1967; Stern, 1938) were adopted by the DSM-III in 1980 and subsequently became influential in the United States. However, this approach was not adopted by the ICD-10, resulting at the time in reduced awareness of borderline personality in the United Kingdom (NCCMH, 2009). Individuals presenting for care throughout the 1980s had limited access to psychodynamic, cognitive or behavioural therapies targeting general mood and anxiety symptoms or interpersonal dysfunction. During

the late 1980s and 1990s, clinicians sought to develop specific treatments for BPD by adapting existing psychological therapies (NCCMH, 2009). The first manualised treatment for BPD was published by Marsha Linehan in 1993. In the years following, 16 manualised approaches to the treatment of BPD have been examined and five have been established as evidence-based (Choi-Kain et et al., 2017; Storebø et al., 2020).

Choi-Kain and colleagues (2017) conceptualise the research examining treatments for BPD as progressing in four major waves. The first wave of research arose in the early 1990s and established evidence for DBT and Mentalisation-Based Treatment (MBT) as superior to treatment as usual (TAU) in the treatment of BPD (Bateman & Fonagy, 1999; Koons et al., 2001; Linehan et al., 1994; Linehan et al., 1991). Emerging evidence for Systems Training for Emotional Predictability and Problem Solving (STEPPS) was also identified (Blum et al., 2008). Second wave research focussed on comparing specialist BPD approaches delivered by experts with general treatment by experts, in response to criticisms that any treatment by experts had clear advantages to TAU (Choi-Kain et al., 2017). Findings strengthened the evidence for DBT (Linehan et al., 2006) and began to build support for Transference-Focussed Psychotherapy (TFP; Doering et al., 2010). Specialist manualised approaches for BPD were compared against each other in the third wave of research (e.g., TFP vs DBT; Clarkin et al., 2007) (Choi-Kain et al., 2017). Evidence increasingly indicated that a number of treatment approaches were effective in the treatment of BPD. An editorial considering third wave evidence suggested (Gabbard, 2007, p. 854): "Could it be that any thoughtful, systematic approach to borderline personality disorder, based on our knowledge of the disorder, is potentially helpful, whatever its theoretical underpinnings or technical approach?"

Fourth wave research subsequently sought to compare specialist treatments for BPD with structured and considered generalist approaches (e.g., DBT vs General Psychiatric Management (GPM), McMain et al., 2009; MBT vs Structured Clinical Management (SCM),

Bateman & Fonagy, 2009). Generalist approaches emerged as an acceptable alternative to providing care for individuals with BPD in clinical populations, particularly in settings where limited time, staffing and budgets preclude 'gold-standard' approaches (Choi-Kain et al., 2017; Choi-Kain et al., 2016). A summary of evidence-based specialist and generalist approaches to BPD, and a consideration of the use of pharmacological treatments, is presented below.

Specialist Treatments for Borderline Personality Disorder.

Dialectical Behaviour Therapy. DBT (Linehan, 1993; 2014) was developed by Marsha Linehan in the late 1980s and early 1990s, arising from her work with women with BPD and severe suicidal ideation (Robins & Chapman, 2004). As explored above, Linehan conceptualised a biosocial theory of BPD, suggesting that underlying emotional dysregulation, in interaction with an invalidating environment, restricts the development of adaptive coping skills and reinforces maladaptive alternatives (Linehan & Kehrer, 1993). As such, DBT is an emotion-focussed treatment, combining cognitive behavioural strategies with mindfulness, a strong focus on the therapeutic relationship, and a balance between acceptance of the individual as they are and recognition of the need for change (the 'dialectic'). The goal of DBT is not only a reduction in BPD-related symptomology and distress, but to support individuals with BPD to build 'a life worth living'. The complete DBT protocol requires treatment be delivered via four modalities: individual therapy, group skills training, 24-hour phone access to the primary therapist and a consultation team environment for clinicians (Linehan, 1993; 2014). A comprehensive exploration of the DBT approach and evidence base will be presented in Chapter II.

Mentalisation-Based Treatment. MBT was developed by Bateman and Fonagy (1999) as a treatment for BPD in a hospital day program setting. MBT seeks to build the

capacity of individuals to identify, understand and question mental states, a process referred to as 'mentalisation' (Allen et al., 2008; Bateman & Fonagy, 2016). The treatment takes a developmental and attachment-based approach, conceptualising the primary dysregulations of BPD as arising from dysfunctional parent/child attachment relationships and the subsequent failure to develop adequate mentalising skills, leading to frequent misinterpretation of the experiences of the self and others (Bateman & Fonagy, 2016). MBT is an 18-month course of treatment consisting of three phases; an assessment phase (assessment of mentalising capacity and attachment style, and establishment of diagnosis), a pre-treatment group (MBT-Introductory) for psychoeducation and an intensive outpatient program (MBT-Individual plus Group) of weekly 75-minute group and 50-minute individual treatment sessions (Bateman and Fonagy, 2016).

MBT is considered an evidence-based therapy for BPD, however recognition of the approach as a first-line treatment varies between countries (Malda-Castillo et al., 2019). MBT is recommended by the Australian NHMRC (2012) clinical practice guidelines, but not by the United Kingdom's NICE (2009) guidelines. The first RCT of MBT reported significant reductions in suicidality and NSSI in patients with BPD in a hospital-based treatment program, with gains maintained at five-year follow-up (Bateman & Fonagy, 1999). A 2009 RCT by Bateman and Fonagy in an outpatient setting found MBT to be more effective in reducing suicidality, NSSI and depression than SCM. A systematic review of 23 studies identified 'promising' evidence for the effectiveness of MBT in treating BPD in both research and clinical settings (Malda-Castillo et al., 2019). MBT was found to be particularly effective in producing sustained, long-term positive change in individuals with BPD. However, many of the studies lacked methodological rigour, with 43% classified as fair and a further 17% as poor, and risk of confounding bias identified in 60% of studies.

Systems Training for Emotional Predictability and Problem Solving. Developed by Blum et al. in 1995 from an earlier approach by Bartels and Crotty (1992), STEPPS is a cognitive-behavioural, systems-based group therapy program (Blum et al., 2002). The approach conceptualises BPD as an emotional intensity disorder and offers psychoeducation, skills training for management of emotions, and behavioural management skills in a 20-week treatment program. STEPPS is not delivered as a stand-alone therapy, but as an adjunct to other ongoing interventions. The systems element is unique, and seeks to engage the social support structures of the participant to build understanding of the BPD diagnosis and encourage reinforcement of positive change (Blum et al., 2016).

The evidence-base for STEPPS as a treatment for BPD is largely based on two RCTs (Blum et al., 2008; Bos et al., 2010) which found the approach to be superior to TAU in reducing BPD-related symptoms, and improving quality of life and overall functioning. An uncontrolled study of 24 participants (in a mixed inpatient and outpatient sample) identified significant reductions in emotion-regulation difficulties, suicidality and hospital admission (Boccalon et al., 2017). A recent non-randomised clinical trial (Guillén Botella et al., 2020) compared STEPPS to DBT and found both approaches to produce significant improvement in BPD-related symptoms and mood. However, DBT was shown to be more effective in addressing the behavioural symptoms of BPD than the STEPPS approach.

Transference-Focussed Psychotherapy. TFP is a manualised, psychoanalytically-oriented approach to BPD based on Kernberg's (1975) conceptualisation of borderline personality. The treatment is based on the understanding of BPD as a disorder of internal conflict, asserting that individuals with BPD experience identify diffusion, resulting in unstable reality testing, aggression and maladaptive defence mechanisms. Employing individual, twice-weekly therapy, TFT uses psychoanalytic techniques (particularly here-and-

now transference) to seek to integrate split-off internalised object relations to resolve the fundamental internal conflict of the disorder (Kernberg et al., 2008; Yeomans et al., 2014).

The APA (2009) categorises the evidence for TFP as strong but controversial, reflecting inconsistency in findings between studies. In a three-year RCT comparing TFP with Schema-Focussed Therapy (SFT) in 86 participants with BPD, Giesen-Bloo and colleagues (2006) identified that, while both approaches achieved reductions in clinical symptoms, SFT was superior to TFP across all outcomes. Further, participants in the TFP group demonstrated a significantly higher drop-out rate than those allocated to SFT. In contrast, an RCT of 104 female outpatients comparing TFP with general treatment by experienced community psychotherapists reported a significantly lower drop-out rate for the TFP group (38.5% compared to 67.3%). Further, TFP was found to be superior in reducing BPD-related symptoms, suicidality, hospital admissions and psychosocial functioning (Doering et al., 2010). In an RCT of 90 participants comparing outcomes following 12 months of DBT, TFP or general supportive treatment, all three approaches produced positive change in mood and functioning. Both DBT and TFP were found to significantly reduce suicidality, while TFP was superior in reducing anger and irritability (Clarkin et al., 2007).

Schema-Focussed Therapy. Combining psychodynamic, cognitive-behavioural, emotion-focussed and attachment approaches, SFT (Young & Klosko, 1993; Young et al., 2003) conceptualises BPD as arising from unmet needs or abuse in early life. These childhood experiences result in a failure to fulfil essential developmental tasks and lead to the development of early maladaptive schemas (Sempértegui et al., 2013). The goal of SFT is to address these schemas through limited re-parenting, imagery and dialogue activities, and cognitive and behavioural restructuring (Kellogg and Young, 2006).

In a literature review of SFT for BPD, Sempértegui and colleagues (2013) characterised the empirical evidence for the approach as promising, supported by a small number of methodologically rigorous studies. An RCT of 32 female outpatients with BPD found eight months of group-based SFT plus weekly individual therapy to be superior to TAU in reducing BPD-related symptoms, general psychopathology and improving quality of life (Farrell et al., 2009). However, as the study design compares a specialist BPD intervention with general care, it is not possible to attribute the findings to SFT specifically. Comparison between specialist approaches is offered by the above-mentioned RCT by Giesen-Bloo et al., (2006). Comparing SFT to TFP in 86 outpatients with BPD, participants in the SFT group demonstrated a larger positive treatment effect across all outcomes (including impulsivity, suicidality and identity disturbance) and a significantly lower risk of dropout. These findings were replicated in a multicentre RCT comparing SFT to TFP as a treatment for BPD in 86 participants (Arntz, 2008). SFT was found to be twice as effective in achieving recovery from BPD and resulted in fewer drop-outs.

Generalist Treatments for Borderline Personality Disorder

General Psychiatric Management. Both GPM and SCM are generalised treatments for BPD, requiring substantially less training and resources than specialist approaches. Developed by Gunderson and Links (2014) as an outpatient treatment for BPD, GPM was created as an approach that could be easily learned and implemented by community mental health providers. Despite its name, GPM is not a specifically psychiatric approach, instead recommending case management based on the APA (2001) *Practice Guidelines for the Treatment of BPD*, dynamically-informed psychotherapy and limited pharmacotherapy to address specific symptoms (Links et al., 2015). The approach is relatively low-intensity, usually requiring no more than one weekly session, with coordination between service

providers. Training in GPM requires one full-day workshop, and the approach is clearly outlined in a short handbook (Gunderson & Links, 2014).

Although limited, the research examining the effectiveness of GPM has sought to offer rigorous comparison to DBT as the recognised 'gold standard' in BPD treatment (Links et al., 2015). A large RCT compared GPM to DBT in the treatment of 180 individuals with BPD and a recent history of NSSI and/or suicidality (McMain et al., 2009). Both groups demonstrated significant reductions in BPD-related symptoms, distress, suicidality, NSSI and emergency hospital presentations and days of admission, and improvements in mood and interpersonal functioning. There was no significant difference in outcomes between the GPM and DBT groups, indicating equal benefit from the two approaches (McMain et al., 2009). A prospective, naturalistic follow-up study conducted by the authors reported that treatment gains were retained across both groups after two years (McMain et al., 2012). However, despite clinical improvement, participants continued to report high levels of functional impairment, with more than half (53%) not engaged in employment or study and 39% receiving disability support (McMain et al., 2012).

Structured Clinical Management. SCM was developed as a practical approach to the management of BPD for mental health clinicians, and is based upon expert consensus on effective strategies for the care of BPD in generalist settings (Bateman & Krawitz, 2016; Choi-Kain, 2017). SCM is a structured program, emphasising psychoeducation, a strong therapeutic alliance, family engagement and safety planning. Weekly group sessions based on psychoeducation and problem solving are also required. The therapeutic stance and techniques employed in SCM are psychodynamically-oriented, consistent with MBT. As a result, much of the research examining the effectiveness of SCM for treating BPD involves direct comparison with MBT (Bateman & Krawitz, 2016; Choi-Kain, 2017).

A large RCT compared 18 months of outpatient MBT with SCM in the treatment of 134 individuals with BPD (Bateman & Fonagy, 2009). Results indicated reductions in BPD-related symptoms, NSSI, suicidality and health services use, and improvements in social and interpersonal functioning across both treatment groups. Stronger improvement was noted in the MBT group, consistent with previous research indicating the BPD-specific interventions are more effective than general approaches (Bateman & Fonagy, 2009; Clarkin et al., 2007). An eight-year prospective follow-up study conducted by the authors reported maintenance of treatment gains across both groups, and a substantially higher percentage of the MBT group continued to meet criteria for recovery (74% versus 51% for SCM) (Bateman et al., 2020). A 2020 RCT compared MBT with SCM for BPD in a public mental health setting (Mulder et al.). Both groups demonstrated substantial reductions in NSSI and suicidality, with no significant difference between treatment conditions.

Pharmacological Treatments for Borderline Personality Disorder

There is significant debate as to the effectiveness of pharmacotherapy in the treatment of BPD (Olabi & Hall, 2010). The APA's (2001) *Practice Guideline for the Treatment of Patients with Borderline Personality Disorder* recommends the use of pharmacological treatment as an adjunct to psychotherapy to target specific symptom presentations in BPD. Specifically, they suggest the use of Selective Serotonin Reuptake Inhibitors (SSRIs) or related antidepressant medication for the treatment of affective dysregulation; SSRIs for symptoms of impulsivity and behavioural dysregulation; and neuroleptic (antipsychotic) medication for cognitive-perceptual disturbance (APA, 2001; Bellino et al., 2008; Oldham et al., 2004). The application of psychoactive medication in the treatment of BPD is widespread, with individuals with BPD more likely to use antidepressant, mood stabiliser and anxiolytic (antianxiety) medication than those with major depressive disorder (Bender et al., 2001). Evidence supporting pharmacological treatment for BPD is still emerging and remains

somewhat limited (Bellino et al., 2008; Olabi & Hall, 2010). A Cochrane review by Binks and colleagues (2006) analysed ten small RCTs published prior to 2003, comparing any psychoactive medication with any other treatment for individuals with BPD. The authors identified that these studies generally lacked methodological rigour, and no reliable conclusions could be made about the efficacy of relevant medications. Nosè et al. (2006) completed a meta-analysis examining 22 placebo-controlled RCTs and found evidence for the effectiveness of neuroleptics in improving impulsivity, aggression and functioning, and for antidepressants and mood stabilisers in addressing affective dysregulation and anger. These findings are only partially consistent with a later Cochrane review (Stoffers et al., 2010) which studied outcomes of 28 trials and identified likely benefit from neuroleptic medication and mood stabilisers in the treatment of BPD, while evidence supporting the use of antidepressants was found to be lacking. Much of the research examining pharmacotherapy for BPD is marked by methodological limitations including high drop-out rates without reporting on the reasons for withdrawal, brief, small-sample trials without long-term follow-up, and sponsorships for trial funding which may lead to a risk of bias in evaluation (Bellino et al., 2008; Binks et al., 2006; Olabi & Hall, 2010). The NICE (2015) clinical practice guidelines conclude that the existing evidence on pharmacotherapy is insufficient to support such prescribing for BPD and suggest that such approaches should only be used in the treatment of comorbidities or for short-term crisis management (Choi-Kain et al., 2017; NICE, 2015).

Borderline Personality Disorder and Mental Health Service Usage

General prevalence rates for BPD are estimated at between 1.0% and 4.0% (NHMRC, 2012). However, these individuals are identified as being among the highest users of psychiatric services, comprising 10% of mental health outpatients and 20% of inpatients (Lieb et al., 2004). Several studies have examined the service utilisation patterns of

individuals with BPD. Results demonstrate more frequent mental health emergency presentations and inpatient admissions (Maclean et al., 2014) and increased use of community-based treatment services compared to other psychiatric diagnoses (Bender et al., 2006; Zanarini et al., 2004). Bender and colleagues (2001) found that those with BPD were more likely to access almost every type of psychosocial intervention, and in greater amounts, than those with other personality disorders or depression. The authors report that, of those individuals with BPD seeking treatment, 95% will receive individual therapy, 56% will engage with group therapy, 72% will experience inpatient admission and 97% of individuals will seek therapeutic support from an average of six clinicians. Individuals with BPD were also found to use more medication than other patient groups (Bender et al., 2001). Longitudinal examination of the service use patterns of individuals with severe BPD over a ten-year period indicate more persistent use of outpatient treatment services with declining inpatient treatment (29% reduction in use of outpatient services over time, compared to a 71% reduction in use of inpatient services) (Hörz et al., 2010). Declines were found to be sharpest in the first four years, remaining relatively stable for the subsequent six-year period. A strong pattern of treatment cessation and later resumption was also observed across treatment modalities. Among those individuals who ended a treatment, 85% would re-engage with individual therapy, while 67% recommenced medication. Of note, participants did not receive specialist treatments for BPD and were provided with general mental health care only, with the researchers suggesting that the re-engagement with treatments may reflect ongoing, unresolved symptoms of BPD (Hörz et al., 2010). These findings are consistent with an earlier longitudinal study by Zanarini and colleagues (2004), which also identified stronger declines in hospital admission over a six-year period (from 79% at baseline to 33%), and a more sustained use of outpatient psychotherapy and pharmacotherapy over time (over

80% of participants), attributed to the more restrictive and costly (in the United States

context) nature of inpatient care (Zanarini et al., 2004).

Health Cost Implications of Borderline Personality Disorder

The tendency among individuals with BPD to access mental health services

repeatedly and from multiple service providers simultaneously (Dimeff & Koerner, 2007)

results in a significant financial burden to the public health sector (Amner, 2012; Bender et

al., 2006). Providing treatment for the complex symptoms and challenging behaviours of

BPD make it one of the most costly psychiatric disorders (Linehan & Heard, 1999), with as

much as forty percent of mental health resources used by this patient group (Jomphe, 2013).

The cost of this care has been quantified in an economic analysis of the health service use

costs for Australian patients with BPD (Hall et al., 2001). Including both emergency and

inpatient-related costs, the researchers estimated an annual treatment expense per patient of

$25,526. However, the analysis included hospital-based care only and did not identify costs

incurred in outpatient and community settings, suggesting that the overall expense to the

sector is likely to be higher. Further, the cost of care was found to be unevenly distributed

across patients, with a minority of identified 'high users' incurring expenses of up to

$150,000. This differential could not be explained by the presence of challenging behaviours

including violence, self-harm and drug use, suggesting inconsistency in patterns of service

engagement and response.

The health cost of BPD represents only part of the broader economic expense of the

illness. One study from the Netherlands, where prevalence rates are comparable to that of

Australia, identified that health-care related expenses represented only 22% of the direct cost

of BPD. Assessing all medical expenses, out-of-pocket costs, productivity losses and

informal care, the total annual cost of BPD was found to be more than 2.2 billion euros, or

€16,852 per patient (approximately 3.18 billion AUD, or $26,802 AUD per patient) (van Asselt et al., 2007).

Research has demonstrated that the provision of evidence-based treatments for BPD can significantly reduce the economic costs of the disorder. An international systematic review (Meuldijk et al., 2017) examined 30 economic evaluations and identified an average cost saving of USD$2,987.82 per participant per year following evidence-based psychological intervention. O'Sullivan et al., (2017) similarly report a 21% – 35% reduction in health care costs with psychological treatment in Ireland, noting reduced emergency presentations and hospital admissions and fewer total days of admission. In a comprehensive economic analysis in Germany, Wagner et al. (2014) examined the cost-of-illness for individuals with BPD before, during and after a 12-month outpatient DBT program. Identifying both direct and indirect costs, the total average cost per individual was found to reduce from €28,026 pre-treatment (approximately $44,989 AUD) to €14,750 post-treatment (approximately $23,678). Notable reductions were observed in the cost of inpatient hospital treatment. Cost savings were observed even during the treatment period, with the savings outweighing the additional cost of DBT, and further extending in the year following the treatment period.

The Challenges of Traditional Mental Health Service Provision

The complexity of BPD and its association with extensive service usage have contributed to significant challenges in mental health service provision. Traditional treatment approaches, characterised by increased service responses during periods of deterioration and a reliance on hospital admission, have shown outcomes ranging from poor to marginally effective (Ben-Porath et al., 2004; Lieb et al., 2004). Comtois and colleagues (2003) identify

that the historic structuring of community-based public mental health services[4] toward

psychotic and mood disorders, characterised by case management and crisis intervention

approaches, may fail to address the needs of individuals with BPD, contributing to poor

treatment adherence and increased hospitalisation. Subsequently, BPD is widely considered

difficult to treat (Dahl, 2008) and one of the most challenging diagnoses seen in mental health

settings (Ben-Porath et al., 2004).

The interaction with mental health services is particularly problematic for individuals

with BPD who describe chronic suicidality (Paris, 2004). Mental health clinicians are trained

to prioritise suicide prevention as a fundamental priority of patient care. However, research

evidence indicates that individuals experiencing suicidality are at significantly elevated risk

of death by suicide in the weeks immediately following discharge from hospital. One Danish

study identified that, in the week following a hospital admission for suicidality, women had a

246 times greater risk of suicide than matched controls. Men similarly demonstrated a 100

times greater risk, with the effect remaining when sociodemographic factors were controlled

for (Qin & Nordentoft, 2005). Similarly, Hunt et al. (2008) identified that 43% of post-

discharge suicides occur in the first four weeks after patients are released from hospital, with

risk highest in the first day and week after discharge. Researchers are divided as to the cause

of such findings. Hjorthøj and colleagues (2014) argue that individuals requiring emergency

mental health care and hospital admission are more severely suicidal, and thereby more likely

to complete suicide. However, several studies suggest that interaction with emergency mental

health services may directly and causally increase the risk of suicide among vulnerable

individuals (Large & Ryan, 2014; Linehan et al., 2006). Linehan (1993) argues that

traditional service responses to suicidality and self-harm reinforce these symptoms by

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[4] In South Australia, community mental health services are the foundational public health service delivering
community-based mental health care for individuals with severe and enduring mental illness.

rewarding such behaviours with increased attention and care, with patients often remaining chronically suicidal following discharge. Support for this assertion is found in an RCT by Coyle et al. (2018), which identified that emergency mental health hospital presentations, and not other indicators of risk including severity of suicidal ideation and number of suicide attempts, was the sole predictor of suicide attempts in the following year. The authors interpret these findings to indicate that traditional service responses to mental health emergency directly contribute to increased suicide risk. Further, the trial identified that DBT intervention, which actively seeks to minimise emergency-driven service engagement, decreased emergency mental health presentation during the treatment period, and reduced the number of suicide attempts in the follow-up period.

Examination of the experiences of individuals with BPD when interacting with mental health services reflects this complexity and challenge. Qualitative examination identified that individuals with BPD in England often found adult mental health services to be inaccessible and unhelpful, with poor communication and a preoccupation with managing risk (Morris et al., 2014). Service experiences were also shaped by protracted and poorly communicated diagnosis, and negative attitudes to BPD by staff. Australian research identified similar themes of experiencing a challenging pathway to diagnosis, miscommunication and complex service pathways, and perceiving specialist treatment services to be inaccessible and costly (Carrotte et al., 2018).

Clinician Attitudes to Borderline Personality Disorder. Therapeutic relationships between mental health clinicians and individuals with BPD are likewise problematic. Clinicians providing care to individuals with BPD commonly describe feeling overwhelmed and hopeless about treatment engagements (Linehan et al., 2000) and are more likely to report fatigue and exhaustion associated with burnout (Carmel et al., 2014a). Negative attitudes and stigmatisation are well documented in the research literature, revealing that

health professionals often assume patients with BPD to be attention-seeking and manipulative (Fallon, 2003; O'Connell & Dowling, 2013; Tusiani-Eng & Yeomans, 2018). Mental health clinicians are found to be less empathetic (Fraser & Gallop, 1993) and more socially rejecting (Markham, 2003) of individuals with BPD than those with other psychiatric diagnoses. Patients with BPD are frequently characterised as 'difficult' and are often denied appropriate care (Sulzer, 2015). As stated by Carmel et al. (2014a, p. 26): "These factors, taken together with the financial stressors unique to public sector mental health, have created an environment of pervasive hopelessness that is common among clinicians and often expands beyond individual clinicians to the larger public mental health system."

Encouragingly, recent evidence suggests that these attitudes may be shifting (Day et al., 2018). A longitudinal, mixed methods examination of the attitudes of public mental health staff to BPD reported a reduction in negative descriptions and a change in the language used (e.g., manipulative, attention-seeking) over the 15 years from 2000. Compared to 2000, the 2015 sample endorsed more positive descriptions of consumers with BPD, with common themes based on skills and treatment approaches. Further, clinicians reported more empathic attitudes toward self-harm. The researchers consider that the change may be related to improvements in clinician skills and systemic treatment practices (Day et al., 2018). This is consistent with research literature suggesting that the availability of effective treatments for BPD results in improved attitudes to the disorder among clinicians and improved outcomes for consumers (Horsfall et al., 2010; Mackay & Barrowclough, 2005).

Principles for Effective Management of Borderline Personality Disorder

Over the past ten years, BPD has garnered increasing attention from Australian public health services and policy makers as the limitations of traditional approaches have become apparent (Kent & O'Sullivan, 2019). In 2012, the NHMRC developed a clinical practice

guideline that sought to improve the recognition and understanding of BPD among clinicians,

facilitate access to evidence-based therapies, and encourage collaborative care approaches

with a focus on recovery. Key recommendations are presented below.

Table 2

Key Recommendations from 'Clinical Practice Guideline for the Management of Borderline Personality Disorder' (NHMRC, 2012, p.6)

Recommendation 38	Health professions at all levels of the healthcare system and within each type of service setting should:
	• acknowledge that BPD treatment is a legitimate use of healthcare services
	• be able to recognise BPD presentations
	• be aware of general principles of care for people with BPD and specific effective BPD treatments
	• provide appropriate care (including non-specific mental health management, specific treatments for BPD and treatment for co-occurring mental illness) according to their level of training and skill
	• refer the person to a specialised BPD service or other services as indicated
	• undertake continuing professional development to maintain and enhance their skills.
Recommendation 8	People with BPD should be provided with structured psychological therapies that are specifically designed for BPD, and conducted by one or more adequately trained and supervised health professionals.
Recommendation 11	Medicines should not be used as the primary therapy for BPD, because they have only modest and inconsistent effects, and do not change the nature and course of the disorder.
Recommendation 31	The majority of a person's treatment for BPD should be provided by community-based mental health services (public and private).

Bateman et al. (2015) similarly sought to inform high quality clinical care for BPD by identifying common characteristics of evidence-based approaches to the disorder. They recommend structured or manualised approaches where individuals with BPD are encouraged to develop a sense of agency. Clinicians are advised to adopt a validating and responsive stance, to assist patients to connect emotions to behaviours and events, and to engage in clinical supervision and self-reflection. These themes are also reflected by Weinberg and colleagues (2011).

Current Directions in Borderline Personality Disorder Treatment Research

The most recent review of research evidence for psychological treatments for BPD is provided by a 2020 Cochrane study by Storebø and colleagues. The review examined 75 RCTs and identified moderate-quality evidence for a variety of specialist BPD treatments across a range of outcomes. Pooled analyses of psychotherapy versus TAU found specialist approaches to be effective in reducing the severity of BPD symptoms, suicidality and NSSI, and improving psychosocial functioning. Only the outcome of BPD symptom severity was found to reach the minimum relevant difference (MIREDIF; Nahler, 2009) for clinically meaningful improvement. Examining individual specialist approaches, the largest number of studies were identified for DBT (26 studies), followed by MBT (seven RCTs). No high-quality evidence was identified to recommend any individual specialised BPD treatment over another. Compared to TAU, DBT was found to be most effective in reducing BPD symptoms severity and NSSI, and improving psychosocial functioning, while MBT was more effective in reducing suicidality, NSSI and depression (Storebø et al., 2020).

Choi-Kain et al. (2017) propose that the new frontier for BPD research lies with dismantling studies of specialist evidence-based therapies and further examination of generalist treatments; approaches which seek to identify the essential elements of effective

care for BPD. Such approaches emphasise a 'paring down' of treatment to minimal core components, offering greater feasibility for implementation in challenging real-world clinical settings (Choi-Kain et al., 2017). In this context, the current research will examine the effectiveness of DBT group skills training as a standalone treatment for BPD in regional community mental health.

The following chapters will present the empirical basis of DBT as a treatment for BPD and consider constraints which limit the feasibility of DBT in public mental health settings, particularly in rural areas where budget and workforce resources are most limited. Emerging evidence for the use of DBT skills training as a pragmatic standalone treatment for BPD will be explored, maintaining essential elements of effective care while offering greater utility for implementation in challenging real-world service environments.

Chapter II: Introduction Part II: Dialectical Behaviour Therapy

An introduction to DBT is presented, including the development of the therapy, primary functions and treatment components. The empirical basis of DBT is explored, including major RCTs, quasi-experimental and qualitative studies. Common methodological limitations, including non-equivalent intervention groups and potentially biased samples, are presented. Research evaluating the implementation of DBT in real-world settings is given, including common barriers and facilitators. The limitations of the complete DBT protocol, and constraints limiting the feasibility of approach in public health settings, are considered. Finally, the use of DBT skills training as a standalone treatment is considered as a pragmatic solution in clinical settings, along with the emerging evidence supporting the effectiveness of this approach.

The Development of Dialectical Behaviour Therapy

DBT was developed throughout the late 1970s and 1980s by Marsha Linehan, an American clinical psychologist with lived experience of self-harm and suicidality (Linehan, 2020). Described by Linehan and Wilks (2015, p.97) as a "trial-and-error clinical effort", the approach sough to apply behaviour therapy and social learning theory to the treatment of chronic and severe suicidality. The specific application of the approach to BPD only emerged when early funding grants required that research specify a psychiatric diagnosis, and BPD was selected due to the known risk of suicide among this clinical population (Linehan & Wilks, 2015). Linehan's development process repeatedly adapted and refined the approach based on the responses of clients. An initial emphasis on problem-solving was experienced by many clients as invalidating, resulting in a re-emphasis of acceptance and warmth. Clients then reported frustration at a lack of active change, leading to the synthesis between change and acceptance that now underpins the DBT approach (the 'dialectic'). Ongoing challenge

was experienced by clients who found the need to tolerate distress while working toward treatment goals overwhelming, prompting Linehan to introduce radical acceptance and distress tolerance skills based on Eastern (Zen) practices and Western contemplative prayer (Linehan & Wilks, 2015). The biosocial theory of BPD was then developed (Linehan, 1993; see Chapter I, p. 25 for details), conceptualising the diagnosis as a disorder of emotional dysregulation and viewing BPD-related behaviours as naturally arising from environmental reinforcers (Lynch et al., 2007). As such, treatment offers a validating environment for individuals, attends to factors that reinforce dysfunctional behaviours, and shapes the development of more adaptive behavioural responses (Lynch et al., 2007).

The Functions of Dialectical Behaviour Therapy

DBT aims to serve five functions through a range of interventions and modes of engagement (Table 3) (Lynch et al., 2007; Pederson, 2015; Salsman & Linehan, 2006). The building of capabilities is based on the assumption that those with BPD experience a deficit of adaptive behavioural responses, and therefore seeks to teach and reinforce more effective skills. Motivation building serves to reinforce treatment progress and overcome therapy-interfering and other dysfunctional behaviours. Skills generalisation ensures that developed capabilities are effectively transferred to the real-world environment. Structuring the treatment environment is intended to support therapeutic gains through intervention in the individual's environment and reduce any reinforcement of dysfunctional behaviours. Finally, strategies to motivate and build the skills of clinicians are intended to reduce burnout and fatigue among the treating team, a common challenge experienced by those providing care in the presence of extreme emotionality and recurring crises (Pederson, 2015; Salsman & Linehan, 2006).

Table 3

Functions of Dialectical Behaviour Therapy

Function	Examples
Building capabilities	Behavioural skills training including psychoeducation, modelling, rehearsal, coaching, homework
Building motivation	Individual therapy including behavioural assessment, contingency management, cognitive modification
Generalising skills to the natural environment	Telephone coaching, homework, in vivo interventions
Structuring the treatment environment	Case management, family or relationship interventions
Motivating and improving the skills of clinicians	Consultation team meetings, clinical supervision, continuing professional development

Lynch et al., 2007; Pederson, 2015; Salsman & Linehan, 2006

Stages of Treatment

Stages of treatment in DBT assist the clinician to prioritise areas for attention in the context of multiple severe and high-risk symptoms. The four stages provide a hierarchy for clinical intervention based on threat to life, severity, complexity, pervasiveness and functional disability (Linehan & Wilks, 2015). Stage One seeks to reduce life-threatening (e.g., suicide attempts, self-harm) and therapy-interfering (e.g., non-attendance) behaviours and increase effective use of adaptive skills. Stage Two focuses on decreasing emotional

avoidance and supporting clients to experience emotions. Problems of daily living (e.g., employment issues, relationship problems) are addressed in Stage Three. Finally, Stage Four supports individuals to build a sense of completeness and the capacity for joy and freedom (Linehan & Wilks, 2015; Lynch et al., 2007; Salsman & Linehan, 2006).

Components of Dialectical Behaviour Therapy

The components (also referred to as modules or modes) of DBT are intended to divide the treatment functions into separate modules, allowing greater flexibility and responsivity to individual clinical presentations (Linehan & Wilks, 2015). The four components of the comprehensive DBT approach are summarised below.

Individual Therapy. Individual DBT is comprised of a dyadic[5] interaction between the individual and the DBT therapist, who typically meet for one hour each week. The individual therapist serves as the key contact throughout treatment; coordinating treatment planning, monitoring progress toward treatment goals, integrating the therapy components and responding to episodes of crisis. An initial orientation phase focuses on building commitment and establishing a therapy agreement. The targets of therapy are determined by the individual's stage of treatment (outlined above), which may shift rapidly and are often based on clinical presentation and disclosures. Behavioural analysis is undertaken to determine the antecedents of target behaviour, and identify opportunity for alternative, skilful responding. DBT diary cards are employed for daily monitoring of emotions, suicidality, maladaptive behavioural responses and adaptive skills use (Lynch et al., 2007; Salsman & Linehan, 2006).

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[5] Being composed of an interaction between the client and therapist

Consultation Team Environment. The DBT consultation team environment facilitates "the treatment of a community of clients by a community of therapists, and the treatment of the therapists by the community of therapists" (Linehan & Wilks, 2015, p. 102). Weekly meetings of the consultation team reduce burnout by providing support to clinicians managing high-risk and severely dysregulated clients. The consultation team also acts to improve treatment fidelity and effectiveness by reinforcing and shaping clinician behaviour. Priorities for discussion are determined based on risk and severity, with the team assisting to problem-solve challenges, identify therapist factors reducing treatment effectiveness, and provide support. DBT therapeutic approaches, such as validation, cheerleading and non-judgement, are maintained by the team throughout (Linehan & Wilks, 2015; Salsman & Linehan, 2006).

Telephone Coaching. Individuals undergoing DBT have 24-hour telephone access to their individual therapist between sessions for the purposes of skills coaching. The intention is to support individuals to avoid dysfunctional behaviours at times of increased distress, and to encourage the use of adaptive behavioural skills. Further, the approach teaches functional help-seeking behaviours and reinforces more effective social interactions (Linehan & Wilks, 2015; Salsman & Linehan, 2006).

Dialectical Behaviour Therapy Skills Training. DBT skills training provides structured weekly group sessions focussed on teaching skills to address the underlying dysregulations in BPD and replace maladaptive behaviours (Linehan, 2014). Skills training is manualised and didactic, focused on teaching, modelling, rehearsal, coaching and homework. Handouts, worksheets and diary cards support the acquisition and generalisation of new skills (Linehan & Wilks, 2015). In accordance with the 'dialectical' foundation of DBT, skills are divided into acceptance skills (Mindfulness and Distress Tolerance) and change skills

(Emotion Regulation and Interpersonal Effectiveness) (Linehan & Wilks, 2015; Üstündağ Budak & Özeke Kocabaş, 2019):

- Mindfulness: Core DBT skills which assist participants in developing attentional control; to focus attention on the present moment effectively and without judgement, in a state of 'wise mind' (Linehan, 2014; Valentine et al., 2015). The goal of mindfulness skills is to enable participants to experience reality as it is, to reduce suffering and build happiness (Üstündağ Budak & Özeke Kocabaş, 2019).

- Emotion Regulation: Teaches skills to moderate emotions, reduce maladaptive emotional responses and have more effective emotional experiences (Linehan, 2014). Skills include the observation and description of emotions, strategies to minimise emotional vulnerability, reduce emotional suffering and increase positive emotional experiences (Üstündağ Budak & Özeke Kocabaş, 2019).

- Distress Tolerance: Teaches participants to manage crises and avoid harmful behaviour with skills to accept themselves, their emotions and challenging situations. Participants learn to recognise crisis situations, and to inhibit maladaptive behaviours arising from severe emotional distress (Linehan, 2014; Valentine et al., 2015).

- Interpersonal Effectiveness: Teaches effective communication and problem solving skills to improve and maintain interpersonal relationships. Participants are supported to reduce strong emotional responses in social interactions. Interpersonal effectiveness skills emphasise self-respect and assertiveness in relationships, and seek to reduce harmful relationships and interactions (Linehan, 2014; Üstündağ Budak & Özeke Kocabaş, 2019).

Empirical Basis for Dialectical Behaviour Therapy

In a critical review of the empirical basis of DBT, Scheel (2000) suggests that the well-developed, theoretically-informed manual, combined with positive early results from effectiveness research, generated significant excitement and attention for DBT as a treatment for BPD, offering clinicians a much-needed evidence-based therapy for a challenging clinical presentation. As a result, DBT quickly became "a popular and highly visible approach" (Scheel, 2000, p. 68). Since its development, DBT has been extensively empirically evaluated as a treatment for women with BPD and is endorsed by the NICE (2009) clinical practice guidelines.

Randomised Controlled Trials of Dialectical Behaviour Therapy for Borderline Personality Disorder

In the first major RCT of DBT (Linehan et al., 1991) 46 women with BPD and chronic suicidality were randomised into one year of DBT or TAU. DBT was shown to be superior to TAU in reducing self-harm, anger and total days of hospital admission, and improving global and social functioning. Both groups demonstrated similar improvements in depression and suicidal ideation (Linehan et al., 1991; Koons et al., 2001). The study has important limitations. Scheel (2000) notes that, prior to randomisation, approximately one third of participants withdrew or were excluded from the study, raising the possibility of biased intervention groups. Further, the DBT group received significantly more hours of both individual and group therapy, with care provided by highly skilled (doctoral and master's trained) clinicians, while details about clinicians in the TAU group were not provided. Finally, care was provided to the DBT group at no charge, while participants receiving TAU were required to pay for care (Linehan & Heard, 1993; Scheel, 2000), suggesting fundamental non-equivalency in the intervention conditions. Additional findings from the

trial published later (Linehan et al., 1993) indicated that results were maintained at six- and 12-month follow-up.

Replication of the original RCT by Koons and colleagues (2001) compared six months of outpatient DBT with TAU in 20 female veterans with BPD. Inclusion criteria was broadened, with a reduced requirement for recent suicidal behaviours, and the TAU condition was enhanced to include more individual and group contact than was usual in the setting. Compared to TAU, DBT was found to be superior in reducing depression, hopelessness, suicidality and anger. Reductions in self-harm and total days of hospital admission reported in the Linehan et al. (1991) study were not replicated. While some methodological improvements were made (including the enhanced TAU condition offering greater equivalency between intervention groups), important limitations (such as a small sample size and no intention to treat (ITT) analysis) remained (Koons et al., 2001; Lynch et al., 2007).

The first major RCT of DBT in a real-world clinical setting was undertaken by van den Bosch, Verheul and colleagues (van den Bosch et al., 2005; van den Bosch et al., 2002; Verheul et al., 2003). Inclusion criteria were further broadened to accept participants with comorbid substance abuse disorder. Fifty-eight female participants were randomised to either DBT or TAU. ITT analysis was employed. Results demonstrated greater reductions in self-harm and impulsivity for the DBT group, in addition to a significantly higher retention rate. Gains were found to be strongest among participants with more severe BPD symptomology (Verheul et al., 2003). DBT was found to be equally effective in participants with and without comorbid substance use disorder (van den Bosch et al., 2005; van den Bosch et al., 2002). As with previous trials, the study had important limitations including a low-intensity TAU condition (average twice-monthly contact) and additional clinician training in the DBT group. Reductions in self-harm and impulsivity were found to be sustained at six-month follow-up,

though the authors reported data trends suggesting that gains may wain in the longer term (van den Bosch et al., 2005).

In a large RCT designed to address some of the methodological limitations of earlier trials, Linehan and colleagues (2006) compared DBT to community treatment by experts. The sample consisted of 101 women with BPD and a recent history of self-harm and/or suicidal behaviour. Clinicians across intervention groups were matched for training and experience, and steps were taken to ensure equivalent intensity, access and cost across treatment conditions. Results indicated significant improvements by participants in both treatment conditions. Compared to community treatment by experts, participants in the DBT group demonstrated significantly fewer and less severe suicide attempts, reduced use of mental health crisis services and hospital-based care, and higher retention rates (Linehan et al., 2006).

An Australian RCT conducted in a regional New South Wales mental health outpatient service compared six-months of DBT with TAU plus wait list for DBT in 73 women with BPD (Carter et al., 2010). ITT and per protocol analyses were employed. Results showed reductions in self-harm and hospital admission in both groups, although no significant difference between groups was identified. As such, key findings from earlier trials (Linehan et al., 1991; 2006) on the superiority of DBT in reducing self-harm and hospitalisation were not replicated. Statistically significant improvement in the secondary outcomes of functional disability and quality of life (psychological, physical and environmental domains) were reported for the DBT group (Carter et al., 2010). While early RCTs examining the efficacy of DBT were undertaken in rigorous research laboratory environments with highly trained clinicians, these findings suggest that results may be more modest when investigations are conducted in 'real-world' clinical service delivery environments (Kazdin, 2008).

Quasi-Experimental Examination of Dialectical Behaviour Therapy

DBT has also been examined as a treatment for BPD in a number of non-randomised studies. Barley and colleagues (1993) provided the first study of DBT in an inpatient setting, finding that the approach effectively reduced the monthly rate of self-harm occurring within the unit. A prospective pilot study of DBT for 24 women with BPD and suicidality in an inpatient setting identified significant reductions in self-harm, dissociation, anxiety and depression (Bohus et al., 2000). Similar results were reported in a non-randomised trial comparing 12 weeks of inpatient DBT with community TAU plus waitlist for DBT in 50 women with BPD and suicidality (Bohus et al., 2004). The DBT group showed significant improvements in self-harm, anxiety, depression, social and interpersonal functioning and general psychopathology, while the control group demonstrated no gains on any outcome measure.

DBT has also been examined as a treatment for adolescents with BPD and suicidality. Rathus and Miller (2002) compared 12 weeks of outpatient DBT with supportive-dynamic therapy plus family therapy. DBT was found to be superior for treatment retention and hospitalisation rates. Further, the DBT group demonstrated post-intervention reductions in BPD symptomology, suicidality and general psychopathology. In a non-randomised controlled trial comparing DBT with TAU in 62 adolescent inpatients, DBT was found to be more effective in reducing challenging behaviours in the inpatient setting (Katz et al., 2004).

Application of the approach within forensic settings has also been studied. Compared with TAU, DBT was found to be more effective in reducing paranoia and maladaptive coping, and improving mood and adaptive coping skills in 35 adult inpatients meeting at least three BPD diagnostic criteria (McCann et al., 2000). The authors also reported non-significant reductions in staff burn-out. In a study of incarcerated adolescent females with

symptoms of BPD, Trupin et al. (2002) found that DBT produced significant reductions in challenging behaviours and staff use of restrictive punishments and improved participation in educational and vocational programs.

In addition to the treatment of BPD, DBT has been applied in empirical research to a diverse range of diagnoses and populations. In the treatment of depression, DBT has been shown to be more effective than medication alone in achieving symptom remission and improving adaptive coping (Lynch et al., 2003) and reducing aggression and interpersonal sensitivity (Lynch et al., 2007). When examined as a treatment for eating disorders, DBT has been found to significantly reduce both bingeing (Telch et al., 2001) and purging (Safer et al., 2001) behaviours, compared to wait-list controls. Individuals with substance use disorders have also been shown to benefit from a modified application of DBT, demonstrating significant reductions in substance use during treatment, with gains maintained on long-term follow-up (Linehan et al., 2002; Linehan et al., 1999). Preliminary evidence also indicates that DBT may benefit those with ADHD, achieving reductions in disorder symptoms and depression and improved neuropsychological functioning (Hesslinger et al., 2002).

Qualitative Investigation of Dialectical Behaviour Therapy

Qualitative studies exploring individuals' experience of undertaking DBT provides further insight into the impact of the approach. Perseius et al. (2003) interviewed 10 women with BPD and self-harm, who unanimously identified DBT as effective and life-saving, with the therapeutic relationship and the acquisition of adaptive skills seen as essential treatment components. DBT was perceived in stark contrast to earlier mental health treatment, which was experienced as strongly negative. The study was limited by a small sample and included only participants who had successfully completed 12 months of therapy. The exclusion of participants who dropped out earlier (and thus may have had a less positive experience) may

have resulted in a biased sample, limiting generalisability of findings. Fourteen women with BPD who received outpatient DBT were interviewed by Cunningham et al. (2004). Consistent with previous findings, all described positive impacts of the therapy, including behavioural changes which made life more liveable. Both positive and negative experiences of therapy were captured by McSherry and colleagues (2012), who interviewed a mixed-gender sample of eight individuals who had received DBT in an adult community mental health setting. Participants identified the group environment as positive, and found the acquisition of adaptive skills to result in increased control and self-confidence. However, the complex concepts presented during skills training were difficult for participants to understand. Similar to earlier studies, the generalisability of findings was limited by the small sample and the sampling procedure, which captured only those participants who had completed the 27-week intervention.

In a systematic review of qualitative research, Little et al. (2018) explored findings on the perceptions of individuals with BPD who had undertaken DBT. The results of seven studies (including both peer-reviewed literature and unpublished doctoral research) were synthesised to identify four main themes; life before DBT described as hopeless, feeling poorly understood and unsupported by others; the therapeutic relationship as essential for change, particularly the importance of respect, therapist knowledge, and common experiences shared in the group context; the development of self-efficacy as a key outcome of therapy, including learning adaptive skills to regulate emotions, taking responsibility for making change, and both positive and negative impacts on relationships and; increased insight, acceptance and hope for the future. The authors highlight the perceived positive impacts of DBT observed across studies, including several factors (such as increased hope and acceptance) which are not commonly captured in quantitative outcome research.

Comparative Studies and Reviews of Dialectical Behaviour Therapy

Research comparing DBT to other structured therapies in the treatment of BPD was briefly introduced in Chapter I. Clarkin and colleagues (2007) undertook an RCT comparing 12-months of DBT, TFP and general supportive therapy. Results indicated that all three approaches produced improvement in mood and functioning, while DBT and TFP produced reductions in suicidality. Only TFP was associated with a reduction in irritability and assault. Comparison of DBT to Dynamic Deconstructive Psychotherapy[6] and TAU was undertaken in a naturalistic study in a real-world clinical setting (Sachdeva et al., 2013). The sample consisted of 68 individuals with BPD in a specialist tertiary clinic. Participants in both manualised intervention groups demonstrated significantly greater reductions in BPD-related symptoms, depression and disability compared to TAU controls. An RCT of DBT versus GPM in 180 individuals with BPD and suicidality found no significant differences in outcome between groups (McMain et al., 2009). Participants in both groups showed significant improvement in BPD-related symptoms, mood, distress and functioning, and reductions in suicidality, self-harm and health care usage.

A systematic review and meta-analysis of treatments for BPD reported that DBT, MBT, SFT and TFP demonstrated a medium effect on the severity of BPD symptoms compared to TAU or community treatment by experts, while DBT was also associated with a small to medium effect on self-harm (Oud et al., 2018). These results are consistent with an earlier examination of 30 studies (Juanmarti & Lizeretti, 2017) which found that DBT, SFT and MBT were equally efficacious in reducing self-harm and suicidal behaviours, although emotional dysregulation remained unimproved in many instances.

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[6] Dynamic Deconstructive Psychotherapy is a weekly, individual treatment combining object relations theory, translational neuroscience and deconstructive philosophy (Sachdeva, 2013)

Authors including Choi-Kain et al., (2017) and Lynch and colleagues (2007) have questioned the value of such 'head to head trials' in advancing the treatment of BPD. Comparison studies are resource intensive, often requiring extensive therapist training, large samples and substantial intervention time (Lynch et al., 2007). Further, they have commonly produced only incremental gains in knowledge, with most demonstrating no particular superiority of any one structured approach over another (Choi-Kain et al., 2017). Choi-Kain et al. (2017) and Lynch et al. (2007) argue that research which aids to identify the essential effective elements of evidence-based approaches, including examinations of mechanisms of change and dismantling studies, offer greater value to improving the treatment of BPD. An exploration of research on mechanisms of change in DBT is presented below. A systematic review of DBT dismantling research is provided in Chapter IV.

Mechanisms of Change in Dialectical Behaviour Therapy

As evidence supporting the effectiveness of DBT for BPD grows, some researchers have turned their attention to identifying the 'active ingredients' of the therapy underlying participant change (Rudge et al., 2020). Lynch et al. (2006, p. 460) define mechanisms of change as "those variables that account for the relationship between the treatment intervention and the outcome", with the identification of such variables "a critical step in the iterative process of treatment development and refinement and in the integration of basic science with clinical outcome research". Understanding the mechanisms of change[7] in DBT is important to refine the approach for maximum effectiveness, and to prevent essential elements being removed or weakened when the therapy is modified for new settings and populations (Mehlum, 2021). Lynch and colleagues (2006) hypothesised potential DBT mechanisms of change based on theoretical and empirical observations. Based on Linehan's

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[7] Also known as 'change process research' (Elliott, 2010)

(1993) biosocial theory of BPD, the authors define change as "the reduction of ineffective action tendencies linked with dysregulated emotions" (Lynch et al., 2006, p. 459). They propose that core and/or unique elements of DBT (dialectics, behavioural targeting, chain analysis, mindfulness and opposite action) serve to; replace or eliminate maladaptive emotional responses; develop adaptive skilful responses to emotional stimuli; improve attentional control and stimulus discrimination, and; sustain the balance between acceptance and change (Lynch et al., 2006). A critical review of research literature regarding DBT mechanisms of change is provided by Rudge and colleagues (2020). Consistent with Lynch et al. (2006), the authors conceptualise such mechanisms in the context of the biosocial theory of BPD. Following review of 12 peer-reviewed research articles, they identify three broad categories of mechanisms of change; emotion regulation and self-control (specifically the deficits inherent in BPD); the therapeutic relationship and investment in therapy, and; the resulting increase in use of adaptive skills, producing measurable treatment gains. The authors highlight the challenge in determining causal (as opposed to associative) relationships in the reviewed data and the uncertain delineation between mechanisms of change and outcomes in the research.

A recent review by Mehlum (2021) is largely consistent with earlier findings. Emotion regulation is identified as a central mechanism of change in DBT, achieved through the increased use of adaptive skills, promoted by a hopeful and validating therapeutic alliance. Emerging evidence connecting treatment gains with neurobiological and epigenetic changes in areas of the brain associated with emotional and behavioural regulation is also highlighted. Most research in this area has been undertaken with adult female samples, and further investigation is required to determine generalisability of these findings across more diverse populations (Mehlum, 2021).

Dialectical Behaviour Therapy Implementation Research

Research examining the implementation of DBT in a range of clinical settings is also developing. The identified studies are diverse in their scope and focus. Empirical evaluation of DBT implementation across ten community mental health centres in the United States (Herschell et al., 2014) identified impacts on the confidence and attitudes of 64 participating clinicians. Employing self-report surveys at four time points over a two-year period, the researchers found that DBT training with ongoing implementation support was associated with improvements in clinician attitudes toward BPD, perceived self-efficacy, use of DBT approaches and confidence in the effectiveness of DBT intervention. Further, gains were strongest for those clinicians with the lowest baseline scores. Notably, the implementation process was facilitated by Behavioral Tech, LLC, a well-respected training company created by DBT founder Marsha Linehan, and featured 'gold-standard' clinical training for therapists, implementation training for managers and administrators and weekly telephone consultation. The implementation support provided by Behavioral Tech, LCC in this study far exceeds that commonly available in public health services, limiting the generalisability of findings.

Navarro-Haro and colleagues (2018) examined the impact of DBT training across 53 community mental health teams to identify predictors of DBT adoption. As with the research by Herschell et al. (2014), clinicians undertook a 'gold standard' six-month training program provided by Behavioral Tech, LLC. Seventy-five percent of teams were found to have implemented DBT following training. Teams with lower self-identified training needs, more previous DBT experience and more highly qualified (Master degree or above) staff were found to be more likely to adopt DBT. Interestingly, teams were found to deliver DBT to more clients (used as a measure of therapy reach) when they were smaller and poorer functioning, with staff reporting lower levels of job satisfaction, efficacy and influence. Navarro-Haro et al. (2014) interpret these findings to suggest that DBT may have the greatest

reach in challenging conditions, where clinicians provide care to a large number of high-needs clients with little organisational support. Findings are limited by the self-selection of teams to undergo training, suggesting greater enthusiasm for DBT, and did not include any measures of client outcome to indicate effectiveness.

Qualitative examination of the challenges to implementing DBT in public health settings is provided by Carmel et al. (2014b). Content analysis of interviews conducted with 19 clinicians found that barriers to DBT implementation included poor organisational support or investment, the time commitment of DBT, and challenges developing and sustaining DBT (including too few appropriately trained clinicians and high staff turnover). Notably, several of the identified challenges to DBT implementation also limited the validity of research findings, including a substantial withdrawal of organisational resources and high attrition among clinicians during the research period. Similar barriers to DBT implementation were identified in a mixed-methods analysis from the United Kingdom (King et al., 2018). The most commonly reported implementation challenges were clinician turnover, financing, resource availability, and the perceived difficulty of DBT implementation. Factors assisting DBT implementation were identified as clinician skill, client receptiveness to DBT, the perceived benefit of DBT implementation, clinician attitude and DBT training (King et al., 2018).

A critical review of DBT implementation literature is provided by Toms et al. (2019). Findings from 14 peer-reviewed articles were synthesised to inform a DBT implementation framework, featuring recommendations for implementers based on the barriers and facilitators identified in the research. Recommendations for successful implementation include robust communication systems, the recruitment of clinicians who are cognitively flexible and non-judgemental, adequate staff training, ongoing supervision and consultation, leadership support and adapting DBT to the needs of the setting (Toms et al., 2019).

Limitations of the Complete Dialectical Behaviour Therapy Protocol

As demonstrated above, the complete, four-modality DBT protocol has established efficacy as a treatment for BPD. However, as indicated by DBT implementation research, the therapy can be challenging to adopt in 'real-world' clinical settings. Characteristics of the approach represent significant constraints to clinical dissemination. DBT is intensive and time-consuming for both clinicians and clients, requiring simultaneous engagement across several modalities (e.g., individual therapy, group skills training, clinician consultation and telephone coaching, totalling four and a half hours or more per week) (Hunnicutt Hollenbaugh & Lenz, 2018; Lyng et al., 2019). To achieve adequate model fidelity, the protocol requires significant clinician training from specialist providers (i.e. Comprehensive Training in Standard DBT by Behavioral Tech, LLC, https://behavioraltech.org/) and specialist supervision (Amner, 2012), which are both expensive and frequently inaccessible to regional clinicians. Expectations of the model (such as 24-hour phone access to the primary clinician) are often not possible to accommodate within public health services due to staffing practices and protocols governing clinical interactions. Moreover, DBT is often perceived by organisations and managers to be costly and complex, leading to reluctance to support clinical implementation (Carmel et al., 2014b). In combination, these factors limit the feasibility of the therapy, placing DBT outside the capacity of many public health settings where budget and workforce resources are limited (Blennerhassett & O'Raghallaigh, 2005; Swenson et al. 2002).

Dialectical Behaviour Therapy Skills Training as a Standalone Treatment

In response to the abovementioned constraints, some clinicians have begun to implement standalone group skills training, without the other DBT treatment components (Hunnicutt Hollenbaugh & Lenz, 2018; Lyng et al., 2019). The selection of group skills

training is a pragmatic one. DBT skills training is manual-based, requiring less extensive staff training, and the group setting allows fewer clinicians to service a larger number of mental health clients. The modest time commitment (two to two-and-a-half hours per week) is achievable within the resources of many public health services. The approach provides a comprehensive set of simple skills which are relevant to a variety of clinical presentations and require only moderate functioning to learn, and thus offers particular utility to tertiary mental health services (Blackford & Love, 2011).

Lyng and colleagues (2019) note that "the introduction of standalone DBT skills training groups for BPD unfolded haphazardly, with little empirical support or uniformity" (p. 239). Research has gradually caught up with clinical practice, and early findings on the effectiveness of standalone DBT skills training as a treatment for BPD are promising. In an RCT comparing the complete DBT protocol versus DBT skills training only versus individual DBT only, Linehan (2015) reported that all groups demonstrated similar improvements in suicidal ideation, severity and frequency of suicide attempts and the use of emergency mental health services. Both DBT skills training only and the complete DBT protocol were associated with greater reductions in self-harming behaviours. This impact was not found for individual DBT only.

While Linehan's (2015) trial was undertaken in a well-resourced research clinic, several studies offer preliminary evidence for group DBT skills training as an effective treatment in 'real world' environments. A recent quasi-experimental study with a within persons control group examined the effectiveness of DBT skills training for treating BPD in an adult community mental health service in metropolitan South Australia (Heerebrand et al., 2021). Following the skills training intervention, participants in the DBT skills training group demonstrated significant reductions in BPD-related symptomology, depression and distress and a reduction in emergency hospital presentations. There was no improvement identified in

the waitlisted control group. The study is underpowered, and limited by the lack of a randomised control group. Further, the service delivering the intervention specialises in providing DBT (both the complete DBT protocol and standalone skills group) to individuals with complex BPD (South Australian Department of Health, 2017). As such, clinicians have specialist training and expertise not commonly available in community services, which may limit the generalisability of findings to other public health settings.

In a randomised comparison of DBT group skills training and a waitlisted control in a Canadian hospital outpatient program, McMain et al. (2016) found DBT participants to display greater reductions in self-harm and suicidal behaviours and aggression, and improved emotion regulation and distress tolerance. In a community mental health setting in the United States, Blackford and Love (2011) reported a statistically significant reduction in symptoms of depression in a diagnostically mixed mental health population following six months of weekly group DBT skills training. The study was limited by a small sample size (12 participants with chronic Axis I diagnoses) and the lack of a control group. Similarly, a nonrandomised comparison of the complete DBT protocol versus group DBT skills training with individual therapy in a United States outpatient hospital setting (Harley et al., 2007) found statistically significant improvements in BPD-related symptomology and suicidal ideation. The interventions were delivered by postdoctoral clinical psychologists who had completed 'gold-standard' intensive training in DBT, representing a level of clinician qualification not commonly available in public mental health settings. Again, the lack of a control group limits the generalisability of findings.

Two of the studies conducted in community mental health settings reported drop-out rates well above that observed in research settings (67%, McMain et al., 2016 and 51%, Blackford and Love, 2011, compared to approximately 20%, Linehan et al., 2006), suggesting that participant groups in clinical settings may differ significantly from those in

research environments. None of the identified studies undertaken in clinical and community settings offered comparison between the DBT skills training group and TAU, an important area of investigation when seeking effective treatment protocols for BPD in public mental health services.

Comparison studies suggest that DBT skills training may be superior or equal to other group therapy approaches (e.g. group-based cognitive therapy) in the treatment of BPD. A three-month, single-blind RCT of DBT skills training versus standard supportive group therapy for BPD was undertaken by Soler et al. (2009). Sixty-three participants contributed to the study. DBT skills training was found to be superior to supportive group therapy in reducing psychological distress, anxiety, depression, anger, irritability and emotional dysregulation. Lower drop-out rates were also observed in the DBT skills training group (Soler et al., 2009). An RCT by Lin et al. (2019) compared DBT skills training with group-based cognitive therapy in 82 college students with BPD, depression and suicidality in Taiwan. Both groups demonstrated similar reductions in depression and suicidality post-treatment and at six-month follow-up, which the authors attributed to increased use of adaptive emotion regulation strategies by participants.

In a systematic review of DBT skills training for diverse clinical populations in both group and individual formats, Valentine et al. (2015) examined 17 studies across a variety of settings. Findings provide preliminary support for DBT skills training as an effective standalone treatment for a range of presentations, with results indicating reduced psychological distress and depression, and improved emotional and behavioural regulation, psychosocial functioning and treatment retention. The authors noted that most of the examined findings were taken from program evaluations in clinical settings, with little data drawn from methodologically robust RCTs. As such, the evidence should be interpreted with caution due to significant methodological limitations including an absence of randomisation,

control or comparison groups and longitudinal follow-up. Further research is recommended, including RCTs to examine the efficacy of manualised DBT skills training for specific clinical populations (Valentine et al. 2015).

Dialectical Behaviour Therapy Skills as a Potential Mechanism of Change

Recent empirical evidence has begun to explore the link between the use of DBT skills and clinical outcomes, building understanding of the role of DBT skills as a potential change mechanism in BPD. As explored in Chapter I, Linehan's biosocial theory conceptualises BPD as a disorder of emotional dysregulation, and proposes that developing skills to regulate severe emotional distress will reduce psychopathology (Linehan, 1993; Linehan & Kehrer, 1993). As such, DBT skills training aims to address emotional dysregulation by teaching strategies to replace maladaptive behaviours with effective, adaptive alternatives (Linehan, 2014). In a recent investigation, Cheavens et al. (2022) sought to examine how DBT skills training modules (mindfulness, distress tolerance, emotion regulation and interpersonal effectiveness) influenced outcomes for those with BPD following six months of DBT skills training in a university training clinic setting. Results indicated similar reductions in self-reported emotional dysregulation across all modules, with no statistically significant between-modules differences. Cheavens and colleagues (2022) suggest that the findings support the biosocial model of BPD, and indicate that all DBT skills training modules contain elements which address emotional dysregulation.

These findings are consistent with those by Heath et al. (2021), who examined the impact of DBT skills training on emotion regulation in 136 participants with a range of mental health diagnoses. Assessing emotion regulation at the beginning and end of each of the DBT skills training modules, the researchers found that each of the group modules were associated with an independent and cumulative improvement in emotion regulation. Gains

were found to be strongest in the earlier phases of treatment. Similar findings were reported in an earlier multi-phase, single case research design assessing the effectiveness of the DBT skills training modules in reducing emotional dysregulation (Hunnicutt Hollenbaugh & Lenz, 2018). Results indicated a reduction in emotional dysregulation in participants over the course of the four DBT skills training modules, with no significant difference between the four modules. Generalisability of these findings is limited, however, as the study compared results among three participants only. In a study comparing DBT group skills training plus TAU with TAU-only in 103 participants in an inpatient setting (Gibson et al., 2014), results indicated significant improvements in emotion regulation following group DBT skills training. Employing the Difficulties in Emotion Regulation Scale (Gratz & Roemer, 2004), and the Cognitive Emotion Regulation Questionnaire (Garnefski & Kraaij, 2007), the researchers identified significant reductions in 'limited access to emotion regulation strategies' and 'inability to engage in goal-directed behaviours', and the cognitive processes of 'planning', 'putting into perspective' and 'positive refocus', noting a particularly strong association between 'planning' and reductions in self-harm. The researchers interpreted these findings as providing support for Linehan's biosocial model and the role of DBT skills as a potential mechanism for change.

Barnicot et al. (2016) found more frequent use of DBT skills was associated with greater reductions in self harm, and reduced likelihood of treatment dropout, independent of other therapeutic processes such as self-efficacy and therapeutic alliance. The researchers interpreted the findings as supportive of the role of DBT skills in directly reducing psychopathology, by teaching individuals how to regulate emotions and behaviour. Further, they suggest that use of DBT skills improves treatment adherence, by supporting individuals to cope with distress arising during treatment, rather than withdrawing at times of difficulty. However, Barnicot and colleagues (2016) note the absence of a significant cross-temporal

relationship in the findings, leaving the direction of the association between skills use and self-harm unclear. Finally, in a process-outcome analysis of randomised controlled research, Kramer (2017) found that, compared to controls, participants who underwent DBT skills training demonstrated significant increases in overall coping functioning. The author reported increases in specific coping strategies related to self-reliance and support-seeking, and reductions in coping approaches involving opposition and submission. Kramer (2017) suggests that DBT skills training may teach individuals how to self-assert and effectively seek structured help in response to challenges. As adaptive and assertive coping strategies increase, maladaptive and ineffective behaviours reduce. Overall, this emerging evidence provides support for the role of DBT skills, and particularly the capacity of the therapy to address emotional dysregulation, as a potential mechanism of change in BPD.

Chapter III: Introduction Part III: Borderline Personality Disorder, Dialectical Behaviour Therapy and Men

The following chapter considers developments in research evidence regarding the prevalence of BPD among men, and common comorbidities. The course of BPD in men is presented, including developmental trajectories and neurobiological factors. Gender differences in the expression of BPD symptoms are explored, with emphasis on the contribution of externalising behaviours on the presentation of the disorder in men. Male patterns of service usage for BPD are given. Finally, emerging evidence of the effectiveness of DBT for males is considered. This chapter provides the backdrop to Study Three, which examines the effectiveness of standalone DBT skills training in men with BPD.

Borderline Personality Disorder Prevalence and Comorbidity in Men

Evidence regarding gender differences in the prevalence of BPD has developed substantially in recent years. Early research strongly indicated a higher occurrence of BPD among women (Paris, 2004; Widiger, 1998; see also Sansone & Sansone, 2011), and the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR; APA, 2000) asserted a 3:1 female to male prevalence ratio. More recent evidence however indicates that BPD is equally prevalent among men and women (Grant et al., 2008). The United States' Wave 2 National Epidemiologic Survey on Alcohol and Related Conditions (Grant et al., 2008) undertook 34,653 clinical face-to-face interviews to identify BPD among a nationally representative sample. Findings indicated no statistically significant differences in the prevalence of BPD between genders, with the disorder identified in 5.6% of men and 6.2% of women. Gender differences were identified in regards to comorbidity, with men found to be more likely to experience comorbid antisocial and narcissistic personality disorder and substance use disorders. These findings are strongly consistent across

investigations, including the Collaborative Longitudinal Personality Disorders Study (Johnson et al., 2003), which sampled 240 individuals with BPD and found that men were more likely to report comorbid substance abuse disorders, and narcissistic, antisocial and schizotypal personality disorders. Similarly, research by Tadic et al. (2009) reported higher rates of comorbid antisocial personality disorder and substance abuse among men with BPD than women, and Grant and colleagues (2008) identified significantly greater levels of comorbid substance abuse disorders among males with BPD.

Several possible explanations for the changing evidence regarding gender prevalence have been suggested. Research has identified a slight female gender bias among clinicians in the diagnosis of BPD (Adler et al., 1990; Giacalone, 1997). Further, women with BPD are more likely to seek treatment from mental health services, while men with BPD are more commonly encountered in substance-abuse and forensic settings (Goodman et al., 2010; Sansone & Sansone, 2011; Wetterborg et al., 2015), likely contributing to a sampling bias in clinical populations (Grant et al., 2008). Grant and colleagues (2008) identify that early research reporting a higher prevalence of BPD among females was commonly limited by small, unrepresentative or biased samples, particularly where clinical populations were used. In a critical review of the literature, Skodol and Bender (2003) similarly concluded that sampling bias caused by the low rate of men with BPD present in treatment settings may explain the disparity in prevalence rates. Finally, Sansone and Sansone (2011) suggest that gender differences in the expression of BPD symptomology may contribute to the diagnosis being under-identified among men. Further exploration of these gender differences is presented below.

Development and Course of Borderline Personality Disorder in Men

Research examining the development of BPD in men is limited, as most investigations have employed female-only or mixed gender samples (Goodman et al., 2013). One study using male participants-only identified developmental risk factors for BPD including loss, trauma and challenging paternal relationships (Paris et al., 1994). Developmental trajectories of BPD in men were explored by Goodman and colleagues (2013), who surveyed the parents of 263 male children (97 with diagnosed BPD and 166 siblings without the disorder). Comparison of the two groups of boys revealed several antecedents of BPD throughout childhood and early adolescence. As early as infancy, prodromal features including excessive separation anxiety, heightened sensitivity and reduced capacity for self-soothing were reported. Sensitivity was found to continue in the primary school years, when lying, emptiness, impulsivity and problems with body image were also described. These features persisted throughout adolescence, in addition to the development of odd and unusual thinking. Victimisation in childhood, either through sexual abuse or bullying, was also found to be an important predictor (Goodman et al., 2013). These findings are consistent with previously described conceptualisations of BPD as arising from disrupted attachment, emotional dysfunction and an invalidating environment in childhood (Bateman & Fonagy, 2016; Linehan, 1993; see Chapter I).

Compared to girls, adolescent males with BPD are more likely to demonstrate aggression and anger (Bradley et al., 2005). Further, in a longitudinal study of primary-school aged boys with annual follow-up until 24 years of age, features of both attention deficit hyperactivity disorder (e.g., impulsivity) and oppositional defiant disorder (e.g., interpersonal conflict and hostility) were found to predict later BPD diagnosis (Burke & Stepp, 2011).

Neurobiological Factors

There are a limited number of studies exploring the neurobiological underpinnings of BPD in men. Traumatic brain injury, occurring before the onset of BPD, has been identified in 42% of male veterans, compared to 4% of controls (Streeter et al., 1995), although findings are strongly confounded by the possibility that antecedents of BPD including impulsivity and risk-taking placed these individuals at greater risk of harm. Neuroimaging studies employing MRI have found men with BPD to have reduced grey matter in brain regions associated with impulsivity, including the parietal, temporal and frontal cortices (Vollm et al., 2009). Prehn and colleagues (2013) examined men with BPD, antisocial personality disorder and a history of violent offending and found hyperactivation of the amygdala and slowed reaction times in response to social emotional tasks. However, the inclusion of a comorbid antisocial personality disorder diagnosis among the sample prevents identification of a direct relationship between task performance and BPD.

Neuroimaging studies have also identified specific gender differences in BPD. A single blind, placebo controlled investigation of individuals with BPD and impulsive aggression employing PET scanning identified gender-specific patterns of serotonergic function, which the authors suggest may be linked to differences in the behavioural expression of BPD in men and women (Soloff et al., 2005). Soloff and colleagues (2008) identified reduced grey matter in the anterior cingulate gyrus in men (but not women) with BPD, and in the medial temporal lobe of women with BPD (but not men). These differences may contribute to gender differences in the clinical presentation and symptom expression of BPD, which will be explored further below.

Clinical Presentation and Symptom Expression

Research has found no difference between genders in levels of emotional distress in BPD (McCormick et al., 2007; Silberschmidt et al., 2015; Zlotnick et al., 2002). Silberschmidt and colleagues (2015) and Zlotnick et al. (2002) report no gender differences in levels of functional impairment, while McCormick et al. (2007) found that women self-reported overall poorer functioning, particularly in emotional and social domains. Men and women with BPD have also been shown to demonstrate self-harming behaviour (Marchetto, 2006) and suicidality (Sher et al., 2019) equally. While the number of suicide attempts has been found to be similar between genders, men tend to employ higher-lethality means, and are at greatest risk of dying by suicide than women (Sher et al., 2019).

Significant gender differences have been identified with regard to the expression of BPD symptoms. Research consistently identifies higher rates of 'externalising' behaviours in men with BPD (Bayes & Parker; 2017; McCormick et al., 2007). Externalising behaviours are those which are directed outwardly (including aggression and explosive anger) and tend to place the individual in conflict with society (Krueger, 1999). In contrast, women with BPD are more likely to demonstrate 'internalising' behaviours, which direct distress inward (such as disordered eating) (Krueger, 1999; McCormick et al., 2007). Barnow et al. (2007) applied Cloninger's (1993) psychobiological model (which seeks to classify BPD dimensionally, rather than categorically as per the DSM-V) to the examination of temperament and character in individuals with BPD. Using structured interviews administered by trained clinicians, the authors compared 202 inpatients with BPD with both healthy controls and controls with mood, substance use or other personality disorders. Men with BPD were found to uniquely demonstrate an 'explosive' temperament, characterised by high levels of novelty seeking and harm avoidance. Female participants demonstrated high levels of harm avoidance, but not novelty seeking. These findings are consistent with an earlier study by Zanarini et al. (1998)

which found men with BPD to demonstrate more intermittent, explosive symptoms than women. Zlotnick and colleagues (2002) similarly reported higher rates of intermittent explosive disorders, antisocial behaviour and substance abuse in men with BPD compared to women.

Bayes and Parker (2017) argue that the higher rates of externalising behaviours in men with BPD may lead to diagnostic confusion with antisocial personality disorder, adding to the under-diagnosis of BPD. Further, externalising behaviours have been suggested to contribute to the high rates of men with BPD in forensic settings (Warren & Burnette, 2012). Possible explanations for the predominance of externalising behaviours in men with BPD have been suggested. In a systematic review of neurobiological research, Mancke et al. (2015) note that deficits in serotonergic function and striatal activity, and reduced grey matter in the anterior cingulate cortex have been identified in male (but not female) BPD populations, and posit a role for impulsivity in male symptom expression. From a schema-focussed perspective, Keulen-de Vos et al. (2016) suggest that violence by men with personality disorders may be an attempt to escape vulnerable emotions including loneliness, abandonment and shame.

Service Usage

Notable differences in health services utilisation have been identified in men and women with BPD, first recognised as early as 1989 (Reich et al). Goodman and colleagues (2010) examined 495 internet surveys completed by parents of individuals with BPD to identify lifetime health resource usage patterns. While both genders demonstrated high levels of lifetime service utilisation, including hospitalisation, men received significantly less psychological treatment and pharmacotherapy than women and were more likely to access substance abuse treatment services. Interestingly, once men did commence treatment, there

were no statistically significant differences in the duration of the engagement between genders (Goodman et al., 2010). These findings are consistent with those by Wetterborg et al. (2014), who found that, compared to women, men with BPD are less likely to access mental health services and are over-represented in drug and alcohol treatment programs. Men with BPD were also identified in criminal justice settings at higher rates (Wetterborg et al., 2015). In contrast, McCormick et al. (2007) reported no statistically significant gender differences in the use of health services in 163 participants with BPD. However, this study examined service usage only within the context and duration of a psychotherapy trial, offering less validity than the lifetime prevalence captured by Goodman et al. (2010).

Possible explanations for the observed gender differences in health care usage have been suggested. Underlying differences in help-seeking behaviour may contribute, with women generally more willing to seek help when needed (Corney, 1990), particularly for emotional and psychological distress (Galdas et al., 2005; Möller-Leimkühler, 2002). Men may be more likely to delay help-seeking and wait for problems to resolve themselves, possibly due to gender norms and conceptualisations of masculinity (Sharpe & Arnold, 1998). Goodman and colleagues (2010) suggest that barriers to treatment may include the under-diagnosis of BPD in men and the presence of comorbid conditions such as substance abuse and antisocial personality disorder which impact referral and care pathways. The authors recommend that traditional treatment approaches to BPD be specifically adapted for male populations to assist in overcoming these challenges (Goodman et al., 2010).

Treatment of Borderline Personality Disorder in Men

While the identification of effective treatments for BPD in women is well advanced (see Chapter I), men with BPD have been under-represented in research populations. A Cochrane systematic review of psychological interventions for BPD (Stoffers et al., 2012)

found that only 11% of participants from 28 examined studies were men. This rate worsened to 2.7% for clinical trials. Where men were included, they were almost always a minority presence in a mixed gender group (Stoffers et al., 2012). Few BPD treatment studies have been identified which employ a male-only sample. Further, where male-only samples are employed, they are often focussed on the treatment of comorbid conditions such as substance abuse (Kienast et al., 2014) or aggression (Nickel et al., 2005).

A limited number of investigations have examined the effectiveness of DBT for treating BPD in men. A naturalistic study of 79 male inpatients with BPD compared self-reported distress and symptomology at admission and discharge (Spitzer et al., 2019). DBT delivered during the admission was found to be moderately effective, with 56.4% of patients reporting positive change and 12.8% describing a remission of symptoms. Notably, the investigations did not employ a male-only sample. Rather, results were based on a gender-specific examination of data obtained from a large mixed-sex group. The authors concluded that there was no difference in the effectiveness of DBT between genders (Spitzer et al., 2019). In a 2020 clinical trial, Wetterborg and colleagues examined a one year DBT program for 30 men with BPD and antisocial behaviour in an outpatient mental health service in Sweden. Results demonstrated a statistically significant reduction in BPD symptomology and depression. Moderate to strong improvements in maladaptive behaviours including aggression, self-harm and criminality were also reported. Seventy percent of participants completed the intervention and described high levels of satisfaction with the treatment received. Treatment gains were found to have been maintained at 12-month follow-up (Wetterborg et al., 2020). The research was limited by the small sample size and lack of a control or comparison group. However, results provide preliminary evidence for the effectiveness of DBT for men with BPD and antisocial behaviour.

Two studies examining DBT skills training as a stand-alone treatment for men were identified. Anestis et al. (2020) found that a modified DBT skills group program for adolescents was effective in improving emotion regulation and distress tolerance in young men with BPD traits in a military-style residential program. A pre-post comparison study of 27 male jail inmates (Moore et al., 2018) found that an eight-week DBT skills group was effective in improving coping skills and reducing externalisation of blame. The sample group was drawn from the general prison population and participants did not necessarily report disordered personality pathology (Moore et al., 2018). Both studies were limited by small sample sizes and the lack of a comparison or control group. No studies were identified which examine the effectiveness of DBT skills training as a stand-alone treatment for men with diagnosed BPD in clinical mental health settings.

In conclusion, despite evidence indicating no gender differences in the prevalence of BPD, the disorder is substantially underdiagnosed in men. Men with BPD present with emotional distress and functional impairment equivalent to women, and are at greater risk of death by suicide. Nevertheless, they are significantly underrepresented in mental health treatment settings. Gender-specific symptom expression, particularly the predominance of externalising behaviours such as aggression and explosive anger, may contribute to the misidentification of the disorder, and the tendency of men with BPD to be found in substance abuse treatment services and forensic settings. Men are also under-represented in research populations, with male-focussed BPD research largely absent from the existing literature. Limited emerging evidence suggests the effectiveness of DBT as a treatment for BPD in men, while no studies were identified investigating DBT skills training as a stand-alone treatment for men with BPD in clinical settings. As such, significant unmet need exists for investigations examining the effectiveness of DBT approaches in improving outcomes for men with BPD.

Chapter IV: Study One: Dismantling Dialectical Behaviour Therapy: A Critical Review of the Literature

As established in Chapter II, DBT has been well-established as an evidence-based treatment for BPD. However, requirements of the standard DBT protocol may limit the feasibility of the approach in public health settings where budget and workforce are most limited. Dismantling studies, which seek to identify the minimal core components of effective treatment, may indicate 'pared-down' approaches with greater feasibility for real-world implementation. The aim of this systematic review was to critically examine empirical literature comparing the effectiveness of single DBT treatment components, either individually or in conjunction with each other, in comparison to standard DBT. Five studies, including a total of 346 participants, that compared standard DBT to standalone DBT skills training and/or individual DBT-only were reviewed. They included two RCTs and three non-randomised naturalistic studies. Findings indicated few or no clinically or statistically significant differences between DBT treatment conditions, and suggest that these approaches may be similarly effective in reducing suicidality and self-harm, and may reduce general psychological distress. Treatment adherence was consistently strongest for standard DBT. Methodological limitations arising from the naturalistic setting of the research are considered. The reviewed studies provide modest, preliminary evidence for the use of the DBT skills training as a standalone treatment for BPD in real-world clinical settings.

Background

DBT (Linehan, 1993; 2014) was developed during the late 1980s and early 1990s, arising from Marsha Linehan's work with women with BPD and severe suicidal ideation (Robins & Chapman, 2004). Linehan conceptualised a biosocial theory of BPD, suggesting that underlying emotional dysregulation, in interaction with an invalidating environment,

restricts the development of adaptive coping skills and reinforces maladaptive alternatives (Linehan & Kehrer, 1993). As such, DBT is an emotion-focussed treatment, combining cognitive behavioural strategies with mindfulness, a strong focus on the therapeutic relationship, and a balance between acceptance of the individual as they are and recognition of the need for change (the 'dialectic'). The complete DBT protocol requires treatment be delivered via four separate components, offering flexibility and responsivity to individual clinical presentations (Linehan & Wilks, 2015). The four components of the comprehensive (standard) DBT approach are: 1. *Individual therapy*, being a dyadic interaction between the individual and the DBT therapist; 2. *DBT skills training*, providing structured weekly group sessions focussed on teaching skills to address the underlying dysregulations in BPD and replace maladaptive behaviours; 3. *Telephone coaching*, offering telephone access to the individual therapist for the purpose of skills coaching at times of increased distress and; 4. A *consultation team environment*, being weekly clinician meetings to provide support to therapists and improve treatment fidelity (Linehan, 2014; Linehan & Wilks, 2015). The four components of the standard DBT approach are shown in Figure 1.

Figure 1

The Four Components of Standard Dialectical Behaviour Therapy
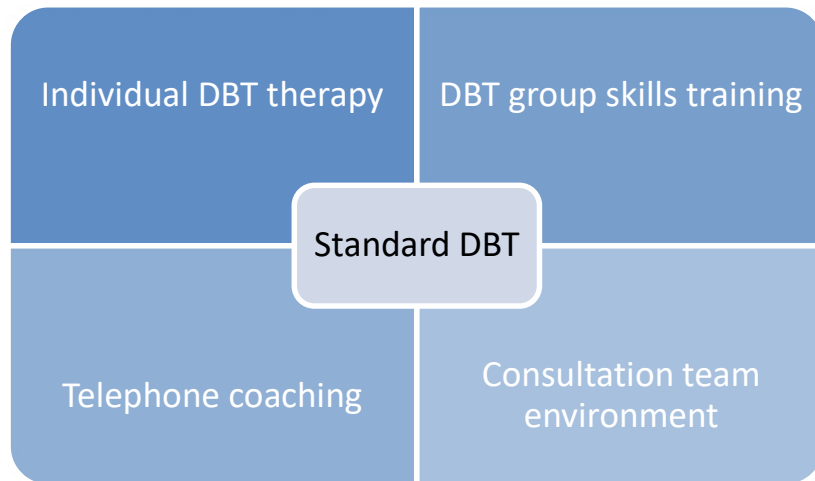
Individual DBT therapy	DBT group skills training
	Standard DBT	
Telephone coaching	Consultation team environment

Since its development, DBT has been extensively empirically evaluated as a treatment

for BPD. In RCTs, DBT has been shown to be effective in reducing self-harm (Linehan et al.,

1991; van den Bosch et al., 2002; Verheul et al., 2003), anger (Linehan et al., 1991),

suicidality (Koons et al., 2001; Linehan et al., 2006), hospitalisation (Linehan et al., 1991;

Linehan et al., 2006), and depression and hopelessness (Koons et al., 2001). Further,

qualitative studies exploring individuals' experience of undertaking DBT have identified the

treatment as effective and life-saving (Cunningham et al., 2004; Perseius et al., 2003).

Research examining the implementation of DBT in real-world clinical settings has found

association with improved clinician attitudes to BPD, perceived self-efficacy and confidence

in the effectiveness of interventions (Herschell et al., 2014). However, research has also

identified significant challenges to the adoption of standard DBT in service environments.

Barriers to the implementation of standard DBT include the time commitment required, a

shortage of appropriately trained clinicians, high staff turnover (Carmel et al., 2014b),

financing, resource availability and the perceived difficulty of DBT implementation (King et

al., 2018). These factors may limit the feasibility of standard DBT as a treatment for BPD in

public health settings where budget and workforce resources are most limited (Blennerhassett & O'Raghallaigh, 2005; Swenson et al. 2002).

Choi-Kain and colleagues (2017) assert that the new frontier for BPD research lies with dismantling studies which seek to identify the essential elements of effective care for BPD. These approaches emphasise a 'paring down' of treatment to minimal core components, offering greater feasibility for implementation in challenging real-world clinical settings (Choi-Kain et al., 2017). As such, this systematic review aims to critically examine research literature which compares the effectiveness of single DBT components, either individually or in conjunction with each other, in comparison to standard DBT, as a treatment for BPD. The review will consider the methodological quality of the identified studies, and explore participant characteristics, implementation of the DBT interventions and major treatment outcomes. Findings will be considered in the context of the theoretical underpinnings of DBT, empirical literature and real-world implementation of DBT interventions. Specific recommendations for future research will be presented.

Method

The protocol for this systematic review was registered on PROSPERO and can be accessed at https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42021288642 (see also Appendix A)[8]. The review was undertaken in accordance with Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Page et al., 2021), which outline best-practice approaches to reviews of health interventions.

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[8] Minor amendments to the systematic review proposal were made subsequent to PROSPERO registration

Searching and Identifying Studies for Inclusion

The review sought to identify all research which compared the effectiveness of standard DBT (being individual DBT, group DBT skills training, telephone coaching *and* a consultation team environment), with any single component, either by itself or in conjunction with others (for example, standard DBT compared to individual DBT only). Searches of the PubMed, EMBASE, CINAHL, Scopus and PsycINFO databases were undertaken in April and May 2022. The search strategy employed variations of the terms 'borderline personality disorder" *or* BPD *and* "dialectical behaviour therapy" *or* DBT *or* "dialectical behavio* therap*" *or* "dialectical behavio* treatment*" (see Appendix B for full search strategy). The search included all English-language, peer-reviewed, quantitative research published since 1993. This date was chosen as the first year of publication of Linehan's (1993) *Skills Training Manual for Treating Borderline Personality Disorder*. Participants in the included studies:

- Were adults aged 18 years and older;

- Met standard diagnostic criteria for Borderline Personality Disorder and;

- Completed at least one component of the Dialectical Behaviour Therapy treatment protocol, as per Linehan's (1993; 2014) manuals.

The review excluded:

- Children under the age of 18 years, and;

- Other publication types (e.g., editorials / reviews, opinion pieces, abstracts from conferences).

Covidence systematic review software (Veritas Health Innovation, n.d.) was used to manage the article screening and review process. Database searches produced a total of 2746

studies. Of these, 956 were identified as duplicates and removed. The remaining 1760 studies

underwent title and abstract screening, resulting in seven studies for full text review. One

study was excluded for not employing a comparator group. A second study was excluded for

employing a comparator group that was not a DBT intervention. To support the accuracy of

screening, a second reviewer independently checked a subsample of articles at both stages.

Researchers were not blinded to each other's decisions. There were no disagreements

between reviewers. A PRISMA flow diagram outlining all stages of the screening and review

process is provided in Figure 2.

Figure 2

PRISMA Flow Diagram


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┌──────────────────────────────────────────┐        ┌──────────────────────────────────────────┐
│ 📄  2746 studies imported for screening   │  ──→   │ 956 duplicates removed                    │
└──────────────────────────────────────────┘        └──────────────────────────────────────────┘
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│ 📄  1760 studies screened                 │  ──→   │ 1749 studies irrelevant                   │
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│ 📄  7 full-text studies assessed for      │  ──→   │ 2 studies excluded                        │
│     eligibility                           │        │ ▶ Show reasons                            │
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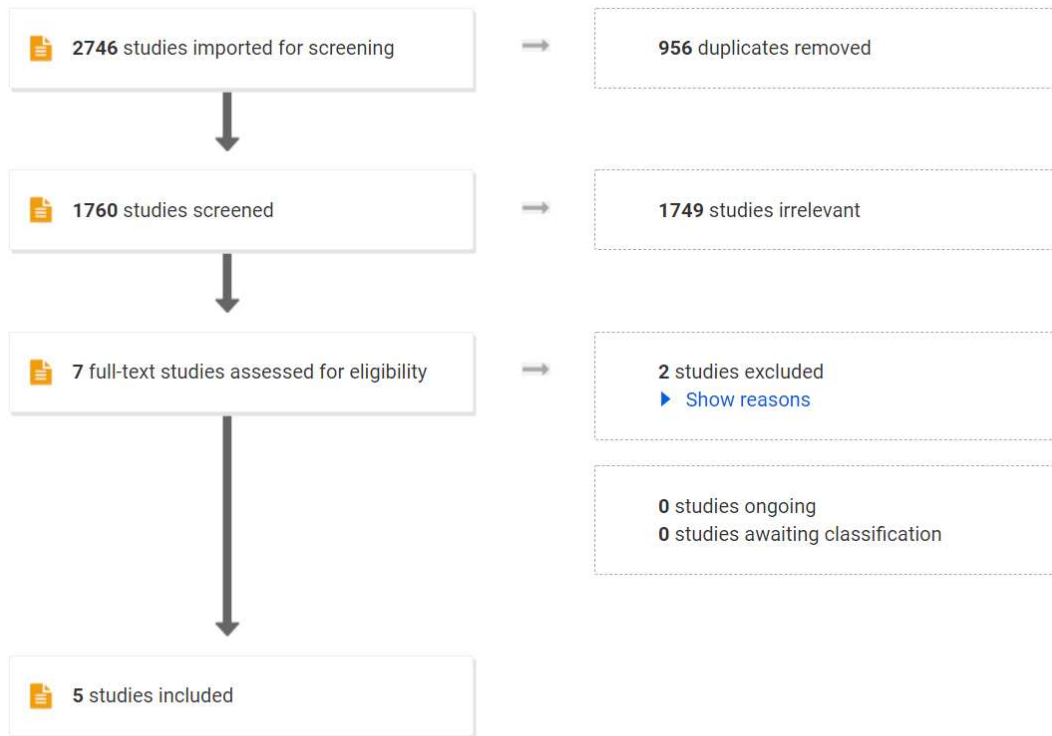
Studies Included

Five studies were identified which met criteria for inclusion in the review. Available data were extracted regarding the study design, sample, participant characteristics, interventions, outcomes and a descriptive summary of findings (see Table 4). The five studies were published between 2007 and 2022. Two of the studies were conducted in the USA, one in Australia, one in Spain and one in Ireland. Sample sizes ranged from 49 to 99. In total, the studies included 346 participants, of which 90% (312) were female. The age of participants ranged from 18 to 62 years.

Analysis

The quality of the studies was assessed against the Mixed Methods Appraisal Tool (MMAT; Hong et al., 2018). The MMAT critically evaluates the methodological quality of empirical studies. For each of the included study types (quantitative randomised controlled trials and quantitative non randomised), screening questions were scored as either 'Y' (criterion met) or 'N' (criterion not met), with scores determined as a percentage of criteria met and a corresponding quality descriptor. The MMAT scoring ratings are presented in Table 5. Of the five studies evaluated, two were identified as of moderate quality with 60% of criteria met, and three were identified as moderate to strong with 80% of quality criteria met.

Table 4

Articles Included in the Review

Author(s)	Publication year	Country	Intervention	Sample size	Participants	Outcomes	Main findings
Andion et al.	2012	Spain	Standard DBT vs. Individual DBT only	$n = 53$	51 women and 2 men with BPD aged 18-41 years ($M = 25.63$, SD 6.46)	Suicide attempts, self-harm, emergency department presentations	Both groups demonstrated significant reductions in suicide attempts, instances of self-harm and number of emergency presentations. There was no significant difference between intervention groups for any outcomes at end of treatment or 18-month follow up.
Harley et al.	2007	USA	Standard DBT vs. DBT skills training + non-DBT individual therapy	$n = 49$	45 women and 4 men with BPD, mean age 40 years	BPD symptoms, depression, suicidal ideation	Both groups demonstrated significant reductions in BPD symptoms, depression and suicidal ideation. Significantly higher drop-out rates were observed for the DBT skills + non-DBT individual therapy group.
Lee et al.	2022	Aust.	Standard DBT vs. DBT skills training only	$n = 57$	44 women and 13 men aged 20-62 years ($M = 37.12$, SD = 12.74). Participants in the Standard DBT group met criteria for BPD, those in the DBT skills	BPD symptoms, psychological distress, quality of life	Both groups demonstrated significant improvements in psychological distress and quality of life. There was no significant reduction in BPD symptoms in either group. There was no significant difference in outcome between intervention groups.

Table 4

Articles Included in the Review

Author(s)	Publication year	Country	Intervention	Sample size	Participants	Outcomes	Main findings
					training group met > 3 BPD diagnostic criteria.		
Linehan et al.	2015	USA	Standard DBT vs. DBT skills training + case management vs. Individual DBT + activities group	$n = 99$	99 women with BPD aged 18-60 years	Frequency and severity of suicide attempts, suicidal ideation, episodes of NSSI, reasons for living, depression, anxiety, use of crisis services, use of psychotropic medication	All groups demonstrated significant reductions in number and severity of suicide attempts, suicidal ideation and use of crisis services, and improved reasons for living. Compared to the Individual DBT + activities group, Standard DBT and DBT skills training + case management resulted in greater reductions in NSSI and depression.
Lyng et al.	2020	Ireland	Standard DBT vs. DBT skills training only	$n = 88$	73 women and 15 men with BPD aged 18-59 years ($M = 33.32$)	BPD symptoms, general psychopathology, suicidal ideation, hopelessness, emotion regulation difficulties, dropout	No significant difference between intervention groups on BPD symptoms, general psychopathology or suicidal ideation. DBT skills training only resulted in significantly greater reduction in hopelessness and emotion regulation difficulties. Dropout was significantly higher for DBT skills only than for Standard DBT (38.2 vs. 16.7%).

Table 5

Mixed Methods Appraisal Tool Scoring Ratings

Author(s), Year	Quantitative randomised controlled trials					Quantitative non-randomised					Score (%)	Quality
	Randomisation appropriately performed	Groups comparable at baseline	Complete outcome data	Assessors blinded to intervention	Participants adhered to intervention	Participants representative of target population	Measurements appropriate for outcome and intervention	Complete outcome data	Confounders accounted for	Intervention administered as intended		
Andion et al., 2012	Y	N	Y	Y	Y	-	-	-	-	-	80	Moderate - Strong
Harley et al., 2007	-	-	-	-	-	Y	Y	N	Y	Y	80	Moderate - Strong
Lee et al., 2022	-	-	-	-	-	N	Y	N	Y	Y	60	Moderate
Linehan et al., 2015	Y	Y	Y	Y	N	-	-	-	-	-	80	Moderate - Strong
Lyng et al., 2020	-	-	-	-	-	Y	Y	N	N	Y	60	Moderate

Results

Participant Characteristics

All of the reviewed studies used standard diagnostic criteria to identify individuals with BPD. Four applied the DSM-IV-TR (APA, 2000), with three administering the Structured Clinical Interview for DSM-IV Axis II Disorders (SCID-II, First et al., 1999) to support accurate diagnosis against DSM criteria. One study (Lee et al., 2022) identified BPD against the ICD-10 (WHO, 1992) diagnosis of 'emotionally unstable personality disorder, borderline type' (F 60.31), which does not include brief, stress-related paranoid and dissociative symptoms and is not directly equivalent to the DSM approach (NCCMH, 2009).

Participants in all studies presented with a broad range of Axis I and II comorbidities, with exclusion criteria generally limited to factors which may impede participation in treatment, such as cognitive impairment or psychotic symptoms. The studies varied in their treatment of suicidality and self-harm. Two studies required recent NSSI or suicide attempt(s) for inclusion in the intervention (Andion et al., 2012; Linehan et al., 2015). A further two studies excluded individuals with recent suicidal behaviour from participation in standalone DBT skills training but not from participation in standard DBT (Lee et al., 2022; Lyng et al., 2020), creating non-equivalent groups between conditions with greater symptom severity among those undertaking standard DBT. The sizable majority of participants were female (90%). While recent evidence indicates that BPD is equally prevalent among men and women (Grant et al., 2008), there is a substantially higher proportion of women in mental health treatment settings (Goodman et al., 2010) which is likely to result in sampling bias in research conducted in clinical populations (Grant et al., 2008).

Dialectical Behaviour Therapy Interventions

Three of the reviewed studies compared standard DBT to DBT skills training (Harley et al., 2007; Lee et al., 2022; Lyng et al., 2020). One study compared standard DBT to individual DBT (Andion et al., 2012) and one compared standard DBT, DBT skills training and individual DBT. None of the studies examined telephone coaching or the consultation team environment as standalone approaches. The implementation of DBT components varied substantially between studies, and often diverged from the components as detailed in Linehan's (1993; 2014) treatment manual. Participants in one standalone DBT skills training group were also taught to complete behavioural and solution 'chain' analysis, an intervention drawn from the individual DBT component (Lyng et al, 2019). Participants in the individual DBT-only condition in the study by Andion and colleagues (2012) were formally taught DBT skills in every second session with their individual therapist, a substantial departure from the model as developed by Linehan (1993; 2014) which is likely to undermine the validity of results for this group.

Similarly, Harley et al. (2007) combined standalone DBT skills with non-DBT individual therapy by 'in-system' or external (community) therapists, providing weekly therapeutic support in addition to the skills program. Linehan et al. (2015) combined DBT skills training with manualised case management, and individual DBT with a psychosocial activity support group. Few modifications to the standard DBT conditions were noted, with Andion and colleagues (2012) restricting telephone coaching to clinician's work hours rather than the 24-hour access recommended by Linehan (1993; 2014). Many of the reported adaptations arose in response to administrative or service requirements of the clinical care setting, while changes to components by Linehan et al. (2015) were designed to control for treatment dose.

Only the study by Linehan and colleagues (2015) sought to provide an equal number of treatment hours between conditions. The remaining studies varied considerably in the hours of treatment offered to participants in each condition. Participants in the study by Lee et al. (2022) received 50 hours of treatment over 20 weeks in the DBT skills condition, and approximately 152 hours over 12 months in the standard DBT condition. Andion et al. (2012) provided the standard DBT group with approximately 144 hours of treatment, while participants receiving individual DBT-only were provided 48 hours of treatment. All of the reviewed studies sought to examine the effectiveness of one or more individual DBT components as a treatment for BPD compared to standard DBT. As such, the deviation in treatment hours between conditions may be considered appropriate in indicating the feasibility of individual DBT components to offer a less resource intensive alternative to standard DBT in real-world settings.

Treatment dropout rates ranged from 7.1% in standard DBT (Andion et al., 2012) to 48% in individual DBT-only (Linehan et al., 2015), with considerable variability between studies and conditions. The reported dropout rates are broadly consistent with those described in published RCTs of DBT, with meta-analysis of 40 studies identifying a mean dropout rate of 28% (Dixon & Linardo, 2020). Of the studies in the current review, four reported strongest treatment adherence among participants in the standard DBT condition (Andion et al., 2012; Harley et al., 2007; Linehan et al., 2015; Lyng et al., 2020), while Lee and colleagues (2022) did not assess treatment dropout. Within studies, individual DBT-only was associated with higher dropout rates than both standard DBT (individual DBT 10.8%, standard DBT 9.8%; Andion et al., 2012) and standalone DBT skills training (individual DBT 48%, standard DBT 24%, DBT skills 39%; Linehan et al., 2015). All of the studies which assessed dropout identified few or no significant between-group differences at pre-treatment, and three reported no significant differences between those participants who completed versus dropped

out of treatment (Andion et al., 2012; Harley et al., 2007; Lyng et al., 2020). This suggests that differences in dropout rate are more likely related to treatment condition than individual participant characteristics.

Design and Treatment Outcomes

Two of the reviewed studies were randomised trials (Andion et al., 2012; Linehan et al., 2015, while three were non-randomised naturalistic studies (Harley et al., 2007; Lee et al., 2022; Lyng et al., 2020). Only the study by Linehan and colleagues (2015) employed ITT analysis, while four analysed data only from participants who had completed treatment. Two studies (Andion et al., 2012; Linehan et al., 2015) provided long-term follow-up of participants, while three (Harley et al., 2007; Lee et al., 2022; Lyng et al., 2020) assessed outcomes at post-treatment without long-term follow-up.

Suicidality and Self-harm. Of the five reviewed studies, four identified suicidality or self-harm as an outcome measure. Each of the studies employed a unique approach to data collection. Andion and colleagues (2012) conducted brief individual interviews with participants and reviewed diary cards and medical records. Linehan et al. (2015) completed structured clinical interviews including the Suicide Attempt Self-Injury Interview (Linehan et al., 2006) and the Suicidal Behaviours Questionnaire (Addis & Linehan, 1989, as cited in Linehan et al., 2015). The Beck Hopelessness Scale (Beck et al., 1974, as cited in Lyng et al., 2020) and the Beck Scale for Suicide Ideation (Beck & Steer, 1991, as cited in Lyng et al., 2020) were employed by Lyng and colleagues (2020). Harley et al. (2007) used the Personality Assessment Inventory (PAI; Morey, 1991) SUI (suicide) scale and BOR-S (self-harm) subscale. All four studies described improved outcomes for participants with regard to suicidality and/or self-harm in one or more DBT condition. Andion et al. (2012) reported significant reductions in suicide attempts and self-harm for participants in both the standard

DBT and individual DBT-only conditions, with gains being retained at long-term follow-up. Linehan et al. (2015) identified similar, significant reductions in suicidal ideation and suicidal attempts in participants in the standard DBT, individual DBT-only or standalone DBT skills conditions. Harley et al. (2007) identified a significant pre-post treatment reduction in suicidal ideation for participants who completed DBT skills training. This finding included both participants from the standard DBT and standalone DBT skills training group and did not offer comparison of outcomes between the two. Lyng et al. (2020) reported no change in suicidal ideation in more than 70% of participants in both treatment groups, and significantly lower hopelessness for participants in standalone DBT skills.

BPD Symptomology. Three of the reviewed studies included measures of BPD-related symptoms. Lee et al. (2022) and Lyng et al. (2020) employed the Borderline Symptom List (BSL-23; Bohus et al., 2009), a 23-item measure of borderline symptom severity. Harley and colleagues (2007) applied the Borderline (BOR) scale of the PAI. Both instruments rely on participant self-report to assess BPD-related symptoms. Findings are inconsistent across studies. Lee et al. (2022) reported no statistically significant improvement in BPD symptoms or emotion regulation in participants who completed either standard DBT or standalone DBT skills. Lyng et al. (2020) found similar reliable positive change in borderline symptom severity among participants in both treatment groups (55.6% in standard DBT and 61.9% in standalone DBT skills), and a moderate improvement in emotion regulation for participants in the standalone DBT skills condition. Harley et al. (2007) reported a significant pre-post treatment reduction in symptom severity for participants who completed DBT skills training. Again, this finding included both participants from the standard DBT and standalone DBT skills training group and did not offer comparison of outcomes between the two.

Psychological Distress. Three of the reviewed studies measured psychological distress or general psychopathology. All relied on self-report instruments, being the Depression Anxiety Stress Scale (Lovibond & Lovibond, 1995, as cited in Lee et al., 2022) the Global Severity Index on the Symptom Checklist-90-Revised (Derogatis, 1994, as cited in Lyng et al., 2020) and the DEP (depression) and ANX (anxiety) subscales of the PAI (Harley et al., 2007). Results varied between studies. Lee and colleagues (2022) reported a significant reduction in psychological distress following six months of treatment in both the standard DBT and standalone DBT skills training conditions. A significant reduction in depression, but not anxiety, across DBT conditions was reported by Harley et al. (2007). Lyng et al. (2020) described a stronger positive reliable change on general psychopathology among participants in the standalone DBT skills group (57.2%) compared to standard DBT (40%), however the between-groups difference was not statistically significant.

Quality of Life. Only Lee and colleagues (2022) examined quality of life as an outcome measure, employing the Quality of Life Enjoyment and Satisfaction Questionnaire (Endicott et al., 1993, as cited in Lee et al., 2022), a 15-item self-report instrument. Results indicated a statistically significant improvement in satisfaction with life following six months of treatment in both the standard DBT and standalone DBT skills training conditions.

Comparison between Treatment Condition. Overall, the reviewed studies found few or no statistically or clinically significant differences in outcome between treatment conditions. Lyng et al. (2020) found no significant difference in outcomes between participants in the standard DBT or standalone DBT skills conditions, consistent with results by Harley and colleagues (2007) and Lee et al. (2021). No significant differences were observed between standard DBT and individual-only DBT (Andion et al., 2012), or between standard DBT, individual-only DBT or standalone DBT skills (Linehan et al., 2015). Linehan et al. (2015) reported that, compared to individual DBT-only, treatment conditions that

included DBT skills (standard DBT or standalone DBT skills training) resulted in stronger reductions in depression, anxiety and self-harm. Lyng et al. (2020) reported a moderate effect on emotion regulation difficulties and hopelessness for standalone DBT skills compared to standard DBT. Lee and colleagues (2022) found a significant association between the acquisition of DBT skills and positive change in clinical outcomes, accounting for 46% of the variance in borderline-related symptoms and 27% in psychological distress.

Discussion

DBT dismantling studies seek to identify the minimal, core components of effective treatment for BPD, and may evidence 'pared-down' approaches with greater feasibility for implementation in real-world clinical settings. The aim of the current systematic review was to critically examine empirical literature comparing the effectiveness of single DBT treatment components, either individually or in conjunction with each other, in comparison to standard DBT. The review yielded five studies that compared the effectiveness of one or more DBT components as a treatment for BPD across a range of outcomes.

All of the reviewed studies compared standard DBT to standalone DBT skills training and/or individual DBT-only. Overall, the examined research was of moderate to moderate / strong methodological quality. The studies consistently reported few or no statistically or clinically significant differences in outcomes between standard DBT, individual DBT-only or standalone DBT skills training. Findings suggest that these approaches may be similarly effective in reducing suicidality and self-harm, and may reduce general psychological distress, particularly depression. There is also modest evidence for improvements in quality of life following DBT intervention. Evidence regarding the effectiveness of the approaches in reducing BPD-related symptoms is equivocal at this stage.

The studies offer an interesting insight into the potential importance of DBT skills training in the treatment of BPD. Linehan et al. (2015) noted a stronger reduction in symptoms in treatment conditions that included DBT skills (standard DBT or standalone DBT skills training). Acquisition of DBT skills was also found to account for 46% of the variance in BPD-related symptoms (Lee et al., 2022). These findings are consistent with the theoretical basis of DBT, which asserts that learning behavioural skills will reduce maladaptive behaviours and increase adaptive responses in those with BPD (Linehan, 1993; Rudge et al., 2020), and research findings that the frequency of DBT skills use is associated with reductions in self-harm (Barnicot et al., 2016), and mediates the effect of intervention type (Neacsiu et al., 2010; 2014).

Treatment adherence was consistently found to be strongest among participants in standard DBT. Lyng et al. (2020) suggest that the higher dropout rate in standalone DBT skills may reflect the lack of individual DBT support, which emphasises and monitors treatment motivation. Similarly, Harley et al. (2007) consider the role of 'in-system' individual contact (such as in standard DBT) in supporting treatment adherence through improved coordination and collaboration between treating clinicians. Further research is required to examine these hypotheses.

Limitations of Existing Research

Most of the reviewed studies represent a pragmatic adaptation of single DBT components to clinical care environments and therefore have some methodological limitations. Only two of the reviewed studies employed randomisation, and only one used ITT analysis. Several of the studies used DBT conditions which diverged from the components as outlined by Linehan (1993; 2014). While some of these variations were to be expected in clinical services (e.g., telephone coaching restricted to business hours), others

(such as teaching DBT skills to individual DBT-only participants) challenge the validity of findings. Only two of the studies provided long-term follow-up of participants, although findings suggest that treatment gains remain intact over time. Finally, the studies were generally underpowered, and highlight the difficulty of achieving large enough sample sizes in clinical settings. While the reliability and generalisability of results obtained in naturalistic settings may be more limited, the studies nevertheless provide important evidence for the feasibility and effectiveness of interventions in real-world care environments.

Limitations of the Current Review

There are a few limitations to the current review. As DBT dismantling research is a recent and emerging area, the review consists of five studies only. Most of these were non-randomised naturalistic studies with noted methodological challenges. As such, findings must be interpreted with caution and can only be considered preliminary. Further, the review included two studies in which participants received a DBT treatment concurrently with a non-DBT support (such as individual therapy or case management). While this may challenge the validity of findings, these studies were included in preference to omitting a significant contribution to a developing research topic.

Recommendations for Future Research

Methodological limitations of the studies have been presented. More methodologically rigorous research in real-world clinical settings, particularly employing randomised allocation of participants and ITT analysis, would strengthen evidence for the feasibility and effectiveness of single DBT components as standalone treatments for BPD. Considering the investment of time and resources even for single DBT components (e.g., two clinicians for 2.5 hours per week for 20-25 weeks for standalone skills training), future research should compare such approaches to TAU or waitlist controls. This would assist in

determining the benefit of DBT-based interventions over existing mental health services in clinical environments. The reviewed studies identified significantly higher drop-out rates for participants in standalone DBT skills training and individual DBT-only. As such, future research may consider quantitative assessment of participant satisfaction, or qualitative examination of the participant experience, to provide greater insight into factors contributing to treatment adherence. Finally, as with most published DBT research literature, men are substantially underrepresented. DBT is an emotion-focussed treatment which seeks to address the underlying dysregulation in BPD and develop adaptive skills. Gender differences in the expression of BPD symptoms have been established in the research literature (Bayes & Parker, 2017; Krueger, 1999; McCormick et al., 2007) and may impact treatment outcomes. As such, further research focussing on the effectiveness of 'pared-down' DBT approaches with male participants is required.

Chapter V: Research Context

This chapter presents the context of the primary research for the thesis, which comprises an RCT of female participants reported in two parts and a pre-post comparison of male participants. The recent history of the prevalence and treatment of BPD in South Australia is considered, including the limitations of clinical services for the disorder across the public mental health system. The unique psychosocial stressors experienced by regional communities, and their impact on health and mental health outcomes, are explored. The challenges of mental health service delivery in regional areas, including underfunding, workforce maldistribution, and other barriers to help-seeking, are presented. The setting of the research is given, incorporating the geographical and sociodemographic landscape of the South East region of South Australia, and the Country Health SA Local Health Network (CHSALHN) service delivery environment. Specific catalysts for the research, arising from the author's professional role for CHSALHN are documented. The development, implementation and evaluation of a pilot program of group DBT skills training for BPD are outlined, which informed the design of the research presented in this thesis. Consideration is given to strategies developed to overcome the challenges of delivering DBT skills training in the regional context.

Borderline Personality Disorder in South Australia

In South Australia, Kent and O'Sullivan (2019) estimate the state-wide population of individuals with BPD to be between 17,000 and 68,000 and acknowledge that "mental health services across the state of SA have not been able to provide routine, consistent access to evidence based therapies for BPD" (p. 10). Over the past decade, BPD has received increasing media and political attention in the state (Opie, 2018; Siebert, 2017), with growing community awareness of the disorder. While key documents to inform BPD health policy

have been commissioned by the South Australian Mental Health Commissioner and SA Health (South Australian Action Plan for People Living with BPD: 2017-2020; Borderline Personality Disorder: An overview of current delivery of Borderline Personality Disorder services in the public sector across South Australia and a proposed way forward, 2014), none have been implemented. South Australians have historically not had access to specialist BPD treatment services such as those seen interstate (Project Air in NSW, Spectrum in Victoria), and the NHMRC guidelines have not been systematically adopted (Kent & O'Sullivan, 2019).

In 2018, the South Australian Deputy State Coroner Jayne Basheer investigated the deaths of two young women with BPD. The findings of the Deputy Coroner identified "serious systemic issues and deficiencies in the current delivery of services for BPD in South Australia" (Basheer, 2018, p. 61). Characterising the mental health system as "fragmented, inconsistent and chaotic", Basheer summarised the current approach to BPD as amounting to "little more than short term crisis management" (p. 61) and identified specific deficiencies including poor access to evidence-based therapies and a reliance upon hospitalisation and medication as primary treatment approaches (Basheer, 2018).

Mental Health Services in the Rural and Regional Context

The challenges of mental health service delivery for BPD are detailed in Chapter I. The complexity of this challenge is further intensified in rural and remote Australia. Rural Australians face unique psychosocial stressors and a health services landscape challenged by underfunding and an insufficient and unequally distributed workforce. Reluctance to seek help for psychological distress, particularly among high-risk groups, and negative experiences by many of those who engage with mental health services, contribute to poorer outcomes for those in regional compared to metropolitan areas.

Rural and Regional Health Disparities

Despite traditional perceptions of rural communities as conservative, cohesive and agrarian, Fraser et al. (2002) highlight increasing diversity in regional Australia in recent years. Disparate population patterns in coastal versus inland areas, shifting employment rates, widening income disparity associated with mining and coastal towns and the concentration of migrant communities in regional centres all contribute to the growing heterogeneity of regional Australia (Fraser et al., 2002). Nevertheless, those living in country areas experience a range of social, environmental and economic stressors unique to regional contexts, which contribute to significant inequalities in health compared to metropolitan residents (Kelly et al., 2010; National Rural Health Alliance (NRHA), 2017). Such factors of 'rural adversity' (Kelly et al., 2010) include increased exposure to natural disasters (e.g., bushfire, drought, flood) and related socio-economic consequences, geographic isolation, the withdrawal of essential community infrastructure (including government offices, banking, etc.) (Wainer & Chesters, 2000) as well as reduced access to social and health services (Kelly et al., 2010). Compared to those in metropolitan Australia, regional residents tend to be less educated (Birrell et al., 2000), experience lower employment rates and incomes, and higher rates of homelessness and housing stress (NRHA, 2017). These factors of rural adversity result in poorer health outcomes for regional populations (Wainer & Chesters, 2000) including; higher prevalence of chronic health conditions and disability; higher rates of substance abuse; reduced overall longevity; higher deaths from diabetes, asthma, coronary heart disease, cervical cancer and motor vehicle accidents; a homicide rate in remote areas more than six times that of cities, and; hospitalisation rates for injury 145% higher in remote versus metropolitan communities (Australian Institute of Health and Welfare (AIHW), 1998, 2019; NRHA, 2017).

Mental Health Outcomes in Regional Australia

Despite the challenges of rural living and demonstrated inequalities in health status compared to metropolitan residents, those living in regional Australia experience mental illness at similar prevalence rates as those in major cities (approximately 20%) (Australian Bureau of Statistics (ABS), 2007; NRHA, 2017). Indeed, country residents are *less* likely to identify themselves as 'unhappy' (Mathers, 1994, as cited in Wainer & Chesters, 2000) and score *higher* on measures of well-being and life satisfaction (NRHA, 2017). Rural women rate themselves as healthier, more satisfied and less stressed than women living in cities (Brown et al., 1997). The NRHA (2017) suggests that these findings may reflect the positive aspects of country living, including higher levels of community participation and informal social support networks. Despite this, the mental health outcomes of rural Australians are notably poorer than those in metropolitan areas. Rural and regional areas experience an incidence of suicide more than 40% higher than metropolitan areas, while remote areas are almost double (AIHW, 2021). The highest suicide rate is observed among young men. Per 100,000 head of population, men aged 20-29 die by suicide at a rate of 40.4 in rural areas and 51.7 in remote communities, compared with 31.8 in cities (Caldwell et al., 2004). Older rural and regional men (aged 85 years and over) are twice as likely to die by suicide as those in metropolitan areas (NRHA, 2017). Rates of suicidality and NSSI increase with remoteness, as do hospital admission rates for mental health conditions (1096 per 100,000 head of population in remote areas, compared to 873 for major cities (2013-2014); NRHA, 2017).

Inequalities are particularly stark for Indigenous Australians, two-thirds of whom live in rural and remote areas. Wainer and Chesters (2000) highlight the role of dispossession, intergenerational trauma and racism in perpetuating social and economic disadvantage among Aboriginal people and contributing to serious, long-term mental health challenges. Compared to non-Aboriginal peoples, Indigenous Australians are three times as likely to report

psychological distress at high or very high levels (NRHA, 2017). Notably, the prevalence of psychological distress is highest for those Aboriginal people in metropolitan areas (34%), decreasing to 32% in regional and 31% in remote communities (NRHA, 2017), suggesting that rural location impacts the wellbeing of Indigenous Australians differently from non-Indigenous people. Indigenous Australians experience a suicide rate more than 1.9 times that of the wider community, increasing to 3.7 times for Aboriginal young people aged 15 to 24 (ABS, 2016, as cited in NRHA, 2017).

Regional Mental Health Funding and Workforce

Health disparities are further compounded by unequal health services funding and workforce availability in country areas. Regional communities receive as little as 14% of the Medicare funding for mental health services of their urban counterparts ($7.44 for remote and very remote areas versus $50.94 for major cities) (AIHW, 2016). While most Australians seek mental health treatment from General Practitioners, there is a workforce shortage in regional areas, worsening with increasing remoteness. Compared to capital cities, regional centres have 13% fewer General Practitioners and 35% fewer in other rural areas (according to Rural, Remote and Metropolitan Area (RRMHA) classification) (Fraser et al., 2002). Regional areas also have a noted shortage of specialist mental health clinicians. This scarcity again increases with remoteness and is observed across public and private services (University of Newcastle, 2014). The number of psychiatrists in regional areas are only 36% of those in metropolitan areas (NRHA, 2017) and the prevalence of psychologists decreases from 74.6 full-time equivalent (FTE) per 100,000 head of population in major cities to 33.5 for outer regional and 18.5 for very remote areas (AIHW, 2020). Where hospital care for mental health problems is sought, rural patients are far more likely to receive general care only and be discharged without being seen by a psychiatrist (AIHW, 2014). Subsequently,

those requiring mental health care in regional areas experience delays in accessing diagnosis or treatment, or may not receive such care at all (NRHA, 2017).

Help-Seeking for Mental Health in Regional Australia

Fraser and colleagues (2002) assert that the maldistribution of mental health clinicians contributes significantly to an underutilisation of mental health services by country residents. This underutilisation is evident when comparing funded mental health service 'encounters' in metropolitan and regional communities. In the 2015-2016 financial year, there were 482 instances of Medicare funded mental health services in cities, compared to 382 in rural areas and 108 in remote communities (NRHA, 2017). While more instances of state and territory funded mental health care occur in country areas (398 in remote communities versus 328 in cities for the 2014-2015 financial year; NRHA, 2017), this is not sufficient to address the service provision disparity.

As presented above, young rural men are at higher risk of suicide, however only 11% of this group have been shown to seek help when experiencing mental health problems. Further, rural men aged 18 to 29 with one or more mental health disorders demonstrate lower help-seeking rates than both young metropolitan men and young rural women (Caldwell et al., 2004). In a survey of help-seeking patterns in regional New South Wales, Perkins and colleagues (2013) found that in a 12-month period, 47% of individuals with a high level of need for mental health services received no professional support. Individuals from very remote areas are the least likely to access care (Hilton et al., 2010).

Several barriers to rural help-seeking for mental health problems have been identified. Regional survey respondents identified factors that prevented or delayed mental health service access, with more than half (52%) describing delays in being provided an appointment. Forty-five percent identified the distance to travel as a barrier, followed by

limited choice in providers (42%) and the high cost of care (36%) (Perkins et al., 2013).

Greater distance from health services has been shown to result in reduced usage (Veitch,

1995). Gender-specific factors have also been posited for reduced help-seeking by men,

including fear, reluctance to demonstrate vulnerability, systemic barriers (Tudiver & Talbot,

1999) and lower mental health literacy (Caldwell et al., 2004). Where country people do seek

help for mental health problems, they tend to be poorer, single, have more severe mental

health concerns and face greater overall adversity (Perkins et al., 2013).

Regional Experiences of Mental Health Services

Fuller et al. (2004) undertook an 18-month consultation process gathering

perspectives on mental health needs and services among 200 community stakeholders in the

west and far north of South Australia. The region of 756,000 km^2 includes the regional cities

of Port Augusta and Whyalla, and large areas are classified as 'very remote' (Fuller et al.,

2004). Findings indicated substantial challenges with the accessibility, acceptability and

functionality of services. The study identified a paucity of specialist mental health services,

with reliance upon visiting clinicians and video conference consultations, contributing to

delays in diagnosis and discontinuous care. Where community mental health teams were

present in the region, they experienced staff shortages and high turnover (with clinicians

commonly staying for less than two years), disrupting multidisciplinary teamwork and

continuity of care. Due to resource limitations, services were found to apply strict criteria for

access, leading some individuals to 'fall through the gaps'. A lack of services in other critical

areas (e.g., drug and alcohol abuse, domestic violence) resulted in an increased demand to

mental health teams. General Practitioners were found to be dissatisfied with the mental

health supports available, which they characterised as inaccessible and inflexible. Community

members also raised concerns about the acceptability of mental health supports, with visiting

services perceived to be too visible in small communities, leading to concerns about stigma

associated with help-seeking. Non-mental health service providers (such as teachers, rural financial counsellors, etc.) were seen as both acceptable and accessible, however often lacked the qualifications and knowledge to respond to complex mental health challenges (Fuller et al., 2004).

The experiences reflected in the consultation by Fuller and colleagues are largely consistent with those identified in a qualitative examination of regional experiences of mental health by Farmer et al. (2020). Individuals living in rural Australia described mental health services as limited, inaccessible and isolating. Perceived stigma of mental illness among those requiring care was high, impacting on willingness to engage with services. Where individuals did seek support from mental health services, they commonly characterised the engagement as negative, raising concerns about the quality of care, privacy, and a lack of funding support and access. Hospital emergency rooms were the most common service setting to produce negative feedback, followed by Mental Health inpatient units (Farmer et al., 2020). In a survey of 2150 residents of regional New South Wales (Perkins et al., 2013), as many as 44% of services users with the highest needs (defined as those with the poorest mental health and highest number of recent adverse experiences) found the care received to be inadequate. For consumers with BPD, an historically stigmatised diagnosis relying upon specialist treatment from expert clinicians, these health inequalities are particularly stark.

Recommendations for Regional Mental Health Services

Given the level of unmet need for mental health care in rural and remote areas and the challenges of service delivery in this context, the National Mental Health Commission (NMHC, 2014) recommends seeking innovative, local solutions to increase specialist mental health services, developed in collaboration with community members with lived experience, mental health clinicians and service providers, and utilising technological solutions (e.g.,

telehealth support). Similarly, Perkins and Miller (2020) argue that previous attempts to replicate metropolitan care approaches in regional Australia have failed to meet the needs of communities, and instead advocate for flexible solutions based on meaningful co-design. Perspectives and ideas from rural consumers and service providers are essential in regional mental health service development, of equal import as the contribution of evidence and experts (Perkins & Miller, 2020).

Country Health SA Local Health Network

At the time of the research, public health services within regional South Australia were delivered by CHSALHN[9]. CHSALHN was the largest local health network in Australia, providing services to 983,776 square kilometres of South Australia and a population of 445,607. The network held 75.5% of the most disadvantaged Statistical Local Areas as identified by the ABS and approximately half of the state's Indigenous population (CHSALHN Mental Health Services, 2017). The six rural regions which comprised CHSALHN are detailed in Figure 3.

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[9] From 1 July 2019 CHSALHN was transitioned to six regional local health networks, each administered by a local CEO and governing board.

Figure 3

Map of Country Health SA Local Health Network Rural Regions
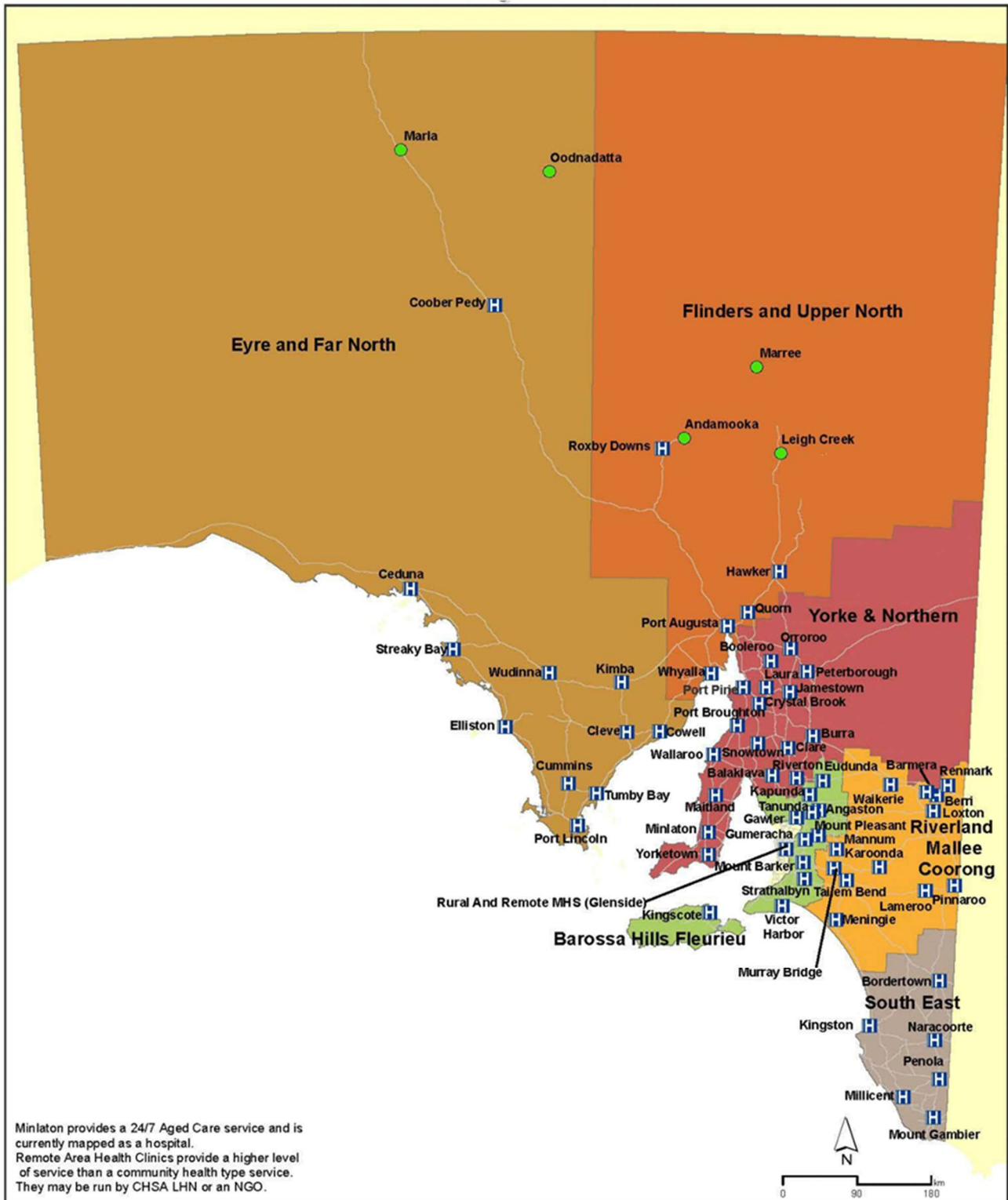
Note. Used with permission, CHSALHN (2018)

South East Region of South Australia

The South East region of South Australia (Figure 4) extends from the township of Keith in the north to Mount Gambier and the Victorian border in the east, bordered by coastline to the south. The region contains a population of 64,855 (ABS, 2019). The regional city of Mount Gambier is the primary service centre for the region, located 450 kilometres south-east of Adelaide. The Rural, Remote and Metropolitan Areas (RRMA; Department of Primary Industries and Energy & Department of Human Services and Health, 1994) geographic classification system broadly identifies the area as rural[10], while the more methodologically robust (AIHW, 2004) Australian Standard Geographical Classification Remoteness Areas (ASGC; ABS, 2002) defines Mount Gambier as inner regional with some restrictions to the accessibility of social contact, services and goods due to remoteness (AIHW, 2004). The region supports significant and diverse agriculture industries producing livestock, cereal grain, wine grapes and softwood timber (ABS, 2019).

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[10] Being a large rural centre with a population between 25,000 and 99,999 (AIHW, 2004)

Figure 4

Map of South East Region of South Australia
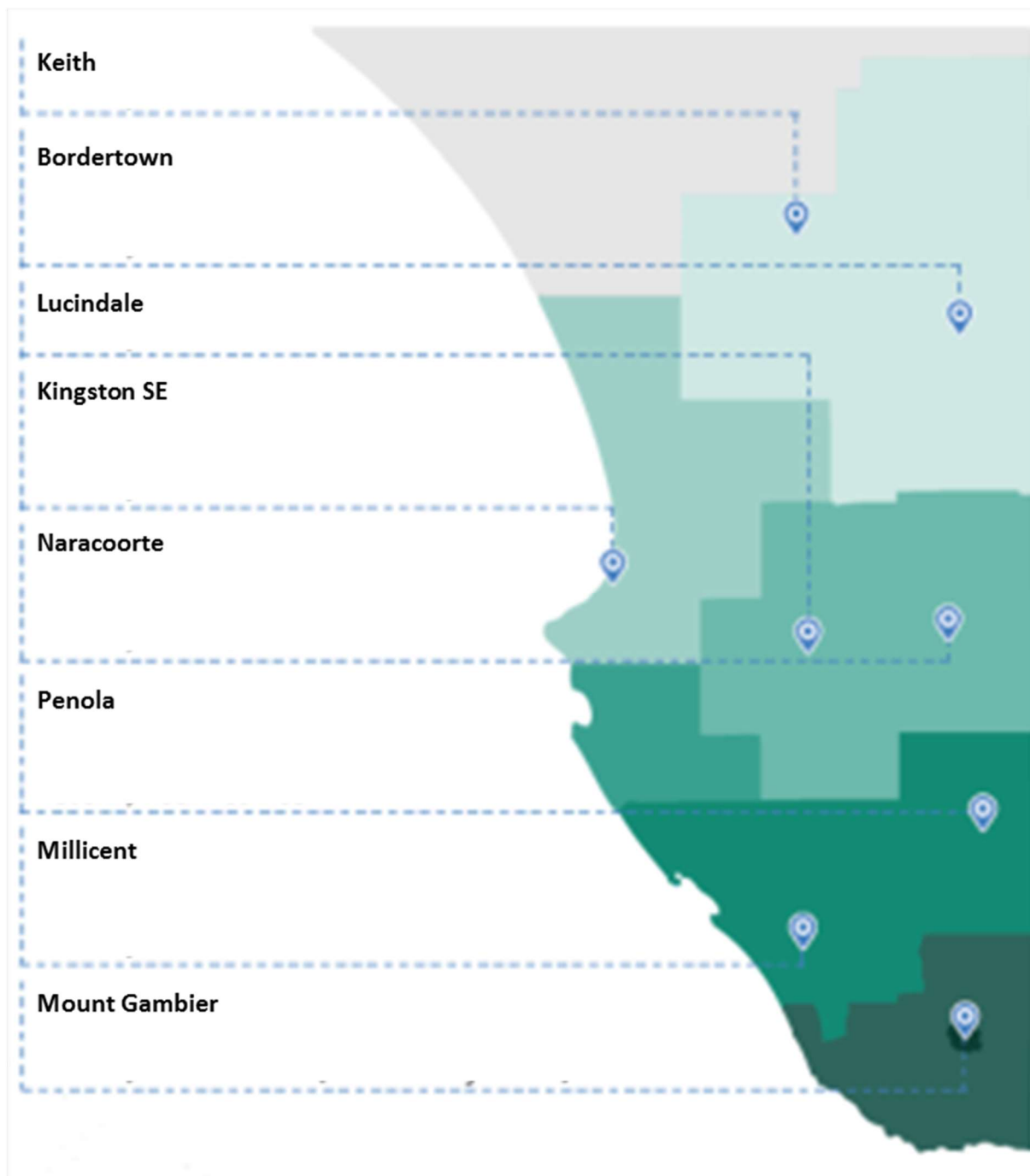
Note. Used with permission, Limestone Coast Local Health Network (2022)

Much of the South East region is identified as moderately disadvantaged (Mount Gambier Health Advisory Council, 2010). Compared to South Australia as a whole, the South East region has lower education levels, with 33.4% of adults completing secondary schooling, and a higher unemployment rate (6.2% compared to 4.9% for the state overall) (ABS, 2022; Regional Development Australia Limestone Coast, 2013). The region has lower median total income compared to the rest of Australia (approximately $48,000 and $51,389 respectively) (ABS, 2022), with employment largely based on agriculture, forestry, fishing and manufacturing (Regional Development Australia Limestone Coast, 2013). Approximately 1.9% of the population identify as Aboriginal and Torres Strait Islander and 3.5% speak a first language other than English, with 11.2% of residents born overseas. The region reports higher rates of chronic disease amongst adults compared with the overall population of South Australia and demonstrates higher levels of health-related risk factors including smoking, obesity and physical inactivity (ABS, 2022; Mount Gambier Health Advisory Council, 2010).

Country Health SA Local Health Network Mental Health

Across rural South Australia, public mental health services are delivered by Country Health SA Mental Health Services[11], providing inpatient and community-based services for adults with complex and severe mental illness. Clinical services across the regions include 13 community mental health teams, three regional mental health inpatient units (located in Mount Gambier, Whyalla and Berri), tele-psychiatry provided via 103 video conferencing units, a 23-bed Rural and Remote Inpatient Unit located at Glenside Campus (Adelaide), a telephone-based Emergency Triage Liaison Service (ETLS) and specialist youth and older persons services. It is the responsibility of country mental health services to:

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[11] At the time of the research

- Offer recovery-focussed rehabilitation and treatment for individuals with mental health challenges

- Coordinate care with individuals, psychiatrists, general practitioners, carers and family

- Provide information to support informed decision making

- Connect individuals with specialist services

- Support transfers of care (Country Health SA Mental Health Services, 2017).

Community Mental Health Mount Gambier. The community mental health team at Mount Gambier comprises part of the Integrated Mental Health Service within the South East region of South Australia. The multidisciplinary integrated mental health service is resourced with 37.76 full time equivalent staff including psychology, social work, occupational therapy, nursing, psychiatry, peer support workers and administration staff. The community team is co-located with a six bed mental health inpatient unit (sited within the Mount Gambier and Districts Hospital) and a sub-acute (assertive community in-reach) program to provide coordinated clinical care to mental health consumers. As is common in regional mental health, maldistribution of the workforce is evident. At the time of the research, only one full-time (1.0 FTE) public health psychologist was employed in the region and two resident private psychologists were present. This represents a regional psychology workforce of 4.6 FTE per 100,000 head of population, compared to a South Australian average of 67.6 FTE and a national average of 92.3 FTE per 100,000 (AIHW, 2021). Further, almost all mental health clinicians were located at the Mount Gambier site, with single 'outreach' clinicians based at Bordertown and Naracoorte.

Community Mental Health Model of Care. The community mental health service operates under a model of care which outlines the principles underpinning clinical service

delivery. It is the expressed goal of CHSALHN that each contact an individual experiences with the mental health service will "strengthen a person's wellbeing, mental fitness and engagement with life" (CHSALHN Mental Health Services, 2017, p. 3). The core principles of the model of care are summarised below.

1. Recovery: Services are delivered based on a recovery model which assumes that all consumers can experience improved wellbeing and a meaningful life, whether in the absence or presence of active mental illness.

2. Integrated service provision: Multidisciplinary teams work collaboratively with consumers, carers and others to provide assessment, clinical care and intervention. All clinicians are to possess core mental health clinical competencies to support effective service delivery.

3. Leadership: Clinical governance systems support consistent, high quality care across CHSALHN and promote responsibility and accountability.

4. Consumer pathway and responsive delivery of care: Services are easily and rapidly accessible via any pathway and referrals are triaged according to clinical priority. All consumers are allocated a care coordinator who is responsible for the consumer's care, including assessment, mental health care planning, and coordination with key stakeholders and service providers. A consultation-liaison approach utilises telemedicine technology to provide specialist support to country services, including psychiatry.

Catalysts for the Current Research

In 2012, as Clinical Senior Psychologist for CHSALHN based in the South East region, the author held a portfolio of responsibility for a quality improvement project targeting clinical service delivery. Local clinicians and managers had previously identified

the need for an evidence-based, efficient and internal treatment service for consumers with BPD. As such, it was negotiated with the CHSALHN Mental Health Executive that the development of such a service would form the focus of this portfolio.

Following a review of the research literature, the author identified DBT as an evidence-based therapeutic approach with demonstrated efficacy in treating BPD. Further, the group format of DBT skills training held potential for efficient treatment delivery in the community mental health setting. In order to identify and address the organisational requirements of such a service, the author formed a consultation group of CHSALHN Mental Health clinicians with representatives from psychiatry, social work, nursing and management. In order to promote transparency and collaboration, minutes from all meetings were published on the internal CHSALHN collaboration portal ('Wiki').

The consultation group identified that an integrated service model, incorporating a DBT skills training group within the existing community mental health case management model, would be most likely to encourage consistent and high-quality care of consumers with BPD. Close collaboration with Mount Gambier and Districts Hospital Accident and Emergency and ETLS, which provides 24-hour telephone response, would support the consistent and collaborative management of emergency presentations and after-hours telephone contacts. In consideration of these general principles, the author developed a comprehensive integrated service model (see Figure 5 in Chapter VI), consistent with NICE (2009) general principles for working with individuals with BPD.

Consultation with the Northern Adelaide Local Health Network (NALHN) DBT program, established in 2001, provided a working example of group-based therapeutic service delivery in the community sector (in the context of a comprehensive DBT model including individual therapeutic intervention). Discussion with clinicians emphasised the

importance of specialist DBT supervision, and the need for peer support as offered by the 'consultation team' environment. Both elements were consequently incorporated into the Mount Gambier DBT service model. NALHN consumer information handouts and referral forms also informed the development of resources for the Mount Gambier DBT skills training group referral process.

Addressing Regional Mental Health Service Delivery Challenges

As presented previously, regional mental health services in Australia are challenged by common limitations and barriers to help-seeking. The developed Mount Gambier DBT skills training service model (presented in detail in Chapter VI) sought to deliver specialist intervention for BPD and, wherever possible, to incorporate strategies to address challenges inherent in the regional service landscape. Table 6 presents a summary of the challenges to regional service delivery identified in the literature, and the corresponding strategies developed to address each.

Table 6

Addressing the Challenges of Regional Mental Health Service Delivery

Identified limitation / barrier to help-seeking	Service model response
Reduced mental health services funding compared to metropolitan areas (AIHW, 2016) Resource limitations (Fuller et al., 2004)	The intervention was developed within existing mental health service resources, no additional funding was required.
Reduced workforce compared to metropolitan areas (AIHW, 2014; 2020) Workforce maldistribution (Fraser et al., 2002) Paucity of specialist MH services (Fuller et al., 2004)	The intervention was delivered by the existing mental health workforce with generalist clinicians (e.g., social work, nursing) providing specialist care with minimal additional training.
Discontinuous care; disrupted multidisciplinary treatment (Fuller et al., 2004)	The intervention was integrated within the existing mental health services, supporting collaboration and communication, and included engagement with local hospital and after-hours emergency staff. The intervention used a multidisciplinary team at all stages of care.
Distance to care (Perkins et al., 2013; Veitch, 1995)	The intervention was provided within the regional city of Mount Gambier. Participants from more remote communities were supported to attend with fuel vouchers or other transport assistance.
High cost of care (Perkins et al., 2013)	The intervention was delivered at no cost to participants.
Delay or inability to access diagnosis or treatment (Fuller et al., 2004; NRHA, 2017)	All individuals referred were provided with a timely comprehensive assessment, diagnosis and psychoeducation from a registered psychologist.
Poor acceptability of mental health services (Fuller et al., 2004)	The intervention was developed in consultation with participants. The group structure, content and materials were adapted in response to participant feedback.

Table 6

Addressing the Challenges of Regional Mental Health Service Delivery

Identified limitation / barrier to help-seeking	Service model response
Stigma associated with help-seeking (Farmer et al., 2020; Fuller et al., 2004)	A 'Family and Friends Information Night' was made available to all participants. Delivered by group facilitators, the content covered BPD, DBT skills training and supporting those with BPD during episodes of crisis. Training on BPD, DBT and crisis management was provided to local mental health staff, general hospital and accident and emergency staff to reduce stigma associated with the BPD diagnosis.
Increased risk of suicide by rural men; reduced help-seeking among young rural men (Caldwell et al., 2004; Tudiver & Talbot, 1999)	A dedicated DBT skills training group for male participants, including a male co-facilitator and content adapted for gender relevance.
Increased rural suicide rate (AIHW, 2021) Increased hospital admissions for mental health problems (NRHA, 2017)	A 'DBT crisis management plan' was developed for each participant, completed collaboratively between the individual, their care coordinator and group facilitators. This plan supported consumer-centred care and effective self-management during episodes of crisis, with emphasis on use of developed skills rather than hospital admission.
Negative experience of emergency hospital presentation for mental health support (Farmer et al., 2020)	As above. Hospital accident and emergency and general staff were provided with training on BPD, DBT and crisis management, and were supported to deliver care in accordance with each participant's 'DBT crisis management plan'.

Pilot Program of Group Dialectical Behaviour Therapy Skills Training for Borderline Personality Disorder

With the establishment of a preliminary rural service model, CHSALHN Mental Health approved a 20-week pilot DBT skills training group, to be internally evaluated upon completion. The pilot group was to be implemented according to Linehan's (1993) *Skills Training Manual for Treating Borderline Personality Disorder.* The group would consist of six to eight currently registered Mental Health consumers with an established diagnosis of BPD, with consumers for the pilot selected by the consultant psychiatrist based on severity of distress and frequency of emergency mental health presentation. The pilot would run from January 22nd until June 11th 2013.

A team of clinicians was selected to implement and facilitate the pilot program, with staff drawn from existing CHSALHN Mental Health personnel, based on clinician interest and skill sets. Two primary facilitators, a clinical psychologist (the author) and a social worker, were identified to lead the program. Two secondary facilitators, both mental health nurses, were selected to fulfil an adjunct and support role. The supervision needs of facilitators were addressed, with specialist DBT supervision contracted from a private interstate psychologist. Supervision was to be delivered via telephone each fortnight for the duration of the pilot group.

Primary facilitators travelled interstate to access face-to-face DBT workshop training, while secondary facilitators undertook online training provided by *Behavioral Tech,* the training organisation founded by DBT creator Dr Marsha Linehan. To support the successful adoption of the pilot program, the consultation group identified training needs for staff within the broader mental health service. A program of targeted education for mental health and hospital staff was then launched, with the author, a co-facilitator and a psychiatrist providing

on-site training for community mental health, ETLS, and Mount Gambier and Districts Hospital Accident and Emergency clinicians. Training sessions included content covering BPD, DBT, the integrated DBT skills training group model, and the roles and expectations of each of the services involved, including management of emergency presentations.

Internal Evaluation of the Dialectical Behaviour Therapy Skills Training Group Pilot Program

Upon completion, an internal evaluation of the CHSALHN Mental Health group DBT skills training pilot program was undertaken which aimed to:

- Examine the efficacy of the DBT skills training group in improving outcomes for consumers with BPD;

- Explore consumer views regarding the implementation of the DBT skills training group focussing on experiences of care and service engagement;

- Explore clinician views regarding the implementation of the DBT skills training group focussing on clinical and organisational processes, communication processes, and effects on care and management of consumers with BPD;

- Explore the potential of the DBT skills training group and integrated service model as a key approach to the delivery of mental health services for consumers with BPD.

The evaluation of the pilot program employed a mixed methods approach, including assessment of BPD symptomology (BSL-23; Bohus et al. 2008) and diagnostic eligibility (McLean Screening Instrument for Borderline Personality Disorder (MSI-BPD; Zanarini et al., 2003), consumer satisfaction (Client Satisfaction Questionnaire 8-item version (CSQ-8; Larsen et al., 1979) and hospital presentation and admission data. Written (feedback forms) and oral (semi-structured interview) feedback was also sought from consumers and clinicians,

summarising their experiences of the pilot program. A simple cost-savings analysis compared the cost of program delivery with the savings incurred by reduced hospital presentation and admission.

Research Ethics Rejection for Publication of the Dialectical Behaviour Therapy Skills Training Group Pilot Program Outcomes

Application for approval for retrospective statistical analysis of the data and publication of results from the DBT skills training group pilot program was sought from the SA Health Human Research Ethics Committee (SAHHREC) in November 2016. An initial *Low and Negligible Risk* application was withdrawn at the advice of the committee and resubmitted as a full application in December 2016. Further information was requested by the SAHHREC and the application was resubmitted in December 2017 and again in January 2018. The application was ultimately rejected by the SAHHREC in February 2018, citing concerns that the likely benefit of the research did not justify the risks to participants, including a concern that the small cohort created a risk of participants being identifiable within a regional community, the lack of independence of the principal investigator who also served as a treating clinician, and the inability to access former participants to obtain explicit informed consent. Appeal of this decision to the Chair of the SAHHREC was unsuccessful.

As ethics approval for publication of these results was not granted, the outcomes of the evaluation cannot be presented in detail, nor can the specific number of participants or their characteristics be discussed. However, results were significantly promising to justify a larger and more methodologically robust trial.

Country Health SA Local Health Network Mental Health Dialectical Behaviour Therapy Group Skills Training Statewide Implementation Plan

Having identified by internal evaluation the potential of group DBT skills training to offer an effective treatment for BPD within existing budget and resources, the researcher was instructed by the CHSALHN Mental Health Executive to develop a comprehensive plan for the state-wide regional implementation of the program (Packham, 2016; Appendix). This document detailed the complete integrated service model, provided implementation guidelines and recommendations to support the successful adoption of the DBT skills training group program in CHSALHN Mental Health services across regional South Australia. While never implemented, in 2018 this plan played a role in supporting the successful tender application submitted by CHSALHN Mental Health to the South Australian state government to lead a $13 million, statewide 'Borderline Personality Disorder Centre of Excellence'. The BPD Centre of Excellence is a state government commitment arising from the recommendation of deputy state coroner Jayne Basheer (2018) to develop an evidence-based, state-wide system of care for individuals with BPD (Kent & O'Sullivan, 2019). Consideration of the establishment of the BPD Centre of Excellence, and resulting impacts of service delivery for BPD in South Australia, is provided in the Discussion (see Chapter VIII).

Chapter VI: Aim and Methods

This chapter details the aims of the primary research, the designs employed and the measures used to gather data. Rationale for the selected approaches is presented to aid in the evaluation and comparison of the research and to support similar research that may be undertaken in future. Two studies examine the effectiveness of DBT group skills training. Study Two is an RCT of female participants presented in two parts: Part I, examining impacts on BPD-related symptomology, quality of life and satisfaction with services, and Part II, examining impacts on health services usage. Study Three is a pre-post comparison of male participants, examining impacts on BPD-related symptomology, quality of life and satisfaction with services.

Aims of Thesis

As demonstrated in the reviewed literature, BPD is a complex psychiatric disorder characterised by significant and pervasive impairment in personality and interpersonal functioning. Individuals with BPD experience the highest rates of self-harm and suicidality of any clinical group (Carmel et al., 2014a; Grant et al., 2008), and are among the highest users of both inpatient and outpatient mental health services (Lieb et al., 2004), As such, BPD is one of the most costly psychiatric disorders in public health settings (Linehan & Heard, 1999), using as much as forty percent of mental health resources (Jomphe, 2013). As explored in Chapter II, Linehan's (1993; 2014) standard DBT protocol (consisting of individual DBT therapy, DBT group skills training, telephone coaching and a consultation team environment) has been well-established by RCT and other empirical evidence as an effective treatment for BPD (Koons et al., 2001; Linehan et al., 1999). However, as indicated by DBT implementation research, the approach can be challenging to adopt in 'real-world' clinical settings. DBT is resource intensive and time-consuming (Lyng et al., 2019), requiring

specialist clinical training and supervision (Amner, 2012), and is often perceived by service providers to be costly and complex (Carmel et al., 2014b). These factors limit the feasibility of the therapy, particularly in public mental health settings where budget and resources are limited (Blennerhassett & O'Raghallaigh, 2005). This challenge is greatest in the rural and regional context, where residents face a unique combination of stressors (factors of 'rural adversity'; Kelly et al., 2010) and experience poorer mental health outcomes than those in metropolitan areas (AIHW, 2021). Regional health disparities are further compounded by unequal health services funding (AIHW, 2016), workforce maldistribution and a lack of specialists in country areas (AIHW, 2020; NRHA, 2017).

DBT skills training, being one component of the standard DBT protocol, may offer a cost-effective and practical solution to this challenge when delivered as a stand-alone treatment for BPD. The pragmatic implementation of standalone DBT skills training arose as a response by clinicians to the noted limitations of the standard DBT approach (Lyng et al., 2019), with research only subsequently catching-up to clinical practice. In RCT and quasi-experimental investigations, standalone DBT group skills training has been shown to reduce BPD-related symptomology, depression, distress (Heerebrand et al., 2021), self-harm and suicidality (McMain et al., 2016) and use of emergency mental health services (Linehan, 2015). Systematic review of DBT 'dismantling' studies (see Chapter IV) provides modest and preliminary evidence that standalone DBT skills training may be as effective as standard DBT in treating BPD. Comparison studies suggest that DBT skills training may be superior or equal to other group therapy approaches (e.g., group-based cognitive therapy) in the treatment of BPD (Lin et al., 2019; Soler et al., 2009). Further, recent research has identified DBT skills as a potential mechanism of change in the treatment of BPD, effectively reducing emotional dysregulation by teaching strategies to replace maladaptive behaviours with effective alternatives, reducing psychopathology (Barnicot et al., 2016; Kramer, 2017). The

approach offers particular utility in the challenging regional service landscape, requiring a modest commitment of time and clinical resources, less extensive staff training, and offering a comprehensive set of simple skills which are accessible and relevant to a large proportion of mental health consumers (Blackford & Love, 2011).

Preliminary evidence for the utility of standalone DBT skills training for treating BPD is limited by a lack of methodological rigour, few studies conducted in clinical and community settings and a paucity of comparison between group DBT skills training and treatment as usual in the clinical environment. Further, there is very limited identified research evidence regarding the application of group DBT skills training for treating BPD in male populations. The purpose of this research is to address the aforementioned gaps in the literature, by employing an RCT of female participants and a pre-post comparison of male participants, to test the following hypotheses:

i. Study Two: Part I: Twenty-five weeks of group DBT skills training in a regional community mental health setting will reduce BPD-related symptomology, and improve quality of life and client satisfaction with services in women with BPD, compared to pre-intervention levels, relative to treatment as usual.

ii. Study Two: Part II: Twenty-five weeks of group DBT skills training in a regional community mental health setting will reduce health services usage including emergency mental health hospital presentations, number of mental health admissions and total days of admission in women with BPD, compared to pre-intervention levels, relative to treatment as usual.

iii. Study Three: Twenty-five weeks of group DBT skills training in a regional community mental health setting will reduce BPD-related symptomology, and improve quality of life and client satisfaction with services in men with BPD, compared to pre-intervention levels, relative to treatment as usual.

Importantly, these studies will help identify effective and efficient treatment approaches for BPD that are feasible within regional public mental health systems and beyond.

Common Approaches

The following sections present methodological approaches common to the aforementioned studies.

Research Design

RCTs are considered the 'gold standard' for effectiveness research, reducing bias in the examination of treatment interventions through random allocation to either the intervention or comparison group (Hariton & Locasio, 2018). Randomisation balances participant characteristics across groups, allowing any observed effect to be more likely attributed to the intervention under examination (Barton, 2000). As such, an RCT was employed for Study Two, with concealed allocation of participants via opaque envelopes to either the DBT skills training group intervention or a TAU control. Participants were randomised to a 1:1 ratio with no stratification. The TAU control comprised mental health care delivered within the Integrated Mental Health Service. Determined by individual consumer need, this care included possible psychiatric contact, individual psychological intervention, psychosocial and/or peer support in addition to the minimal requirement of clinical care-coordination by a mental health nurse or allied health clinician. While intended as a robust 'standard care' comparison, care received by TAU control participants was substantially enhanced by processes inherent in the research. Specifically, TAU participants received a timely diagnostic interview conducted by a psychologist, formal psychoeducation, clearly defined service pathways and care provided by clinicians who had self-selected to contribute to the research program and had received recent training in BPD. As such, it should be noted that the TAU condition represents an enhanced standard of clinical care.

The RCT was registered with the Australian New Zealand Clinical Trials Registry (ANZCTR; registration number ACTRN12626000236493). Consolidated Standards of Reporting Trials (CONSORT) were used to display the flow of participants through the study (Schulz et al., 2010). The RCT was conducted between January 2015 and December 2016 in the Integrated Mental Health Service (Mount Gambier), a community mental health setting in the regional South East of South Australia, as detailed in the Research Context.

ITT analysis was employed, meaning participants were analysed in their randomisation groups regardless of whether the intervention was completed by the participant or not. ITT approaches provide a more reliable estimate of treatment effectiveness by preserving the original randomised allocation and minimising the impact of protocol non-compliance and losses to follow-up (McCoy, 2017).

While RCTs provide the greatest methodological rigour, the challenges presented by real-world clinical settings can preclude such an approach. As discussed in Chapter III, men with BPD are significantly underrepresented in mental health settings, being more likely to present in substance abuse programs and forensic settings (Wetterborg et al., 2015). The low number of men receiving care for BPD within the Integrated Mental Health Service prevented an RCT approach due to insufficient participant numbers for a comparison group. As such, in Study Three a pre-post design was employed to examine the effectiveness of group DBT skills training for treating BPD in a male population. Pre-post designs are limited in that they do not control for other factors that may impact on outcomes, lessening the extent to which an observed effect can be attributed to the intervention (Thiese, 2014). Nevertheless, such approaches are commonly employed in the examination of DBT-based treatment approaches in clinical settings (Flynn et al., 2019; Kroger et al., 2013; Suominen et al., 1999).

Longitudinal studies have demonstrated that individuals with BPD show some remission of symptoms with advancing age (Biskin, 2015). As such, the decision was taken prior to conducting the analysis to control for age as a potential confound in all three studies.

Ethics Approval

Ethics approval for the research was granted by the SAHHREC on 8th December 2014 (HREC/14/SAH/176). A Data and Safety Monitoring Committee (DSMC) comprised of senior CHSALHN Mental Health staff was established in order to provide oversight of the intervention and review collected data to ensure participant safety.

Intervention Design

The intervention comprised a 25-week DBT skills training group adapted by the author from Linehan's (2014) *DBT Skills Training Manual Second Edition*. Group DBT skills training is one subcomponent of Linehan's (1993) complete DBT treatment approach, and was deployed in the current research as a stand-alone treatment without the broader protocol. The skills training group was delivered, free of charge, within the Integrated Mental Health Service, with participants maintaining regular (minimum fortnightly) contact with their existing Mental Health care coordinator throughout. All clinicians engaged in the research intervention, including group facilitators and care coordinators, volunteered to participate. The delivery of group DBT skills training as a stand-alone treatment differs substantially from Linehan's (1993; 2014) standard DBT protocol which requires individual therapy occurring concurrently with skills group participation, and 24-hour phone access to the primary therapist, in addition to a consultation team environment for clinicians. This divergence from the standard DBT protocol reflects the need to provide a treatment for BPD within the limitations and challenges of a real-world clinical setting. An overview of the DBT

skills training program is presented in Table 7. Digital access to the full treatment manual can be provided by contacting the author.

DBT Group Skills Training for Women

The DBT skills training program for female participants was delivered in two-hour sessions over 25 consecutive weeks. Intervention groups were delivered between January 2015 to December 2017. The program was available to female participants-only (single gender group) and was 'closed', meaning that no new members were accepted after the commencement of a group program. While Linehan's (1993; 2014) manual supports either closed or open group structures, the closed approach was chosen to support group cohesion and to simplify administration processes. Each week, the group was delivered by one 'lead facilitator' who presented group content, and one 'secondary facilitator' who monitored group processes and participant engagement, and provided additional support to participants as needed. The facilitators were of mixed gender, with a minimum of one female clinician facilitating each week, and were from a range of clinical disciplines (including mental health nursing, social work and occupational therapy).

DBT Group Skills Training for Men

The DBT skills training program for male participants was delivered in two-hour sessions over 25 consecutive weeks from February 2016 to August 2016. The group was gender-specific, only accepting male participants, and was closed, allowing no new members to join after the first week. Each week, the group was delivered by a male 'lead facilitator' (a social worker) who directed the session and delivered content, and a male or female 'secondary facilitator', who monitored group processes and supported participants as needed. Secondary facilitators were from a range of tertiary-qualified mental health disciplines. As presented in Chapter V, rural men are at increased risk of suicide, and young rural men are

less likely to seek help for mental illness (Caldwell et al., 2004; Tudiver & Talbot, 1999), with help-seeking associated with stigma (Farmer et al., 2020) and services perceived as low in acceptability (Fuller et al., 2004). As such, a dedicated DBT skills training group for male participants-only, led by a male co-facilitator, was intended to support service accessibility and acceptability for regional men. Further, group content was adapted for gender relevance by the male lead facilitator (e.g., examples of pleasant activities provided in the emotion regulation component were selected to be familiar and acceptable to most regional men).

Table 7

Overview of the 25-Week DBT Skills Training Program

Topic	Week	Handouts
Orientation: Goals and Guidelines	1	G1: Goals of Skills Training
		G1A: Options for Solving Any Problem
		G2: Overview: Introduction to Skills Training
		G3: Guidelines for Skills Training
		G4: Skills Training Assumptions
		G5: Biosocial Theory
Mindfulness Skills		
Overview and Wise Mind	2	M1: Goals of Mindfulness Practice
		M1A: Mindfulness Definitions
		M2: Overview: Core Mindfulness Skills
		M3: Wise Mind: States of Mind
		M3A: Ideas for Practicing Wise Mind
Mindfulness "What" Skills	3	M4: Taking Hold of Your Mind "What" Skills
		M4A: Ideas for Practicing Observing
		M4B: Ideas for Practicing Describing
		M4C: Ideas for Practicing Participating
Mindfulness "How" Skills	4	M5: Taking Hold of Your Mind "How" Skills
		M5A: Ideas for Practicing Non-Judgementalness
		M5B: Ideas for Practicing One Mindfulness
		M5C: Ideas for Practicing Effectiveness
Emotion Regulation Skills		
Overview and Understanding and Labelling Emotions	5	ER1: Goals of Emotion Regulation
		ER2: Overview: Understanding and Naming Emotions
		ER3: What Emotions Do for You
		ER4: What Makes It Hard to Regulate Your Emotions
		ER4A: Myths about Emotions
Observing and Describing Emotions	6	ER5: Model for Describing Emotions
		ER6: Ways to Describe Emotions
		ERW4A: Observing and Describing Emotions
Checking the Facts	7	ER7: Overview: Changing Emotional Responses
		ER8: Check the Facts
		ER8A: Examples of Emotions That Fit the Facts
		ERW5: Check the Facts
Opposite Action	8	ER9: Opposite Action and Problem Solving: Deciding Which to Use
		ER10: Opposite Action
		ER11: Figuring Out Opposite Actions
		ERW7: Opposite Action to Change Emotions
Problem Solving	9	ER12: Problem Solving
		ER13: Reviewing Opposite Action and Problem Solving
A (Part 1)	10	ER14: Overview: Reducing Vulnerability to Emotion Mind – Building a Life Worth Living
		ER15: Accumulating Positive Emotions: Short Term
		ER16: Pleasant Events List
		ERW10: Pleasant Events Diary
A (Part 2)	11	ER17: Accumulating Positive Emotions: Long Term
		ER18: Values and Priorities List
		ERW11A: Getting from Values to Specific Action Steps
		ERW11B: Diary of Daily Actions on Values and Priorities
B, C; PLEASE	12	ER19: Build Mastery and Cope Ahead

		ER20: Taking Care of Your Mind by Taking Care of Your Body
		ER20A: Nightmare Protocol, Step by Step
		ER20B: Sleep Hygiene Protocol
Mindfulness of Emotions	13	ER21: Overview: Managing Really Difficult Emotions
		ER22: Mindfulness of Current Emotions: Letting Go of Emotional Suffering
		ER23: Managing Extreme Emotions
		ER24: Troubleshooting Emotion Regulation Skills: When What You Are Doing Isn't Working
		ER25: Review of Skills for Emotion Regulation
Distress Tolerance Skills		
Crisis Survival; Pros and Cons	14	DT1: Goals of Distress Tolerance
		DT2: Overview: Crisis Survival Skills
		DT3: When to Use Crisis Survival Skills
		DT4: STOP Skill
		DT5: Pros and Cons
TIP Skills	15	DT6: TIP Skills: Changing Your Body Chemistry
		DT6A: Using Cold Water, Step by Step
		DT6B: Paired Muscle Relaxation, Step by Step
Distracting; Self-Soothing; Improve the Moment	16	DT7: Distracting
		DT8: Self-Soothing
		DT8A: Body Scan Meditation Step by Step
		DT9: Improving the Moment
Reality Acceptance	17	DT10: Overview: Reality Acceptance Skills
		DT11: Radical Acceptance
		DT11A: Radical Acceptance: Factors That Interfere
		DT11B: Practicing Radical Acceptance Step by Step
		DT12: Turning the Mind
Willingness; Half-Smiling; Willing Hands	18	DT13: Willingness
		DT14: Half-Smiling and Willing Hands
		DT14A: Practicing Half-Smiling and Willing Hands
Mindfulness of Thoughts	19	DT15: Mindfulness of Current Thoughts
		DT15A: Practicing Mindfulness of Thoughts
Interpersonal Effectiveness		
Understanding Obstacles; Clarifying Goals	20	IE1: Goals of Interpersonal Effectiveness
		IE2: Factors in the Way of Interpersonal Effectiveness
		IE2A: Myths in the Way of Interpersonal Effectiveness
		IE3: Overview: Obtaining Objectives Skilfully
		IE4: Clarifying Goals in Interpersonal Situations
DEAR MAN	21	IE5: Guidelines for Objectives Effectiveness: Getting What You Want (DEAR MAN)
		IE5A: Applying DEAR MAN Skills to a Difficult Current Interaction
GIVE	22	IE6: Guidelines for Relationship Effectiveness: Keeping the Relationship (GIVE)
		IE6A: Expanding the V in GIVE: Levels of Validation
FAST	23	IE7: Guidelines for Self-Respect Effectiveness: Keeping Respect for Yourself (FAST)
Evaluating Options	24	IE8: Evaluating Options for Whether or How Intensely to Ask for Something or Say No
		IEW6: The Dime Game: Figuring Out How Strongly to Ask or Say No
		IE9: Troubleshooting: When What You Are Doing Isn't Working
Graduation	25	

Clinical Care Model

A summary of the DBT skills training group clinical care model is presented in Figure 5.

Figure 5

The Dialectical Behaviour Therapy Skills Training Program Clinical Care Model

REFERRAL

Care coordinator and consumer discuss the BPD diagnosis and the DBT Skills Training group. Discussion to be supported by provision of information handouts: *Borderline Personality Disorder* and *Dialectical Behaviour Therapy (DBT) Skills Training Group.*

Consumer and care coordinator collaboratively complete the *Referral to DBT Skills Training Group*, including the *Borderline Personality Disorder Diagnostic Summary* and the *McLean Screening Instrument (MSI-BPD; Zanarini et al. 2003).*

Care coordinator presents referral for consideration at Mental Health Clinical Meeting.

SCREENING

Clinical psychologist undertakes pre-group screening including: *Structured Clinical Interview for the DSM-5 Personality Questionnaire* and *Borderline Symptom List – 23 item version (BSL-23).* Consumer and clinical psychologist discuss the BPD diagnosis and the DBT Skills Training Group, including treatment goals and expectations.

ACTIVE GROUP ENGAGEMENT

Care Coordinator

Minimum fortnightly contact. Responsible for collaborative development of *DBT Crisis Management Plan.* Care coordinator maintains all routine responsibilities, to be delivered in accordance with DBT therapeutic assumptions and treatment principles

DBT Skills Training Group

25 x 2 hour weekly skills training groups, consisting of Mindfulness, Interpersonal Effectiveness, Emotion Regulation and Distress Tolerance.

ETLS

Provides 24 hour telephone-based crisis support. Care provided is guided by *DBT Crisis Management Plan.* Notification of all contacts to care coordinator and DBT group facilitators via Mental Health triage.

Local Hospital Accident and Emergency

Emergency presentations managed in accordance with *DBT Crisis Management Plan.* Notification of all contacts to care coordinator and DBT group facilitators via Mental Health triage.

Care coordinators and DBT facilitators attend weekly DBT Team Meetings for peer consultation and collaborative care

Upon completion of group, care coordinator continues to provide care according to consumer needs, with ongoing care planning and clinical support to reflect developed DBT strategies.

Note. Developed by the author

Managing Clinical Risks

In most public health settings, DBT-based approaches represent a significant departure from traditional medical responses to BPD, which prioritise risk minimisation by increasing services when consumers are most dysfunctional. In contrast, DBT conceptualises BPD as a fully treatable illness, employing behavioural reinforcement principles to support individuals to develop effective self-management of symptoms and distress. For example, group participants receive more service engagement in reinforcement of tangible progress toward treatment goals, while reinforcers are withheld in response to lack of change or deteriorating mental state.

For most individuals with BPD, hospitalisation does not reduce suicide risk and can result in further deterioration (Paris, 2004). As such, DBT approaches use hospitalisation minimally, instead supporting consumers to employ DBT skills to effectively manage the stressors precipitating any crisis episode. This emphasis on hospital avoidance and self-management is a departure from traditional risk-averse approaches employed by health services. As such, the implementation of DBT skills training demands robust protocols around management of suicidal behaviour and episodes of crisis.

A clinical care model was developed by the author for the DBT skills training group (Figure 5) which sought to ensure the safety of group participants through shared management of crisis episodes and consistent service responses. This collaborative care approach featured a 'DBT crisis management plan' developed with each individual participant, and engaged group facilitators, care coordinators, the Mount Gambier and Districts Hospital Accident and Emergency and the CHSALHN ETLS. The model encouraged participants to independently implement self-management strategies in response to stressors. In instances where these strategies were ineffective and the care coordinator was

unavailable (e.g., outside of business hours), ETLS was available for 24-hour brief telephone support to encourage participants to identify and implement appropriate distress tolerance skills. Presentation to Mount Gambier and Districts Hospital Accident and Emergency was only to be considered when other options had not reduced distress and suffering remained acute. Where emergency presentations did arise, the DBT crisis management plan was employed by treating clinicians to support DBT-informed responses.

Recruitment Procedure

Participants were recruited through referral by their current mental health care coordinator and subsequent screening interview conducted by the author.

Eligibility criteria

Eligibility criteria were determined in order to support meaningful participation in the intervention and reduce challenges to group cohesion, while minimising the number of participants in a 'real-world' clinical setting who would be excluded from receiving treatment. Participants were accepted under the following criteria:

- Consumers registered for care with the community mental health service with an established or suspected diagnosis of BPD (confirmed at interview using the Structured Clinical Interview for the DSM-IV Axis II Personality Disorders; SCID-PD; First et al., 1997);

- Aged 18 years and over;

- Voluntarily participating in the program (referring clinicians were asked to assess for any pressure to participate arising from external agencies);

- Sufficient language and literacy skills to effectively comprehend detailed written and verbal instructions, complete homework sheets and provide verbal descriptions of recent activities;

- Willing to adhere to DBT skills training group guidelines.

Participants were excluded from participation and offered alternative therapeutic supports if intake screening (SCID-PD and BSL-23) by the psychologist identified:

- Active psychosis, or clinically significant[12] antisocial or narcissistic personality traits;

- Cognitive impairment or substantially limited language or literacy skills.

Comorbidities (with the exception of those stated above), were not grounds for exclusion from participation. Following screening, only one individual met exclusion criteria and was provided alternative treatment within the mental health service.

Measures

The following measures were used in Study Two Part I (RCT of female participants) and Study Three (pre post comparison of male participants). Psychometric properties for these instruments and the reasons for their selection are detailed below.

Borderline Symptom List – 23 item version (BSL-23)

The BSL-23 (Bohus et al., 2008) is a 23-item self-report questionnaire designed to assess for a broad range of symptoms related to BPD. Participants are asked to rate how much they have suffered from each listed problem in the past week (for example, "I thought

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[12] Antisocial or narcissistic personality traits were determined by the assessing psychologist to be clinically significant where they resulted in social and interpersonal impairment likely to challenge group cohesion (for example, externalised aggression, difficulty adhering to group rules).

of hurting myself". Possible responses range from 0 (*not at all*) to 4 (*very strong*). Responses

on the Likert-scale items combine to provide a possible total score from 0 to 92. Scores are

provided as a sum score, with higher scores indicating more severe BPD-related

symptomology and distress. Percentile values are also given, indicating the percentage

ranking of the individual relative to a general BPD clinical population. A severity

classification system of borderline symptoms using the BSL-23 is proposed by Kleindienst et

al. (2020). The approach provides six classifications of symptom severity based on the BSL-

23 mean score: *none or low* (0 – 0.3), *mild* (0.3 – 0.7), *moderate* (0.7 – 1.7), *high* (1.7 – 2.7),

very high (2.7 – 3.5) and *extremely high* (3.5 – 4). The classification system is externally

validated against independent samples, is consistent with recognised assessments of BPD-

related symptomology, and discriminates effectively between healthy and clinical

(diagnosed) BPD samples (Kleindienst et al. 2020).

The BSL-23 is commonly employed as a measure of borderline symptoms in BPD

research (Kleindienst et al., 2020; Lee et al., 2021; Lyng et al., 2020). Sound psychometric

properties are reported for the instrument including high internal consistency (Cronbach's α =

0.935 – 0.969) and moderate to high convergent validity (Bohus et al., 2007). The BSL-23

has demonstrated sensitivity to the effects of treatment interventions (Bohus et al., 2008) and

was employed in this research as an efficient tool for the collection of data related to

participants' self-reported BPD-related symptoms and distress.

World Health Organisation Quality of Life – BREF version (WHOQOL-BREF)

The WHOQOL-BREF (WHO, 1996) is a self-administered 26-item measure of

quality of life. The instrument defines quality of life as an "individuals' perceptions of their

position in life in the context of the culture and value systems in which they live and in

relation to their goals, expectations, standards and concerns" (WHO, 1996, p. 5). Participants

are asked to rate how much they have experienced certain things (for example, "How safe do you feel in your daily life"). The Likert-scale responses range from 1 (*not at all*) to 5 (*an extreme amount*), and combine to produce a raw score which is transformed to offer a domain score from four to 20. The instrument provides scores across four domains: physical health, including dependence on medical care, energy and fatigue, pain, and work capacity; psychological health, including negative feelings, self-esteem, thinking and concentration; social relationships, capturing personal relationships and social support, and; environment, including financial resources, home environment and opportunities for learning. Higher scores in each domain reflect higher self-perceived quality of life.

The WHOQOL-BREF has previously been employed as a measure of quality of life in BPD research (Carter et al., 2010). Sound psychometric properties are reported including high to moderate internal consistency across domains (Cronbach's α = Physical 0.82, Psychological 0.81, Social Relationships 0.68, Environment 0.80) and good discriminant validity and construct validity (Skevington et al., 2004). The WHOQOL-BREF was employed in this research as an effective instrument for gathering self-reported quality of life data, and was used with permission of The WHOQOL Group, Programme on Mental Health, WHO.

Client Satisfaction Questionnaire (CSQ-8)

The CSQ-8 (Larsen et al., 1979) is an eight-item self-report measure of participant satisfaction with services. Participants are asked a series of questions about the services received (e.g., "How satisfied are you with the amount of help you have received?"), with responses provided on a 4-point Likert scale (for example, from 1 *quite dissatisfied* to 4 *very satisfied*). The CSQ-8 produces a possible total score from eight to 32, with higher scores indicating greater levels of satisfaction. The tool is widely used in mental health clinical and

research settings, offering a standardised, uni-dimensional measure of general satisfaction. The CSQ-8 has good internal consistency (Cronbach;s α = 0.83 – 0.92) and high concurrent validity (Attkisson & Greenfield, 1996; Kelly et al., 2018).

For Study Two Part I and Study Three, these measures were administered by the author prior to delivery of the intervention and again in Week 25 of the intervention period. Pre and post data collection is consistent with published research on DBT-informed treatments for BPD in real-world clinical settings (Harley et al., 2007; Lee et al., 2022; Lyng et al., 2019).

The measures used in Study Two Part II are detailed separately below, as they are not common to all studies.

Study Two: Part I: Randomised Controlled Trial of Female Participants Examining Outcomes of Borderline Personality Disorder-Related Symptomology, Quality of Life and Satisfaction with Services

Aim

The purpose of Study Two Part I was to examine the effectiveness of group DBT skills training in reducing BPD-related symptomology, and improving quality of life and client satisfaction with services in women with BPD in a regional community mental health setting.

Hypothesis

Twenty-five weeks of group DBT skills training will reduce BPD-related symptomology, and improve quality of life and client satisfaction with services in women with BPD, compared to pre-intervention levels, relative to treatment as usual.

Design

As detailed above, a CONSORT-compliant (Schulz et al., 2010) RCT was employed, comparing a 25 week DBT skills training group intervention with a TAU control. The RCT was conducted between January 2015 and December 2017 in the Integrated Mental Health Service (Mount Gambier). Four separate DBT skills training groups were delivered during this period.

Sample

Sample size estimates were informed by clinical impressions of the author, an experienced clinical psychologist, and those from an unpublished pre-post pilot study with five women previously conducted by the author. That study produced the following results: Mean BSL Pre Scores: 2.86 (SD: 0.63); Mean BSL Post Scores: 1.76 (SD:0.79). Power calculations were conducted to identify the sample size required to detect a statistically significant difference (P=0.05; power =80%; 1:1 enrolment ratio) between the two groups in mean change pre to post based on a repeated measures ANOVA with within/ between interactions. Calculations assumed a mean pre BSL score of 2.87 (SD: 0.8) and took account of the change required to move a person from one severity category to another. Using this approach, it was determined that a sample of 12 participants per group would be required.

The same participant group was used for Study Two Part I and Part II. The sample comprised 34 individual women. Randomised allocation placed 17 participants in the intervention group and 17 participants in the TAU control. Demographic information for the participants is provided in Table 8 below.

Table 8

Demographic Information for Study Two Participants

	Value	Control (Frequency (%))	Intervention (Frequency (%))	Total (Frequency (%))
Age (years)	(Mean (SD))	34 (11)	36 (10)	
Education	Primary	1 (6)	1 (6)	2 (6)
	Secondary	8 (50)	12 (71)	20 (61)
	Tertiary	7 (44)	4 (24)	11 (33)
Marital status	Living as married	5 (31)	4 (27)	9 (29)
	Married	2 (13)	4 (27)	6 (19)
	Separated	2 (13)	1 (7)	3 (10)
	Single	7 (44)	6 (40)	13 (42)

Maximum number of missing data for any variable does not exceed three

As shown in Table 8, control and intervention groups were highly similar at baseline. The mean age at baseline was 34 years for the control group and 36 years for the intervention group. Participants tended to be single and have a secondary school education. Only one woman from each group had a primary level education. This pattern was consistent between the control and intervention groups.

Procedure

Participants were provided verbal and written information on the research project and signed consent was obtained. Quantitative data were collected via self-administered measures provided to participants in week one and week 25 of the intervention period.

Outcome Measures / Variables

The primary outcome measure for Study Two Part I was participants' self-reported BPD-related symptomology (BSL-23).

A secondary outcome measure for Study Two Part I was participants' self-reported quality of life (WHOQOL-BREF).

A secondary outcome measure for Study Two Part I was participants' self-reported satisfaction with services (CSQ-8).

Statistical Analysis

As each participant had pre- and post-treatment data taken, there is clustering on participant – that is, the same participant may give data on up to two occasions. Thus, linear mixed-effects models were performed, with an interaction of time period and intervention group, adjusting for clustering on participant. Firstly, an unadjusted model was performed and then an adjusted model, adjusting for patient age. The outcome variables are: BPD-related symptomology (BSL mean), self-reported quality of life (WHOQOL-BREF) reported across four domains: physical, psychological, social relationships and environment and participant satisfaction with services (CSQ-8). As participant satisfaction with services was only measured post-intervention, instead of an interaction, the predictor (intervention group) was used in a linear regression model.

The statistical software used for both primary studies was SAS 9.4 (SAS Institute, 2013).

Study Two: Part II: Randomised Controlled Trial of Female Participants Examining Impacts on Health Services Usage

Aim

The purpose of Study Two Part II was to examine the effectiveness of group DBT skills training in reducing health service usage including emergency mental health hospital presentations, number of mental health admissions, total days of admission, and number of emergency transfers to Adelaide (capital city) in women with BPD in a regional community mental health setting.

Hypothesis

Twenty-five weeks of group DBT skills training will reduce health services usage including emergency mental health hospital presentations, number of mental health admissions and total days of admission in women with BPD, compared to pre-intervention levels relative to treatment as usual.

Design

A CONSORT-compliant (Schulz et al., 2010) RCT was employed in Study Two Part II, comparing a 25 week DBT skills training group intervention with a TAU control. Pre-treatment data was gathered for the 25 weeks immediately preceding the intervention period, and post-treatment data for the 25 weeks immediately following. The RCT was conducted between January 2015 and December 2016 in the Integrated Mental Health Service (Mount Gambier).

Sample

Additional power calculations were done for three secondary outcomes: number of presentations to emergency department; total days in admissions to emergency department and transfers to Adelaide (binary outcome; 0,1). The same general approach was used as that for that of the primary outcome (two-way ANOVA with repeated measures) and with the same assumptions (for example alpha of 0.05). Using this approach, it was determined that a sample of 51 participants per group would be required. As such, Study Two Part II is underpowered.

Sample details and demographic variables for Study Two Part II are provided in Study Two Part I above.

Procedure

Participants were provided verbal and written information on the research project and signed consent was obtained. Quantitative data on participant's health services usage were manually extracted by the author from relevant medical databases at the conclusion of the intervention period. As separate medical record databases are employed by SA Health across country and metropolitan areas, and between hospital inpatient and community-based services, data were extracted from the Consolidated Country Client Management Engine (CCCME), Community Based Information System (CBIS) and Open Architecture and Clinical Information System (OACIS) to ensure that all relevant contacts with SA Health (government) services were captured.

Outcome Measures / Variables

The first outcome measure for Study Two Part II was number of emergency mental health hospital presentations, defined as a presentation to any hospital accident and emergency department with a documented primary cause of mental health.

The second outcome measure for Study Two Part II was the number of mental health hospital admissions, defined as an admission to any hospital with a documented primary cause of mental health.

The third outcome measure for Study Two Part II was total days of mental health hospital admission, defined as the number of days of admission to any hospital with a documented primary cause of mental health.

The fourth outcome measure for Study Two Part II was number of emergency mental health transfers to Adelaide, defined as any service-initiated emergency transfer of care to Adelaide with a documented primary cause of mental health. These transfers occurred from the participant's local service to the Royal Adelaide Hospital, being the major tertiary referral hospital for South Australia.

Statistical Analysis

Each participant had pre- and post-treatment data taken, as such there was clustering on participant – the same participant may have given data on up to two occasions. Thus, there may have been correlation within participants which could result in erroneous P values and standard errors if not accounted for. For this reason, negative binomial Generalized Estimating Equation (GEE) models and a binary logistic GEE model were employed. Negative binomial GEE model outcome variables include: number of emergency mental health presentations, number of mental health hospital admissions, and total days of mental

health hospital admission versus interaction of time period and intervention group, adjusting for clustering on participant.

Number of emergency mental health transfers to Adelaide was dichotomised due to there being only four transfers (the Negative Binomial GEE model did not converge). A binary logistic GEE model was then performed with outcome: (i.e. having at least one transfer to Adelaide (yes/no)) versus time period and intervention group (this was a main effects model – an interaction model did not converge).

Study Three: Pre-Post Comparison of Male Participants Examining Outcomes of Borderline Personality Disorder-Related Symptomology, Quality of Life and Satisfaction with Services

Aim

The purpose of Study Three was to examine the effectiveness of group DBT skills training in reducing BPD-related symptomology, and improving quality of life and client satisfaction with services in men with BPD in a regional community mental health setting.

Hypothesis

Twenty-five weeks of group DBT skills training will reduce BPD-related symptomology, and improve quality of life and client satisfaction with services in men with BPD compared to pre-intervention levels.

Design

A pre-post design was utilised, comparing participant's self-reported outcome scores before and after a 25 week DBT skills training group intervention. The study was conducted between February 2016 and August 2016.

Sample

Power calculations were conducted to identify the sample size required to detect a statistically significant difference in mean BSL scores pre to post. Calculations assumed a mean pre BSL score of 2.87 (SD:0.8); P=0.05; power =80%). Using this approach, it was determined that a sample of 23 participants would be required to identify a medium effect size. As such, Study Three is underpowered. Sample size for Study Three was limited by the small number of men with BPD receiving care within the community mental health service. The under-representation of men in clinical care settings is detailed in Chapter III.

The sample comprised 12 men with a confirmed diagnosis of BPD. The ages of participants ranged from 27 to 40 (mean = 31). As shown in Table 9, participants tended to be single and have a secondary school education.

Table 9

Demographic Information for Study Three Participants

	Value	Total (Frequency (%))
Age (mean)		31
Education	Primary	3 (25)
	Secondary	8 (67)
	Tertiary	1 (8)
Marital status	Living as married	0 (0)
	Married	2 (17)
	Separated	1 (8)
	Single	9 (75)

N = 12

Procedure

Participants were provided verbal and written information on the research project and signed consent was obtained. Quantitative data were collected via self-administered measures provided to participants in week one and week 25 of the intervention period.

Outcome Measures / Variables

The primary outcome measure for Study Three was participants' self-reported BPD-related symptomology (BSL-23).

Secondary outcome measures for Study Three were participants' self-reported quality of life (WHOQOL-BREF) and satisfaction with services (CSQ-8).

Statistical Analysis

Linear mixed-effects models were used, with predictor: time period, adjusting for clustering on participant. Firstly, an unadjusted model was performed and then an adjusted model, adjusting for participant age. The outcomes were: BPD-related symptomology (BSL mean), self-reported quality of life (WHOQOL-BREF) reported across four domains, physical, psychological, social relationships and environment, and participant satisfaction with services (CSQ-8). Participant satisfaction with services was only measured post-treatment, as such there was no comparison group and no statistical analysis could be performed.

Chapter VII: Results

Study Two: Part I: Randomised Controlled Trial of Female Participants Examining Outcomes of Borderline Personality Disorder-Related Symptomology, Quality of Life and Satisfaction with Services

Table 10 presents descriptive statistics of all the continuous variables used in this female-only analysis. Variables with a skewed distribution are described by a median and interquartile range (IQR). Variables with an approximately normal distribution are described by a mean and standard deviation (SD).

At onset, both the control and intervention groups reported high (Kleindienst et al., 2020) BPD-related symptoms and distress. Both groups described moderate self-perceived quality of life for the physical and environment domains, and relatively poorer quality of life for the social relationships domain. The poorest quality of life was reported in the psychological domain for both the control and intervention groups.

Table 10

Descriptive Statistics of Continuous Variables for the Control and Intervention Groups

	Pre – Control N = 17	Pre – Intervention N = 17	Post – Control N = 14	Post – Intervention N = 11
Age (years)	34.27 (11.25)	35.56 (9.72)	35.44 (11.31)	36.77 (8.25))
BPD-related symptomology (score)	48.76 (20.79)	57.06 (22)	55.50 (22.63)	36.20 (22.10)
BPD-related symptomology (mean)	2.09 (0.99)	2.49 (0.95)	2.41 (0.99)	1.57 (0.96)
Quality of life (physical)	10.27 (2.57)	10.69 (1.91)	10.31 (1.54)	11.64 (2.79)
Quality of life (psychological)	8.08 (3.11)	7.75 (1.77)	8.29 (2.57)	10.15 (2.54)
Quality of life (social relationships)	10.90 (4.25)	8.75 (4.28)	9.48 (3.55)	11.09 (4.38)
Quality of life (environment)	12.24 (2.95)	11.77 (3.14)	11.64 (1.95)	14.14 (2.41)
Participant satisfaction with services*	-	-	25.50 (20, 27)	27 (21, 31)

Median (IQR) (the rest of the statistics are mean(SD))
Borderline-related symptomology: BSL-23 provides a sum score from zero to 92, with higher scores indicating more severe BPD-related symptoms.
Quality of life: WHOQOL-BREF provides a domain score from four to 20, with higher scores indicating higher self-perceived quality of life
Participant satisfaction with services: CSQ-8 provides a total score from eight to 32, with higher scores indicating greater levels of satisfaction.

Borderline Personality Disorder-Related Symptomology

Table 11 below provides the findings for the mean BSL scores. With age as a confounder, there is a statistically significant interaction between group and time period (p= .0129) indicating that there is a statistically significant difference between the two groups and over time. For the post period, women in the control group had a mean BSL score 0.84 units 95% confidence interval (CI) [0.01, 1.68] greater than those in the intervention group (p= .0475). For the post period, women in the intervention group had a mean BSL score 0.96 units lower 95% CI [-1.68, -0.03] than that for the control group (p= .0108). The effect size for this analysis (*d*= 0.34) was small (Cohen, 1988). As per the Kleindienst et al. (2020) classification system, women in the intervention group reported *high* BPD-related symptoms in the pre period (BSL-23 mean score = 2.49) and *moderate* symptoms in the post period (BSL-23 mean score = 1.57), while women in the control group reported *high* levels of BPD symptoms in the pre-period (BSL-23 mean score = 2.09) and *high* levels of symptoms in the post-period (BSL-23 mean score = 2.41). Overall, these findings support the hypothesis that group DBT skills training will reduce BPD-related symptomology compared to pre-intervention levels, relative to that of treatment as usual.

Table 11

Linear Mixed-Effects Models of BPD-Related Symptomology: Interaction of Treatment Group and Time Period, Adjusting for Clustering on Participant

Interaction	Confounder	Group / Time	Comparison	Estimate (95% CI)	Comparison P value	Interaction P value	Residual Standard Deviation	Cohen's d
Treatment* Time_period		Control	Post vs Pre	0.28 [-0.35, 0.92]	.3653	.0129	0.83	0.33
		Post	Control vs Intervention	0.85 [0.03, 1.68]	.0440			1.01
		Pre	Control vs Intervention	-0.40 [-1.09, 0.30]	.2493			-0.47
		Intervention	Post vs Pre	-0.96 [-1.68, -0.25]	.0105			1.15
Treatment* Time_period	Age	Control	Post vs Pre	0.29 [-0.35, 0.92]	.3595	.0129	0.83	0.34
		Post	Control vs Intervention	0.84 [0.01, 1.68]	.0475			1.00
		Pre	Control vs Intervention	-0.40 [-1.10, 0.30]	.2437			-0.48
		Intervention	Post vs Pre	-0.96 [-1.68, -0.25]	.0108			-1.15

Control N = 17, intervention N = 17, total N = 24

Quality of Life

Results related to self-reported quality of life are presented across four domains; physical health, psychological, social relationships and environment, as detailed below.

Physical Health. Table 12 below provides the findings for the WHOQOL-BREF (physical health) scores. Both the unadjusted and adjusted analyses show that there is not a statistically significant interaction between group and time period (p= .3599), indicating that there is no statistically significant difference between the two groups or over time. Thus there is no support for the hypothesis that group DBT skills training will improve physical health quality of life compared to pre-intervention levels, relative to that of treatment as usual.

Table 12

Linear Mixed-Effects Models of Quality of Life (Physical Health): Interaction of Treatment Group and Time Period, Adjusting for Clustering on Participant

Interaction	Confounder	Group / Time	Comparison	Estimate (95% CI)	Comparison P value	Interaction P value	Residual Standard Deviation	Cohen's d
Treatment* Time_period		Control	Control	0.23 [-0.78, 1.23]	.6485	.3599	1.67	0.13
		Control	Intervention	-1.10 [-2.83, 0.64]	.2038	.2038		-0.65
		Control	Intervention	-0.41 [-1.98, 1.15]	.5896			-0.24
		Intervention	Intervention	0.91 [-0.21, 2.03]	.1078			0.54
Treatment* Time_period	Age	Control	Post vs Pre	0.24 [-0.77, 1.25]	.6238	.3579	1.64	0.14
		Post	Control vs Intervention	-1.15 [-2.88, 0.57]	.1807			0.69
		Pre	Control vs Intervention	-0.47 [-2.03, 10.9]	.5401			-0.28
		Intervention	Post vs Pre	0.92 [-0.19, 2.04]	.1006			0.55

Control N = 17, intervention N = 17, total N = 34

Psychological. Table 13 below provides the findings for the WHOQOL-BREF (psychological) domain scores. There is not a statistically significant interaction between group and time period (p= .0593), indicating that there is no statistically significant difference between the two groups or over time. This finding remains non-significant when controlling for age (p= .0597). Thus there is no support for the hypothesis that group DBT skills training will improve psychological quality of life compared to pre-intervention levels, relative to that of treatment as usual.

Table 13

Linear Mixed-Effects Models of Quality of Life (Psychological): Interaction of Treatment Group and Time Period, Adjusting for Clustering on Participant

Interaction	Confounder	Group / Time	Comparison	Estimate (95% CI)	Comparison P value	Interaction P value	Residual Standard Deviation	Cohen's d
Treatment* Time_period		Control	Post vs Pre	0.53 [-0.72, 1.78]	.3904	.0593	1.94	0.27
		Post	Control vs Intervention	-1.46 [-3.45, 0.54]	.1455			-0.75
		Pre	Control vs Intervention	0.33 [-1.45, 2.12]	.7030			0.16
		Intervention	Post vs Pre	2.32 [0.93, 3.70]	.0021			1.19
Treatment* Time_period	Age	Control	Post vs Pre	0.55 [-0.70, 1.80]	.3747	.0597	1.93	0.28
		Post	Control vs Intervention	-1.49 [-3.50, 0.53]	.1405			-0.76
		Pre	Control vs Intervention	0.30 [-1.51, 2.10]	.7357			0.15
		Intervention	Post vs Pre	2.33 [0.95, 3.71]	.0020			1.20

Control N = 17, intervention N = 17, total N = 24

Social Relationships. Table 14 below provides the findings for the WHOQOL-BREF (social relationships) scores. With age as a confounder, there is a statistically significant interaction between group and time period (p= .0224) indicating that there is a statistically significant difference between the two groups and over time. Women in the intervention group had a social relationships domain score 2.40 units 95% CI [0.41, 4.40] higher in the post period than in the pre period (p= .0205). The effect size for this analysis (d=.81) was large (Cohen, 1988). In comparison, there was no statistically significant change in the control group women (p= .3741). This finding supports the hypothesis that group DBT skills training will improve self-reported quality of life for the domain of social relationships compared to pre-intervention levels, relative to that of usual treatment.

Table 14

Linear Mixed-Effects Models of Quality of Life (Social Relationships): Interaction of Treatment Group and Time Period, Adjusting for Clustering on Participant

Interaction	Confounder	Group / Time	Comparison	Estimate (95% CI)	Comparison P value	Interaction P value	Residual Standard Deviation	Cohen's d
Treatment* Time_period		Control	Post vs Pre	-0.81 [2.60, 0.98]	.3581	.0224	3.07	-0.26
		Post	Control vs Intervention	-1.01 [-4.21, 2.19]	.5191			-0.32
		Pre	Control vs Intervention	2.16 [-0.76, 5.07]	.1397			0.70
		Intervention	Post vs Pre	2.36 [0.37, 4.35]	.0223			0.76
Treatment* Time_period	Age	Control	Post vs Pre	-0.79 [-2.59, 1.01]	.3741	.0220	2.94	-0.26
		Post	Control vs Intervention	-1.18 [-4.30, 1.94]	.4422			-0.40
		Pre	Control vs Intervention	2.01 [-0.82, 4.84]	.1552			0.68
		Intervention	Post vs Pre	2.40 [0.41, 4.40]	.0205			0.81

Control N = 17, intervention N = 17, total N = 24

Environment. Table 15 below provides the findings for the WHOQOL-BREF (environment) scores. With age as a confounder, there is a statistically significant interaction between group and time period (p= .0129) indicating that there is a statistically significant difference between the two groups and over time. Women in the intervention group had an environment domain score 2.27 units 95% CI [0.79, 3.76] higher in the post period than in the pre period (p= .0043). The effect size for this analysis (*d*= 1.08) was found to be large (Cohen, 1988). In comparison, there was no statistically significant differences in scores for control group women in the post versus pre intervention period (p= .6146). This finding supports the hypothesis that community-based DBT will improve self-reported quality of life for the domain of environment compared to pre-intervention levels, relative to that of usual treatment.

Table 15

Linear Mixed-Effects Models of Quality of Life (Environment): Interaction of Treatment Group and Time Period, Adjusting for Clustering on Participant

Interaction	Confounder	Group / Time	Comparison	Estimate (95% CI)	Comparison P value	Interaction P value	Residual Standard Deviation	Cohen's d
Treatment* Time_period		Control	Post vs Pre	-0.35 [-1.69, 0.99]	.5953	.0129	2.07	-0.16
		Post	Control vs Intervention	-2.14 [-4.30, 0.02]	.0520			-1.03
		Pre	Control vs Intervention	0.47 [-1.46, 2.40]	.6205			0.22
		Intervention	Post vs Pre	2.26 [0.77, 3.74]	.0045			1.08
Treatment* Time_period	Age	Control	Post vs Pre	-0.33 [-1.67, 1.01]	.6146	.0130	2.05	-0.16
		Post	Control vs Intervention	-2.18 [-4.35, -0.01]	.0486			-1.06
		Pre	Control vs Intervention	0.42 [-1.52, 2.36]	.6561			0.20
		Intervention	Post vs Pre	2.27 [0.79, 3.76]	.0043			1.10

Control N = 17, intervention N = 17, total N = 24

Participant Satisfaction with Services

Table 16 below provides the findings for the participant satisfaction with services (CSQ-8) scores. While the control group had lower satisfaction scores (-2.69 on a scale from eight to 32), this was not statistically significant (in both the adjusted and unadjusted comparisons). Thus, this finding does not support the hypothesis that group DBT skills training would significantly increase participant satisfaction with services when compared to treatment as usual.

Table 16

Linear Regression Model for Participant Satisfaction with Services and Treatment Group

Interaction	Confounder	Comparison	Estimate (95% CI)	Comparison P value	Interaction P value	Residual Standard Deviation	Cohen's d
Treatment_group		Control vs Intervention	-2.70 [-6.85, 1.45]	.2021	.2021*	4.86	-0.56
Treatment_group	Age	Control vs Intervention	-2.69 [-6.84, 1.45]	.2030	.2030*	4.85	-0.55

*Global p value
Control N = 17, intervention N = 17, total N = 34

Study Two: Part II: Randomised Controlled Trial of Female Participants Examining Impacts on Health Services Usage

Table 17 provides the descriptive statistics of the four outcomes used in this analysis, by treatment group and by time period. Although the three continuous variables are all skewed to the right, medians and interquartile ranges were almost all zeros, so means and standard deviations have been presented. Frequencies and percentages are given for the binary variable emergency transfers of care.

Table 17

Descriptive Statistics of Hospital Outcomes versus Treatment Group and Time Period

	Pre – Control N = 17	Pre – Intervention N = 17	Post – Control N = 17	Post – Intervention N = 17
Number of emergency presentations (Mean (SD))	0.5 (1.1)	0.8 (1.2)	0.4 (0.7)	0.1 (0.2)
Number of admissions (Mean (SD))	0.5 (1.7)	0.7 (1.2)	0.4 (0.8)	0.1 (0.2)
Total days of admission *(Mean (SD))	1.8 (6.8)	4.6 (10.4)	1.2 (2.5)	0.2 (1.0)
Transfer to Adelaide (N(%))	1 (5.9)	2 (11.8)	1 (5.9)	0 (0)

Number of Emergency Mental Health Presentations

Table 18 below provides the findings for the number of emergency mental health presentations. There is no statistically significant interaction between intervention group and time period for this outcome adjusting for clustering on participant (interaction p value= .0654). However, the odds of having an emergency mental health presentation reduced by 7% (OR: 0.07; 95% CI 0.01, 0.60) in the intervention group following the intervention (p=

.0148), while no statistically significant change was observed in the control group. Thus there is partial support for the hypothesis that group DBT skills training will reduce emergency mental health presentations compared to pre-intervention levels relative to that of usual treatment.[13]

Table 18

Negative Binomial GEE Model and Binary Logistic GEE Model Results for Emergency Mental Health Presentations

Interaction / Predictor	Group / Time	Comparison	IRR/OR (95% CI)	Comparison P value	Interaction / Global P value
Treatment* Time period	Control	Post vs Pre	0.75 [0.20, 2.81]	.6697	.0654
	Intervention	Post vs Pre	0.07 [0.01, 0.60]	.0148	
	Post	Control vs Intervention	6.00 [0.73, 49.54]	.0962	
	Pre	Control vs Intervention	0.57 [0.17, 1.97]	.3760	

Control N = 17, intervention N = 17, total N = 34

Number of Mental Health Admissions

Table 19 below provides the findings for the number of mental health admissions. There is no statistically significant interaction between intervention group and time period for this outcome adjusting for clustering on participant (interaction p value= .1705). However,

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[13] This was because the group/time interaction was not statistically significant, indicating that the rate of improvement in the intervention group was not statistically greater than that in the control group.

the odds of having a mental health admission reduced by 9% (OR: 0.09; 95% CI 0.01, 0.82) in the intervention group following the intervention (p= .0324), while no statistically significant change was observed in the control group. Thus there is partial support for the hypothesis that group DBT skills training will reduce mental health admissions compared to pre-intervention levels, relative to that of usual treatment.[14]

Table 19

Negative Binomial GEE Model and Binary Logistic GEE Model Results for Number of Mental Health Admissions

Interaction / Predictor	Group / Time	Comparison	IRR/OR (95% CI)	Comparison P value	Interaction / Global P value
Treatment* Time period	Control	Post vs Pre	0.75 [0.09, 5.94]	.7852	.1705
	Intervention	Post vs Pre	0.09 [0.01, 0.82]	.0324	
	Post	Control vs Intervention	6.00 [0.69, 52.08]	.1042	
	Pre	Control vs Intervention	0.73 [0.11, 4.76]	.7399	

Control N = 17, intervention N = 17, total N = 34

Total Days of Mental Health Admission

Table 20 below provides the findings for the total days of mental health admission. There is no statistically significant interaction between intervention group and time period for

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[14] This was because the group/time interaction was not statistically significant, indicating that the rate of improvement in the intervention group was not statistically greater than that in the control group.

this outcome adjusting for clustering on participant (interaction p value= .0993). However, for the intervention group, participant's post-intervention had total days of mental health admission 5% less compared with participant's pre-intervention (IRR=0.05; 95% CI 0.01, 0.50). This comparison is statistically significant (comparison p value= .0104). Thus there is partial support for the hypothesis that group DBT skills training will reduce total days of mental health admission compared to pre-intervention levels, relative to that of usual treatment.[15]

Table 20

Negative Binomial GEE Model and Binary Logistic GEE Model Results for Total Days of Mental Health Admission

Interaction / Predictor	Group / Time	Comparison	IRR/OR (95% CI)	Comparison P value	Interaction / Global P value
Treatment* Time period	Control	Post vs Pre	0.68 [0.09, 5.33]	.7115	.0993
	Intervention	Post vs Pre	0.05 [0.01, 0.50]	.0104	
	Post	Control vs Intervention	5.25 [0.63, 43.57]	.1246	
	Pre	Control vs Intervention	0.40 [0.05, 2.96]	.3680	

Control N = 17, intervention N = 17, total N = 34

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[15] This was because the group/time interaction was not statistically significant, indicating that the rate of improvement in the intervention group was not statistically greater than that in the control group.

Emergency Transfers of Care

Table 21 provides the findings for the number of emergency transfers of care. There is no statistically significant association between emergency transfer of care (Yes/No) and time period, controlling for treatment group and adjusting for clustering on participant (p= .3370), nor between emergency transfer of care and treatment group, controlling for time period and adjusting for clustering on participant (p= 1.0000). Thus, there is no support for the hypothesis that group DBT skills training will reduce emergency transfers of care compared to pre-intervention levels relative to that of usual treatment.

Table 21

Negative Binomial GEE Model and Binary Logistic GEE Model Results for Emergency Transfers of Care

Interaction / Predictor	Comparison	IRR/OR (95% CI)	Interaction / Global P value
Time period	Post vs Pre	0.31 (0.03, 3.35)	0.3370
Treatment group	Control vs Intervention	1.00 (0.14, 7.29)	1.0000

*The binary logistic GEE model is modelling the probability that transfers to Adelaide = 'Yes'

Control N = 17, intervention N = 17, total N = 34

Study Three: Pre-Post Comparison of Male Participants Examining Outcomes of Borderline Personality Disorder-Related Symptomology, Quality of Life and Satisfaction with Services

Table 22 shows descriptive statistics for all the continuous variables used in this analysis, by time period. As these variables are generally not normally distributed, medians and interquartile ranges (IQR) are presented.

Table 22

Descriptive Statistics of Variables used in this Analysis, by Time Period

	Pre – Median (IQR) N = 12	Post – Median (IQR) N = 9
Age (years)	31 (28, 40)	31 (27, 36)
BPD-related symptomology (score)	47 (25, 70)	13 (6, 22)
BPD-related symptomology (mean)	2 (1, 3)	0.6 (0.3, 1.0)
Quality of life (physical)	12 (10, 14)	13 (12, 15)
Quality of life (psychological)	10 (8, 13)	12 (8, 13)
Quality of life (social relationships)	9 (7, 13)	13 (8, 15)
Quality of life (environment)	12 (11, 14)	12 (11, 15)
Participant satisfaction with services	-	28 (26, 31)

Borderline-related symptomology: BSL-23 provides a sum score from zero to 92, with higher scores indicating more severe BPD-related symptoms.
Quality of life: WHOQOL-BREF provides a domain score from four to 20, with higher scores indicating higher self-perceived quality of life
Participant satisfaction with services: CSQ-8 provides a total score from eight to 32, with higher scores indicating greater levels of satisfaction.

Borderline Personality Disorder-Related Symptomology

Table 23 provides the findings for the mean BSL scores. There is a statistically significant association between mean BSL score and time period (global p value = .0279). Participants post-intervention had a mean BSL value 1.10 units lower 95 %CI [-2.04, -0.15]. When adjusted for age, the significant association remains (global p value = .0301). As per the Kleindienst et al. (2020) classification system, participant's post-intervention reported *mild* BPD-related symptoms (BSL-23 mean score = 0.6), compared to *high* levels of reported symptoms pre-intervention (BSL-23 mean score = 2.0). Overall, these findings support the hypothesis that group DBT skills training will reduce BPD-related symptomology in men, compared to pre-intervention levels.

Table 23

Linear Mixed-effects Models of BPD-related Symptomology: Time Period, Adjusting for Clustering on Participant

Predictor	Confounder	Time period comparison	Estimate (95% CI)	Global P value
Time period		Post vs Pre	-1.10 [-2.04, 0.15]	.0279
Time period	Age	Post vs Pre	-1.06 [-2.00, 0.13]	.0301

N=12

Quality of Life

Results related to self-reported quality of life are presented across four domains; physical health, psychological, social relationships and environment, as detailed below.

Physical Health. Table 24 below provides the findings for the WHOQOL-BREF (physical health) domain scores. There is no statistically significant association between domain score and time period (global p value = .3374). This association remains non-

significant when controlling for age (global P value = .3784). Thus, there is no support for the hypothesis that group DBT skill training will improve physical health relative to pre-intervention levels.

Table 24

Linear Mixed-effects Models of Quality of Life (Physical Health): Time Period, Adjusting for Clustering on Participant

Predictor	Confounder	Time period comparison	Estimate (95% CI)	Global P value
Time period		Post vs Pre	0.83 [-1.05, 2.72]	.3374
Time period	Age	Post vs Pre	0.75 [-1.11, 2.61]	.3784

N=12

Psychological. Table 25 below provides the findings for the WHOQOL-BREF (psychological) domain scores. There is no statistically significant association between domain score and time period (global p value = .0805). This association remains non-significant when controlling for age (global p value = .0884). Thus, there is no support for the hypothesis that group DBT skills training will improve self-reported quality of life for the psychological domain relative to pre-intervention levels.

Table 25

Linear Mixed-effects Models of Quality of Life (Psychological): Time Period, Adjusting for Clustering on Participant

Predictor	Confounder	Time period comparison	Estimate (95% CI)	Global P value
Time period		Post vs Pre	1.98 [-0.30, 4.27]	.0805
Time period	Age	Post vs Pre	1.95 [-0.37, 4.26]	.0884

N=12

Social Relationships. Table 26 below provides the findings for the WHOQOL-BREF (social relationships) scores. There is a statistically significant association between WHOQOL-BREF (social relationships) score and time period (global p value = .0168). Participants post-intervention had a domain value 2.83 units higher 95% CI [0.66, 5.00]. When adjusted for age, the significant association remains (global p value = .02). This finding supports the hypothesis that group DBT skills training will improve self-reported quality of life for the domain of social relationships, relative to pre-intervention levels.

Table 26

Linear Mixed-effects Models of Quality of Life (Social Relationships): Time Period, Adjusting for Clustering on Participant

Predictor	Confounder	Time period comparison	Estimate (95% CI)	Global P value
Time period		Post vs Pre	2.83 [0.66, 5.00]	.0168
Time period	Age	Post vs Pre	2.75 [0.54, 4.95]	.0207

N=12

Environment. Table 27 provides the findings for the WHOQOL-BREF (environment) domain scores. There is no statistically significant association between domain score and time period (global p value = .5477). This association remains non-significant when controlling for age (global p value = .5978). Thus, there is no support for the hypothesis that group DBT skills training will improve self-reported quality of life for the environment domain relative to pre-intervention levels.

Table 27

Linear Mixed-effects Models of Quality of Life (Environment): Time Period, Adjusting for

Clustering on Participant

Predictor	Confounder	Time period comparison	Estimate (95% CI)	Global P value
Time period		Post vs Pre	0.45 [-1.21, 2.12]	.5477
Time period	Age	Post vs Pre	0.40 [-1.28, 2.08]	.5978

N=12

Participant Satisfaction with Services

As participant satisfaction with services (CSQ-8) was only measured in the post-intervention period, no comparison could be analysed. However, participants post-intervention reported a mean CSQ-8 score of 28.11 (out of a possible total score of 32), with a range between 15 and 32. As higher scores on the CSQ-8 indicate higher satisfaction with services, these results indicate high level of satisfaction with services received during the intervention period.

Chapter VIII: Discussion

This chapter presents a summary of research findings, considered in the context of the existing literature. Explanations for the findings, informed by theoretical models, research evidence, and clinical observations and expertise, are also explored. Strengths and limitations of the current research are presented. The unique contribution of the research to the identification of effective treatments for BPD in real-world clinical service delivery environments is outlined, and suggestions for future research are offered.

Summary of Findings

DBT has been extensively empirically evaluated as an efficacious treatment for BPD. However, research has also identified significant challenges to the adoption of the complete (standard) DBT protocol in clinical service environments. Standard DBT requires intensive, long-term engagement by highly trained specialist clinicians (Carmel et al., 2014b), is costly and resource intensive, and is often perceived to be difficult by service providers (King et al., 2018). These factors constrain the feasibility of the approach in public mental health settings, particularly those in rural and regional areas where workforce and funding are most limited (Blennerhassett & O'Raghallaigh, 2005; Swenson et al. 2002). Choi-Kain et al. (2017) highlight the importance of 'pared down' treatment approaches as the new frontier for BPD research, identifying the minimum essential elements of effective care, offering greater feasibility for implementation in challenging real-world clinical settings. As such, the current research provides a systematic review of DBT 'dismantling' studies (Study One), offering critical appraisal of five studies comparing standard DBT to standalone DBT skills training and/or individual DBT-only. Findings indicated few or no clinically or statistically significant differences between DBT conditions, and suggest that these approaches may be similarly effective in reducing suicidality and self-harm, and may reduce general psychological

distress. Overall, the reviewed studies provide modest, preliminary evidence for the use of DBT skills training as a standalone treatment for BPD in real-world clinical settings. Further, the current research sought to examine the effectiveness of standalone DBT skills training as a pragmatic treatment approach for BPD by integrating a 25-week DBT skills training group program into existing clinical services within the Mount Gambier Community Mental Health Service in regional South Australia. An RCT of female participants examined outcomes of BPD-related symptomology, quality of life and satisfaction with services (Study Two Part I) and health services usage (Study Two Part II). A pre-post comparison study of male participants examined outcomes of BPD-related symptomology, quality of life and satisfaction with services (Study Three).

The results of the Study Two RCT demonstrated that group DBT skills training is superior to TAU in reducing BPD-related symptomology in female participants. The approach was also shown to be effective in reducing symptoms of BPD in men in pre/post comparison. Both men and women reported a statistically significant improvement in quality of life in the domain of social relationships, while female participants additionally experienced a statistically significant improvement in the environment domain. No improvement in quality of life for the physical health or psychological domains was found in participants of either gender. Both men and women described high levels of satisfaction with the services received. Female participants in the intervention group experienced a small, statistically significant decrease in emergency mental health hospital presentations, mental health admissions and mental health-related hospital admission in the period following the DBT skills training group, compared to pre-intervention levels. There was no statistically significant difference between the intervention and control groups for these outcomes. There was no reduction in the number of emergency transfers of care to Adelaide in either group.

Borderline Personality Disorder-Related Symptomology

Participants' self-reported BSL-23 scores demonstrated that group DBT skills training led to statistically significant reductions in BPD-related symptomology and distress. Following DBT skills training, female participants reported average BPD symptom reductions from *high* to *moderate*, while male participants reported average reductions from *high* to *mild*. Previous findings with regard to borderline-related symptom reduction following standalone DBT skills training have been mixed. Consistent with current findings, Heerebrand et al. (2021) reported significant reductions in symptoms of BPD following DBT skills training in an adult community mental health service in metropolitan Adelaide, with no improvement shown in the waitlisted control group. In a Canadian RCT (McMain et al., 2016), DBT skills training participants showed more improved emotion regulation and distress tolerance compared to waitlisted controls. Similar findings were reported by Blackford and Love (2011), who observed reductions in symptoms of depression in a diagnostically mixed population in a community mental health setting following six months of group DBT skills training. Statistically significant reductions in symptoms of BPD were also identified following group DBT skills training delivered by postdoctoral clinical psychologists in a hospital outpatient setting (Harley et al., 2007). In contrast, no statistically significant improvement in BPD symptoms or emotion regulation following DBT skills training was found by Lee and colleagues (2022), and systematic review of five DBT 'dismantling' studies found evidence regarding the effectiveness of DBT skills training in reducing BPD-related symptoms to be equivocal (see Chapter IV).

Biosocial Model of Borderline Personality Disorder. The finding that DBT skills training reduced BPD-related symptomology may be understood in the context of Linehan's (1993) biosocial developmental model of borderline psychopathology. As explored in Chapter I, the model suggests that individuals with BPD are biologically predisposed to

emotional vulnerability, characterised by increased sensitivity to emotional stimuli, extreme emotional responding and difficulty returning to baseline, resulting in dysfunctional responding to challenging emotions. The biological predisposition toward emotional vulnerability interacts with an invalidating early environment (featuring intolerance and invalidation of emotional expression), hindering children from developing the skills to understand and cope with emotional experiences. This interaction increases the likelihood of the individual developing BPD (Chapman, 2006; Crowell et al., 2009; Linehan et al., 1993). As such, the biosocial model conceptualises emotional dysregulation as the central area of dysfunction in BPD (Crowell et al., 2009; Linehan et al., 1993). Research has identified that individuals with BPD demonstrate both inadequate adaptive emotion regulation skills (Chapman et al., 2008; Daros & Williams, 2019) and a reliance on maladaptive approaches (Muehlenkamp et al., 2011; Sansone et al., 2005; Trull et al., 2000; 2011).

As discussed in Chapter II, the biosocial model proposes that developing skills to regulate severe emotional distress will reduce psychopathology (Linehan, 1993; Linehan & Kehrer, 1993). As such, DBT skills training provides structured weekly group sessions focussed on addressing emotional dysregulation by teaching strategies to replace maladaptive behaviours with effective, adaptive alternatives (Linehan, 2014). Specifically, the mindfulness module develops attentional focus and supports effective action selected from 'wise mind' (as opposed to 'emotion mind'); the emotion regulation module aims to reduce affective dysregulation; interpersonal effectiveness training assists to support positive relationships and social interactions; and distress tolerance develops skills to reduce maladaptive crisis survival strategies and self-harm. As such, a reduction in symptoms of BPD may reflect the successful acquisition and consolidation of these taught skills, resulting in more effective self-management of the key areas of dysregulation typically experienced in BPD. This assertion is supported by research evidence exploring DBT skills as a potential

mechanism of change in BPD. DBT skills training has been shown to be effective in reducing

emotional dysregulation (Gibson et al., 2014; Hunnicutt Hollengaugh & Lenz, 2018), with

each of the group modules associated with an independent and cumulative improvement in

emotion regulation (Heath et al., 2021). Cheavens and colleagues (2022) found reductions in

emotional dysregulation to occur across all DBT skills training modules, consistent with the

biosocial theory underpinning the intervention and the emphasis on emotion regulation

embedded within each skills training module. The researchers note the presence of emotion

regulation strategies in all DBT skills training modules. For example, the distress tolerance

module teaches strategies (such as self-soothing and TIP skills[16]) known to be effective in

regulating emotions in moments of crisis. Similarly, interpersonal effectiveness includes

approaches to address cognitive rumination and distortions and associated emotions

(Cheavens et al., 2022).

More frequent use of DBT skills has been associated with greater reductions in self-

harm and reduced likelihood of treatment dropout, supporting the role of DBT skills in

directly reducing psychopathology by teaching adaptive approaches to regulate emotions and

behaviour (Barnicot et al., 2016). Kramer (2017) identified that participants who underwent

DBT skills training demonstrated significant increases in overall coping functioning, with

increases in strategies related to self-reliance and support seeking, and reductions in less

adaptive coping approaches involving opposition and submission. The findings were

interpreted by the author to suggest that DBT skills training may teach individuals how to

self-assert and effectively seek structured help in response to challenges, with maladaptive

behaviours reducing as adaptive and assertive strategies develop (Kramer, 2017). In a

comparison of standard DBT, standalone DBT skills training and individual DBT-only,

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[16] TIP skills include strategies (such as intensive exercise or use of cold water) designed to alter body chemistry
to produce a rapid reduction in extreme emotional arousal.

Linehan et al. (2015) noted significantly stronger symptom reductions in treatment conditions that included DBT skills, suggesting that DBT skills training is required to maximise positive outcomes. This finding is consistent with those of Lee and colleagues (2022), who identified that acquisition of DBT skills accounted for 46% of the variance in BPD-related symptoms following treatment intervention, and that improvement in emotion regulation skills was associated with reduced BPD symptoms and general distress. When interpreted in the context of the biosocial model of BPD, this evidence provides support for capacity of DBT skills training to reduce borderline symptoms by effectively addressing emotional dysregulation and supporting the development of adaptive coping strategies.

An alternate explanation for the identified symptom reduction may have been identified by Fonagy and Bateman (2006). The authors suggest that, contrary to the historical conceptualisation of BPD as a chronic and treatment-resistant diagnosis, the course of the disorder may be characterised by high rates of natural remission. Up to 75% of individuals with severe BPD may achieve remission within six years of diagnosis, and recurrence rates are low (Fonagy & Bateman, 2006). However, as the current research controlled for the effects of age, it is unlikely that natural remission is an adequate explanation for the observed improvement in BPD-related symptoms.

Quality of Life

A statistically significant improvement in the secondary outcome of self-reported quality of life was identified in the social relationships domain for both male and female participants. An additional finding of improved satisfaction in the environmental domain for women was not replicated among male participants. These results are inconsistent with an Australian RCT comparing a modified application of the complete DBT protocol with TAU plus wait list for DBT in female participants in a regional mental health service (Carter et al.,

2010) which noted improvements in the physical, psychological and environment domains, with no statistically significant increase in social relationship satisfaction. In contrast, Lee et al. (2022) found that change in quality of life scores was not significantly associated with improved DBT skills. Comparison is limited however, as Lee and colleagues applied the shorter Quality of Life Enjoyment and Satisfaction Questionnaire (Endicott et al., 1993; as cited by Lee et al., 2022), which does not offer domain-specific outcomes.

As explored in Chapter I, emotional dysregulation is likely to underpin some of the interpersonal challenges experienced by those with BPD (Dixon-Gordon et al., 2013; Linehan, 1993). Stronger emotion regulation skills have been associated with more positive social interactions (Lopes et al., 2005) and more adaptive responding to interpersonal challenges (Baumeister et al., 1998). DBT skills training seeks to address the underlying emotional dysregulation in BPD, and replace maladaptive behaviours and responses with more effective ones. As such, this finding may reflect improved emotion regulation capacity by participants acquired through DBT skills training, resulting in more effective interpersonal experiences. The finding of improved social relationships satisfaction in the current research may also be consistent with the assertion by Lee and Jeffery (2018) that the DBT group environment can assist in reducing the interpersonal disconnection experienced by many consumers with BPD. This is further supported by anecdotal reports from clinicians contributing to the current studies, who described high levels of group cohesion and the development of stable and supportive interpersonal relationships among participants, at times extending to pragmatic 'real-world' assistance (e.g., participants providing transportation to group to other members). The development of adaptive social relationships within the group may have enhanced participant satisfaction in this domain.

Carter et al. (2010) observed that participants post-intervention continued to report quality of life scores significantly below the Australian average. This is consistent with the

results of the current research, which reveal that at the conclusion of the intervention, both participant groups continued to report quality of life scores more than one standard deviation below Australian community population norms (Hawthorne et al., 2006). This indicates substantial ongoing distress and dysfunction, even for those participants who experienced improvements in the quality of life domains and reductions in BPD-related symptoms (Carter et al., 2010).

Social-Communicative Explanatory Model for Social Relationships Satisfaction. Individuals with BPD report a high prevalence of early life trauma, which Luyten et al. (2020) suggest may disrupt the development of adaptive attachment, social cognition and epistemic trust (being the ability to trust and integrate new information from social interactions). Communication and social learning are negatively impacted, resulting in less adaptive social functioning and an experience of isolation. Further, this reduced capacity for social learning contributes to the perception among care providers that individuals with BPD are 'resistant' or 'hard to reach' (Luyten et al., 2020).

Luyten and colleagues (2020) posit that effective therapeutic approaches must contain three core elements; teaching and learning of content, particularly a 'model of the mind'; the re-emergence of adaptive mentalising, requiring a therapeutic interaction characterised by collaborative social communication, and the re-emergence of social learning, supported by increased self-reflection and social trust. Similar approaches can be identified in the therapeutic processes of the DBT skills training group. Specifically, the mindfulness component teaches a model of the mind which conceptualises a division between the 'emotion mind' and the 'reasonable mind', encouraging participants to seek a balanced synthesis between these two in a state of 'wise mind'. Collaborative social communication is not only provided by the facilitating clinicians, but by benign peer relationships among group members, with group cohesion supported by an understanding of shared experiences and

open self-reflection. Finally, generalisation and consolidation of social learning is explicitly encouraged by the use of weekly 'diary cards' to record adaptive skills use, with the first hour of each group session dedicated to shared reflection of skills rehearsal, learning and problem-solving 'real-world' challenges. It may be that these therapeutic processes effectively mediate the effects of epistemic mistrust and subsequent social dysfunction, resulting in a self-perceived improvement in social relationships.

Participant Satisfaction with Services

Although there was no statistically significant difference in satisfaction with services between the DBT skills training intervention and TAU control groups, all groups reported high levels of service satisfaction. Comparison of this outcome to existing research is challenging, as identified studies of service-user experiences are qualitative investigations, and provide mixed results on the perceived benefit of service engagement. One qualitative study from England (Morris et al., 2014) identified that individuals with BPD often found adult mental health services to be inaccessible and unhelpful, with poor communication and a preoccupation with managing risk. Service experiences were also shaped by protracted and poorly communicated diagnosis, and negative attitudes to BPD by staff. An Australian investigation identified similar themes of individuals experiencing a challenging pathway to diagnosis, miscommunication and complex service pathways, and perceiving specialist treatment services as inaccessible and costly (Carrotte et al., 2018). In a regional Australian context, mental health services are perceived to be limited, inaccessible and isolating (Farmer et al., 2020), low in acceptability, and too visible in small communities, leading to concerns about stigma associated with help-seeking (Fuller et al., 2004). Specific strategies developed to address the challenges of regional mental health service delivery were provided in Table 6 (Chapter V). The developed service model offered specialist intervention for BPD free of cost in participants' local community (reducing the need for regional residents to travel for care).

Participants received a timely and formal diagnostic interview conducted by a psychologist, with sharing of the diagnosis supported by psychoeducation and handouts related to BPD and DBT skills training. Service delivery was provided through clearly delineated pathways by clinicians who had self-selected to contribute to the research program (and thus can be assumed to be open to providing care for those with BPD) and had received recent training in the disorder. Further, the use of broad staff training and DBT crisis management plans for emergency hospital presentations represents a service-level shift away from traditional, risk averse responses to crisis management. These processes were experienced by all participants, regardless of group allocation, and may have contributed to the consistently high satisfaction rating across groups. While in this instance these processes were implemented for research purposes, they may be readily introduced to many clinical settings as part of routine practice and should be considered by services seeking to improve the care of individuals with BPD in future.

Health Services Usage

Results for outcomes related to health services use in the RCT of female participants (Study Two Part II) reflected a statistically significant pattern of modest decreases in service utilisation for intervention group participants in the period following completion of the DBT skills training group, compared to pre-intervention levels. Intervention group participants experienced a 7% reduction in the odds of experiencing emergency mental health hospital presentation, a 9% reduction in the odds of mental health hospital admission, and a 5% reduction in total days of mental health admission. However, there was no statistically significant difference between the intervention and control groups for outcomes related to health services usage. There was no reduction in the number of emergency transfers of care to Adelaide.

These findings are consistent with the previously reported RCT conducted in regional New South Wales mental health services (Carter et al., 2010), which identified statistically non-significant reductions in hospital admissions following a modified DBT intervention. Study Two Part II did not replicate the statistically significant reductions in hospitalisation observed in earlier research (Linehan et al., 1991; Bateman & Fonagy, 2001; Linehan et al., 2006). As posited by Carter and colleagues (2010), this may reflect the shorter (25-week) follow-up period of the current study compared to the 12-18 month periods utilised by Linehan and colleagues (1991) and Bateman and Fonagy (2001). A longer period of follow-up may be required to fully capture the consolidation of learned skills and subsequent impact on independent self-management of distress. An alternative explanation is that the statistically non-significant positive trends toward reduced service usage observed in the research may reflect the under-powered nature of Study Two Part II, with participant numbers limited by the practical realities of time-limited research conducted within a real-world service environment. A larger sample would likely be required to adequately identify statistically significant change.

In regards to emergency mental health presentations, anecdotal evidence from clinicians contributing to the research program noted that, when participants did present to hospital seeking mental health support, they were more likely to do so *before* self-harm had occurred. This may reflect a shift toward adaptive engagement with emergency mental health care based on a planned and supported application of the participants' developed 'DBT crisis management plan' (a collaboratively developed plan for the management of emergency mental health hospital presentations). If so, the outcome of health service usage, while useful for informing the cost benefit of treatment interventions, may be an ineffective metric for adaptive symptom management or self-harm. Future research may consider using both health services usage data, information drawn from participants' weekly DBT diary cards (which

capture both adaptive and maladaptive coping strategies), and qualitative data from treating clinicians, to develop a more complete conceptualisation of the impact of DBT skills training on participants' management of distress.

Dialectical Behaviour Therapy Group Skills Training and Men

Despite evidence indicating that BPD is equally prevalent among men and women (Grant et al., 2008), men have been substantially under-represented in research populations. Male-focussed BPD treatment research is largely absent from the existing literature, and no previous studies have been identified examining DBT skills training as a standalone treatment for men with BPD in clinical settings. The current research responds to this paucity by examining the effectiveness of standalone group DBT skills training delivered in a men-only intervention group (Study Three). Further, the developed treatment model seeks to address identified barriers to service access for men with BPD, and particularly men in a regional context, by adapting the approach for male populations (Goodman et al., 2010) to improve service acceptability (Fuller et al., 2004), reduce stigma (Farmer et al., 2020) and support help-seeking (Caldwell et al., 2004).

Results of the pre-post comparison of male participants indicate a statistically significant reduction in BPD-related symptomology, with average BSL-23 scores reducing from *high* to *mild* following DBT skills training. This finding is broadly consistent with limited previous research which indicates moderate reductions in borderline-related symptoms in men following DBT interventions (Spitxer et al., 2019; Wetterborg et al., 2020), and improved emotion regulation and distress tolerance in young men following standalone DBT skills training (Anestis et al., 2020). Examination of the impact of DBT skills training on self-reported quality of life identified statistically significant improvement for the social relationships domain (which includes personal relationships and social support) only, and no

significant improvement in the domains of physical health, psychological health or environment. This finding has been considered above in light of previous research findings and Luyten et al.'s (2020) social communicative explanatory model. With regard to participant satisfaction with services, CSQ-8 scores indicated an average high level of satisfaction among male participants. This finding is consistent with that of Wetterborg et al. (2020), who reported high levels of satisfaction among men following a one year DBT program in an outpatient mental health service in Sweden.

As explored previously, both DBT and the biosocial model were largely developed from Linehan's (1993) work with women with BPD. Further, men demonstrate gender-specific patterns of clinical presentation and symptom expression, particularly higher rates of 'externalising' behaviours such as anger and aggression (Bayes & Parker, 2017; McCormick et al., 2007). Neuroimaging studies have also identified gender specific differences in BPD (Soloff et al., 2008; 2005). Such gender difference should prevent assumption about the transferability of treatment interventions between sexes. The current research findings are important in indicating that DBT skills training may be effectively deployed as a treatment for men with BPD, and that the approach is not only effective among more thoroughly researched female populations.

Participant Retention

The current research did not explicitly examine participant dropout as on outcome of interest. However, of the female RCT participants, three (18%) from the control group and six (35%) from the DBT skills training group ceased to engage and were lost to follow-up. A 25% dropout rate (three individuals) was observed among men completing DBT skills training. This is largely consistent with the 38% and 39% dropout rates from standalone DBT skills training reported by Lyng et al. (2020) and Linehan et al. (2015) respectively, and is

considerably lower than the 51% described by Blackford and Love (2011). Dropout rates in the current research are also similar to those described in published RCTs of standard DBT, with meta-analysis of 40 studies identifying an average dropout rate of 28% (Dixon & Linardo, 2020). Lyng and colleagues (2020) suggest that standalone DBT skills training may experience relatively higher dropout due to the lack of 'dropout-blocking' strategies, such as regular individual therapy sessions with ongoing monitoring of motivation, which are seen in the standard DBT protocol. The importance of 'in-system' individual contact in supporting treatment adherence through improved coordination and collaboration between treating clinicians is also posited by Harley et al. (2007). This explanation is unlikely to apply to the current research, which embedded group DBT skills training within the broader mental health service, requiring participants to maintain minimum fortnightly contact with individual care coordinators and implementing strategies to support collaboration and consistency between service providers. In light of the lower dropout rate observed among the TAU participants, it may be that the highly structured group program and expectations of participants (such as regular weekly attendance, completion of homework and open disclosure of challenges and progress), may create a more challenging service engagement experience than the relatively less structured TAU approach. Future qualitative investigation of the experiences of standalone DBT skills training participants would provide greater insight in this regard.

Strengths of the Research

The current research overcomes many of the limitations noted in previous investigations of DBT skills training as a treatment for BPD. The use of a clinical setting, with the intervention delivered by existing clinicians rather than expert clinicians or researchers, supports the generalisability of findings to real-world mental health services. While previous investigations had no, or relatively weak, TAU control groups (such as non-comparable training, supervision and monitoring of clinicians between conditions) (Robins &

Chapman, 2004), this research employed a robust RCT design with ITT analysis, comparing DBT skills training to high-quality standard care. This approach enhances internal validity. The research offers empirical evidence supporting DBT skills training as an effective treatment for men with BPD, a focus lacking in previous research (Stoffers et al., 2012). Finally, the research included data on broad outcomes that went beyond symptomology, employing self-report measures of quality of life and satisfaction with services. This addresses the tendency of previous investigations to focus primarily on symptomatic remission and psychosocial functioning (Ng et al., 2016) and considers the self-perceived recovery journey of participants.

Limitations of the Research

There are limitations to the research. Study Two was adequately powered to demonstrate significant changes in the primary outcome of BPD-related symptomology, with power calculations based on previous, unpublished pilot data. Assumption underlying these calculations were also consistent with the Kleindienst et al. (2020) classification of symptom severity for the BSL-23 and associated standard deviation. However, Study Two Part II was underpowered, which is likely to have contributed to non-statistically significant positive findings related to health services use. The small sample size reflects the complexity of conducting research in a real-world clinical setting, with participants with complex mental health problems associated with relatively chaotic daily lives. Study Three was similarly underpowered, with sample size limited by the small number of men with BPD receiving care within the community mental health service.

Several extraneous factors are related to the introduction of research to a clinical setting. Namely, the training delivered to community mental health and local hospital emergency staff led to a broad upskilling of clinicians across the service. This resulted in a

higher-quality TAU control condition, where individuals received care by clinicians with knowledge of BPD and therapeutic approaches superior to those present prior to the research project. This consideration is consistent with the assertion by Delima et al. (2020), that the presence of an RCT in a public health setting may act as an educational intervention, with staff training likely to enhance care. In the current research this may have minimised the statistical significance of differences between groups, and contributed to favourable findings in the control participants. While alternative study designs (such as a matched control to a comparable regional site) were considered, such approaches would not have been as rigorous as the 'gold-standard' RCT.

It should also be noted that the author was intimately involved in the development of the intervention and associated model of care. Although the author was not involved in the delivery of the intervention, independent replication studies are needed to test the reliability of the findings. To support future replication of the research, or implementation of the developed model of care, a comprehensive manual has been developed by the author containing all required group materials (program overview, handouts, worksheets, DBT diary card, etc.), screening materials, information sheets, staffing training materials including PowerPoint presentations tailored for particular audiences (e.g., community mental health care coordinators, or hospital accident and emergency staff), etc. This manual is available freely from the author and has been provided to mental health services across both regional and metropolitan South Australia upon request.

The research utilised a 25-week follow-up period when analysing health services use. This period is consistent with that employed in previous investigations in real-world service delivery environments (Carter et al., 2010). However, studies employing longer follow-up periods (e.g., 12 to 18 months as employed by Bateman & Fonagy, 2001; Linehan et al., 1991) have identified larger, statistically significant reductions in health services use. As

such, longitudinal follow-up of 12 months or more may be required to fully capture the consolidation and impact of learned skills and is warranted in future research.

Contributions of the Research

While standard DBT has demonstrated efficacy as a treatment for BPD, implementation research has identified constraints which limit the feasibility of the approach in real-world clinical settings, including the time commitment required, a shortage of appropriately trained clinicians, high staff turnover (Carmel et al., 2014b), financing, resource availability and the perceived difficulty of DBT implementation (King et al., 2018). Findings of the current research offer support for the pragmatic implementation of standalone group DBT skills training in public mental health settings, with a developed service model which overcomes many of these identified challenges. The manualised intervention was effectively delivered by generalist mental health clinicians from a range of disciplines, following easily accessible and low-cost online and in-house training. No additional staffing or resources were required beyond that already available within the service. Finally, the intervention model was consistent with NHMRC (2012) recommendations for effective management of BPD, and employed specific strategies (such as the use of DBT crisis management plans) to support strong communication and collaboration between service providers and consumers. As such, the current research offers a potential solution to the feasibility challenges of standard DBT, applying standalone group DBT skills training to achieve outcomes moderately superior to TAU.

As previously discussed, men with BPD have been substantially under-represented in research populations (Grant et al., 2008) and no previous studies have been identified examining DBT skills training as a standalone treatment for men with BPD in clinical settings. Gender specific differences in the clinical presentation, symptom expression (Bayes

& Parker, 2017; McCormick et al., 2007) and neurobiological underpinnings of BPD (Soloff et al., 2008; 2005) prevent assumption about the transferability of treatment interventions between the sexes. The current research responds to the paucity of male-focussed BPD treatment research and offers modest evidence supporting the effectiveness of standalone group DBT skills training as a treatment for men.

Feasibility of Standalone Dialectical Behaviour Therapy Skills Training in Regional Mental Health Services

The current research sought to examine the effectiveness of standalone group DBT skills training as a feasible treatment for BPD in regional community mental health. Challenges of the regional mental health service landscape, and the strategies developed to overcome these, are detailed in Chapter V (see Table 4). Rural communities experience acute challenges in accessing specialist care for BPD, including shortages of mental health clinicians (Fuller et al., 2004), funding challenges (AIHW, 2016) and high levels of unmet need (Fuller et al., 2004; NRHA, 2017). Further, services in country areas are perceived to be inaccessible (Perkins et al., 2013; Veitch, 1995), low in acceptability (Fuller et al., 2004) and stigmatised, with a reliance on hospital admissions to manage mental health problems (Farmer et al., 2020). The developed intervention model included specific strategies to address each of the identified challenges of regional mental health service delivery, offering evidence-informed, specialist care for BPD delivered by generalist clinicians, in the local community and at no cost to participants. Integration into existing mental health services, and strategies such as broad staff training and the use of DBT crisis management plans for hospital presentations, promoted collaboration and encouraged supported (adaptive) self-management of distress. A men-only DBT skills training group, facilitated by a male clinician with content adapted for gender relevance, encouraged engagement by rural men, who are less likely to seek help for distress and are at increased risk of suicide (Caldwell et

al., 2004; Tudiver & Talbot, 1999). The intervention required no additional funding, making the approach achievable for resource-limited country health services. Further, there was no increase in staffing cost or allocation, rather a refocussing of clinical attention toward intervention and away from reactive crisis management. In the two-year course of the research, six DBT skills training groups (four female-only and two male-only) were delivered in the regional city of Mount Gambier. Results indicate improved outcomes for consumers across a range of areas, including reduced BPD-related symptomology and high levels of satisfaction. As such, the research can be considered to demonstrate the potential utility of this approach for feasible implementation in regional public health settings, and can be readily implemented at scale within established services.

Progress in the Treatment of Borderline Personality Disorder

Although DBT was the first psychological therapy found to demonstrate strong efficacy in the treatment of BPD, a range of specialist approaches have since been shown in RCTs to be similarly effective. Therapies developed from a cognitive-behavioural perspective including SFT (Young et al., 2003) and STEPPS (Blum et al., 2008) as well as psychodynamically-informed approaches such as MBT (Bateman & Fonagy, 2004) and TFP (Clarkin et al., 2006) are now considered to be empirically supported (see Chapter I). Metanalyses comparing specialist treatments for BPD have shown minimal difference between approaches (Levy et al., 2018; Stoffers et al., 2012), and none are any more or less efficacious than DBT (Cristea et al., 2017; Lieb et al., 2004). All the approaches are highly specialised, requiring extensive clinician training and rigorous adherence to manualised treatment interventions.

These specialist approaches differ in their theoretical foundation and formulation of BPD. However, comprehensive comparisons of the treatments have identified that the

approaches are substantially more similar than different, in regards to the characteristics of treatment and the therapeutic techniques employed (de Groot, Verheul & Trijisburg, 2008; Weinberg et al., 2011), suggesting that common factors may underpin successful outcomes. This recognition is important for several reasons. First, it repositions BPD away from historical perspectives of the diagnosis as 'difficult to treat' (Dahl, 2008). BPD is not only treatable, but clinicians have a variety of treatment approaches from which to choose. Second, the rigorous adherence to complex manualised treatment approaches that limit 'generalist' clinicians from providing specialist care is likely not required to achieve positive outcomes (Choi-Kain, 2020; Choi-Kain, Albert & Gunderson, 2016). As indicated by the current work, in addition to research by Harley et al. (2007), Lee et al. (2021) and Lyng and colleagues (2020), pragmatic, flexible approaches to BPD, adapted to suit clinical populations and service delivery environments, are not only adequate but desirable. Such approaches require less specialist clinical training, fewer resources, and may be more readily integrated within existing mental health services, making effective treatment available to more individuals with BPD.

Recommendations for Future Research

Several areas for future research have been identified. Future examination of the impact of standalone group DBT skills training on health services usage would benefit from a larger sample and therefore more statistical power. Further, longitudinal follow-up of 12 to 18 months, as employed by Linehan et al. (1991), is recommended to fully observe the consolidation of learnt skills and resulting impacts on psychological wellbeing and service use. While the current study included quantitative measures of self-reported quality of life and satisfaction with service, qualitative investigation comprising participant interviews would allow a more nuanced understanding of the experiences and recovery journey of individuals. The insights offered would hold significant value for improving and refining the

developed intervention model. As noted in Chapter I, clinician attitudes toward BPD are often defined by hopelessness, fatigue, stigma and social rejection. The current study did not examine the impact of the intervention approach on clinician attitudes. Qualitative investigation of the effect of group DBT skills training on the attitudes of treating clinicians is also recommended in future research.

The current research integrated standalone DBT skills training into the existing community mental health service, and treatment was available only to those individuals receiving care within this system. As the community mental health service provides support to those with complex and severe mental health challenges, this restricted access to those individuals with BPD experiencing considerable distress and impairment as a result of the diagnosis. Many of these individuals had experienced many years of suffering due to BPD prior to commencing DBT skills training. As explored in Chapter I, empirical evidence increasingly supports the conceptualisation of BPD as a lifetime developmental disorder with onset occurring during adolescence (Chanen & Kaess, 2012; Sharp & Fonagy, 2015). In order to minimise the harms and disability experienced by those with BPD, future research should explore the application of standalone DBT skills training and other pragmatic approaches in an early-intervention context.

Most recently, the global COVID-19 pandemic has impacted research investigating DBT-based approaches for the treatment of BPD. As service accessibility was restricted by lockdowns and isolation measures, researchers and clinicians began to explore innovative digital solutions to deliver care to those with BPD. Researchers have now begun publishing preliminary but promising outcomes from DBT-informed therapies delivered by videoconference and phone (Salamin et al., 2021), and internet (Vasiljevic et al., 2022). In South Australia, both metropolitan and regional DBT skills training groups rapidly pivoted to videoconference modalities in 2020 and 2021. While noting challenges arising from the new

approach, regional mental health clinicians anecdotally reported that the digital platform increased service access for some consumers, particularly those who lived most remotely from local service hubs. Digitally-based therapeutic approaches may offer benefit within regional mental health service landscapes, potentially increasing accessibility and improving noted challenges of workforce paucity and maldistribution, and service visibility and stigma. As such, future research exploring the effectiveness of standalone group DBT skills training in a digital context may be desirable.

Services for Borderline Personality Disorder in South Australia: An Update

In response to the 2018 recommendations of deputy state coroner Jayne Basheer (see Chapter V, p. 114), the South Australian state government committed $13 million to the development of an evidence-based, statewide system of care for individuals with BPD (Kent & O-Sullivan, 2019). The tender to deliver this project was won by CHSALHN Mental Health (now Rural and Remote Mental Health Services). The Borderline Personality Disorder Centre of Excellence, later renamed the Borderline Personality Disorder Collaborative (BPD Co) to highlight the importance of collaboration between service providers and those with a lived experience of BPD, officially launched on 7th June 2019. Staffed by a psychiatrist, psychologists, social workers, occupational therapists, mental health nurses, lived experience staff and research clinicians, BPD Co is working to deliver improved, evidence-based interventions for individuals with BPD. Located in metropolitan Adelaide, BPD Co has adopted a stepped model of care delivered via a hub and spoke service model, with the aim to provide high-quality, individually tailored services to those who need them across South Australia, including in rural and regional areas (Kent & O'Sullivan, 2019). At the time of writing, BPD Co provides care to rural consumers via digital (videoconferencing) group programs from a variety of therapeutic modalities (DBT, SFT, common factors), shared care

with regional community teams, and training of local mental health clinicians to deliver enhanced specialist care, including 'the Gold Card SA[17]' brief intervention clinic.

At the time of writing, in-person standalone DBT skills training groups are available intermittently in community mental health services in a small number of regional locations in South Australia, including Mount Gambier. In recent years, staff shortages in public mental health have worsened, while demand for services has strongly increased (in part due to the psychological impacts of the COVID-19 pandemic). In country South Australia, limited availability of local staff remains the primary barrier to the delivery of treatment services for individuals with BPD.

Conclusion

This research supports the pragmatic application of group DBT skills training as a specialist treatment for BPD in regional public mental health services. The systematic review of DBT 'dismantling' studies provides modest, preliminary evidence for the use of DBT skills training as a standalone treatment for BPD in real-world clinical settings. Pragmatic integration of a 25-week DBT skills training group into community mental health services in regional South Australia produced statistically significant reductions in BPD-related symptoms, and modest improvement in quality of life, in both male and female participants. The developed treatment model sought to address factors which limit the feasibility of standard DBT in clinical service environments, and included specific strategies to address known challenges to mental health service delivery in the regional context. The research overcame several of the limitations of earlier studies, utilising a robust design and real-world clinical setting, supporting the generalisability of findings. Outcomes of the current and

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[17] Gold Card SA is an assessment and brief intervention clinic delivered by general mental health staff, based on an approach developed by *The Project Air Strategy for Personality Disorders* in New South Wales.

previous research suggest that rigorous adherence to complex manualised interventions may not be necessary to achieve positive outcomes for individuals with BPD. The current research advances the examination of 'pared-down' treatment approaches for the BPD, and supports the practical and flexible adaptation of evidence-based approaches to suit clinical care environments and rural settings.

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Appendix A

Systematic Review Protocol

1. **Review Title.**

    Dismantling Dialectical Behaviour Therapy: A Critical Review of the Literature.

2. **Original language title.**

    N/A

3. **Anticipated start date.**

    1st February 2022

4. **Anticipated completion date.**

    30th June 2022

5. **Stage of review at time of this submission**

6. **Named contact**

    Brooke Packham

7. **Named contact email**

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8. **Named contact address**

9. **Named contact phone number**

10. **Organisational affiliation of the review**

    University of Adelaide

11. **Review team members and their organisational affiliations.**

    Professor Deborah Turnbull, University of Adelaide

    Dr Kate Gunn, University of South Australia

12. **Funding sources/sponsors.**

    N/A

13. **Conflicts of interest.**

    The authors declare that they have no known conflicts of interest.

14. Collaborators.

Nil.

15. Review question.

Which of the Dialectical Behaviour Therapy treatment components are most beneficial for treating Borderline Personality Disorder in adults?

16. Searches.

The search will include all English-language, peer-reviewed research published since 1993 on the Scopus, PsychInfo, CINAHL Plus, EMBASE and PubMed databases. Unpublished studies will not be sought.

17. URL to search strategy.

The search strategy for PubMed is provided as an example:

Borderline Personality Disorder	Dialectical Behaviour Therapy
"Borderline personality disorder"[mh] OR Borderline Personality Disorder*[tw] OR BPD[tw]	"Dialectical behavior therapy"[mh] OR Dialectical Behavior Therap*[tw] OR DBT[tw] OR Dialectical Behaviour Therap*[tw] OR dialectical behavioural treatment*[tw] OR dialectical behavioral treatment*[tw] OR dialectical behavior treatment*[tw] OR dialectical behaviour treatment*[tw]

18. Condition or domain being studied.

Borderline Personality Disorder, according to standard diagnostic criteria, with or without comorbidities.

19. Participants/population.

Inclusion: Adults who met standard diagnostic criteria for Borderline Personality Disorder and completed at least one component of the Dialectical Behaviour Therapy treatment protocol, as per Linehan's (1993; 2014) manuals.

Exclusion: Children below 18 years of age.

20. Intervention(s), exposure(s).

Any one of the four components of Dialectical Behaviour Therapy (DBT; Linehan, 1993; 2014), 1) individual therapy; 2) group skills training; 3) 24-hour telephone coaching 4) therapist consultation team (standard DBT), either individually or in conjunction with each other.

21. Comparator(s)/control.

Any one of the four DBT components, either individually or in conjunction, or standard DBT.

22. Types of study to be included.

Inclusion: Quantitative studies only.

Exclusion: Editorials / reviews, opinion pieces, abstracts from conferences.

23. Context.

Studies of Dialectical Behaviour Therapy treatment delivered in either inpatient or outpatient settings, including both clinical and research environments.

24. Main outcome(s).

Impacts on borderline-related symptomology, including non-suicidal self-injury and suicide attempts, using any relevant measure during any time period.

25. Additional outcome(s).

Quality of life, participant satisfaction, substance use, health services usage, participant drop-out.

26. Data extraction (selection and coding).

Study selection: The primary investigator (the named contact) will apply eligibility criteria and select studies for inclusion in the systematic review. Titles and abstracts will be reviewed in the first stage, followed by full text articles in the second stage. A second reviewer will independently check a subsample at both stages. Researchers will not be blinded to each other's decisions. Disagreement will be resolved by discussion among the researchers. The study selection process will be recorded using Covidence.

Data extraction: Data to be extracted from study documents includes information about study design, methodology, participant demographics and baseline characteristics, outcome measures and effect. The primary investigator will extract data and a second reviewer will check a subset of the extracted data. Disagreements will be resolved by discussion among the researchers. The data selection process will be recorded using Covidence. Only published data will be extracted. Study investigators will not be contacted for additional details.

27. Risk of bias (quality) assessment.

The Mixed Methods Appraisal Tool (MMAT) will be applied to assess risk of bias.

28. Strategy for data synthesis.

A narrative synthesis will be undertaken to determine the pattern of outcomes in each study.

29. **Analysis of subgroups or subsets.**

   Not applicable – there will be no analysis by subgroup.

30. **Type and method of review.**
31. **Language.**

   English

32. **Country.**

   Australia

33. **Other registration details.**

   N/A

34. **Reference and/or URL for published protocol.**

35. **Dissemination plans.**

   The completed review will comprise part of a dissertation, which will be submitted to the University of Adelaide library.

36. **Keywords.**

   Borderline personality disorder; component analysis; critical review; dialectical behaviour therapy; dismantling research.

37. **Details of any existing review of the same topic by the same authors.**

   N/A

38. **Current review status.**
39. **Any additional information.**
40. **Details of final report/publication(s) or preprints if available.**

Appendix B

Systematic Review Search Strategy

PubMed:

Borderline Personality Disorder	Dialectical Behaviour Therapy
"Borderline personality disorder"[mh] OR Borderline Personality Disorder*[tw] OR BPD[tw]	"Dialectical behavior therapy"[mh] OR Dialectical Behavior Therap*[tw] OR DBT[tw] OR Dialectical Behaviour Therap*[tw] OR dialectical behavioural treatment*[tw] OR dialectical behavioral treatment*[tw] OR dialectical behavior treatment*[tw] OR dialectical behaviour treatment*[tw]

Embase:

Borderline Personality Disorder	Dialectical Behaviour Therapy
"Borderline state"/de OR "Borderline Personality Disorder*":ti,ab OR BPD:ti,ab	"Dialectical behavior therapy"/de OR DBT:ti,ab OR "Dialectical Behavio* Therap*":ti,ab OR "dialectical behavio* treatment*":ti,ab

CINAHL:

Borderline Personality Disorder	Dialectical Behaviour Therapy
MH "Borderline personality disorder" OR TI ("Borderline Personality Disorder*" OR BPD) OR AB ("Borderline Personality Disorder*" OR BPD)	MH "Dialectical behavior therapy" OR TI (DBT OR "Dialectical Behavio* Therap*" OR "dialectical behavio* treatment*") OR AB (DBT OR "Dialectical Behavio* Therap*" OR "dialectical behavio* treatment*")

Scopus:

Borderline Personality Disorder	Dialectical Behaviour Therapy
"Borderline personality disorder" OR BPD	"Dialectical behavior therapy" OR DBT OR "Dialectical Behavio* Therap*" OR "dialectical behavio* treatment*"

PsycINFO:

Borderline Personality Disorder	Dialectical Behaviour Therapy
Borderline personality disorder.sh OR Borderline Personality Disorder*.mp OR BPD.mp	Dialectical behavior therapy.sh OR Dialectical Behavio* Therap*.mp OR DBT.mp OR Dialectical Behavio* Treatment*.mp

Appendix C

Statewide Implementation Plan
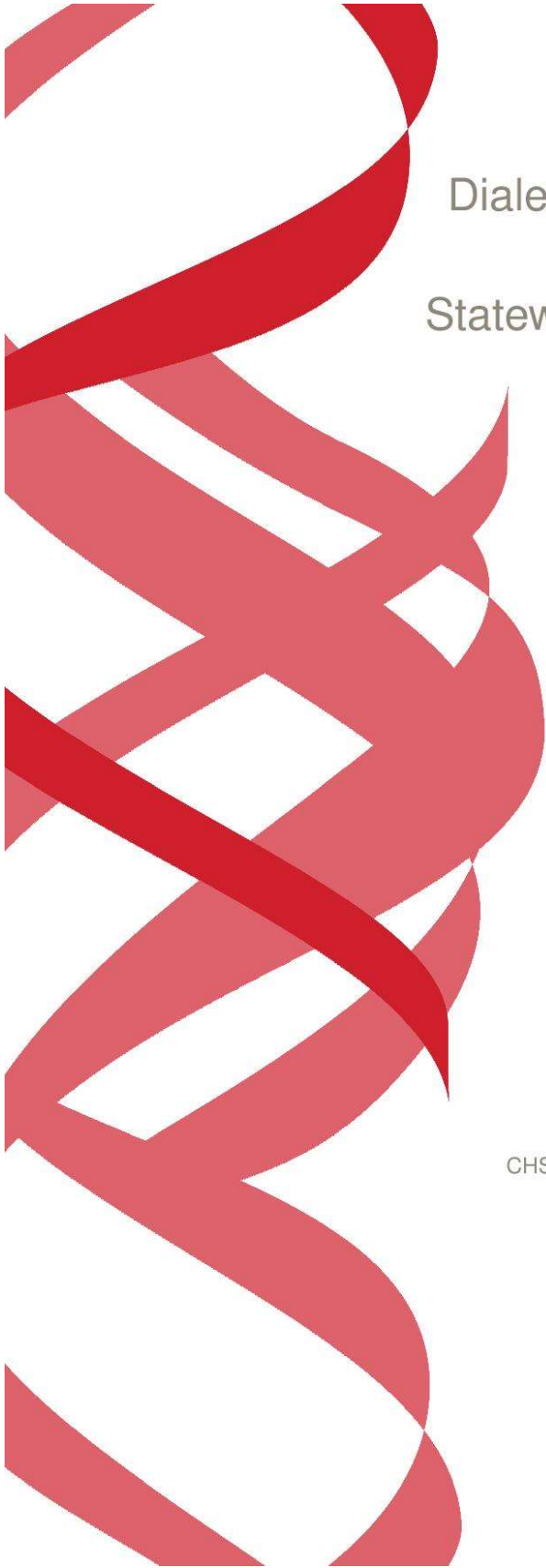
Dialectical Behaviour Therapy Group Skills Training: Statewide Implementation Plan

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November 2016

Government of South Australia
SA Health

Contents

Abbreviations

APA	American Psychiatric Association
BPD	Borderline Personality Disorder
BSL-23	Borderline Symptom List 23-item version
CSQ-8	Client Satisfaction Questionnaire 8-item version
DBT	Dialectical Behaviour Therapy
MSI-BPD	McLean Screening Inventory for Borderline Personality Disorders
NICE	National Institute for Health and Care Excellence
NHMRC	National Health and Medical Research Council

Introduction

BPD is a chronic mental disorder characterised by marked fluctuations in mood, persistent difficulties with emotional regulation and impulse control, poor self-image and high rates of self-harm and suicidal behaviour (Amner, 2012; APA, 2000). The prevalence of the disorder in the community is approximately 1 to 2% (APA, 2000). BPD is the most common personality disorder seen in mental health care settings, with prevalence estimates of 10% for psychiatric outpatients and 20% for inpatients (Lieb, Zanarini, Schmahl, et al., 2004).

Individuals with BPD experience significant emotional and functional impairment (NICE, 2009) and high rates of comorbidity (Hall, Caleo, Stevenson et al., 2001). Between 60 and 70% of people with BPD attempt suicide at some point in their life, with rates of completed suicide estimated to be approximately 10% (Oldham, 2006).

Historically, BPD has been associated with high rates of treatment failure (Amner, 2012) and extensive service utilisation, resulting in substantial costs to health services (Bender, Dolan, Skodol et al., 2004). Of the highest users of inpatient psychiatric services, 40% receive a diagnosis of BPD (Linehan, Comtois, Murray et al., 2006). Further, individuals with BPD commonly seek help repeatedly and from multiple providers simultaneously (Dimeff & Koerner, 2007).

Recommendations for the management of BPD

National Australian guidelines for the treatment and management of BPD are provided by the NHMRC (2012) *Clinical Practice Guideline for the Management of Borderline Personality Disorder*. Key recommendations include:

Recommendation 38: Health professions at all levels of the healthcare system and within each type of service setting should:

- acknowledge that BPD treatment is a legitimate use of healthcare services

- be able to recognise BPD presentations

- be aware of general principles of care for people with BPD and specific effective BPD treatments

- provide appropriate care (including non-specific mental health management, specific treatments for BPD and treatment for co-occurring mental illness) according to their level of training and skill

- refer the person to a specialised BPD service or other services as indicated

- undertake continuing professional development to maintain and

enhance their skills.

Recommendation 8: People with BPD should be provided with structured psychological therapies that are specifically designed for BPD, and conducted by one or more adequately trained and supervised health professionals.

Recommendation 11: Medicines should not be used as primary therapy for BPD, because they have only modest and inconsistent effects, and do not change the nature and course of the disorder.

Recommendation 31: The majority of a person's treatment for BPD should be provided by community-based mental health services (public and private).

Dialectical Behaviour Therapy for BPD

Over the past two decades, a growing body of research has examined the efficacy of psychological approaches to the treatment of BPD. The strongest empirical evidence has been demonstrated by Dialectical Behaviour Therapy (DBT), a cognitive behavioural therapeutic approach incorporating skills training in deficit areas (e.g., emotional regulation and interpersonal effectiveness).

Following significant examination by randomised controlled trials, DBT has been shown to be effective in reducing suicidality and inpatient admissions, among other key outcomes (Carmel, Rose & Fruzetti, 2014). DBT is now considered the standard recommended treatment for BPD (McMain, Links, Gnam, et al., 2009), and is endorsed by the NICE (2009) clinical practice guidelines.

However, the complete DBT protocol requires treatment be delivered via five modalities: individual therapy, group skills training, 24 hour phone access to the primary therapist, case management and a consultation team environment for clinicians. The complete protocol requires intensive, long-term client engagement and highly trained, specialist clinicians. It is therefore difficult to implement in community mental health settings, where there are often limited resources and a shortage of appropriately trained staff (Blennerhassett & O'Raghallaigh, 2005).

Group Skills Training, being of the five DBT treatment modalities, may offer a cost-effective solution to this challenge. DBT Skills Training is manual based, requiring less extensive staff training, and the group setting allows fewer clinicians to service a larger number of mental health clients (Blackford & Love, 2012). Group participants report additional benefits from the group therapeutic environment including the sharing of lived experience with others and intrinsic group processes of support and validation. Two published studies have demonstrated the value of group DBT skills training as an effective treatment in the community mental health setting, when delivered without the complete DBT protocol (Blackford & Love, 2012; Harley, Baity, Blais & Jocobo, 2007).

In 2012, a comprehensive service model for the integration of DBT Skills Training into

community mental health services was developed by CHSALHN Mental Health (South East) (Packham, Turnbull & Fennell, 2016). The program features 25 weeks of group-based DBT Skills Training, designed to address the pervasive emotional dysregulation in BPD and equip participants for life-long, effective self-management. The DBT Skills Training group is combined with community care coordination, psychiatric support and liaison with emergency and after hours care, promoting strong communication between services, consumers and clinicians. Weekly meetings for service providers encourage collaborative care planning, consistent clinical responses, and smooth care transitions. DBT Crisis Management Plans are collaboratively developed by consumers and key clinicians, and encourage supported self-management as an effective alternative to hospital-based care.

The developed service model has been comprehensively evaluated since its launch in 2013 and is currently the focus of a research collaboration with the University of Adelaide. Excellent outcomes for consumers and services have been observed, including significant reductions in BPD-related symptoms and distress, improved quality of life, high levels of satisfaction with services, and reductions in mental health emergency presentations and hospital admissions (Packham, Turnbull & Fennell, 2016).

This document provides a comprehensive service model, implementation guidelines and recommendations to support the successful adoption of the DBT Skills Training program in CHSALHN Mental Health services across regional South Australia.

REFERRAL

Care coordinator and consumer discuss the BPD diagnosis and the DBT Skills Training group. Discussion to be supported by provision of information handouts: *Borderline Personality Disorder* and *Dialectical Behaviour Therapy (DBT) Skills Training Group*.

Consumer and care coordinator collaboratively complete the *Referral to DBT Skills Training Group*, including the *Borderline Personality Disorder Diagnostic Summary* and the *McLean Screening Instrument (MSI-BPD; Zanarini et al. 2003)*.

Care coordinator presents referral for consideration at Mental Health Clinical Meeting.

SCREENING

Clinical psychologist undertakes pre-group screening including: *Structured Clinical Interview for the DSM-5 Personality Questionnaire* and *Borderline Symptom List – 23 item version (BSL-23)*. Consumer and clinical psychologist discuss the BPD diagnosis and the DBT Skills Training Group, including treatment goals and expectations.

ACTIVE GROUP ENGAGEMENT

Care Coordinator

Minimum fortnightly contact. Responsible for collaborative development of *DBT Crisis Management Plan*. Care coordinator maintains all routine responsibilities, to be delivered in accordance with DBT therapeutic assumptions and treatment principles.

DBT Skills Training Group

25 x 2 hour weekly skills training groups, consisting of Mindfulness, Interpersonal Effectiveness, Emotion Regulation and Distress Tolerance.

ETLS

Provides 24 hour telephone-based crisis support. Care provided is guided by *DBT Crisis Management Plan*. Notification of all contacts to care coordinator and DBT group facilitators via Mental Health triage.

Local Hospital Accident and Emergency

Emergency presentations managed in accordance with *DBT Crisis Management Plan*. Notification of all contacts to care coordinator and DBT group facilitators via Mental Health triage.

Care coordinators and DBT facilitators attend weekly DBT Team Meetings for peer consultation and collaborative care

Upon completion of group, care coordinator continues to provide care according to consumer needs, with ongoing care planning and clinical support to reflect developed DBT strategies.

Diagram 1: The DBT Skills Training Group Service Model and Pathway of Care

Dialectical Behaviour Therapy Group Skills Training

DBT Skills Training Group Service Model and Pathway of Care

The DBT Skills Training Group Service Model and Pathway of Care for a currently registered mental health consumer are highlighted in Diagram 1.

Service settings

DBT Skills Training may be considered for implementation in the following service settings (subject to minimum local resources and staffing):

- CHSALHN Integrated Mental Health Units
- CHSALHN Community Mental Health teams with an accessible local hospital Accident and Emergency service.

Participants

Inclusion criteria

DBT Skills Training may be considered for consumers under the following criteria:

- Registered community mental health consumers with an established or suspected BPD diagnosis, or significant emotional dysregulation or distress tolerance challenges.

- Engagement with the program must be voluntary. Clients must not be coerced or compelled to participate. Referring clinicians should assess for any pressure for participation arising from external agencies.

- The consumer must be suitable for effective engagement in a therapeutic group environment.

- The consumer must have sufficient language and literacy skills to effectively comprehend detailed written and verbal instructions, complete homework sheets, and provide verbal description of activities.

- Consumers must agree to adhere to the DBT Skills Training Group guidelines.

Exclusion criteria

Consumers should be offered alternative therapeutic supports where they have:

- Active psychosis, or antisocial or narcissistic personality traits;
- Cognitive impairment or limited language or literacy skills.

Referral procedure

Referral to the DBT Skills Training Group is made by the community mental health care coordinator. Referral remains the responsibility of the care coordinator, including instances where referral has been requested by the treating psychiatrist, or upon discharge from a mental health inpatient unit, etc.

Prior to completing referral documentation, the care coordinator should provide to the consumer verbal and written information about BPD and DBT Skills Training. Relevant referral forms and associated information handouts are available to staff via the wiki. Verbal consent should be sought from the consumer before proceeding.

Where possible, completion of the referral form should be done in collaboration with the consumer, capturing the individual symptom experience in the diagnostic summary and screening instrument.

Completed referral forms should be presented for consideration at the next mental health team clinical meeting.

Assessment process

If a referral for DBT Skills Training is deemed appropriate, each consumer will be individually assessed by the clinical psychologist or appropriately trained delegate. Assessment and screening serve to:

1. Confirm the BPD diagnosis, or the presence of clinically significant emotional dysregulation and / or distress tolerance difficulties;

2. Identify any narcissistic or antisocial personality traits, cognitive deficit or language / literacy challenges that would preclude participation in group;

3. Expand the consumer's understanding of their diagnosis, and provide conceptual links between the primary deficits experienced in BPD and the capabilities acquired through DBT Skills Training;

4. Ensure that consumers are aware of, and prepared to comply with, DBT Skills Training Group guidelines.

Assessment comprises administration of the following instruments:

1. Structured Clinical Interview for the DSM-5 (First, Williams, Karg & Spitzer, 2015)

2. Borderline Symptom List - 23 item version (BSL-23; Bohus et al., 2009)

At the completion of the assessment process, consumers should be provided a 'feedback session' with the assessing clinician. All relevant findings should be communicated in a shared conceptualisation of the consumer's presentation and experience. Clear links should be drawn between identified deficits and distress, and the skills acquisition offered by DBT Skills Training. DBT Skills Training Group guidelines ('group rules') should be reviewed, along with the expectations of, and commitment required by, participants.

In instances where it has been identified that the group DBT Skill Training Group is not an appropriate therapeutic environment for the consumer (i.e., exclusion criteria have been met), the reasons for exclusion should be clearly explained, and an alternative therapeutic support negotiated.

Treatment protocol

DBT Skills Training manual

The DBT Skills Training program should be presented in accordance with the comprehensive manual developed by CHSALHN Mental Health (available electronically and in hard copy). This manual is adapted from Linehan's (2014) *DBT Skills Training Manual Second Edition*, and contains all materials required to deliver the DBT Skills Training group, including the program schedule, facilitator notes, participant handouts and worksheets, etc.

DBT Skills Training program

The DBT Skills Training program should be delivered in two hour sessions over 25 consecutive weeks. The day of program delivery should be chosen to minimise the disruption of public holidays. Content is delivered in four components:

- Mindfulness: Assists participants in learning to focus attention on the present moment, effectively and without judgement.

- Emotion Regulation: Teaches skills to moderate emotions and have more effective emotional experiences. Participants are taught to understand and label emotional experiences, decrease vulnerability to emotional thinking, and overcome mood-dependent actions.

- Distress Tolerance: Teaches participants to accept themselves, emotions and challenging situations, to survive crises and avoid harmful behaviour.

- Interpersonal Effectiveness: Focuses on interpersonal problem solving and effective communication, helping participants to maintain positive relationships and reduce overwhelming emotions.

A weekly schedule for content delivery is presented in the DBT Skills Training manual. This schedule may be altered subject to local conditions. However, the full mindfulness component must be delivered before progressing to other material, due to the foundational nature of the content.

Care coordination and collaborative care

Care co-ordination principles

The DBT Skills Training Group is a therapeutic intervention only and does not reduce involvement by community mental health care coordinators. Care coordinators retain responsibility for care planning and routine data collection, serve as primary contact for consumers and services, and manage episodes of crisis as appropriate. For all DBT Skills Training Group participants, care planning and coordination should be conducted in accordance with DBT principles.

DBT Skills Training Group participants are required to attend minimum fortnightly

appointment with care coordinators. Failure to maintain minimum attendance may result in participants being withdrawn from the program.

Care coordinators are required to attend weekly DBT Consultation Team meetings to discuss consumer engagement, progress and issues as they arise, and to be supported by the team in their consumer interactions.

General principles for effective care coordination of DBT Skills Training group participants include:

- Good access to services

- An understanding of BPD and DBT by clinicians

- A non-judgemental stance by clinicians, with acknowledgement and acceptance of the individuals' experience, wants and needs

- Comprehensive assessment (including co-occurring problems)

- An open, empathic and collaborative therapeutic relationship, with an emphasis on optimism, success and autonomy

- Structure and consistency (firm boundaries, managed transitions and endings and non-reactivity to crises or self-harm)

- Focus on case management needs and care planning (including DBT Crisis Management Plan), with a clear breakdown of roles and responsibilities

- Attend to co-occurring psychopathology

- A common team approach with supervision and team support for clinicians

Care planning

Care coordinators supporting DBT Skills Training group participants should develop comprehensive care plans in collaboration with the consumer (and carers where appropriate), consistent with CHSALHN Mental Health requirements. The care plan should:

- Clearly identify the roles and responsibilities of all health and social care professionals involved

- Identify manageable short-term treatment aims and specify steps that the person and others might take to achieve them

- Identify long-term goals, including relating to employment and occupation, that the person would like to achieve, which should underpin the overall long-term treatment strategy (these goals should be realistic, and link to the medium-term treatment aims)

- Develop a crisis plan that identifies potential triggers that could lead to a crisis, specifies self-management strategies likely to be effective and establishes how to access services (including support numbers and crisis services) when

independent management is ineffective

- Be shared with the GP and the consumer.

Risk assessment

Routine risk assessment of DBT Skills Training group participants should:

- Take place as part of a full assessment of the person's needs

- Differentiate between long-term and more immediate risks

- Identify the risks posed to self and others, including the welfare of any dependent children

- Agree explicitly the risks being assessed with the participant and develop collaborative risk management plans that:

    1. Address both the long-term and more immediate risks

    2. Relate to the overall long-term treatment strategy

    3. Take account of changes in personal relationships, including the therapeutic relationship

- Be routinely shared with the DBT Consultation Team.

The DBT Consultation Team

Weekly DBT Consultation Team meetings are provided to support all clinicians contributing to the DBT Skills Training program. Attendance at meetings is compulsory for all DBT facilitators and care coordinators. Other relevant local staff (e.g., Consultation Liaison, interested non-contributing team members) are welcome to attend.

The purpose of the DBT Consultation Team meetings is to:

- Identify and address risks to participant safety and wellbeing;

- Review recent emergency mental health presentations and ETLS contacts by group participants;

- Provide opportunity for collaborative care planning between DBT facilitators and care co-ordinators, to ensure consistent clinician and service responses, and smooth transitions of care;

- Manage operational and business matters relevant to the running of DBT Skills Training group;

- Provide opportunity for peer supervision ('intervision') and collegiate support.

Discharge

Discharge planning

At the completion of the DBT Skills Training Group, ongoing care coordination

requirements should be determined by the individual needs of the consumer. Where discharge from the mental health service is appropriate, it is recommended that a graduated withdrawal of services is considered, in order to ensure maintenance of treatment gains and capacity for effective self-management in the community.

DBT Graduates Group

Local teams may choose to offer a DBT 'Graduates Group' to provide an informal opportunity for past participants to review skills use and problem-solve recent challenges. Held monthly, the DBT Graduates Group is made available to all DBT Skills Training group graduates. Attendees are not required to be registered with the community mental health service and may attend on an informal / 'as needs' basis. The DBT Graduates Group is an excellent opportunity to promote independent and effective self-management in the community without need for formal service engagement.

Managing risks to client safety

Emphasising hospital avoidance and effective self-management

DBT conceptualises BPD as a fully treatable illness, with the inherent assumption that the participant will no longer require mental health services on an ongoing / permanent basis for BPD following successful therapeutic engagement. Throughout treatment, behavioural reinforcement principles are employed to support participants to build capacity for effective self-management of symptoms and distress. For example, group participants will receive more service engagement in response to tangible progress on treatment goals and *not* in response to declining mental state or lack of change. Positive reinforcers are provided in the presence of functional behaviour, while reinforcers are withheld from the participant in the presence of dysfunctional behaviour.

In many service settings, this approach represents a significant departure from the traditional medical approach of providing consumers with increased services when they are most dysfunctional. In DBT, hospitalisation is used minimally and often as a last resort, with considerable effort exerted to keep the participant out of hospital. For most individuals with BPD, hospitalisation does not reduce the risk of suicide and can produce an adverse effect (Paris, 2004). From a DBT perspective, it is essential that participants identify and employ DBT skills to effectively manage the stressors precipitating any crisis episode.

Compared to treatment as usual, the emphasis placed by DBT on hospital avoidance and effective self-management is high-risk. As such, the implementation of DBT Skills Training requires strong protocols around crisis response and management of suicidal behaviour. Central to the DBT Skills Training Program service model is the shared management of crisis episodes, guided by a collaboratively developed DBT Crisis Management Plan, and engaging the consumer, DBT facilitators, care coordinators, local hospital Accident and Emergency and the Emergency Triage Liaison Service (ETLS).

DBT Crisis Management Plan

All DBT Skills Training Group participants must have a DBT Crisis Management Plan, provided to ETLS and the local hospital accident and emergency department *no later than four weeks* after the commencement of the group. The DBT Crisis Management Plan is to be developed collaboratively by the participant and care coordinator. Where local staffing allows, it is desirable for the plan to be reviewed by the Consultation Liaison to ensure usability in the emergency setting. A DBT Crisis Management Plan template is available from the state-wide DBT Coordinator. The completion, quality and implementation of the plans should be monitored by local DBT facilitators via the DBT Consultation Team weekly meetings.

Emergency and after-hours clinical support

Collaborative management of crisis episodes and consistent service responses are essential to the DBT Skills Training Program service model. Group participants will be encouraged to independently implement self-management strategies in response to stressors. In instances where these strategies are ineffective and the care coordinator is unavailable (e.g., outside of business hours), the participant should contact ETLS for brief support to identify and implement appropriate distress tolerance skills. Presentation to local hospital Accident and Emergency should only be considered when other options have proven ineffective and distress remains acute.

Twenty four hour telephone-based support will be available to group participants from ETLS. ETLS clinicians may provide brief coaching to assist individuals to manage their distress. This role should be supported by the prior provision of an individual DBT Crisis Management Plan for each participant, and training for staff on BPD, DBT and crisis management approaches provided by the state-wide DBT Coordinator. Local DBT facilitators should be notified of all ETLS contacts via Mental Health triage.

Emergency mental health presentations to the local hospital Accident and Emergency should be supported by the prior provision of an individual DBT Crisis Management Plan for each participant, and training for staff on BPD, DBT and crisis management approaches provided by the state-wide DBT Coordinator. It is expected that, wherever possible, emergency presentations will be managed in accordance with DBT principles, supporting participants to identify and implement DBT skills. Hospital admission should only be considered where absolutely necessary to ensure the immediate safety of the individual. Local DBT facilitators should be notified of all emergency mental health presentations via Mental Health triage.

Clinical accountability pathway

CHSALHN Mental Health Executive
(Clinical Director / Strategic Director)

CHSALHN Mental Health Allied Health Advanced Clinical Leads
Discipline-specific clinical leadership and supervision

CHSALHN Mental Health Senior Nursing Leads
Discipline-specific clinical leadership and supervision

Regional Director

Team Leader / Network Manager

Statewide DBT Coordinator
Co-ordination and monitoring of DBT Skills Training
Provides expert clinical advice / education / supervision in DBT

Primary DBT Facilitators
Local delivery of DBT Skills Training Group and DBT Consultation Group meetings

ETLS / A&E
Management of after-hours and crisis contacts, as per. DBT Crisis Management Plans

Secondary DBT Facilitators
Local delivery of DBT Skills Training Group and DBT Consultation Group meetings, as required

DBT Care Coordinators
DBT Care Coordination, care planning and comprehensive risk assessment
Development of DBT Crisis Management Plans

KEY

— Operational responsibility

— Clinical responsibility

···· Clinical advice / support

▢ Local DBT Consultation Team

Summary of minimum essential resources per region

Minimum resources that must be available in each region to successfully implement a DBT Skills Training program are detailed below. A comprehensive assessment of the availability of a region to accommodate these requirements is provided in the site specific assessment.

Staffing

- 2 primary DBT facilitators

- 2 secondary ('backup') DBT facilitators

- Minimum of 3 care coordinators to provide support to DBT participants. *NB: It is recommended that secondary DBT facilitators also serve as care coordinators for group participants in order to minimise the number of required staff and increase service efficiency. However, primary DBT facilitators may not provide care coordination services for current group members.*

Infrastructure

- Conference or meeting room of sufficient space to accommodate 6 to 8 group members and 2 DBT facilitators. Rooms must be able to be booked on an ongoing basis, and appropriate for delivering therapeutic interventions (e.g., clear exits, free of noise and distractions, etc.).

- Access to local hospital accident and emergency department for collaborative management of episodes of 'crisis', self-harm and suicidal ideation.

- Approval and support for the program at the team leader, regional director and CHSALHN MH Executive levels.

Professional development requirements

Staff training

Successful implementation of DBT Skills Training demands extensive staff training across disciplines and services, utilising a variety of approaches. Recommendations for minimum appropriate staff training have been designed to promote shared understanding of BPD and DBT, while minimising costs.

	Training format	Cost (approx.)
Primary DBT facilitators	Workshop attendance *Comprehensive DBT Training is desirable, though infrequently available in Australia*	$1000-$3000ea. (*subject to availability*)
Secondary DBT facilitators	BehavioralTech online training *http://behavioraltech.org/ol/details.cfm*	US$399 each
DBT care coordinators	BehavioralTech online training *http://behavioraltech.org/ol/details.cfm*	US$399 each
Community care coordinators *(non-DBT engaged)*	'In-house' presentation *Delivered by state-wide DBT Coordinator, Clinical Senior Psychologist or other appropriately trained staff member*	No cost
Local hospital staff *(Accident & Emergency and inpatient staff)*	'In-house' presentation *Delivered by state-wide DBT Coordinator, Clinical Senior Psychologist or other appropriately trained staff member*	No cost
ETLS	'In-house' presentation *Delivered by state-wide DBT Coordinator, Clinical Senior Psychologist or other appropriately trained staff member*	No cost
Line management / organisational staff	'In-house' presentation *Delivered by state-wide DBT Coordinator, Clinical Senior Psychologist or other appropriately trained staff member*	No cost

All 'in-house' training sessions should be *repeated annually* to minimise the impact of staff turnover and support ongoing professional development of all clinicians. DBT team members (primary and secondary facilitators, and care-coordinators) should seek annual professional development opportunities to promote DBT knowledge and expertise.

Clinical supervision

All primary DBT facilitators must be provided with *DBT-specific* clinical supervision provided by the state-wide DBT Coordinator, Clinical Senior Psychologist, or other appropriately qualified staff member. CHSALHN recommends that clinical supervision sessions occur on a minimum monthly basis. The state-wide DBT Coordinator may bear responsibility for monitoring DBT clinical supervision arrangements.

Critical factors for successful implementation

Several research studies have examined the challenges and solutions to implementing DBT programs in mental health services. A summary of common findings and relevant recommendations are detailed below.

Lack of agency support and investment

Carmel, Rose and Fruzetti (2014) identified a lack of administrative and/or overall agency support and investment to be the most common challenge to effective DBT implementation. Additional concerns included a limited interest among line managers and some clinicians in providing evidence-based care for consumers with BPD.

Recommendations:

- Regions considering implementing DBT Skills Training must complete a *site specific assessment*. This assessment will assist in determining whether DBT fits the capacities and constraints of the local service, considers the level of support among local clinicians and managers for providing evidence-based treatment to consumers with BPD, and assesses the availability of clinical time and staffing.

- Provide training on BPD and DBT to both operational and clinical staff to increase understanding and reduce negative attitudes.

Poor fidelity / model 'drift'

Markstrom (2014) found that the implementation of evidence-based programs in community mental health may be impacted by poor fidelity to the therapeutic model (model 'drift'). Factors contributing to model drift included lack of familiarity with the therapeutic approach among policy-makers, 'soft' governance processes, and selective or incomplete application of the approach to accommodate organisational conditions.

Recommendations:

- Provide training on BPD and DBT to both operational and clinical staff to ensure understanding of the therapy and evidence base.

- Establish clear pathways for clinical accountability and decision-making.

- The state-wide DBT Coordinator may bear responsibility for monitoring model fidelity across participating regions.

Insufficient time commitment for DBT

Clinicians report that DBT demands a burdensome time commitment and can be difficult to manage in conjunction with full caseloads (Carmel, Rose & Fruzetti, 2014). Clinicians were particularly challenged where other clinical responsibilities were not reduced in accordance with DBT involvement.

Recommendations:

- Prospectively agree on dedicated clinical time for DBT (to be negotiated between line manager and clinician)

- Maximise the more flexible use of the time of more skilled DBT clinicians, offering greater efficiency in service delivery.

Challenges with DBT development, staffing and participant recruitment

DBT requires significant clinician training, and insufficient numbers of appropriately trained staff, in addition to high staff turnover, can present a challenge to sustainability (Carmel, Rose & Fruzetti, 2014). Difficulties in developing DBT programs and recruiting participants within the requirements and restrictions of the service setting were also noted.

Recommendations:

- Regions considering implementing DBT Skills Training must complete a *site specific assessment*. This assessment will assist in determining whether DBT fits the capacities and constraints of the local service, considers the level of support among local clinicians and managers for providing evidence-based treatment to consumers with BPD, and assesses the availability of clinical time and staffing.

Inadequate opportunity for consultation

Ongoing consultation between clinicians is essential in order to implement and maintain a DBT program. Inadequate opportunity for case consultation, collaborative care discussion and detailed review of therapeutic techniques, has been identified by clinicians as a challenge to the sustainability of a DBT program (Carmel, Rose & Fruzetti, 2014).

Recommendations:

- Weekly DBT Consultation Team meetings are compulsory for all clinicians contributing to a DBT Skills Training group.

- The state-wide DBT Coordinator may bear responsibility for ensuring the consistent and effective utilisation of the DBT Consultation Team meetings.

- The state-wide DBT Coordinator may periodically hold 'shared' DBT Consultation Team meetings to facilitate collaboration between regions.

'Remote Access' DBT Skills Training

It is considered that some CHSALHN community mental health services with an interest in DBT Skills Training may be unable to meet the minimum essential resources per region (see page 16). Small and isolated teams, or those with relatively fewer registered consumers diagnosed with BPD, may not be able to demonstrate the capacity required by the *site specific assessment* to support the development of a local DBT Skills Training program. As such, it is recommended that, should the DBT Statewide Implementation working party (see *Implementation schedule*, page 21) identify sufficient demand, a

'Remote Access' DBT Skills Training group be considered for development.

The 'Remote Access' DBT Skills Training group is proposed as a statewide program to deliver weekly DBT Skills Training to remote consumers by digital telehealth network (DTN). The principal components of the group are as follows:

- 'Remote Access' DBT Skills Training would be provided by the statewide DBT Coordinator and other appropriately trained staff, according to the treatment protocol outlined in the CHSALHN Mental Health DBT Skills Training manual.

- Participating community mental health teams and local hospital accident and emergency staff would require appropriate 'in-house' training to be delivered annually by the DBT Coordinator or appropriately trained delegate.

- Referrals should be submitted by local care coordinators to the statewide DBT Coordinator. Assessment and screening of participants would be conducted via DTN by the DBT Coordinator or appropriately trained delegate.

- All participants would require local DBT care coordinators and reliable, weekly access to local DTN facilities.

- Local DBT care coordinators would require appropriate online training (see page 17), the support of the local team leader and regional director, and would receive collegiate support through compulsory weekly 'Remote Access' DBT Consultation Team meetings to be held via DTN or telephone.

- Comprehensive risk assessment and safety planning would be of the utmost importance for remote participants. All participants would require a DBT Crisis Management Plan to be placed with ETLS and the nearest local hospital accident and emergency department.

- Remote digital delivery of DBT Skills Training is a previously un-trialled therapeutic approach. Comprehensive evaluation and assessment of participant outcomes, coordinated by the statewide DBT Coordinator, would be essential.

- It is recommended that the coordination, delivery and monitoring of the 'Remote Access' DBT Skills Training group be the responsibility of the statewide DBT Coordinator.

Implementation schedule

The following timetable is a proposal only and is subject to CHSALHN Mental Health Executive review and approval.

30 November 2016 Submission of *DBT Statewide Implementation Plan* to CHSALHN MH Executive for review.

30 January 2017 Distribution of consultation draft of *DBT Statewide Implementation Plan* to CHSALHN MH senior clinical and organisation staff for comment.

24 February 2017 Deadline for comment on consultation draft of *DBT Statewide Implementation Plan*.

31 March 2017 Finalisation of *DBT Statewide Implementation Plan*. Submission to CHSALHN MH Executive for final approval and distribution.

April 2017 Formation of CHSALHN MH DBT Statewide Implementation working party. To be led by statewide DBT Coordinator, if appointed*.

The appointment of the DBT Coordinator is considered essential for the successful completion of the implementation plan within the detailed timeframe.

14 April 2017 Invitation to regional managers and senior clinicians to complete *site specific assessment* to assess viability of developing a local DBT Skills Training program.

19 May 2017 Deadline for MH regional managers to submit completed *site specific assessments* to DBT Statewide Implementation working party.

16 June 2017 Deadline for DBT Statewide Implementation working party to review submitted *site specific assessments* and identify sites for development.

30 June 2017 Deadline for DBT Statewide Implementation working party to notify regional managers of outcome of *site specific assessment* submissions.

DBT Statewide Implementation working party to make determination regarding viability of 'Remote Access' DBT group and commence development, if required.

July – November 2017 Roll-out of regional staff training, to be coordinated by the statewide DBT Coordinator and DBT Statewide Implementation working party. Must include 'in-house' training to regional community mental health teams, regional accident and emergency staff, ETLS clinicians, and line management and organisational staff. Also includes completion of recommended training by DBT facilitators and care coordinators.

January 2018 Local DBT teams to commence recruitment and screening of DBT Skills Training group participants.

January 2018   Negotiation of commencement dates for regional DBT Skills Training groups. Commencement dates should be staggered across regions to maximise efficiency and opportunities for learning.

February 2018   Appointment of clinical supervisors / establishment of formal DBT-specific clinical supervision arrangements.

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Appendix 1: Site Specific Assessment

DBT Skills Training Group Regional Site Specific Assessment

Site Specific Assessment is a requirement for regions within CHSALHN Mental Health seeking the development of a local DBT Skills Training Group. It involves assessing the suitability of the resources at the site at which the DBT Skills Training Group is proposed, and whether they are sufficient to ensure the satisfactory conduct of the program.

See (INSERT WIKI LINK) for further information on how to complete this form.

The Site Specific Assessment should be completed by the Team Leader and Network Manager and submitted to the DBT Coordinator (INSERT CONTACT EMAIL) for consideration by 19 May 2017.

1. Site	
	Please specify whether the site is an Integrated Mental Health Unit or has access to a local hospital accident and emergency:
2. Proposed DBT Consultation Team	**Primary DBT Facilitator 1** Name: Discipline: **Primary DBT Facilitator 2** Name: Discipline: **Secondary DBT Facilitator 1** Name: Discipline: *Will the clinician also serve as a DBT Care Coordinator?* **Secondary DBT Facilitator 2** Name: Discipline: *Will the clinician also serve as a DBT Care Coordinator?* **DBT Care Coordinator 1** Name: Discipline: **Additional DBT Care Coordinators:**

3. Room Availability	*Please describe nature and accessibility of meeting room space:*
4. Line Management Support	*Does the DBT Skills Training Group have the full support of the Team Leader, Network Manager and Regional Director?*
5. Clinical Demand	*Please detail the likely clinical demand for the DBT Skills Training Group. This may include approximate number of registered clients with BPD or significant emotion dysregulation challenges, and / or average clinical time spent on this client group, including management of crisis episodes:*
6. Clinical Commitment	A prospective agreement on dedicated clinical time for DBT must be negotiated between the line manager and each DBT clinician. Recommended minimum allocations of clinical time are available on the wiki (INSERT LINK). *Please detail the approximate percentage of FTE each member of the DBT Consultation Team will dedicate:* **Primary DBT Facilitator 1:** **Primary DBT Facilitator 2:** **Secondary DBT Facilitator 1:** **Secondary DBT Facilitator 2:** **DBT Care Coordinators:**

7. Remote Access DBT	*Please detail interest in utilising a 'Remote Access' DBT Skills Training Group, if available (see wiki for further information):*
8.	*Any other comments, requests or suggestions:*
9. Signatures	**Team Leader**…………………………………………………. **Network Manager**…………………………………………… **Regional Director**……………………………………………

Appendix D

Participant Information and Consent Form

Government of South Australia

SA Health

Participant Information Sheet / Consent Form
Health / Social Science Research – Adult providing own consent

Title:	**Effectiveness of Dialectical Behaviour Therapy Group Skills Training for Borderline Personality Disorder in Community Mental Health**
Project Sponsors:	**Country Health SA Local Health Network (CHSALHN) Mental Health The University of Adelaide**
Principal Investigator:	**Brooke Packham**
Research Supervisors:	**Professor Deborah Turnbull, The University of Adelaide Dr Kate Gunn, Flinders University**
Location:	**Mount Gambier Community Mental Health Wehl Street North, Mount Gambier SA 5290**

Part 1 What does my participation involve?

1   Introduction

You are invited to take part in this research project, which is called *Effectiveness of Dialectical Behaviour Therapy Group Skills Training for Borderline Personality Disorder in Community Mental Health*. You have been invited because you are a registered consumer of CHSALHN Mental Health services with an established or possible diagnosis of Borderline Personality Disorder. Your contact details were obtained from your Mental Health Case Manager.

This Participant Information Sheet/Consent Form tells you about the research project. It explains the processes involved with taking part. Knowing what is involved will help you decide if you want to take part in the research.

Please read this information carefully. Ask questions about anything you don't understand or want to know more about. Before deciding whether or not to take part, you might want to talk about it with a relative, friend, or local health worker.

Participation in this research is voluntary. If you don't wish to take part, you don't have to.

If you decide you want to take part in the research project, you will be asked to sign the consent section. By signing it you are telling us that you:

•   Understand what you have read
•   Consent to take part in the research project
•   Consent to be involved in the research described
•   Consent to the use of your personal and health information as described.

You will be given a copy of this Participant Information and Consent Form to keep.

2   What is the purpose of this research?

The aim of the research project is to examine the effectiveness of Dialectical Behaviour Therapy (DBT) skills training for improving symptoms and functioning in individuals with Borderline Personality Disorder. Borderline Personality Disorder is the most common personality disorder seen in mental health services. Individuals with Borderline Personality Disorder often experience significant emotional and functional impairment. Historically, Borderline Personality Disorder has been associated with high rates of treatment failure and service utilisation.

DBT is an evidence-based, cognitive behavioural intervention for Borderline Personality Disorder. The complete DBT treatment protocol requires intensive, long-term consumer engagement and highly trained specialist clinicians. As such, it is difficult to implement in community mental health settings. Group skills training is one aspect of the DBT treatment protocol that may offer a cost-effective solution to this challenge. This research project aims to examine the effectiveness of DBT group skills training in community mental health for improving symptoms and functioning in individuals with Borderline Personality Disorder.

The results of this research will be used by the researcher, Brooke Packham, to obtain a Doctor of Philosophy degree from The University of Adelaide.

3   What does participation in this research involve?

Consent form

All participants will be asked to sign a consent form before any assessments for the research project are undertaken.

Screening procedures

If you decide to take part in the research project, you will first undertake an assessment with a psychologist, asking questions about your mental health and symptoms of Borderline Personality Disorder; this will determine if you are eligible to take part. Completing the assessment will take approximately two hours.

If the screening assessment shows that you meet the requirements, then you will be able to start the research project. If the screening questionnaire shows that you cannot be in the research project, the research coordinator will discuss other options with you.

Randomisation and the use of a control group (female participants only)

All female participants will be randomly allocated to one of two treatment groups. The first treatment group (the 'intervention' group) will undertake the DBT skills training group from January until June. The second treatment group (the 'control' group) will receive treatment as usual from Mental Health services and will undertake the DBT skills training group from June until December. The use of a control group allows the researcher to examine how effective DBT group skills training is when compared to treatment as usual.

Male participants will not be randomly allocated. As fewer male participants are expected to take part, all male participants who are eligible and wish to participate will commence DBT group skills training in January.

Procedures

> *The DBT Skills Training Group*

The DBT Skills Training Group is a 25 week program designed to teach the skills necessary for you to establish stability in your life. The group is led by two DBT facilitators and runs for 2 hours each week with a short tea/coffee break. The focus of the group is skills acquisition – it is not a 'process group' to discuss feelings or recent distressing episodes. Homework is required to assist you in practicing new skills and monitoring your progress.

> *The DBT Group Skills*

The DBT Skills Training Group consists of four components. Each contains a range of skills which, with practice, can help you to improve your life.

- Mindfulness skills will assist you in learning to focus your attention on the present moment. You will learn to observe and describe experiences, effectively and without judgment.

- Emotion Regulation focuses on skills to moderate emotions and have more effective emotional experiences. You are taught to understand and label emotional experiences, decrease your vulnerability to emotional thinking, and overcome mood dependent actions.
- Distress Tolerance teaches you to accept yourself, emotions and the current situation, to survive crises and avoid harmful behaviour.
- Interpersonal Effectiveness focuses on interpersonal problem solving and effective communication, helping you to maintain positive relationships and reduce overwhelming emotions.

The commitment required by the participant

Participation in the group requires a significant commitment. Effective treatment takes time and effort. You will need to commit to full participation in the group program, which takes about 6 months. We expect you to maintain weekly or fortnightly contact with you Mental Health Case Manager and to notify the group facilitators if you are unable to attend group sessions. If you miss 3 group sessions in a row, you will need to withdraw from the rest of the group until the next cycle begins. This is because consistency and continuity are important for you to feel included in the group and benefit from the program.

Questionnaires and follow-up

The researcher will ask you to complete questionnaires several times during your participation in the research project. Participants will complete questionnaires in the first and last (25th) week of the DBT skills training group. Participants allocated to the control group will also be asked to complete questionnaires in the first and last (25th) week of the 'treatment-as-usual' control period. All participants will be asked to complete questionnaires six months after the completion of the DBT skills training group.

Feedback of results

All participants will be offered an individual meeting with the researcher two weeks after the completion of the DBT skills training group. At this meeting, you will be provided with a simple report showing the results of your completed questionnaires. The researcher will spend time discussing these results with you and will answer any questions you may have.

If you would also like a meeting to discuss your results after the six-month follow-up has been completed, please notify the researcher and this will be arranged.

Bias

This research project has been designed to make sure the researchers interpret the results in a fair and appropriate way and avoids researchers, clinicians and participants jumping to conclusions.

Reimbursement and costs

There are no costs associated with participating in this research project, nor will be you paid.

How the research will be monitored

The research will be monitored by a Data and Safety Monitoring Committee (DSMC). The DSMC consists of experienced mental health clinicians who are independent from the research project. They will review all data in de-identified form every six months for the duration of the research project. The DSMC is able to stop the research project if there is evidence of harm to participants or other adverse events.

Access to personal records

In addition to the questionnaires completed by participants, the researcher will access individual medical records to obtain information about 1. psychiatric diagnoses and; 2. mental health emergency presentations and hospital admissions for the period of six months prior to commencement of DBT group skills training until the six month post-group follow-up. No other information from participant's individual medical record will be accessed by the researcher.

4   Other relevant information about the research project

All aspects of the research project will be conducted at Mount Gambier Community Mental Health, Wehl Street North, Mount Gambier.

Participant Information Sheet/Consent Form - 10th October 2014

Each DBT skills training group will have approximately eight to ten participants. Approximately 30 participants are expected to join the research project in total.

5 Do I have to take part in this research project?

Participation in any research project is voluntary. If you do not wish to take part, you do not have to. If you decide to take part and later change your mind, you are free to withdraw from the project at any stage.

If you do decide to take part, you will be give this Participant Information and Consent Form to sign and you will be given a copy to keep.

Your decision whether to take part or not to take part, or to take part and then withdraw, will not affect your routine care, your relationship with professional staff, or your relationship with CHSALHN Mental Health.

6 What are the possible benefits of taking part?

We cannot guarantee or promise that you will receive any benefits from this research; however, possible benefits my include:

• Developing new skills to manage emotions and tolerate distress
• Experiencing fewer symptoms of Borderline Personality Disorder
• Experiencing improved quality of life

7 What are the possible risks and disadvantages of taking part?

Psychological distress

You may feel that some of the questions we ask are stressful or upsetting. If you do not wish to answer a question, you may skip it and go to the next question, or you may stop immediately. If you become upset or distressed as a result of your participation in the research project, the research team will be able to arrange for counselling or appropriate support. Any counselling or support will be provided by qualified staff who are not members of the research team. This support will be provided free of charge.

Group discussions

Whilst all care will be taken to maintain privacy and confidentiality, you may experience embarrassment if one of the group members were to repeat things said in a confidential group meeting.

8 What if I withdraw from this research project?

If you do consent to participate, you may withdraw at any time. If you decide to withdraw from the project, please notify the principal researcher before you withdrawn. The principal researcher will inform you if there are any special requirements linked to withdrawing. If you do withdraw, you will be asked to complete and sign a 'Withdrawal of Consent' form; this will be provided to you by the principal researcher.

If you decide to leave the research project, the researchers will not collect additional personal information from you, although personal information already collected will be retained to ensure that the results of the research project can be measured properly and to comply with law. You should be aware that data collected up to the time you withdraw will form part of the research project results. If you do not want your data to be included, you must tell the researcher when you withdraw from the research project.

9 Could this research project be stopped unexpectedly?

This research project may be stopped unexpectedly for a variety of reasons. These may include reasons such as: an unexpected adverse event, or an instruction from the Data and Safety Monitoring Committee to stop the research project.

10 What happens when the research project ends?

When the research project ends, CHSALHN Mental Health will continue to provide case management and support based on individual needs.

Part 2 How is the research project being conducted?

By signing the consent form you consent to the researcher collecting and using personal information about you for the research project. Any information obtained in connection with this research project that can identify you will remain confidential. All participants will be allocated a research code to be used on all research materials. Only the researcher will have access to the name/code list and coded data. Only non-identifiable data will be accessed by the Data and Safety Monitoring Committee, research supervisors or used in publication. Your information will only be used for the purpose of this research project and it will only be disclosed with your permission, except as required by law.

The personal information that the research team collect and use is demographic information (e.g., age, gender), psychiatric diagnoses, mental health emergency presentations and hospital admissions, and information from questionnaires (including borderline-related symptoms, quality of life and participant satisfaction with services).

Information about your health service usage, including mental health emergency presentations and hospital admissions, may be obtained from your health records held by this organization for the purposes of this research. By signing the consent form you agree to the research team accessing health records if they are relevant to your participation in this research project.

It is anticipated that the results of this research project will be published and/or presented in a variety of forums. In any publication and/or presentation, information will be provided in such a way that you cannot be identified. Only non-identifiable data will be used in publication and/or presentation, except with your express permission.

In accordance with relevant Australian and/or South Australian privacy and other relevant laws, you have the right to request access to the information about you that is collected and stored by the researcher. You also have the right to request that any information with which you disagree be corrected. Please inform the researcher named at the end of this document if you would like to access your information.

Any information obtained for the purpose of this research project that can identify you will be treated as confidential and securely stored. It will be disclosed only with your permission, or as required by law.

If you have a complaint regarding your treatment by CHSALHN Mental Health clinicians or the researcher, you are able to raise your concerns directly with your mental health case manager or the researcher in the first instance. If you are not satisfied with the response you receive, or do not wish to raise the issue directly with staff, please contact the complaints contact person listed below.

If you suffer any distress or psychological injury as a result of this research project, you should contact the researcher as soon as possible. You will be assisted with arranging appropriate treatment and support.

This research project is being conducted by Brooke Packham, Clinical Senior Psychologist, CHSALHN Mental Health for the purposes of obtaining a Doctor of Philosophy degree from The University of Adelaide.

CHSALHN/The University of Adelaide may benefit financially from this research project if, for example, the project assists CHSALHN/The University of Adelaide in any commercial enterprise.

You will not benefit financially from your involvement in this research project even if, for example, knowledge acquired from your information proves to be of commercial value to CHSALHN/The University of Adelaide.

In addition, if knowledge acquired through this research leads to discoveries that are of commercial value to CHSALHN/The University of Adelaide, the researchers or their institutions, there will be no financial benefit to you or your family from these discoveries.

No member of the research team will receive a personal financial benefit from your involvement in this research project (other than their ordinary wages).

14 Who has reviewed the research project?

All research in Australia involving humans is reviewed by an independent group of people called a Human Research Ethics Committee (HREC).

The ethical aspects of this research project have been approved by the HREC of SA Health.

This project will be carried out according to the *National Statement on Ethical Conduct in Human Research (2007)*. This statement has been developed to protect the interests of people who agree to participate in human research studies.

15 Further information and who to contact

The person you may need to contact will depend on the nature of your query. If you want any information concerning this project or if you have any problems which may be related to your involvement in the project, the details for the researcher are:

Research contact person

Brooke Packham

Clinical Senior Psychologist, CHSALHN Mental Health

(08) 8721 1507

brooke.packham@health.sa.gov.au

For matters relating to research at the site at which you are participating, the details of the local site complaints person are:

Complaints contact person

Consumer Feedback Coordinator

CHSALHN South East

(08) 8724 5222

PO Box 267

Mount Gambier SA 5290

If you have any complaints about any aspect of the project, the way it is being conducted or any questions about being a research participant in general, then you may contact:

Reviewing HREC approving this research and HREC Executive Officer details

SA Health Human Research Ethics Committee

Sarah Lawson, HREC Executive Officer

(08) 8226 6367

sarah.lawson@health.sa.gov.au

Participant Information Sheet/Consent Form - 10th October 2014

Consent Form – Adult providing own consent

Title:	**Effectiveness of Dialectical Behaviour Therapy Group Skills Training for Borderline Personality Disorder in Community Mental Health**
Project Sponsors:	**Country Health SA Local Health Network (CHSALHN) Mental Health**
	The University of Adelaide
Principal Investigator:	**Brooke Packham**
Research Supervisors:	**Professor Deborah Turnbull, The University of Adelaide**
	Dr Kate Gunn, Flinders University
Location:	**Mount Gambier Community Mental Health**
	Wehl Street North, Mount Gambier SA 5290

Declaration by Participant

I have read the Participant Information Sheet or someone has read it to me in a language that I understand.

I understand the purposes, procedures and risks of the research described in the project.

I have had an opportunity to ask questions and I am satisfied with the answers I have received.

I freely agree to participate in this research project as described and understand that I am free to withdraw at any time during the project without affecting my future care.

I understand that I will be given a signed copy of this document to keep.

Name of Participant (please print)
Signature   Date

Declaration by Researcher

I have given a verbal explanation of the research project, its procedures and risks and I believe that the participant has understood that explanation.

Name of Researcher[t] (please print)
Signature   Date

[t]An appropriately qualified member of the research team must provide the explanation of, and information concerning, the research project.

Note: All parties signing the consent section must date their own signature.

Participant Information Sheet/Consent Form - 10th October 2014

Appendix E

Data Collection Questionnaire

Borderline Symptom List 23   (BSL-23)

Code: _____   **Date: _____**

Please follow these instructions when answering the questionnaire:In the following table you will find a set of difficulties and problems which possibly describe you. Please work through the questionnaire and decide how much you suffered from each problem in the course of the last week. In case you have no feelings at all at the present moment, please answer according to how you *think you might have felt*. Please answer honestly. **All questions refer to the last week. If you felt different ways at different times in the week, give a rating for how things were for you on average.**
Please be sure to answer each question.

	In the course of last week...	not at all	a little	rather	much	very strong
1	It was hard for me to concentrate	0	1	2	3	4
2	I felt helpless	0	1	2	3	4
3	I was absent-minded and unable to remember what I was actually doing	0	1	2	3	4
4	I felt disgust	0	1	2	3	4
5	I thought of hurting myself	0	1	2	3	4
6	I didn't trust other people	0	1	2	3	4
7	I didn't believe in my right to live	0	1	2	3	4
8	I was lonely	0	1	2	3	4
9	I experienced stressful inner tension	0	1	2	3	4
10	I had images that I was very much afraid of	0	1	2	3	4
11	I hated myself	0	1	2	3	4
12	I wanted to punish myself	0	1	2	3	4
13	I suffered from shame	0	1	2	3	4
14	My mood rapidly cycled in terms of anxiety, anger, and depression	0	1	2	3	4
15	I suffered from voices and noises from inside or outside my head	0	1	2	3	4
16	Criticism had a devastating effect on me	0	1	2	3	4
17	I felt vulnerable	0	1	2	3	4
18	The idea of death had a certain fascination for me	0	1	2	3	4
19	Everything seemed senseless to me	0	1	2	3	4
20	I was afraid of losing control	0	1	2	3	4
21	I felt disgusted by myself	0	1	2	3	4
22	I felt as if I was far away from myself	0	1	2	3	4
23	I felt worthless	0	1	2	3	4

Now we would like to know in addition the quality of your **overall** personal state in the course of the last week. 0% means **absolutely down**, 100% means **excellent**. Please check the percentage which comes closest.

0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
(very bad)	⟵								⟶	(excellent)

BSL - Supplement: Items for Assessing Behavior

	During the last week.....	Not at all	once	2-3 times	4-6 times	Daily or more often
1	I hurt myself by cutting, burning, strangling, headbanging etc.	0	1	2	3	4
2	I told other people that I was going to kill myself	0	1	2	3	4
3	I tried to commit suicide	0	1	2	3	4
4	I had episodes of binge eating	0	1	2	3	4
5	I induced vomiting	0	1	2	3	4
6	I displayed high-risk behavior by knowingly driving too fast, running around on the roofs of high buildings, balancing on bridges, etc.	0	1	2	3	4
7	I got drunk	0	1	2	3	4
8	I took drugs	0	1	2	3	4
9	I took medication that had not been prescribed or if had been prescribed, I took more than the prescribed dose	0	1	2	3	4
10	I had outbreaks of uncontrolled anger or physically attacked others	0	1	2	3	4
11	I had uncontrollable sexual encounters of which I was later ashamed or which made me angry.	0	1	2	3	4

Please double-check for missing answers

WE THANK YOU VERY MUCH FOR YOUR PARTICIPATION!
PLEASE RETURN THE QUESTIONNAIRE TO YOUR THERAPIST

2

WHOQOL - BREF

PROGRAMME ON MENTAL HEALTH
WORLD HEALTH ORGANIZATION
GENEVA

For office use only

	Equations for computing domain scores	Raw score	Transformed scores*	
			4-20	0-100
Domain 1	(6-Q3) + (6-Q4) + Q10 + Q15 + Q16 + Q17 + Q18 ☐ + ☐ + ☐ + ☐ + ☐ + ☐ + ☐	=		
Domain 2	Q5 + Q6 + Q7 + Q11 + Q19 + (6-Q26) ☐ + ☐ + ☐ + ☐ + ☐ + ☐	=		
Domain 3	Q20 + Q21 + Q22 ☐ + ☐ + ☐	=		
Domain 4	Q8 + Q9 + Q12 + Q13 + Q14 + Q23 + Q24 + Q25 ☐ + ☐ + ☐ + ☐ + ☐ + ☐ + ☐ + ☐	=		

* Please see Table 4 on page 10 of the manual, for converting raw scores to transformed scores.

I.D. number

ABOUT YOU

Before you begin we would like to ask you to answer a few general questions about yourself: by circling the correct answer or by filling in the space provided.

What is your **gender**?   Male   Female

What is you **date of birth**?   _____ / _____ / _____

                                                      Day   / Month   / Year

What is the highest **education** you received?   None at all

                                                      Primary school

                                                      Secondary school

                                                      Tertiary

What is your **marital status**?   Single   Separated

                                                      Married   Divorced

                                                      Living as married   Widowed

Are you currently **ill**?   Yes   No

If something is wrong with your health what do you think it is?_____illness/ problem

Instructions

This assessment asks how you feel about your quality of life, health, or other areas of your life. **Please answer all the questions.** If you are unsure about which response to give to a question, **please choose the one** that appears most appropriate. This can often be your first response.

Please keep in mind your standards, hopes, pleasures and concerns. We ask that you think about your life **in the last two weeks.** For example, thinking about the last two weeks, a question might ask:

	Not at all 1	Not much 2	Moderately 3	A great deal 4	Completely 5
Do you get the kind of support from others that you need?					

You should circle the number that best fits how much support you got from others over the last two weeks. So you would circle the number 4 if you got a great deal of support from others as follows.

	Not at all 1	Not much 2	Moderately 3	A great deal 4	Completely 5
Do you get the kind of support from others that you need?					

You would circle number 1 if you did not get any of the support that you needed from others in the last two weeks.

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Please read each question, assess your feelings, and circle the number on the scale for each question that gives the best answer for you.

		Very poor	Poor	Neither poor nor good	Good	Very good
1(G1)	How would you rate your quality of life?	1	2	3	4	5

		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
2 (G4)	How satisfied are you with your health?	1	2	3	4	5

The following questions ask about **how much** you have experienced certain things in the last two weeks.

		Not at all	A little	A moderate amount	Very much	An extreme amount
3 (F1.4)	To what extent do you feel that physical pain prevents you from doing what you need to do?	1	2	3	4	5
4(F11.3)	How much do you need any medical treatment to function in your daily life?	1	2	3	4	5
5(F4.1)	How much do you enjoy life?	1	2	3	4	5
6(F24.2)	To what extent do you feel your life to be meaningful?	1	2	3	4	5

		Not at all	A little	A moderate amount	Very much	Extremely
7(F5.3)	How well are you able to concentrate?	1	2	3	4	5
8 (F16.1)	How safe do you feel in your daily life?	1	2	3	4	5
9 (F22.1)	How healthy is your physical environment?	1	2	3	4	5

The following questions ask about **how completely** you experience or were able to do certain things in the last two weeks.

		Not at all	A little	Moderately	Mostly	Completely
10 (F2.1)	Do you have enough energy for everyday life?	1	2	3	4	5
11 (F7.1)	Are you able to accept your bodily appearance?	1	2	3	4	5
12 (F18.1)	Have you enough money to meet your needs?	1	2	3	4	5
13 (F20.1)	How available to you is the information that you need in your day-to-day life?	1	2	3	4	5
14 (F21.1)	To what extent do you have the opportunity for leisure activities?	1	2	3	4	5

		Very poor	Poor	Neither	Good	Very good

				poor nor good		
15 (F9.1)	How well are you able to get around?	1	2	3	4	5

The following questions ask you to say how **good or satisfied** you have felt about various aspects of your life over the last two weeks.

		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
16 (F3.3)	How satisfied are you with your sleep?	1	2	3	4	5
17 (F10.3)	How satisfied are you with your ability to perform your daily living activities?	1	2	3	4	5
18(F12.4)	How satisfied are you with your capacity for work?	1	2	3	4	5
19 (F6.3)	How satisfied are you with yourself?	1	2	3	4	5
20(F13.3)	How satisfied are you with your personal relationships?	1	2	3	4	5
21(F15.3)	How satisfied are you with your sex life?	1	2	3	4	5
22(F14.4)	How satisfied are you with the support you get from your friends?	1	2	3	4	5
23(F17.3)	How satisfied are you with the conditions of your living place?	1	2	3	4	5
24(F19.3)	How satisfied are you with your access to health services?	1	2	3	4	5
25(F23.3)	How satisfied are you with your transport?	1	2	3	4	5

The following question refers to **how often** you have felt or experienced certain things in the last two weeks.

		Never	Seldom	Quite often	Very often	Always
26 (F8.1)	How often do you have negative feelings such as blue mood, despair, anxiety, depression?	1	2	3	4	5

Did someone help you to fill out this form?..

How long did it take to fill this form out?..

Do you have any comments about the assessment?

....

....

THANK YOU FOR YOUR HELP

CLIENT SATISFACTION QUESTIONNAIRE (CSQ-8)

Please help us improve our program by answering some questions about the services you have received. We are interested in your honest opinions, whether they are positive or negative. *Please answer all of the questions.* We also welcome your comments and suggestions. Thank you very much; we really appreciate your help.

Circle your answer:

1. **How would you rate the quality of service you have received?**

4	3	2	1
Excellent	Good	Fair	Poor

2. **Did you get the kind of service you wanted?**

1	2	3	4
No, definitely	No, not really	Yes, generally	Yes, definitely

3. **To what extent has our program met your needs?**

4	3	2	1
Almost all of my needs have been met	Most of my needs have been met	Only a few of my needs have been met	None of my needs have been met

4. **If a friend were in need of similar help, would you recommend our program to him or her?**

1	2	3	4
No, definitely not	No, I don't think so	Yes, I think so	Yes, definitely

5. **How satisfied are you with the amount of help you have received?**

1	2	3	4
Quite dissatisfied	Indifferent or mildly dissatisfied	Mostly satisfied	Very satisfied

6. **Have the services you received helped you to deal more effectively with your problems?**

4	3	2	1
Yes, they helped a great deal	Yes, they helped	No, they really didn't help	No, they seemed to make things worse

7. **In an overall, general sense, how satisfied are you with the service you have received?**

4	3	2	1
Very satisfied	Mostly satisfied	Indifferent or mildly dissatisfied	Quite dissatisfied

8. **If you were to seek help again, would you come back to our program?**

1	2	3	4
No, definitely not	No, I don't think so	Yes, I think so	Yes, definitely