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The Role of Skills Use, Common and Extratherapeutic Factors in Dialectical Behaviour Therapy for Borderline Personality Disorder

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Signed:

The Role of Skills Use, Common and Extratherapeutic Factors in

Dialectical Behaviour Therapy for Borderline Personality Disorder

Background: Dialectical behaviour therapy (DBT) has been shown to be an effective treatment for patients with borderline personality disorder (BPD) who self-harm. However, the treatment mechanisms are unknown. Research on the relative importance of specific factors (outlined as central in the DBT manual), common factors (theorised to be common to all successful psychotherapy) and extratherapeutic factors (occurring outside of the treatment context) could yield insight on how DBT works and inform future research and clinical work.

Methods: 89 patients were recruited who had BPD with recent self-harm, and were about to initiate DBT. Patients were assessed every 2 months for a year. Multi-level modelling was used to determine the independent association of DBT-specific factors (perceived understanding, frequency of use and helpfulness of the DBT skills), common factors (treatment credibility, therapeutic alliance and self-efficacy) and extratherapeutic factors (perceived social support, numbers of social contacts and social confidantes) with outcome (self-harm, BPD severity and treatment completion). Qualitative interviews with 40 patients were conducted and analysed thematically to explore their experiences of learning and using the DBT skills.

Results: Frequency of skill use and perceived skill helpfulness were associated with outcome independently of common and extratherapeutic factors. All three common factors were also independently associated with outcome, whilst extratherapeutic factors were not. From the qualitative analysis, a series of interacting themes were

developed to depict how patients use and gain benefit from the DBT skills, and what factors facilitate or act as barriers to this process.

Conclusion: The DBT skills and common factors each contribute independently to outcome; therapists should focus on both and further research should seek to disentangle the direction of the association with outcome. The qualitative findings may yield ideas for therapists on how to ensure patients gain maximum benefit from the skills.

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Abbreviations

BPD = borderline personality disorder

DBT = dialectical behaviour therapy

RCT = randomised controlled trial

TAU = treatment as usual

Acknowledgements

Thesis Outline

This thesis investigates the role of specific, common and extratherapeutic factors in dialectical behaviour therapy (DBT) for borderline personality disorder (BPD) with self-harm, using both quantitative and qualitative methods. The overall aim is to generate evidence on the mechanisms by which patients with BPD can achieve change. The premise of the thesis is that DBT has been shown to be more effective than control treatments in reducing self-harm in patients with BPD (Brazier et al. 2007, Binks et al. 2006, Stöffers et al. 2012), but the mechanisms by which this is achieved have not been empirically established. Identification of these mechanisms could enable them to be enhanced in existing interventions or even in routine treatment for patients with BPD, so that improved outcomes are achieved (Llewellyn & Hardy 2001, Kazdin 2007).

Theories on the mechanisms of change in psychotherapy have identified three types of factor that may contribute to treatment outcome: specific factors, common factors and extratherapeutic factors. Specific factors are those outlined in the theory of a particular therapy as a central mechanism for patient change (Oei & Shuttlewood 1996). In DBT, patients are taught a set of skills to better regulate their emotions, and patients' use of these skills is identified in the DBT manual as a key mechanism for achieving change (Linehan 1993a, b). Linked to this, the thesis focuses on three specific factors in DBT: perceived understanding, frequency of use and perceived helpfulness of the DBT skills. Common factors are aspects of treatment which are common to all therapies (Oei & Shuttlewood 1996). The contextual theory outlines several factors common to all successful psychotherapy interventions, and argues that these common

factors are the key agents of change (Frank & Frank 1991, Wampold 2001). This thesis focuses on three common factors identified by the contextual theory: treatment credibility, the therapeutic alliance, and self-efficacy. Extratherapeutic factors are factors that influence outcome outside of the treatment context (Lambert 2003, Hubble et al. 2005). This thesis focuses on three extratherapeutic factors linked to social support from friends and family: perceived social support, number of social contacts and number of social confidantes.

Previous research has shown that more frequent use of the DBT skills is associated with improved outcomes during DBT (Miller et al. 2000, Neacsiu et al. 2010, Stepp et al. 2008). This could suggest that skill use is a specific change mechanism in DBT. Alternatively, Wampold (2001) suggests that specific factors are associated with therapy outcome only because they enhance common factors. For instance, patients who use the skills more are likely to find their treatment more credible, to have a stronger alliance with their therapist, and to feel a stronger sense of self-efficacy. They may also receive more social support from friends and family. No research to date has examined whether skill use is associated with outcome independently of common and extratherapeutic factors. Such research could yield valuable information on how patients receiving DBT achieve change, and on what factors therapists and researchers should focus when aiming to improve outcomes. The first aim of this thesis is therefore to establish whether skills use is associated with the outcome of DBT for BPD independently of common and extratherapeutic factors.

Secondly, patients with BPD are often considered to drop out of treatment more frequently than patients with other mental disorders (Bornovalova & Daughters 2004,

Horner & Diamond 1996, Kelly et al. 1992). However, very few studies have examined what processes occurring during treatment are associated with dropout. Previous research has shown that a stronger therapeutic alliance is associated with treatment completion in psychotherapy for BPD (Gunderson et al. 1997, Spinhoven et al. 2007, Yeomans et al. 1994). However, the predictive relevance of specific factors such as DBT skills use, other common factors such as treatment credibility or self-efficacy, and extratherapeutic factors such as social support, has not been evaluated. Furthermore, no study to date has examined whether the DBT skills are associated with treatment completion independently of common and extratherapeutic factors. Such research could enable a better understanding of why patients drop out of DBT treatment, and could inform what factors therapists should focus on to prevent this. The second aim of this thesis is therefore to establish whether skills use predicts treatment completion in DBT for BPD independently of common and extratherapeutic factors.

Thirdly, quantitative research on the association between treatment processes and outcomes is arguably limited, because although it can show *what* factors are associated with outcome, it cannot show *how* these factors lead to better outcomes. By contrast, qualitative interviews with patients can yield valuable insights on how their experiences in therapy enabled them to achieve change, and can enable identification of barriers to change (Hodgetts & Wright 2007). This in turn can inform future quantitative work by giving an indication of what mediating and moderating factors could be evaluated, and can ensure that researchers' understanding of change mechanisms during therapy remains rooted in the lived experiences of patients rather than tied to abstract academic theories (Black 1994, Denzin & Lincoln 1994,

Greenhalgh & Taylor 1997, Miles & Huberman 1994). Since the main focus of the present thesis is on the DBT skills, the qualitative element focuses on participants' experiences of learning, using and gaining benefit from the skills. The aims are to explore how patients use the skills and how they come to gain maximum benefit from them, what factors facilitate this and what factors act as barriers to this.

Based on the above aims, the thesis addresses the following three research questions:

1) Are the DBT skills associated with outcome independently of common and extratherapeutic factors?

Specifically:

a) Are the DBT skills associated with self-harm frequency during treatment independently of common and extratherapeutic factors?

b) Are the DBT skills associated with BPD symptom severity during treatment independently of common and extratherapeutic factors?

2) Do the DBT skills predict treatment completion independently of common and extratherapeutic factors?

3) How do patients experience learning, using and gaining benefit from the DBT skills?

Specifically:

a) How do patients use the DBT skills?

b) How do patients come to gain maximum benefit from the DBT skills?

c) What factors facilitate patients in gaining maximum benefit from the DBT skills?

d) What factors act as barriers to gaining maximum benefit from the DBT skills?

Questions One and Two are addressed using quantitative methods, whilst Question Three is addressed using qualitative methods.

The structure of the thesis is outlined below. Chapters One to Four are Literature Review chapters whilst Chapters Five to Seven present empirical data collected and analysed by the doctoral candidate, and Chapter Eight is a Discussion chapter.

Chapter One summarises the nature and treatment of BPD, the DBT model, evidence for its effectiveness and the need for research on its mechanisms.

Chapter Two reviews the literature on specific, common and extratherapeutic factors in psychotherapy, describes the contextual model and reviews the evidence for and against it, and reviews evidence on the role of specific, common and extratherapeutic factors in DBT.

Chapter Three systematically reviews the literature on predictors of symptom change in psychotherapy for BPD, in order to evaluate the weight of evidence in the field and to identify what potential predictors of outcome should be included in the predictive models evaluated in Chapter Five.

Chapter Four systematically reviews the literature on treatment completion rates and predictors of completion in psychotherapy for BPD, in order to be able to compare the completion rate in the sample evaluated in Chapters Five and Six, and to identify what potential predictors of completion should be included in the predictive models evaluated in Chapter Six.

Chapter Five evaluates the association between skills, common, and extratherapeutic factors and outcome in a sample of patients receiving DBT for BPD with self-harm.

Chapter Six evaluates the association between skills, common and extratherapeutic factors and months of treatment completed in a sample of patients receiving DBT for BPD with self-harm.

Chapter Seven is a qualitative study using thematic analysis to explore patients' experiences of learning and using the DBT skills.

Chapter Eight discusses the findings as a whole and draws implications for clinical practise and for further research.

Chapter One

Literature review: Borderline personality

disorder and dialectical behaviour therapy

Borderline personality disorder

Personality disorders

Personality disorders are defined as enduring patterns of inner experience and behaviour that deviate markedly from cultural expectations, are present since early adulthood, and are present in a variety of contexts (APA 1994). The Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) lists ten personality disorders, of which borderline personality disorder is one (APA 1994, 2000). Since DSM-III was produced in 1980 (APA 1980), personality disorders have been separated from other types of mental disorder. Whilst personality disorders are grouped together under the heading "Axis II" disorders, so-called "clinical syndromes" such as major depression, anxiety disorder, or schizophrenia are grouped together as "Axis I" disorders. This separation occurred because the experiences and behaviours typical of Axis I disorders were considered to be qualitatively different from those experienced by the healthy population, whilst the experiences and behaviours manifest in people with personality disorders were viewed as the extreme end of normal personality variation (Kendell 2002). Following on from this, the characteristics of Axis I disorders are generally described in terms of 'symptoms', whereas those of Axis II disorders are considered to be stable personality traits. Relatedly, Axis I disorders were thought of as episodic and of relatively short duration, whilst Axis II disorders were thought of as unremitting and of lifelong duration (Ruocco 2005). These assumptions have since been questioned (Millon 2002, Ruocco 2005, Widiger 2003).

DSM-IV groups personality disorders into three clusters (APA 1994). Cluster A is termed the "odd or eccentric disorders" and includes paranoid personality disorder, schizoid personality disorder and schizotypal personality disorder. Cluster B is termed

the "dramatic, erratic or emotional disorders" and includes antisocial personality disorder, borderline personality disorder, histrionic personality disorder and narcissistic personality disorder. Cluster C is termed the "anxious or fearful disorders" and includes avoidant personality disorder, dependent personality disorder and obsessive-compulsive personality disorder.

Borderline personality disorder

Borderline personality disorder (BPD) is currently defined by DSM-IV as "a pervasive pattern of instability of interpersonal relationships, self-image and emotions, and marked impulsivity" (APA 1994, p.654). As with the other personality disorders, this pattern must have been present since at least early adulthood, and must be manifest in a variety of contexts. Specifically, in order to be diagnosed with BPD according to DSM-IV, a person must meet at least 5 of the following 9 criteria (APA 1991, 1994):

1. Frantic efforts to avoid real or imagined abandonment.

2. A pattern of unstable and intense interpersonal relationships characterized by alternating between extremes of idealization and devaluation.

3. Identity disturbance: persistent and markedly disturbed, distorted, or unstable self-image or sense of self (e.g. feeling like one does not exist or embodies evil).

4. Impulsiveness in at least two areas that are potentially self-damaging (e.g. spending, sex, substance abuse, shoplifting, reckless driving, binge eating).

5. Recurrent suicidal gestures, threats, or behaviour, 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 severe dissociative symptoms or paranoid ideation.

The International Statistical Classification of Diseases and Related Health Problems describes a set of behaviours and internal experiences similar to the DSM-IV diagnosis of BPD, termed 'emotionally unstable personality disorder- borderline subtype' (WHO 1992). The definition given by the DSM-IV is taken for the duration of this thesis.

Theoretical Models of BPD

Current theoretical models of BPD include the biosocial model (Linehan 1993a), the mentalization model (Bateman & Fonagy 2006), the schema model (Arntz 2004) and the object relations model (Clarkin et al. 2006). Each of these theories have given rise to different treatment models for BPD.

The biosocial model underlies the dialectical behaviour therapy treatment model, and is described in detail on pages 33-34. In brief, it posits that borderline personality disorder arises from a transaction between biological emotional vulnerability and environmental invalidation (Linehan 1993a). That is, BPD develops in people who have a biological tendency to be emotionally sensitive and to experience extreme emotions. If such emotional responses are then invalidated by those around them as they are growing up, by being ignored, suppressed or punished, this further increases their emotional vulnerability and means that they do not develop the behavioural and cognitive skills required to self-regulate their emotions. This leads to the emotional dysregulation and anger outbursts common in BPD, and leads people with this disorder to resort to using self-damaging methods for regulating their emotions such as excessive drinking or self-harm. An extension of this is the over/undercontrol model for personality disorder (Lynch & Cheavens 2008), which argues that BPD and some other personality disorders, such as histrionic and narcissistic personality disorders, are characterised by undercontrol of emotions and of behaviour and so require treatment approaches which teach skills to increase emotional and behavioural control. By contrast, many other personality disorders, such as paranoid, avoidant and obsessive-compulsive personality disorder, are characterised by overcontrol of emotions and behaviour, and so require treatment approaches which encourage emotional expression and reduce avoidance behaviours.

The mentalization model of BPD argues that BPD arises from a mentalization deficit in the context of attachment relationships (Bateman & Fonagy 2006). 'Mentalization' refers to the capacity to coherently reflect on the mental states of oneself and others. The model contends that people who develop BPD did not have their mental states understood or accurately reflected by their caregivers when growing up - instead, their

caregivers may have ignored or punished their expressions of their thoughts and emotions. People who experience such reactions from their caregivers therefore become confused in their thinking about their own mental states and those of others, and do not learn to mentalize accurately, particularly in the context of attachment relationships. These failures in mentalization can lead them to make errors in interpreting the behaviour and motives of those around them, and errors in understanding how others may interpret their own behaviour, leading to feelings of rejection and hostility. They can also lead to confusion between mental states and reality such that their negative self-cognitions feel like reality, leading to extreme negative affect. All of the above is theorised to lead to problems with interpersonal relationships, self-harm and impulsive behaviour.

The schema model of BPD argues that BPD arises from core internalized 'schemas' that frame the way people with BPD think about and react to events in their life, including: "I am powerless and vulnerable", "I am inherently unacceptable", and "Others are dangerous and malevolent" (Arntz et al. 1999). These self-defeating emotional and cognitive patterns develop early in life as a reaction to adverse experiences such as neglect and abuse by caregivers. Furthermore, due to their early adverse experiences, patients with BPD are theorised to switch between four categories of schema mode: the Child Mode, the Dysfunctional Coping Mode, the Maladaptive Parent Mode and the Compensatory Mode (Bernstein et al. 2007, Young et al. 2003). These respectively involve feeling and thinking in a child-like manner, attempts to protect the self from painful feelings, acting out internalised models of a dysfunctional parent, and extreme attempts to compensate for feelings of shame, loneliness or vulnerability.

Finally, the object relations model of BPD theorises that early aversive experiences with attachment figures, such as abuse and neglect, lead to identify diffusion in patients with BPD whereby they alternate between identifying with their 'self' representation as a helpless and frightened victim, and identifying with an 'other' representation, based on internalised experiences of aggression and rejection from attachment figures (Clarkin et al. 2006, Kernberg et al. 2008). Thus, an individual with BPD can alternate between feelings of anxiety, despair and rejection (when identifying with the 'self' representation) and feelings of anger and hostility towards others and even towards the self (when identifying with the 'other' representation).

The health and social care implications of BPD

People meeting diagnostic criteria for BPD represent 0.7% of the UK population (Coid et al. 2006), 10% of outpatient psychiatric populations (APA 2000), and 20% of inpatient psychiatric populations (APA 2000). Thus, these individuals represent a substantial sector of the psychiatric patients requiring NHS services. Indeed it has been shown that patients with BPD receive more psychiatric and general health care than patients with common mental disorders such as major depression or anxiety (Ansell et al. 2007). In particular, patients with BPD generate very high treatment costs through extensive use of A&E and inpatient psychiatric services (Bender et al 2001, NIMH 2001). The high use of A&E and inpatient services stems in part from the high prevalence of self harm and suicide attempts in this disorder. One study of 290 inpatients with BPD found that 80.7% were engaging in self-harming behaviours, and 81.4% had recently either threatened or attempted suicide (Zanarini et al. 2003). The high percentages found in this study were likely inflated by the inpatient sample, since suicidal and self-harming behaviour is a common reason for inpatient admission

(Bowers 2005, Ziegenbein et al. 2006). Nonetheless, in one study at least 50% of a sample attending A&E four times or more a year due to self harm were diagnosed with BPD (Bongar et al. 1990). A 15 year follow-up of individuals with BPD in the 1980s and 1990s found that 10% had completed suicide (Paris 2002), a figure backed up by other longitudinal studies (Perry 1993, Black et al. 2004, APA 2001). This suicide rate is about 400 times higher than that in the general population (Gunderson & Ridolfi 2006). Considering the burden placed on health services by these individuals and the degree of emotional pain they experience (Holm & Severinsson 2008), development of effective treatment services for these individuals has become a priority for the NHS (NICE 2009, NIMHE 2003).

A further challenge posed by patients with BPD to health and social services is a severe impairment in psychosocial functioning across a range of domains, including work and social relationships. This impairment has been shown to be greater than that experienced by patients with major depressive or anxiety disorders (Ansell et al. 2007). For instance, in a treatment study for BPD conducted in the Netherlands, 80% of patients were either unemployed or on disability benefit at baseline (Verheul et al. 2003). More generally, it has been shown that over 50% of patients with BPD are severely impaired in terms of employability (Elliott & Weissenborn 2010), and that their level of work-related impairment is greater than that in major depressive disorder and in some other personality disorders (Skodol et al. 2002). Research also indicates elevated social dysfunction in BPD, again higher than that found in major depressive disorder and some other personality disorders (Hill et al. 2008, Skodol et al. 2002).

In addition, patients with BPD demonstrate high rates of comorbid Axis I disorders, which often require treatment in themselves. For instance, in a sample of 290 patients diagnosed with BPD, 97% also had a mood disorder, 89% had an anxiety disorder, and 54% had an eating disorder (Zanarini et al. 2004). Furthermore, 50% had problems with either alcohol abuse or dependence, and 47% with drug abuse or dependence.

Challenges in treating borderline personality disorder

The diagnosis of BPD has historically met with stigma and a certain degree of hopelessness in health professionals, as illustrated by the following quote: "There may be no psychiatric diagnosis laden with more stereotypes and stigma than borderline personality disorder…. Collectively, and as individuals, persons with borderline personality disorder are referred to as not sick, manipulative, and noncompliant. In practice settings, persons with this label may find care difficult to obtain" (Nehls 2000, p.62). Supporting this view, when psychiatric nurses were asked in a 1986 survey to name what words came to their mind when thinking about BPD, over 90% responded with either 'manipulative', 'attention-seeking' or 'trouble' (Gallop & Lance 1986). Patients with this disorder have been viewed as chronic, untreatable and interpersonally difficult. In a survey of 65 psychiatric nurses as recently as 2007, 88% reported finding patients with BPD especially difficult to treat, and 83% reported that their team often disagreed on how to best treat them (James & Cowman 2007).

In more recent years, there has been a new climate of hope surrounding the treatment of BPD – and personality disorder in general. This was reflected in the 2003 UK

government report: *"Personality disorder – no longer a diagnosis of exclusion"* (NIMHE 2003), which established that better care for personality disorder should be a priority for the NHS, and that the government would fund specialist services. There may be at least two recent research findings that have contributed to a more positive view of the prognosis of patients with BPD. Firstly, epidemiological data has suggested that, far from being chronic and intractable, some of the features associated with BPD improve to a substantial degree over time (McGlashan et al. 2005, Zanarini et al. 2007). Secondly, evidence from randomised controlled trials (RCTs) has suggested that specialised psychological treatments for BPD are associated with improved mental health outcomes (Brazier et al. 2006, Binks et. al 2006, Stoffers et al. 2012, Zanarini 2009). Thus, BPD may be considered a treatable disorder.

Evidence on effective treatment for borderline personality disorder

Four systematic reviews and one non-systematic review aiming to evaluate the effectiveness of psychotherapy for BPD have been conducted to date, based on an evaluation of evidence from RCTs. A Health Technology Assessment systematic review concluded that there was some evidence that two therapies are more effective than TAU for BPD: DBT and mentalization based therapy (Brazier et al. 2006). A Cochrane review published in the same year reached the same conclusion (Binks et al. 2006). Three years later, a third review identified two additional therapies as having some evidence for effectiveness: transference focused psychotherapy and schema focused therapy (Zanarini 2009), whilst the NICE review published in 2009 found some evidence for effectiveness for manual assisted cognitive therapy and STEPPS on self-harm outcomes, and for DBT and mentalization based therapy on self-harm, anger,

depression and anxiety outcomes (NICE 2009). Most recently, an updated Cochrane review identified interpersonal therapy as more effective than control treatments (Stoffers et al. 2012). Perhaps the most detailed review to date has been In addition, a systematic review by the doctoral candidate has identified another three treatments which have demonstrated effectiveness in treating at least one aspect of BPD in at least one RCT (Barnicot et al. 2011 – see Chapter 4). These were: CBT (cognitive behaviour therapy), DDP (dynamic deconstructive psychotherapy) and ERGT (emotion regulation group therapy). Thus, there are currently a large number of treatments which have been empirically demonstrated to help people with BPD achieve at least some improvements, although most have been tested in only one or two RCTs.

The most thoroughly investigated of these treatments has been DBT, tested against control treatments in twelve RCTs in patients with BPD (Carter et al. 2010, Feigenbaum et al. 2011, Koons et al. 2001, Linehan et al. 1991, Linehan et al. 1999, Linehan et al. 2002, Linehan et al. 2006, McMain et al. 2009, Pistorello et al. 2012, Priebe et al. 2012, Turner et al. 2000, Verheul et al. 2002). The focus of the thesis is on this therapy.

Dialectical behaviour therapy

Dialectical behaviour therapy (DBT) was developed in the 1980s by Marsha Linehan as a specialised psychotherapy for patients with BPD - particularly those with recurrent self harm. It was subsequently manualised in 1993 (Linehan 1993a). In this manual Linehan describes the aetiological theory of BPD on which DBT is based - the biosocial theory.

The biosocial theory

The biosocial theory argues that BPD arises from the conjunction between an inherited biological vulnerability and the experience of environmental social stressors. This biological vulnerability takes the form of a heightened sensitivity and reaction to emotional stimuli followed by an increased time to return to a baseline emotional state. People who go on to develop BPD receive feedback from their environment which enhances their emotional vulnerability and teaches them ineffective coping skills. The key process by which this is proposed to occur is 'invalidation'. That is, the child consistently receives feedback that their emotions are not a valid response to their environment. Such feedback could take the form of ignoring the child's emotional communication, telling the child to stop feeling emotional, implying that emotions are easily controllable, actively telling the child that their emotions are wrong or unjustified, punishing the child for emotional displays, or only responding to extreme emotional displays. The child hence learns to continually question their emotions, blame themselves for their emotions, and to try to suppress their emotions – or express them in an extreme manner in order to get a response. The child also does not learn skills to effectively deal with their emotions – since their emotions are not acknowledged as validly existing in the first place. Physical and sexual abuse are the

most extreme forms of invalidation, since the child's acute feelings of distress are met with an implicit communication from the abuser that this is an acceptable experience, and displays of emotional distress in this context may meet with severe punishment. However, the experience of invalidation need not be so extreme. Furthermore, the biosocial theory posits a transaction between inherited emotional vulnerability and environmental invalidation, such that a child with a tendency to react with extreme emotional responses may be more likely to trigger an invalidating emotional response from their environment.

The DBT therapeutic method

Dialectical behaviour therapy is so-named because the philosophical principle of dialectics runs through all of the therapeutic techniques laid out in the manual (Linehan 1993a). Dialectics refers to the idea that reality is not singular, nor black and white. Rather, reality is often a synthesis between opposing extremes – and cannot be fully appreciated unless both extremes and their synthesis are understood in any given situation (Goldberg 1980). Achieving synthesis between extreme viewpoints or courses of action will then produce change.

The core dialectic at the heart of DBT treatment is the dialectic between validation and change. That is, in order to achieve improvement, a person with BPD must both be validated in their current emotional responses and regulation strategies, and must be helped to change these same responses and regulation strategies. Building on the biosocial theory, this dialectic aims to both correct the damaging effect of childhood emotional invalidation, and to teach the effective emotional regulation strategies not

taught by the invalidating environment. According to a theoretical review published by the treatment developer and other specialist DBT researchers, the mechanism by which these techniques act to produce change in patients with BPD can be distilled as the following: *"the reduction of ineffective action tendencies linked with dysregulated emotions"* (Lynch et al. 2006, p. 17). This process, and the treatment techniques linked to it, can be termed specific factors in DBT – i.e. factors clearly delineated by the treatment developers as active causes of change (see Chapter Two).

The main strategies used to validate patients include reflecting the person's emotions back to them: "I can see you feel angry", never judging patients' actions as "bad" or "irrational", getting patients to describe their emotional experiences in detail, working backwards to find the logical chain of events leading up to a feeling, thought or action, and constantly reinforcing that the patient's emotions, thoughts and behaviours were valid and logical responses to events around them.

A key method used to improve patients' abilities to regulate their emotions effectively is teaching them four sets of skills: the Mindfulness skills, the Interpersonal Effectiveness skills, the Emotion Regulation skills, and the Distress Tolerance skills (Linehan 1993a, 1993b).

The Mindfulness Skills

The mindfulness skills are known as the "core" skills, as they underpin each of the other three skills sets. They primarily concern developing a greater awareness of the self and of one's surroundings in the moment. Marsha Linehan drew many of her ideas for these skills from the teachings of Zen Buddhism. They can be broken down into the "What" skills and the "How" skills. The "What" skills include a focus on the moment

rather than the past or future; stepping back and observing what is going on instead of getting swept away by it; awareness of one's thoughts, emotions, body, actions and external events; describing internal and external events in words; and recognising thoughts and emotions as internal events rather than literal reflections of external reality. The "How" skills refer to how the above "What" skills should be done: with a non-judgemental stance – not judging their own or others' emotions, thoughts, or actions as "good" or "bad", but instead accepting them as they are; focusing on one thing at a time in the moment; and acting effectively- that is, doing "what works" to achieve one's goals in a particular situation.

The Interpersonal Effectiveness skills

These skills are concerned with learning to improve interpersonal relationships, with the ultimate aim of adding to emotion regulation abilities, since interpersonal relationships are a major trigger for emotional reactivity in patients with BPD. The skills include paying attention to maintaining relationships, working out when to prioritise maintaining relationships and when to prioritise obtaining one's own needs, and how to say no or to ask for something in such a way that conflict is minimised and the likelihood of success is maximised. The routine patients are taught to use for this purpose is summarised by an acronym known as "DEARMAN GIVE FAST".

The Emotion Regulation skills

All of the skills have the ultimate aim of helping patients to better regulate their emotions – but the emotion regulation skills address this aim more explicitly. Linked to mindfulness, a key emotion regulation skill is to identify, label and accept one's current

emotional state. By identifying and labelling the emotions they are experiencing, the patient reduces the sense of frustration and confusion often surrounding intense emotional states, can act to self-validate their emotion, can work out the sequence of events leading to that emotion, can recognise the emotion as an internal event rather than a literal reflection of reality, and can more effectively identify strategies to deal with their particular emotions.

A second emotional regulation skill is to identify the function of the emotion being experienced. According to Linehan (1993a), all emotions have a function, or a "purpose" – that is, they are experienced and expressed, either explicitly or implicitly, because the consequences of their experience or expression are in some way rewarding to the person. Linehan argues that a common function of emotions is to communicate something to others, in the implicit or explicit hope that this communication will lead to unmet needs being met. Another function is to validate the individual's perceptions and interpretations of events. The ability to identify the function of the emotion, it is argued, will allow the patient to understand better the reinforcing consequences of their emotions which, in fact, act as obstacles to changing their emotions.

Thirdly, patients are taught to reduce their vulnerability to extreme emotional reactions by getting sufficient sleep, eating balanced meals, getting sufficient exercise, taking any prescribed medication in the correct dosages, not using non-prescribed or mood-altering drugs, avoiding excessive alcohol consumption, and engaging in

activities that build a sense of self-efficacy. These skills are summarised under the acronym: PLEASE MASTER.

Fourthly, patients are taught to increase positive emotional experiences – by being aware of positive events that occur on a day-to-day basis, and by making long-term changes to their life such that positive emotional events are more likely to occur.

Fifthly, patients are taught to "act opposite" – that is, to do the opposite of whatever their current emotional state is driving them to do. This could be going out when depression is driving one to stay at home, getting on the bus when anxiety is prompting one to avoid it, saying a kind word to someone when anger is prompting one to say something unpleasant, or even just smiling when feeling sad or angry. Importantly, the aim of this skill is not to suppress or deny the current emotion – but rather to create a competing, more positive emotional state.

Distress Tolerance skills

The distress tolerance skills are concerned with emotion regulation also, but are particularly relevant in helping the patient to tolerate situations of extreme emotional distress without resorting to self-harming, drinking or other ineffective behaviours. They include self-soothing skills - activities which engage the senses of sight, sound and touch in a soothing fashion – such as listening to music, going for a walk in the park or stroking a dog. They also include distracting oneself from one's emotional state by

doing an activity requiring attention and focus, such as reading a book, washing up or playing a game. Additionally, patients are taught to evaluate the pros and cons of engaging in self-harming behaviours if their emotional state is leading to urges so to do. Finally, the ultimate form of distress tolerance is radical acceptance – that is, accepting that distressing emotional states are an unavoidable aspect of life which must be endured.

The DBT Therapeutic Structure

DBT can be divided into three stages, each a year long. The aim of the first stage is increasing behavioural skills for emotional regulation, and decreasing ineffective behaviours including self-harm, suicide, therapy-interfering behaviours, and quality-of-life interfering behaviours (1993a). In the first stage, the structure of DBT as laid out in the manual (Linehan 1993a) consists of weekly hour-long individual sessions and weekly two hour-long group meetings, for a year. In the individual sessions, patient and therapist review the diary card completed by the patient, detailing emotions, urges and skills use over the past 7 days. They then set an agenda for the session, during which they will discuss events in the patient's personal life. DBT sets a strict order of priority for issues to discuss in therapy. Target 1 issues are decreasing suicidal behaviours including self-harm, suicidal ideation and suicide attempts. If any such behaviours have occurred since the last individual therapy meeting, therapists will make their discussion a priority above all other issues. Target 2 issues are decreasing therapy-interfering behaviours on either the part of the patient or therapist, such as turning up late or missing sessions, not keeping therapy agreements, not doing homework, not concentrating during therapy, being aggressive or critical. Target 3 issues are decreasing behaviours that reduce the patient's quality of life, such as

substance abuse, staying with abusive partners, unemployment, poor housing and Axis 1 disorders.

In the group meetings, patients are taught the skills described above in a psychoeducation format, with techniques used including handouts, short talks, discussions, diagrams and role play. Patients' individual problems are not discussed in detail, other than in the reporting of homework, where patients describe their application of skills in their lives since the previous meeting, and therapists and other patients give feedback.

Evidence On the Effectiveness of DBT

To date, DBT for BPD has been evaluated in twelve RCTs (Carter et al. 2010, Feigenbaum et al. 2011, Koons et al. 2001, Linehan et al. 1991, Linehan et al. 1999, Linehan et al. 2002, Linehan et al. 2006, McMain et al. 2009, Pistorello et al. 2012, Priebe et al. 2012, Turner et al. 2000, Verheul et al. 2002). One of these, Priebe et al. (2012), was conducted concurrently to the empirical work in the current thesis using a highly overlapping sample of patients (see p. 160 for details). The methods and findings of these twelve trials are outlined in Table1.1. In seven trials, DBT was conducted as closely as possible to the manualised version, with no additions or changes (Carter et al. 2010, Feigenbaum et al. 2011, Koons et al. 2001, Linehan et al. 1991, Linehan et al. 2006, McMain et al. 2009, Verheul et al. 2003). In two trials, DBT was delivered exactly as according to the manual, but with the addition of new techniques specifically targeting substance abuse, such as attachment strategies to maintain people in treatment, and a dialectical stance on drug use (Linehan et al. 1999, Linehan et al. 2002) – as according to a separate manual on DBT for BPD with substance abuse (Linehan 1997). In one trial, DBT was delivered as according to the

manual but the distress tolerance skills module was shortened to allow for introduction of a new validation skills module (Pistorello et al. 2012). In another trial, DBT was delivered largely according to the manual, but psychodynamic components were added, skills were taught in individual sessions rather than in a group format, and six groups focusing on interpersonal relationships with significant others were added (Turner 2000). Finally, in the trial whose sample overlapped with that of the current thesis, DBT was delivered as per the manual, with the addition of a care-coordinating role for the therapy team (Priebe et al. 2012). That is, the therapy team was responsible for dealing with social care issues such as housing and benefits, and the team psychiatrist was responsible for prescription and monitoring of psychiatric medication. In eight trials, the comparison condition was "treatment as usual" (TAU) i.e. whatever the usual care for patients with BPD would be in the local healthcare district (Carter et al. 2010, Feigenbaum et al. 2011, Koons et al. 2001, Linehan et al. 1991, Linehan et al. 1999, Pistorello et al. 2012, Priebe et al. 2012, Verheul et al. 2002). However, this was more strictly governed in some trials than others. For instance, in Linehan et al. 1991, all individuals in the TAU condition were offered immediate access to alternative individual therapy, whereas in Feigenbaum et al. 2011 and Priebe et al. 2012, some patients received individual therapy, but others received only infrequent access to an outpatient psychiatrist, or contact with a non-therapeutically trained care co-ordinator. In one trial, the comparator treatment, known as comprehensive validation treatment, was specially designed for the purposes of the trial, with the aim of providing the validating aspects of DBT without the change-focused techniques (Linehan et al. 2002). In another, the comparator was also specifically designed and manualised for the trial, and was based on the APA guidelines for the treatment of BPD (APA 2001), together with the use of psychodynamic techniques, and delivered in the

form of weekly meetings by "experts" in the treatment of BPD (McMain et al. 2009). In

Turner (2000), the comparator was client-centred therapy, whilst in Linehan et al.

(2006), the comparator was community treatment by experts- that is, non-behavioural

individual therapists considered by their management to be expert in treating

"difficult" patients.

Table 1.1 Randomised controlled trials of DBT versus control treatments

Study	Country	Inclusion Criteria				Exclusion Criteria		Intervention	Control condition	Treatment Length	Sample size
		BPD	Gender	Self-harm	Substance dependence	Psychotic disorders	Bipolar disorder				
Carter et al. 2010	Australia	Yes	Female	Yes	No	Yes	Yes	DBT	TAU	6	73
Feigenbaum et al.2011	U.K.	No[1]	Any	No	No	Yes	Yes	DBT	TAU	12	42
Koons et al. 2001	U.S.A.	Yes	Female	No	No	Yes	Yes	DBT	TAU	6	28
Linehan et al. 1991	U.S.A.	Yes	Female	Yes	No	Yes	Yes	DBT	TAU	12	44
Linehan et al. 1999	U.S.A.	Yes	Female	No	Yes	Yes	Yes	DBT-SA	TAU	12	28
Linehan et al. 2002	U.S.A.	Yes	Female	No	Yes	Yes	Yes	DBT-SA	CVT	12	23
Linehan et al. 2006	U.S.A.	Yes	Female	Yes	No	Yes	Yes	DBT	CTBE	12	101
McMain et al. 2009	Canada	Yes	Any	Yes	No	Yes	Yes	DBT	GPM	12	180
Pistorello et al. 2012	U.S.A.	No[2]	Any	Yes	No	Yes	No	DBT	TAU	12	63
Priebe et al. 2012	U.K.	No[3]	Any	Yes	No	No	No	DBT	TAU	12	80
Turner 2000	U.S.A.	Yes	Any	No	No	Yes	Yes	DBT + PT	CCT	12	24
Verheul et al. 2002	N.L.	Yes	Female	No	No	Yes	Yes	DBT	TAU	12	58

[1] Patients with any Cluster B Disorder were included; in practice all but 2 met diagnostic criteria for BPD

[2] Patients had to meet at least 3 BPD diagnostic criteria

[3] Patients with any personality disorder were included; in practice all but 1 met diagnostic criteria for BPD

CCT = client-centered therapy; CTBE = community treatment by experts; DBT-SA = DBT adapted for substance abuse; DBT + PT = DBT incorporating psychodynamic techniques; GPM = general psychiatric management; N.L. = Netherlands; TAU = treatment as usual; U.K. = United Kingdom, U.S.A. = United States of America

Self-harm and suicide attempts

Three RCTs found a significant main effect of DBT over the control treatment on self-harm frequency during the treatment year (Linehan et al. 1991, Pistorello et al. 2012, Turner 2000). Two further RCTS found a significant group by time interaction, in favour of DBT, for change in self-harm over time (Priebe et al. 2012, Verheul et al. 2003), whilst another found a trend in the same direction (Koons et al. 2001, p<0.10). In addition, whilst Linehan et al. 2006 did not find a significant effect of DBT versus TBCE on self-harm in general, they did report significantly fewer suicide attempts in the DBT arm. The remaining five RCTs did not find a significant difference between DBT and the control treatment on self-harm outcomes (Carter et al. 2010, Feigenbaum et al. 2011, Linehan et al. 1999, Linehan et al. 2002, McMain et al. 2009).

BPD symptom severity

Perhaps surprisingly, considering that DBT is a specialised treatment developed specifically for patients with BPD, only four of twelve RCTs have examined the effect of DBT on BPD symptom severity (Koons et al. 2001, McMain et al. 2009, Pistorello et al. 2012, Priebe et al. 2012). This is probably due to the focus of DBT Stage One on self-harm and Axis 1 symptoms rather than the other aspects of BPD.

Whilst all four RCTs found a significant decrease in BPD symptom severity over time in the DBT condition, only one trial found that this decrease was greater than that experienced in the control condition (Pistorello et al. 2012). Of particular relevance to this thesis, the RCT with an overlapping sample to that studied in Chapters Five

to Seven did not find significant group differences in BPD symptom severity, although the p value was near-significant (p = 0.10, Priebe et al. 2012).

Axis I symptoms

Of the seven RCTs assessing the main or interaction effect of treatment on depression, two found a significant main effect in favour of DBT (Pistorello et al. 2012, Turner 2000), one found a treatment by time interaction in favour of DBT (Koons et al. 2001), and the remaining four found no differences between conditions (Linehan et al. 1991, Linehan et al. 2006, McMain et al. 2009, Feigenbaum et al. 2011). Neither of the two studies evaluating anxiety found any differences between the effect of DBT and the control conditions (Koons et al. 2001, Turner 2000). In four trials assessing the effect of treatment condition on general psychiatric symptoms, one found no significant differences after 6 months of treatment but did find a main effect favouring DBT after 12 months (Turner 2000), whilst the remaining three found no group differences (Linehan et al. 2002, McMain et al. 2009, Priebe et al. 2012).

Summary of RCT results and comparison with previous review findings

Five of twelve RCTs conducted to date have found statistically significant evidence that DBT is more successful than control treatments in reducing self-harm (Linehan et al. 1991, Turner 2000, Verheul et al. 2003, Pistorello et al. 2012, Priebe et al. 2012), with the sixth finding a trend in the same direction (Koons et al. 2001). The seventh found no effect on nonsuicidal self-harm, but did find fewer suicide attempts in the DBT condition than the control condition (Linehan et al. 2006). Thus

it seems that, under some conditions, DBT is more effective than control treatments in reducing self-harm. The non-significant results in some studies may be considered somewhat antithetical given that the primary aim of Stage One DBT is self-harm reduction (Linehan 1993a). Only one of four studies evaluating the effect of DBT on BPD symptoms found evidence that it is more effective than other treatments in reducing BPD symptoms. This may initially seem unexpected given that DBT was developed specifically for patients with BPD. However, DBT Stage One primarily focuses on self-harming behaviour rather than other aspects of BPD (Linehan 1993a), which may explain its lack of effect. DBT Stage One does explicitly aim to reduce quality of life interfering behaviours including Axis I comorbidities, but only as tertiary targets to be discussed where self-harm or therapy-interfering behaviours are not present. It is therefore perhaps not surprising that DBT is only sometimes found more effective than control treatments in reducing Axis 1 symptoms. Robbins & Chapman (2004) reached a similar conclusion, suggesting that studies where self-harm was not highly prevalent, such as that of Koons (2001), may be more likely to find group differences in Axis 1 symptoms. As yet unpublished work by Linehan's group suggest that, within individual studies, individuals with lower self-harm at pre-treatment may gain greater relief from Axis 1 symptoms such as depression (Lungu et al. in preparation).

 That almost half of the RCTS reviewed have not found evidence of greater self-harm reduction in DBT than in control treatments may also be considered surprising given the positive conclusions reached by some reviewers on the topic. For instance, Blennerhasset and O'Raghallaigh (2005) conclude that "The most

consistent observation from research published to date is that the application of

standard outpatient dialectical behaviour therapy (stage 1) reduces the rate of

suicidal behaviour compared with treatment as usual". Brazier and collegaues

(Brazier et al. 2006) conclude that there is "some evidence that DBT is more

effective than treatment as usual (TAU) for the treatment of chronically parasuicidal

or drug-dependent borderline women". The 2006 Cochrane review is more

cautious but still largely positive in its conclusions: "DBT does seem to offer a small

benefit over treatment as usual in preventing people undertaking acts of self-harm

or parasuicide. This is a consistent finding although it is not always statistically

significant in the small trials" (Binks et al. 2006).

It seems that the conclusions of the current review with regards to the

effectiveness of DBT for self-harm reduction may be less positive than those of

earlier systematic reviews. One possible reason for this is that, since the publication

of the earlier systematic reviews, three trials with non-significant group differences

in self-harm frequency have been published (Carter et al. 2010, McMain et al. 2009,

Feigenbaum et al. 2011). Furthermore, some reviews have excluded the two trials

in comorbid substance dependent samples (Linehan et al. 1999, Linehan et al. 2002)

from their evaluation of self-harm results (Binks et al. 2006), whilst others have not

separately examined self-harm and other impulsive behaviours such as drug abuse

(Brazier et al. 2006). A factor that may have added to a lack of clarity is that RCTs

have tended to publish multiple types of outcome related to self-harm, including

self-harm frequency, self-harm risk severity, self-harm presence, and suicide

attempt frequency.

Despite representing a less positive picture of DBT than has perhaps been portrayed in earlier reviews, the finding of this review that DBT is more effective than other treatments at reducing self-harm under some circumstances is an indication that it is a promising treatment approach. However, further research is required to understand under which circumstances DBT is more effective than other treatments, and via what processes patients receiving DBT achieve self-harm reduction.

Conclusion

In sum, this chapter concludes that BPD is a personality disorder associated with severe emotional pain and high societal and healthcare costs. Despite stigmatising attitudes and beliefs in the treatment resistance of this disorder, several BPD-specific psychotherapy models have been developed. Among these, DBT has been the most tested and has met with a largely positive response from systematic reviewers. This chapter has reviewed the evidence on DBT from the 12 RCTs to date, including some material not included in prior reviews. The review found that, for patients with BPD, DBT is often more effective than control treatments in reducing self-harm, but that this is not always the case. It has been demonstrated to reduce total BPD symptoms to a greater extent that other treatments in one trial, and it is sometimes more effective for the reduction of Axis 1 symptoms. Research evaluating the mechanisms by which patients can reduce self-harming behaviours, other BPD symptoms and Axis I symptoms through DBT could help to

elucidate how DBT achieves its effects, and could enable these effects to be enhanced in future treatments for BPD. Chapter Two will discuss psychotherapy process research- research that aims to elucidate change mechanisms in psychotherapy - and will review research to date on mechanisms of change in DBT.

Chapter Two

Literature review: Specific, common and extratherapeutic factors in psychotherapy

The Role of Psychotherapy Change Process Research

Psychotherapy can be defined as "(1) a relation among persons, engaged in by (2) one or more individuals defined as needing special assistance to (3) improve their functioning as persons, together with (4) one or more individuals defined as able to render such special help" (Orlinsky & Howard 1978, p. 284). Psychotherapy change process research aims to evaluate the mechanisms or 'processes' through which patients undertaking therapy are enabled to improve (Orlinksy et al. 2004). This thesis considers both processes occurring in the context of therapy and those occurring outside the therapy context as potentially relevant.

In order to maximise the effect of psychotherapy it is useful to determine via what mechanisms treatment facilitates patient improvement. Potentially, interventions can then be adapted to enhance these mechanisms, which in turn could produce improved outcomes for patients (Llewellyn & Hardy 2001, Kazdin 2007). Similarly, if aspects of treatment which are less relevant to patient change are identified, these can potentially be down-played in future versions of the intervention. This could possibly increase the efficiency of the intervention by allowing the therapist to focus their efforts on treatment processes which promote patient change – and could also increase cost-effectiveness. In addition to adapting the existing intervention, such research creates the possibility of implementing the most effective aspects of specialised therapies in more routine psychiatric treatment, such as psychiatrist or keyworker consultations. For these reasons, the Medical Research Council recommends that research on mechanisms of change should form

an essential part of the development of any complex psychological intervention (Craig et al. 2008). They state that such process evaluation "is often highly valuable – providing insight into why an intervention fails unexpectedly or has unanticipated consequences, or why a successful intervention works and how it can be optimised" (Craig et al. 2008, p. 12).

Specific and Common Factors

It is important to make the distinction between two types of change mechanism in psychotherapy: specific factors and common factors. The relative importance of these two types of change process is the subject of much contention and debate, and has key implications for the belief system underlying the practice of psychotherapy. Psychotherapy models are almost always based on a theory about the etiology of particular patient problems, and linked to this, the mechanisms by which patients with particular problems can achieve change. Specific processes have been defined as elements clearly delineated as active causes of change in the theory based upon which a given therapy was developed (Oei & Shuttlewood 1996). For example, the theory of DBT outlines that BPD is partly caused by a deficit in emotion regulation capacity, and that a key mechanism by which DBT can help them to overcome this is by teaching them skills to better regulate their emotions (see Chapter One for further details). Patients' learning and use of these skills is therefore termed 'specific' to DBT.

Other aspects of therapy which may contribute to patient change are covered by two overlapping terms: 'non-specific' and 'common'. It has been noted that these terms are often used interchangeably even though they do not have identical meanings (Castonguay 1993). The term 'non-specific' refers to possible elements in one therapy that contribute to improvement but which are not specified in the theoretical or practical delineation of the therapy (Oei & Shuttlewood 1996). 'Common' refers to aspects of treatment which are common to all or nearly all therapies (Oei & Shuttlewood 1996). The key difference is that the classification of an aspect of a treatment as non-specific or specific will vary depending on the particular therapy model under consideration, whereas common factors are not defined in relation to a particular therapy, but in relation to all therapies. In practice, many non-specific factors will also be common factors, and vice versa. For example, the therapeutic alliance is not delineated as a key mechanism of change in most therapy models, including cognitive-behavioural and psychodynamic, and is thus, for these therapies, a 'non-specific' factor, whilst also being a factor that is common to almost all types of therapy.

Determining the relative importance of specific versus common factors has profound implications for the way in which psychotherapy is practiced. A lot of money, time and effort is invested in developing and manualising particular therapies (Luborsky & DeRubeis 1984, Wilson 1998), in schooling therapists in the theories and practice of particular models, in determining whether they are 'adherent' to the model they have been taught to practice (Shaw et al. 1999, Perepletchikova & Kazdin 2005), and in assessing whether one form of therapy is

superior to another. Indeed, investment in manualisation and extensive testing of the relative effectiveness of particular models of therapy has been outlined by the American Psychological Association as essential in order to establish the status of psychotherapy as equivalent to that of biological psychiatry (Task Force on Promotion and Dissemination of Psychological Procedures 1995). If specific factors are found to be of little importance to outcome, then such investment would no longer be a priority. Furthermore, if common factors are found to dominate over specific factors, the priorities of therapists could radically shift. The focus would be on enhancing common factors such as the alliance, treatment credibility and self-efficacy, whilst specific techniques and theories would be seen only as (important) vehicles for further enhancing such common factors. Conversely, if specific factors are found to dominate over common factors, therapists could emphasise these and research could focus on understanding how to enhance them. Ultimately, the question of the relative importance of specific and common factors ties in with the larger aim of psychotherapy change process research – to identify the processes by which change is achieved, to devise and implement methods to enhance these processes, and to thereby improve patient outcomes.

However, some authors argue that separating elements of therapeutic interventions into these categories is not relevant to how therapies are practised in reality. It has been found that therapists practising one model of psychotherapy often use techniques that are supposedly specific to other therapy models (Ablon & Jones 1998). Norcross (1995) therefore argues that the idea of processes specific to any one type of therapy is a "pernicious misconception" which has hindered

research and practice by closing people's minds to the overlap between different therapy types. Other authors argue that common factors are so enmeshed within specific factors that attempting to investigate them independently is impossible (Butler & Strupp 1986). These conceptual issues will be further explored in the Final Discussion, Chapter Eight.

The Contextual Model

Historically, the starting assumption for most researchers and practitioners has been to value specific factors above common or non-specific factors (Asay & Lambert 1999, Wampold 2001). For instance, the APA Task Force on Promotion and Dissemination of Psychological Procedures asserted that: "treatments found to be superior to conditions that control for such nonspecific processes .... are even more highly prized and said to be efficacious and specific" (Chambless & Hollon 1998, p. 8). Similarly, Parloff (1986) writes: "Some mechanisms of change are, ipso facto, less acceptable than others. If the seemingly positive effects of psychotherapy are attributable primarily to such mechanisms as 'suggestion', 'placebo', 'attention', or 'common sense advice', then the credibility of psychotherapy as a profession is automatically impugned" (pp. 523-524).   An alternative view is that different psychotherapies are effective, not due to their specific factors, but rather due to factors which are common to all successful forms of therapy. Several writers have devised lists of these 'common' factors which they deem essential for therapeutic progress (Goldfried 1980, Castonguay 1993, Grencavage & Norcross 1990). Whilst differing slightly, these lists by and large identify similar factors as important

(Wampold 2001). For instance, Grencavage and Norcross' review of 50 different publications in which common factors were proposed found that several core themes were consistently identified by different writers (namely development of a therapeutic alliance, opportunity for catharsis, acquisition and practice of new behaviours, and patients' positive outcome expectations) (Grencavage & Norcross 1990). However, it should be noted that some disagreement exists as to what the most important common factors are. For instance, Bohart and Tallman refer to the influence of patient characteristics and actions as "the neglected common factor in psychotherapy". Although such other ideas about psychotherapy change processes are acknowledged, the primary focus of this thesis is the contextual model developed by Frank and Frank (1971, 1991).

Frank and Frank (1971, 1991), consider that all psychotherapies share three broad characteristics which are essential for therapeutic progress. Firstly, successful psychotherapy always involves an emotionally charged, confiding relationship with the therapist. Secondly, successful therapy occurs in a healing setting i.e. in a context which enhances the patient's belief that the therapist can and will help them with their problems. This is particularly enhanced when therapy is considered a valid way to seek healing by the patient's culture, is delivered by a therapist considered highly qualified or 'expert', and occurs in a set-apart 'healing setting' such as a hospital or the therapist's office . Thirdly, successful therapy is based on a rationale which explains the origin of the patient's symptoms and prescribes a ritual or procedure for resolving them (Wampold 2001). This last point is important,

because it highlights that, as stipulated by those advocating specific change mechanisms, it *is* important to have a psychological explanation for the presenting problems and a specific set of techniques laid out to deal with them. However, it does not matter whether the rationale used is 'true'- it matters only that both patient and therapist believe the rationale to be true, and accordingly believe that the techniques used will benefit the patient. "The treatment procedures used are beneficial to the patient because of the meaning attributed to those procedures, rather than because of their specific psychological effects" (Wampold 2001, p. 27). Further to this, Frank and Frank (1971, 1991) stipulate that all successful therapies involve the following six common factors: the patient finds the therapeutic rationale and techniques to be credible and believes that by following them s/he will be enabled to change, an emotionally charged relationship develops between the patient and the therapist, the therapy provides new learning experiences for the patient, the therapy arouses the patient's emotions, the therapy enhances the patient's sense of self-efficacy, and the therapy provides opportunities for the patient to practice new skills. Learning experiences can include, for example, a new conceptualisation of their problems and a new understanding of the best ways to deal with them. This new understanding, in turn, increases patients' sense of self-efficacy, by reassuring them that their problems can be understood and dealt with effectively. Self-efficacy can also be enhanced by enabling the patient to feel that they have achieved new insights, or – in behavioural therapies- carried out previously anxiety-provoking actions. A final way in which self-efficacy can be enhanced is by encouraging patients to practice what they have learned, in their lives outside of therapy, or in a group therapy context (Frank & Frank 1991).

The focus of this thesis is on three of the common factors identified in the contextual theory: the therapeutic alliance, the patient's view of the treatment as a credible method of achieving change, and the patient's sense of self-efficacy. These concepts and their interaction will be explored in detail below.

The therapeutic alliance

There are many different terms used by researchers to describe the relationship between patient and therapist including the therapeutic relationship, the therapeutic alliance, the working alliance, and the helping alliance. Accordingly, there have been many different definitions of the concept, leading to a lack of clarity in the field as to what the relationship or the alliance actually means (Horvath & Luborsky 1993, Wampold & Budge 2012). For instance, Norcross defines the therapeutic alliance as "the quality and the strength of the collaborative relationship between patient and therapists – agreement on therapeutic goals, consensus on treatment tasks, and a relationship bond" (Norcross 2010, p. 120), whilst other definitions include "a sense of working together in a joint struggle against what is impeding the patient" (Luborsky 1976, p.94). Many measures of the alliance have two broad concepts in common - personal attachment, and collaboration in the therapy process (Horvath & Luborsky 1993). Some authors have proposed that the relationship itself differs from the alliance - the relationship is the bond between therapist and patient, a mutual liking and trusting, whilst the alliance is the collaboration between therapist and patient on mutually agreed upon tasks towards the completion of mutually agreed upon goals (Bordin 1979, Hatcher & Barends 2006). The therapeutic alliance has been hypothesised to

contribute to outcome in at least two ways. The contextual theory hypothesises

that a key role of the bond aspect is to decrease the patient's feeling of alienation -

a key hallmark of mental distress (Frank & Frank 1991). Another key role of the

alliance is to facilitate the patient's expectations that, by working with the

therapist, they will achieve change. In turn, the perception of the treatment and the

therapist as credible enhances the formation of the alliance (Wampold & Budge

2012).

Treatment credibility

Treatment credibility refers to the degree to which patients believe that

participating in a particular psychotherapy is a credible way to achieve change

(Borkovec & Nau 1972). This idea reflects the growing body of literature on the

placebo effect in general medicine, an important aspect of which is the credibility of

the placebo and the consequent expectation of symptomatic relief (Benedetti 2009,

Price et al. 2008). A key influence on treatment credibility is the credibility of the

treatment rationale. It has been shown that psychological treatments are perceived

as more credible when they are presented as novel, based on scientific research,

and tested in clinical trials (Kazdin & Krouse 1983). This construct is highly

overlapping, both statistically and conceptually, with that of response expectancy

(Devilly & Borkovec 2000, Constantino et al. 2004, Constantino et al. 2005), i.e. the

degree to which patients expect to achieve positive change as a result of treatment.

Authors such as Irving Kirsch have argued that response expectancy is a key

ingredient of therapeutic change across all therapeutic modalities (Kirsch 1990).

Self-efficacy

The construct of self-efficacy reflects an optimistic self-belief (Schwarzer 1992).

Specifically, it reflects the patient's belief that they can perform difficult tasks or

cope with challenges in various domains of their lives. The contextual model is not

the only theory to highlight the crucial role of self-efficacy in psychotherapy. For

instance, Bandura (1977) argued that the key mechanism of change in all forms of

psychological treatment is to increase patients' sense of self-efficacy, by enabling

them to engage in effective performance of behaviours they had previously found

difficult. Thus, both Bandura and the contextual theorists argue that all effective

forms of therapy will enable patients to engage in new behaviours, (even if these

behaviours are purely psychological such as the development of insights), to master

these behaviours, and hence achieve an increased sense of self-efficacy. Contextual

theorists further argue that this process interacts with the other common factors,

whereby perception of the treatment as credible and formation of an alliance with

the therapist will increase the likelihood that patients will engage in these new

behaviours and hence achieve increased self-efficacy (Wampold & Budge 2012).

The role of specific factors in the contextual model

Proponents of the contextual model argue that specific factors are often associated

with the outcome of psychotherapy, but only because they facilitate and are

facilitated by the common factors, which are the true drivers of change (Frank &

Frank 1990, Wampold 2001). Perception of a treatment as credible requires a specific treatment rationale and treatment techniques upon which to base this perception. Development of an alliance also requires that patient and therapist work together based on a specific treatment rationale, towards specific treatment goals and using specific techniques. Specific treatment tasks allow patients to master new behaviours and so increase their self-efficacy. Thus, specific treatment rationales, goals, techniques and tasks contribute to outcome only because they enhance the common factors.

Criticisms of the common factors approach

Despite the growing appreciation of approaches emphasising the importance of common processes, the contextual theory and other similar theories have also attracted a degree of criticism. It has been argued that the common factors outlined by theorists such as Frank (Frank & Frank 1991) are not truly common to all therapies. For instance, whilst all therapies may provide some form of 'new learning experiences', the learning experiences they provide are so different that they cannot be meaningfully compared, and should not therefore be considered 'common' factors (Haaga 1986). Strupp (1986) further argues that overemphasising the role of common factors and neglecting that of specific factors could mean that research on psychotherapy process is seriously hindered, and the true mechanisms of therapeutic progress are not discovered.

The evidence for and against the contextual theory

The question of whether the research evidence favours specific or common factors has incited much debate in the literature. To some authors, the balance of evidence clearly supports the contribution of common factors, whilst suggesting that specific factors contribute comparatively little to outcome (Hubble et al. 2005, Lambert & Bergin 1986, Lambert 2003, Wampold 2001). Others are highly critical of the evidence cited in favour of common factors, and argue the evidence suggests that specific factors may be equally or more important (DeRubeis et al. 2005). To others, the evidence is more mixed, suggesting that both specific and common factors have an important role to play (Orlinsky et al. 2004). This thesis is based on the view that, whilst there is stronger evidence to date on the importance of common factors than that of specific factors, nonetheless, there is some evidence suggesting that specific factors may be important too. Furthermore, because very few studies have examined the interplay between specific and common factors, there is very little evidence to support contextual theorists' contention that specific factors only contribute to outcome indirectly by enhancing common factors. The evidence for and against each from RCTs, meta-analyses, component designs and correlational studies is reviewed below.

Evidence from randomised controlled trials

The American Psychological Association stipulated in the 1990s that RCTs should be used to determine whether the effects of a therapy were due to specific or

common factors (Task Force on Promotion and Dissemination of Psychological Procedures 1995, Chambless & Hollon 1998). Patients are randomly allocated to receive either the therapy being tested, or a "placebo" treatment. The placebo treatment is designed to comprise all of the non-specific/common aspects of psychotherapy, whilst not containing the specific elements of the psychotherapy being tested. Advocates of specific factors often cite RCT evidence that a particular therapy model has been found to be more effective than 'placebo' therapies as evidence that specific factors are key in promoting positive outcome. For instance, DeRubeis et al. (2005) cite the repeated RCT findings that cognitive therapy is more effective than placebo comparison therapies for panic disorder as evidence that specific factors have an important role to play. However, evidence from most RCTs conducted to date has not been sufficient to demonstrate that specific factors were responsible for any superior effect of one therapy over another. This is because, without directly measuring and then comparing the non-specific/common factors occurring in each condition, no assumptions that they are equivalent can be made (Wilkins 1983), and such assessments are rarely made (Horvath 1988). Indeed, patients and therapists in the control condition will usually both be aware that they are receiving (or administering) the 'placebo' therapy, and so are likely to perceive the treatment as less credible than patients and therapists in the experimental condition (Frank & Frank 1991). In support of this, it has been shown that placebo treatments that are commonly used in psychotherapy RCTs are perceived as less credible than the therapy models they are tested against (Borkovec & Nau 1972). Furthermore, precise delineation of exactly what non-specific aspects are present in a particular therapy is itself difficult- designing a 'placebo' treatment which then

comprises all of them presents further difficulties (Oei & Shuttlewood 1996). Some

RCTs to date have been superior to others in that they have compared a treatment

to a highly credible alternative treatment which is delivered in a similar format and

with the same frequency as the tested treatment, such as RCTs comparing CBT to

trauma-focused CBT for post-traumatic stress disorder (NICE 2005). Nonetheless,

even in these RCTs, the alliance and treatment credibility were not directly

assessed, and so it cannot be ruled out that one treatment was more credible than

the other, or that differences in outcome between the conditions were due to

chance differences in the quality of the therapeutic alliance in the two samples.

Thus, evidence from RCTs arguably does not offer convincing support for the

importance of specific factors, unless it can be empirically demonstrated that the

treatment conditions compared are equivalent in terms of all non-specific factors

that could contribute to outcome, such as the alliance and treatment credibility,

and if differences in outcome between treatment conditions hold even after

adjusting statistically for these non-specific factors.

Evidence from meta-analysis of trials

The evidence from meta-analyses of RCTs could be seen as supporting the

importance of common factors. Indeed, the starting point for the development of

models emphasising the common aspects of therapy was the Dodo Bird effect. This

was so called after a seminal article summarised the equivalence of outcomes

across therapies by quoting from Alice in Wonderland: "At last the Dodo said,

'Everybody has won, and all must have prizes'" (Rosenzweig et al. 1936, p. 412). In

other words, studies comparing the relative effectiveness of different psychotherapy models have found that no one model is more effective than another (Wampold 2001). The first meta-analysis to demonstrate this was that of Smith and Glass (1977). Several subsequent meta-analyses comparing the effectiveness of different forms of psychotherapy have supported this result (Brown 1987, Wampold et al. 1997). However, the validity of comparing the effect sizes achieved in trials with different diagnostic groups, disorder severity and outcome severity has been criticised (Rachman & Wilson 1980).

There are two possible explanations for the meta-analysis findings. On the one hand, there may be different specific factors at work in different therapies which, whilst achieving similar effect sizes in terms of patient improvement, nonetheless do so via very different routes (DeRubeis et al. 2005). Alternatively, the equivalent effectiveness of different therapy models could constitute evidence that the common factors shared by all or most therapies play the major role in contributing to patient improvement, rather than specific factors. Supporters of this interpretation argue that it offers a far more parsimonious explanation for outcome equivalence than any other explanation- and science always favour parsimony (Wampold 2005). However, critics of this interpretation argue that the simplest explanations do not always reflect the complexities of reality (De Rubeis et al. 2005).

Evidence from component studies

Further evidence against the importance of specific factors includes a meta-analysis of 27 component studies, in which a group of patients who received the full version of a therapy were compared to a group who receive the same therapy but with one specific 'component' missing. The average effect size was not statistically different from zero - i.e. the treatments were equally effective with or without their respective specific factors (Ahn & Wampold 2001).

Correlation between common factors and treatment outcome

Another strand of evidence in favour of the contextual theory is the wealth of evidence supporting the association between common factors and treatment outcome. This is particularly true for the three common factors that are the focus of this thesis: the therapeutic alliance, treatment credibility, and self-efficacy. The evidence for each of these will be reviewed in turn.

The therapeutic alliance

Numerous reviews have identified the alliance as one of the process variables most consistently and strongly associated with outcome (Orlinsky & Howard 1986, Gaston 1990, Horvath & Greenberg 1994, Orlinksy et al. 1994). Furthermore, two meta-analyses, one with 24 studies and one with 79 studies, have each found a medium effect size for the association of alliance with outcome (Horvath & Symonds 1991, Martin et al. 2000), corresponding to 7% and 5% of the variance in outcome respectively (Wampold 2001). Moreover, it has been shown that early alliance predicts later outcome (Blatt et al. 1996, Krupnick et al. 1996), even after

adjusting for pre-treatment symptom severity (Burns & Nolen-Hoeksmea 1992).

This suggests that a better therapeutic alliance leads to improved outcomes rather

than improved outcomes leading to a better therapeutic alliance. The weight of the

evidence on the therapeutic alliance has been interpreted by many reviewers, such

as Lambert (1986, 2003) and Wampold (2001), as evidence that common factors

are strongly linked to treatment outcome. However, Kazdin (2007) notes that

relatively few studies have investigated the direction of the relationship between

alliance and outcome, and that several of those which have, have found a

bidirectional relationship (Barber et al. 2000, DeRubeis & Feeley 1990, Tang

&DeRubeis 1999). DeRubeis et al. (2005) conclude therefore that the available

evidence on the therapeutic alliance does not provide good evidence for the

importance of common factors. Nonetheless, it remains the aspect of therapy with

the strongest evidence base as a mechanism of patient change.

Treatment credibility

Several studies have shown that, across many different therapeutic modalities,

patients who perceive their therapy as a credible method for achieving change

achieve better outcomes (Hardy et al. 2012, Kirsch & Henry 1977, Nau et al. 1974,

Safren et al. 1997, Borkovec et al. 2002, Smeets et al. 2008). There is also good

evidence that outcome expectations - i.e. to what extent patients expect to

achieve positive outcomes during therapy - is positively related to treatment

outcome (Greenberg et al. 2006). This construct overlaps conceptually and

statistically with treatment credibility (Devilly & Borkovec 2000, Constantino et al. 2004, Constantino et al. 2005). A meta-analysis of the association between treatment credibility and outcome in thirty psychotherapy studies found that they were highly correlated (Weaver 1998). As predicted by the contextual theory, evidence suggests the effect of outcome expectations on outcome is partly mediated by the therapeutic alliance (Connolly- Gibbons et al. 2003, Constantino et al. 2005, Joyce et al. 2003, Meyer et al. 2002).

Self-efficacy

The construct of self-efficacy can be assessed in terms of general self-efficacy in dealing with a variety of problem areas, or in terms of self-efficacy to overcome a particular problem (Wilson et al. 2002). Both general (Beeber et al. 2010, Sheu 2008, Tschacher et al. 2000) and target-specific (Casey et al. 2005, Delsignore et al. 2008, Wilson et al. 2002) self-efficacy have been shown to be related to the outcome of treatment. Several studies have shown that self-efficacy predicts the outcome of other kinds of health interventions also, such as the take-up of health behaviours after community health campaigns (Maibach et al. 1991), or adherence to neurological interventions (Fuertes et al. 2009). However, the use of this construct in psychotherapy process-outcome research is certainly less well-established than the measurement of therapeutic alliance or treatment credibility, and no review or meta-analysis could be identified. It has been argued that there is as yet insufficient evidence to conclude that self-efficacy can be considered a common factor predicting the outcome of therapy (Weinberger 1993).

Correlation between specific factors and treatment outcome

Wampold (2001) considers the evidence that specific factors can predict outcome to be very limited. He cites, for instance, the NIMH TDCRP, a large-scale study of different treatment models for depression in which"despite different theoretical rationales, distinctive therapeutic procedures, and presumed differences in treatment processes, none of the therapies produced clear and consistent effects at termination of acute treatment on measures related to its theoretical origins" (Imber et al. 1990, p. 357). Mirroring this finding, several other studies have found that, even when patients receiving a particular therapy model demonstrate improvements on constructs theoretically specified as mechanisms of change for that therapy, such as changes in cognitions during cognitive behavioural therapy, patients receiving completely different therapies, or even pharmacotherapy, show equivalent improvements on these constructs (Zeiss et al. 1979, Simons et al. 1984). Furthermore, it has been demonstrated that changes in depression can occur prior to introduction of the cognitive interventions aimed at changing cognitions during cognitive behavioural therapy (Illardi & Craighead 1994).The most parsimonious explanation for these findings is that specific factors do not explain the outcome of therapy. Hubble et al. (2005) conclude therefore: "After more than 40 years of research, evidence that specific ingredients are needed for resolving particular disorders remains conspicuously missing... Bluntly put, the existence of specific psychological treatments for specific disorders is a myth" (Hubble et al. 2005, p. 28).

However, other authors have argued that this conclusion is premature, citing

several studies that have demonstrated associations between specific factors and

outcome. Oei and Shuttlewood (1996) address this debate with particular reference

to cognitive behaviour therapy (CBT) for depression, citing De Rubeis and

colleagues' (1990) finding that a CBT-specific factor, change in cognitions, predicts

subsequent changes in outcome whilst changes in outcome do not predict

subsequent changes in cognitions. Furthermore, Oei & Shuttlewood (1997) found

that change in cognitions predicted outcome even after adjusting for the effects of

common factors such as therapeutic alliance, but also that common factors such as

the alliance were no longer associated with outcome after adjusting for specific

factors. Thus, there is evidence that specific change processes can be associated

with outcome. Orlinksy and colleagues (2004) reached a similar conclusion after

reviewing 821 psychotherapy change process studies published between 1950 and

2001. They concluded that "effective psychotherapy is clearly more than a set of

technical procedures, but it is also more than a warm, supportive relationship. Both

the common factors of relationship and specific therapeutic interventions have an

impact on outcome". Orlinsky and colleagues' conclusion is arguably based on a

much more comprehensive review of the literature than Wampold's. However,

whereas Wampold's conclusion was based primarily on carefully selected studies of

very high quality, Orlinsky et al's review did not discriminate between high and low

quality studies. Based on the review of the literature conducted above, this thesis

argues that, whilst certainly the evidence in favour of common factors seems

stronger, and the evidence against the role of specific factors must be

acknowledged, it may be premature to dismiss the role of specific factors.

Psychotherapy change process research should therefore continue to investigate the role of both types of variable, and should further consider the ways in which they may interact.

The Role of Extratherapeutic Factors

An often neglected source of variance in the outcome of psychotherapy is factors occurring outside of the treatment context, or 'extratherapeutic factors'. People's experiences in their everyday lives are likely to affect the course of psychotherapy. Lambert (2003) and Hubble et al. (2005) suggest that such extratherapeutic factors could include support from friends and family, or positive and negative life events. Based on evidence of 'spontaneous remission', i.e. symptom reduction without receiving treatment, Lambert & Bergin (1986) estimated that up to 40% of the variance in the outcome of therapy could be explained by extratherapeutic factors. However, they acknowledged that this work was subject to substantial limitations (Lambert 2003). More recently, Wampold et al. (2001) estimated that, after accounting for the influence of specific and common aspects of the therapy process, 20% of the variance in outcome remains unexplained and may partly be attirubuted to extratherapeutic factors.

This thesis focuses on one particular type of extratherapeutic factor: social support. Two separate meta-analyses, of 23 and 27 studies respectively, have concluded that social support is positively associated with psychotherapy outcome, although with a

small effect size (Case 2008, Roerhle & Strouse 2008). Specific examples include the findings that social support predicts positive outcomes after inpatient hospitalisation for depression (Brugha et al. 1990), after exposure therapy for PTSD (Price et al. 2011), and after cognitive behaviour therapy for depression (Schar & Bodenmann 2011). A review of the role of social support in psychotherapy concludes that enhancing social support from patients' friends and family may contribute to positive outcome firstly by providing emotional support and reassurance of self-worth, secondly by providing practical help, thirdly by providing companionship, and fourthly by providing motivational support, including the motivation to complete therapy goals (Champion 2012). More generally, social support, especially the presence of a person to confide in, has been consistently shown to reduce the probability of developing psychiatric illness after experiencing a severely stressful life event (Champion 1990), including physical or sexual abuse in childhood (Friedman 2007). Based on results such as these, an influential theory for explaining the association between social support and improved mental health has been developed - the 'buffer theory' - which argues that this association is due to a 'buffering' effect of social support on the impact of life stressors (Broadhead et al. 1983, Cohen & Wills 1985). However, although widely tested and broadly accepted, the evidence for this theory has been criticised (Alloway & Bebbington, 1987). The relationship between social support and psychiatric illness is likely to be bidirectional. For instance, it has often been demonstrated that patients with mental illness have fewer social contacts than people in the general population (Brugha et al. 1982).

Specific, common and extratherapeutic factors in dialectical behaviour therapy

for borderline personality disorder

Several authors have identified a need for research on change mechanisms in DBT, including Levendusky (2000), Linehan (2000), Robins and Chapman (2004), and Lynch (2006, 2007). As argued earlier, if effective treatment processes or elements in DBT are identified, DBT can be improved by augmenting these processes, and these processes can also be implemented in routine treatment. The end results of such research should be improved outcomes. Evidence on change mechanisms in DBT from three types of study will be considered: meta-analyses, component studies, and correlational studies.

Meta-analyses

In the most recent Cochrane review of psychological treatment for BPD, Stoffers and colleagues conducted a meta-analysis of the effect of DBT compared to TAU, and found moderate to large statistically significant effects indicating superiority of DBT for anger, parasuicide and mental health outcomes (Stoffers et al. 2012). This could indicate that specific elements of DBT are responsible for its positive impact on these outcomes. However, patients in the TAU conditions used in this

comparison did not receive treatment for as many hours per week as those in the DBT condition, and the TAU condition is likely to have been less credible than DBT. Thus, the superior effect of DBT in this meta-analysis could have been due to the increased attention received by DBT patients, and the increased credibility of DBT, rather than any specific elements of DBT.

Only one meta-analysis to date has compared the effectiveness of DBT to that of other treatments that were specifically developed for BPD, rather than 'treatment as usual'. The between-groups effect size for DBT was not significantly different from that of other therapy models such as MBT or TFP (Levy et al. 2012, in preparation). This finding could suggest that common factors are more important than specific factors in determining the effect of therapy for BPD. Alternatively, different models may achieve equivalent effects via different specific mechanisms.

Component studies

There have to date been three component studies of DBT. In the first, 11 patients with BPD were randomly assigned to receive non-DBT individual therapy plus DBT skills training, whilst 8 were assigned to receive non-DBT individual therapy alone Linehan (1993a). There were no between-group differences on any outcome. Linehan concluded that either both DBT individual and skills training are necessary, or the non-DBT individual therapy may have interfered with the effect of the skills training.

One of the RCTs described in Chapter One, Linehan et al. 2002, may be considered a component study. DBT was compared to comprehensive validation treatment (CVT), a treatment specially designed to provide the validating aspects of DBT without the change-focused techniques. The DBT group had a significantly greater reduction in opiate use between months 8 and 12 of treatment than the CVT group, but there were no group differences in self-harm or general psychiatric symptoms. This suggests that both the validating and change-focused aspects of BPD may make an important contribution to substance use outcomes.

Most recently, Andion et al. (2012) found that standard DBT (i.e. group and individual) was not significantly superior to the individual DBT component alone on any outcome. This could indicate that the skills training groups do not make an important contribution to outcome.

Correlation between specific factors and treatment outcome

Two specific factors, i.e. factors outlined by Linehan (1993a) in the treatment manual as key change mechanisms in DBT, have been evaluated: use of the DBT skills, and balancing acceptance versus change techniques.

DBT skill use

Learning and use of the DBT skills is clearly stipulated in the treatment manual as a key change mechanism, theorised to enable patients to better tolerate distress and regulate their emotions (Linehan 1993a). Three studies have evaluated the

relationship between use of the DBT skills and outcome (Miller et al. 2000, Neacsiu et al. 2010a, Stepp et al. 2008). These are discussed in chronological order below.

Miller and colleagues (2000) examined 27 adolescent DBT patients' ratings of the helpfulness of 19 individual DBT skills. The helpfulness of each skill was rated after 12 weeks of DBT, on a 5-point scale from 'not at all helpful' to 'extremely helpful' using the DBT Skills Rating Scale for Adolescents (Rathus & Miller 1995a). Outcomes were measured using the Life Problems Inventory (LPI, Rathus & Miller 1995b), designed to assess four major problem areas characteristic of BPD: identity confusion, impulsivity, emotional instability and interpersonal problems. Three of the emotion regulation skills were positively correlated with reduction in identity confusion, whilst one of the distress tolerance skills (radical acceptance) was positively correlated with reduction in interpersonal problems. Contrary to their hypothesis, perceived helpfulness of one of the mindfulness skills was negatively correlated with reduction in emotional instability. The authors concluded that skills helpfulness was less often correlated with outcome than they had hypothesised, and suggest that the frequency of skills use may be more highly correlated with outcome than helpfulness.

Perhaps following this recommendation, Stepp et al. (2008) chose to evaluate frequency of skills use in 27 adult patients receiving DBT. Use of 22 DBT skills was assessed weekly using the diary cards routinely completed by patients during individual therapy. Using multi-level modelling, the authors showed that higher skills use frequency was associated with greater reduction in BPD symptom severity over time, even after adjusting for patient age and pre-treatment BPD and general

psychiatric symptom severity. The authors also adjusted for diary card compliance

as an index of treatment motivation, and the results remained significant. They

argue that skills use may therefore be a specific change mechanism in DBT,

contributing to outcome over and above the role of common factors.

Neacsui et al. (2010a) also measured skills use. The authors developed a checklist

assessing the use of the behaviours prescribed by the skills e.g. "I accepted my

strong feelings, but let them not interfere with other things too much", as well as

behaviours proscribed in the skills teaching e.g. "I refused to believe that it had

happened" (Neacsui et al. 2010). Patients are asked to what extent they have

carried out each behaviour in the past month, on a 4 point scale from "never used"

to "regularly used". The lack of DBT-specific terminology allowed the authors to

apply it to patients receiving other treatments as part of the control group from

three RCTs, as well as to patients receiving DBT (Linehan et al. 1999, Linehan et al.

2002 and Linehan et al. 2006). The analyses indicated that, across all patients,

increased skill use predicted decreased likelihood of non-suicidal self-harm and of

suicide attempts, increased control over anger and decreased depression.

Furthermore, mediational analyses indicated that increased skills use fully mediated

the effect of increasing time in treatment on the likelihood of suicide attempts,

anger control and depression, and partially mediated the effect of time in

treatment on the likelihood of non-suicidal self-harm. Because the analysis did not

consider DBT separately from other treatments, the results suggest that increased

skill use in a more generic sense may be a change mechanism common to several

psychological treatments. However, the authors interpreted the finding that DBT

patients increased their skills use more over time than TAU patients as evidence that skills use is a specific change mechanism in DBT.

Research on the association DBT skills use and outcome has become increasingly methodologically sophisticated over time. All three studies conducted to date have found at least some evidence that use of the DBT skills predicts outcome. The relationship between actual use of the skills and outcome seems to be stronger than that for perceived helpfulness of the skills. However, the research to date has been subject to several limitations. Firstly, in two studies not all participants met full diagnostic criteria for BPD (Miller et al. 2000, Stepp et al. 2008), and it is not clear if this influenced the results. Secondly, in one study, ratings of skill use were collected as part of individual therapy, in the context of which patients may have felt pressured to inflate their skills use (Stepp et al. 2008), and in another, it is not clear whether ratings of skill helpfulness were collected by independent researchers or by the therapists (Miller et al. 2000). Thirdly, in Neascui et al. (2010a), patients were required to retrospectively rate their use of skilled behaviours over the past month. This time period may have been long enough to be subject to recall bias. Supporting this, a comparison of a daily rating of coping skills use to a retrospective rating made at the end of the same week found that they shared only 25% of variance in skills use (Smith et al. 1999).

It could be argued that the evidence from the studies presented above supports the use of the DBT skills as a specific change mechanism in DBT. However, contextual theorists would also expect DBT skills use to be related to outcome – but their explanation would differ. Whilst proponents of the role of specific factors in DBT

argue that the effect of skills use on outcome is mediated by improved emotion regulation abilities (Linehan 1993a), contextual theorists would argue that the effect is mediated by the inter-related processes of increased self-efficacy, greater treatment credibility, and a stronger therapeutic alliance (Frank & Frank 1991, Wampold 2001). Research to date has not produced evidence supporting either mediational theory, and has not demonstrated that the effect of skills use on outcome holds even after adjusting for self-efficacy, treatment credibility and the alliance.

Therapist balance between acceptance versus change techniques

As described in Chapter One, the central dialectic underpinning the treatment strategies used in DBT is the balance between the use of acceptance/ validation techniques versus the use of change techniques. Two studies have assessed the correlation between this balancing of techniques and outcome.

Shearin and Linehan (1992) indirectly measured the balance between acceptance and change techniques using the Structural Analysis of Social Behaviour (SASB, Benjamin 1988). High use of acceptance techniques was conceptualised as high scores on the freeing and ignoring items of the SASB, whilst high use of change techniques was conceptualised as high scores on the controlling and nurturing items of the SASB. A balance between acceptance and change was conceptualised as high scores on both freeing/ignoring items and controlling/nurturing items. Four patients used the SASB to rate their therapist's behaviour weekly. Aggregating time

series data over all four patients, the results supported a significant negative

association between balanced use of acceptance/change techniques and

subsequent parasuicide severity. Examining patient data individually, significant

relationships were found in two of four patients.

The results of this small study were replicated in a sample of 76 patients taking part

in Linehan's 2006 RCT of DBT versus treatment by community experts (Linehan et

al. 2006). Bedics et al. (2012) showed that therapists' use of a balance between

acceptance and change techniques, as reported by patients on the SASB, was

associated with a subsequent reduction in self-harming behaviour. However, this

was only the case for patients in the DBT condition. In patients receiving treatment

by community experts, balanced acceptance-change techniques was associated

with an increase in self-harming behaviour.

 The results of these two studies suggest therapists' balancing of acceptance versus

change techniques could be a specific change mechanism in DBT. However, it is not

clear how well the SASB really measures acceptance and change techniques as

conceptualised in DBT. Furthermore, these studies have not examined whether

these results hold after adjusting for common factors such as the therapeutic

alliance.

Correlation between common factors and treatment outcome

Only one common factor has been evaluated in relation to DBT: the therapeutic

alliance.

The therapeutic alliance

Turner (2000) evaluated the therapeutic alliance in 24 patients with BPD using the Helping Relationship Questionnaire (HRQ Luborsky 1984), after six months of either DBT (plus psychodynamic techniques) or client centred therapy. Adjusting for the effect of treatment condition, there was a significant positive association between the therapeutic alliance and aggregate improvement in parasuicide severity, number of suicide/self-harm attempts, suicidal ideation severity, number of days in hospital, impulsivity, anger, depression, anxiety and general psychiatric symptom severity. Weaknesses of this analysis included the late timepoint at which the alliance was assessed, adding to the difficulty in determining the direction of association between alliance and outcome. Furthermore, the use of an aggregate outcome index meant that information on individual alliance-outcome relationships was unavailable. Such information could contribute to clearer hypotheses on the mechanisms by which the alliance influences outcomes. Nonetheless, this study provides an initial indication of the potential relevance of the alliance to the outcome of DBT. The importance of the alliance in psychotherapy for BPD has also been demonstrated in other therapeutic models (see Chapter Three).

Correlation between extratherapeutic factors and treatment outcome

Only one study has examined the influence of social support on the outcome of DBT. O'Toole and colleagues (2012) found that perceived social support was positively associated with emotional well-being in patients receiving DBT. However, this study did not assess any potential confounders such as baseline severity, or specific or common therapy factors.

Conclusion

Research on change mechanisms in psychotherapy can be a valuable source of information for treatment development and improvement. The relative contribution of specific, common and extratherapeutic factors to change is at the heart of our understanding of how psychotherapy works. The weight of evidence from meta-analyses, component designs and correlational studies seems to favour common factors as the main drivers of change. However, there is also evidence that specific and extratherapeutic factors may be important. Research on change mechanisms in DBT has been limited and has largely focused on correlating specific factors with outcome. Research focusing on the role of common and extratherapeutic factors has been particularly minimal. There is good evidence that skill use, a specific factor in DBT, is associated with symptom improvement during DBT. However, it is not clear whether this association is driven by covariance with common and extratherapeutic factors, or whether the influence of skill use is independent of these factors. Further research should test whether skill use still remains associated with outcome after adjusting for common factors such as treatment credibility, the alliance and self-efficacy, and extratherapeutic factors such as social support from friends and family.

Chapter Three

A systematic review of factors predicting the outcome of psychotherapy for borderline personality disorder

INTRODUCTION

A version of the work presented in this chapter has been published in Clinical Psychology Review as Barnicot et al. (2012). See Appendix A for the publication manuscript (p.481).

As reviewed in Chapter One, evidence suggests that psychotherapy can alleviate the behaviours and psychological distress associated with BPD. In particular, the 1990s and 2000s saw the development of various psychotherapy models specifically designed to treat BPD, such as DBT, mentalization based therapy, schema focused therapy and STEPPS (Bateman & Fonagy 2006, Blum et al. 2002, Linehan 1993, Young 1994). Some patients receiving these treatments experience markedly better outcomes than others despite receiving the same treatment. The factors driving these inter-individual differences in outcome are largely unknown.

There is as yet no consensus on what factors influence the outcome of psychotherapy for BPD. Such information would be valuable, firstly because determining what patient characteristics influence the outcome of therapy could enable earlier identification of patients who may be at risk of poor outcomes and may therefore require altered treatment strategies. Secondly, as discussed in Chapter Two, understanding how therapy processes can influence outcomes could enable helpful factors to be identified, and treatments for BPD could then be modified to enhance these factors. Thirdly, a systematic review on this topic could be a useful source of information on potential confounders to consider when

evaluating mechanisms of change during psychotherapy for BPD, as in Chapter Five of the present thesis.

Existing attempts to synthesise research on predictors have been non-systematic and have included those of Lieb and colleagues (2004), who briefly summarised the results of four relevant studies, and Robins and Koons (2004), who summarised the results of five relevant studies, both as part of wider reviews on treatment for BPD. However, whilst a wide range of potential predictors were identified, these reviews demonstrated few consistent findings across studies. Moreover, it was beyond the scope of these brief review sections to include any information or critique of the methodology employed in the cited studies.

The aim of this chapter is therefore to systematically and critically review the evidence on patient characteristics and treatment processes prospectively predicting symptom change during psychotherapy for BPD.

METHODS

Searches of title and abstract content were performed in January 2012 in the PsycInfo, EMBASE, CINHAL and Medline databases. The search terms used were combinations of either "borderline personality" or "Cluster B" with terms used to designate association: "correlate", "associate", or "predict", and terms used to describe relevant outcomes: "outcome", "symptoms", "recovery", "improvement", "depression", "anxiety", "anger", "self harm", "self injury", "parasuicide" or "suicide", or with terms used to designate psychological treatment: "therapy" or

"psychotherapy". The references of included studies were then screened to identify any further relevant papers, as were the contents of all known RCTs of psychotherapy for BPD as identified in recent reviews (Binks et al. 2006, Barnicot et al. 2011, Priebe et al. 2012).

Studies were included if they evaluated the prospective relationship between any pre-treatment patient characteristic or treatment process and symptom change during psychotherapy for BPD, and reported on the statistical significance of the association. Pre-treatment patient characteristics could include sociodemographic factors, past or current mental health symptoms, personality traits or previous treatment history. Associations between outcome and patient biological (e.g. amygdala activity) or neuropsychological (e.g. working memory capacity) characteristics were excluded. Treatment processes were broadly defined to include any aspects of therapist or patient behaviours during treatment. The outcome of interest, symptom change, could include BPD symptoms, Axis I symptoms, and other Axis II symptoms. Studies in which not all patients had a diagnosis of BPD were excluded. Conference abstracts were excluded whilst dissertations and non-English language papers were not excluded.

The doctoral candidate screened all titles. The abstracts of potentially relevant studies were then independently screened by two researchers at a time (the candidate and either MS, NB or NF), and the full texts of any potentially relevant studies were obtained. The references of any full texts were also screened for potential relevance. Data on study characteristics and findings was independently

extracted by the candidate and either MS or NB. Any discrepancies between researchers were resolved by discussion.

 Quality criteria for evaluating the predictor analyses used in included papers were constructed in accordance with existing quality criteria such as those suggested by Gerber and colleagues (2011) and through wider reading on appropriate conduct of predictor-outcome analyses. The criteria developed were as follows:

1. The sample size for the predictors analysis (N< 30 = 0; 30≤ N>100 =1; N≥100 = 2).

2. The use of a reliable structured interview to diagnose BPD (not used = 0; used = 1).

3. The use of validated and reliable predictor and outcome measures (not validated and reliable = 0; validated and reliable = 1).

4. For RCTs only, blinding of the outcome assessor to treatment arm (not blinded = 0; blinded = 1; no control condition = n.a.).

 5. Predictor analysis used intent-to-treat data (not used = 0; used = 1).

6. Evidence was obtained that omission of missing data did not bias the results, either by showing that patients with missing outcome data did not differ from those with complete data on any of the predictor variables, or showing that predictor-outcome relationships remained the same after adjusting for data missingness, or showing that a sensitivity analysis using multiple imputation demonstrated the same results (evidence not obtained = 0; evidence obtained = 1; data available for entire sample of interest = n.a.).

7. Maximum likelihood or multiple imputation used in the main (not sensitivity) analysis to minimise bias from missing data (not used or no information on missing data = 0; used = 1; no missing data = n.a.).

8. Outcome distribution checks were performed and appropriate analyses used (distribution not checked or inappropriate model used = 0; distribution checked and appropriate model used = 1).

9. Analysis used continuous rather than dichotomised predictors when appropriate. This method increases statistical power to detect relationships between variables (Brauer 2002) and does not involve arbitrary division of predictor variables into "high" and "low" categories. (Continuous predictor variable was dichotomised in the predictor analysis = 0; continuous predictor was entered as continuous variable in predictor analysis = 1; predictor was categorical originally = n.a.).

10. Paper published in a peer reviewed journal (not published = 0; published = 1).

Each included study was scored against each criterion and the scores were then averaged to give a quality score for that study between 0 and 1, with higher scores reflecting higher quality. This averaging approach was taken because not all quality criteria applied to each study. The quality score reflects the quality of the study's analysis of predictor-outcome relationships, rather than the quality of the study as a whole. Where information pertaining to the criteria was ambiguous in the included studies, study authors were contacted for clarification. Where this information could not be obtained, ambiguous information was scored as not meeting the quality criterion. Analysis quality was assessed independently by the

doctoral candidate and NB. Inter-rater reliability was "substantial" according to Landis and Koch's critieria (kappa = 0.72, S.E. = 0.06; Landis & Koch 1977). The final quality analysis results were decided by discussion between the two authors.   `

Ideally, synthesis of research findings should be done using effect size procedures such as meta-analysis (Hunter & Schmidt 2004). However, many of the studies included in this review presented no information from which a standardised effect size could be calculated. Meta-analysis would have required exclusion of these studies - a potential source of bias since studies with non-significant findings were less likely to present effect size data. Furthermore, the number of studies examining the same predictor in relation to the same outcome was often too small for meta-analysis. Therefore, research synthesis was descriptive only. Findings on predictors examined in three or more studies will be presented in detail, since this was deemed a sufficient number of studies to permit cross-study synthesis. Predictors evaluated in fewer studies will be more briefly described.

RESULTS

Thirty three papers met review inclusion criteria. See Figure 3.1 below for a

QUOROM diagram detailing the paper retrieval process. The included papers are

described in detail in Appendix B Table B1 (p. 507-510). Some of the included

papers had overlapping samples. The sample assessed in Linehan et al. (1999)

constitute a sub-sample of the patients assessed by Chapman et al. (2009) and

Neacsiu et al. (2010), whilst the patients included in Bohus et al. (2004) constitute a

sub-sample of those assessed in Kleindienst et al. (2009), and the patients included

in Meehan (2008) constitute a sub-sample of those assessed in Clarkin et al. (2007).

In addition, the analyses of Spinhoven et al. (2007) and Spinhoven et al. (2008) use

a sub-sample of the patients assessed in Giesen-Bloo et al. (2006), whilst the

samples of Brown et al. (2009) and Harned et al. (2010) are both drawn from a

larger study (Linehan et al. 2006).

Despite differences in therapy model, measurement instruments, and

measurement timepoints, some consistent findings across studies could be

identified. The main method for classifying study findings was a consideration of

the statistical significance of any relevant associations tested. However, wherever

available, the effect size for significant associations was also reported, as

standardized r coefficients where possible. Effect sizes converted by the doctoral

candidate to r coefficients, using Effect Size Calculator software (De Fife 2009), are

signified by the superscript [a]. Furthermore, nine authors of included papers that

did not give information from which an r coefficient could be calculated were

contacted, and the necessary data was received from two. Effect sizes received

through correspondence with study authors are signified by the superscript [b]. The

size of r coefficients was classified as small (r < 0.30), medium (30 < r < 0.50) or

large (r ≥ 0.50), according to Cohen's classifications (Cohen 1988). Risk ratios were

classified according to the Cochrane Collaboration categorisation of risk ratio effect

size (Schünemann et al. 2008).

Quality Evaluation

Predictor-outcome analyses in eight studies were given low quality scores (≤0.5),

fifteen moderate scores (>0.5 and <0.70), nine high scores (≥ 0.70 and < 1.0) and

one the maximum score of 1. Importantly, these scores pertain specifically to the

quality of the analyses of predictor-outcome associations, and not to the quality of

the study as a whole. Subsequent references in this review to "analysis quality" are

references to these quality ratings, and not to the quality of the studies as a whole.

The calculation of the quality score for each study is explained in Appendix B Table

B2 (p.511-513). Twenty-five authors were contacted in order to clarify information

relating to the quality criteria, of which twelve replied with relevant information.

Information gained through contacting study authors is denoted by the superscript

[c] in Appendix B.

Figure 3.1. QUOROM diagram showing paper retrieval process

Unique electronic search results

N = 549

Excluded following electronic title screen

N = 225

Abstracts screened

N = 324 from search results

N = 23 from reference screen

N = 36 from BPD psychotherapy studies identified in previous reviews

Excluded following abstract screen

N = 242

Full texts screened

N = 98 from search results

N = 7 from reference screen

N = 36 from BPD psychotherapy studies identified in previous reviews

Excluded following full text screen

N = 108

Papers included in review

N = 33

Patient Characteristics At Pre-treatment

Sociodemographics

Almost all studies to examine the influence of patient sociodemographics found no significant association with outcome, including studies examining age (Bateman & Fonagy 1999, Black et al. 2009, Bohus et al. 2004, Davidson et al. 2010, Laddis 2010, Ryle & Golynkina 2000), gender (Bateman & Fonagy 1999, Laddis 2010, Ryle & Golynkina 2000), employment (Bohus et al. 2004, Davidson et al. 2006, Spinhoven et al. 2008), educational level (Bateman & Fonagy 1999, Black et al. 2009, Davidson et al. 2010, Laddis 2010, Ryle & Golynkina 2000, Spinhoven et al. 2008), and marital status (Bateman & Fonagy 1999, Davidson et al. 2010, Laddis 2010, Ryle & Golynkina 2000). Most of these non-significant findings resulted from predictor analyses of moderate or high quality. Exceptions were a significant association between age and change in suicidality (Clarkin et al. 2007, direction and effect size not stated, moderate predictor analysis quality), a positive association between male gender and improvement in general psychiatric symptoms (Black et al. 2009, r = 0.18 small effect size, moderate predictor analysis quality) and a positive association between employment and remission from BPD (Ryle & Golynkina 2000, r = 0.60[a] large effect size, moderate predictor analysis quality).

BPD symptom severity

 The effect of pre-treatment BPD severity was examined in seven studies, all of moderate or high predictor analytic quality with one exception. Their findings are summarised in Table 3.1. When broken down by outcome, four of five studies

examining the association with change in *BPD* symptoms found evidence of a relationship (Black et al. 2009, Giesen-Bloo et al. 2006, Meares et al. 1999, Ryle & Golynkina 2000). The two studies evaluating the effect of initial BPD severity on *Axis 1* symptom change found no significant relationships (Bohus et al. 2004, Black et al. 2009), whilst another found no significant association between BPD severity and remission from self-harm (Bateman & Fonagy 1999).

Three studies found that those with higher pre-treatment BPD severity achieved greater improvement in BPD symptoms during treatment. Effect sizes in these three studies ranged from small (r = 0.29[a], Meares et al. 1999) to large (r = 0.58, Black et al. 2009). Conversely, Ryle and Golynkina (2000) found that higher pre-treatment BPD severity was associated with a lower chance of achieving recovery from BPD (i.e. no longer meeting diagnostic criteria), with an effect size approaching large (r = - 0.46 [a]). A fifth study reported a significant association between initial BPD severity and improvement, but did not report the direction of the effect (Spinhoven et al. 2008). A partial explanation of the discrepant result in Ryle and Golynkina's study may be their use of recovery as an outcome criterion, whereas the studies with significant positive results used degree of symptom change as a continuous variable.

Table 3.1 Association between pre-treatment symptom severity and symptom change

Predictor	Paper	Sample size for analyses	Outcome	Association	Effect size	Instruments
Total BPD symptom severity at pre-treatment	Bateman & Fonagy 1999	44	Presence of self-harm	0	/	DIB, SSI
	Black et al. 2009	164	Improvement in BPD symptoms	+	r = 0.24	BEST, BEST
				0	r = 0.10	BEST, ZAN-BPD
				0	r = 0.11	ZAN-BPD, BEST
				+	r = 0.58	ZAN-BPD, ZAN-BPD
			Improvement in depression	0	r = 0.06	ZAN-BPD, BDI
			Improvement in general psychiatric symptoms	0	r= 0.14 [a]	ZAN-BPD, CGI
	Bohus et al. 2004	31	Improvement in general psychiatric symptoms	0	/	DIB-R, SCL-90-R
				0	r = 0.14 [b]	SCID-II, SCL-90-R
			Improvement in depression	0	r = 0.02 [b]	SCID-II, BDI
				0	r = 0.13 [b]	SCID-II, HAMD
			Improvement in anxiety	0	r = 0.33 [b]	SCID-II, HAMA
				0	r = -0.02	SCID-II, STAI
			Improvement in anger	0	r = 0.03	SCID-II, STAXI
			Improvement in dissociation	0	r = -0.03	SCID-II, DES
	Giesen-Bloo et al. 2006	88	Improvement in BPD	+	RR=1.07	BPDSI-IV, BPDSI-IV
			Recovery from BPD	0	/	BPDSI-IV, BPDSI-IV
	Meares et al. 1999	60	Improvement in BPD	+	r = 0.29 [a]	DSM-III, DSM-III
	Ryle & Golynkina 2000	27	Recovery from BPD	-	r = 0.46 [a]	DSM-IV, DSM-IV
	Spinhoven et al. 2008	71	Improvement in BPD	+/-	/	BPDSI-IV, BPDSI-IV
			Recovery from BPD	0	/	BPDSI-IV, BPDSI-IV
Dissociation severity at pre-treatment	Bohus et al. 2004	31	Improvement in dissociation	+	/	DES, DES
	Braakman et al. 2007	30	Improvement in general psychiatric symptoms	+	F = 6.38	DSS, SCL-90-R
			Improvement in depression	0	F = 0.35	DSS, BDI
			Improvement in anxiety	+	F = 7.25	DSS, BAI
			Improvement in dissociation	+	F = 36.1	DSS, DSS
	Harned et al. 2010	22	Remission from self-harm	0	r = 0.03 [a]	DES, SBQ, SASII
	Kleindienst et al. 2011	52	Improvement in dissociation	+	r = 0.43 [b]	DES, DES
			Improvement in general psychiatric symptoms	-	β = -0.02	DES, SCL-90-R
	Yen et al. 2009	50	Improvement in dissociation	+	β = 0.28	DES, DES
Anger severity at pre-treatment	Bohus et al. 2004	31	Improvement in anger	+	r = 0.59 [b]	STAXI, STAXI
	Meehan 2008	37	Improvement in anger	+	r = 0.49 [a]	OAS-M, OAS-M
	Yen et al. 2009	50	Improvement in anger	0	/	STAXI, STAXI

Predictor	Study	N	Outcome	Association	Effect size	Measures
General psychiatric symptom severity at pre-treatment	Bateman & Fonagy 1999	44	Remission from self-harm	0	/	SCL-90-R, SSI
	Black et al. 2009	164	Improvement in BPD symptoms	+	r = 0.30	CGI, ZAN-BPD
				0	r = 0.06	CGI, BEST
			Improvement in depression	0	r = 0.10	CGI, BDI
			Improvement in general psychiatric symptoms	0	r = 0.06[a]	CGI, CGI
	Bohus et al. 2004	30	Improvement in general psychiatric symptoms	+	r = 0.32[b]	SCL-90-R, SCL-90-R
	Kleindienst et al. 2011	54	Improvement in general psychiatric symptoms	+	r = 0.31[b]	SCL-90-R, SCL-90-R
	Laddis 2010	58	Improvement in general psychiatric symptoms	0	r = 0.28[a]	BPRS, BPRS
	Ryle & Golynkina 2000	27	Recovery from BPD	0	r = 0.14[a]	SCL-90-R, DSM-IV
	Yen et al. 2009	50	Improvement in general psychiatric symptoms	0	/	BSI, BSI
Depression severity at pre-treatment	Bateman & Fonagy 1999	44	Remission from self-harm	0	/	BDI, SSI
	Black et al. 2009	164	Improvement in BPD symptoms	0	r = -0.04	BDI, ZAN-BPD
				0	r = 0.06	BDI, BEST
			Improvement in depression	0	r = -0.06	BDI, BDI
			Improvement in general psychiatric symptoms	0	r = 0.03[a]	BDI, CGI
	Bohus et al. 2004	31	Improvement in depression	+	r = 0.50[b]	HAMD, HAMD
	Ryle & Golynkina 2000	27	Recovery from BPD	0	r = 0.15[a]	BDI, DSM-IV
	Yen et al. 2009	50	Improvement in depression	0	/	BDI, BDI
Anxiety severity at pre-treatment	Bohus et al. 2004	31	Improvement in anxiety	+	r = 0.39[b]	HAMA, HAMA
	Harned et al. 2010	51	Remission from self-harm	-	r = - 0.44[a]	SCID-I, SBQ

+ Positive association (p≤ 0.05); 0 No association; - Negative association (p≤ 0.05) ; +/- Significant association, direction not reported; / No effect size given; [a] Effect size converted to r by review authors; [b] Effect size provided through correspondence with study author; β Regression coefficient; BAI Beck Anxiety Inventory; BDI Beck Depression Inventory; BEST Borderline Evaluation of Severity over Time; BPDSI-IV Borderline Personality Disorder Severity Index Version IV; BPRS Brief Psychiatric Symptom Inventory; BSI Brief Symptom Inventory; DES Dissociative Experiences Scale; DIB(-R) Diagnostic Interview for Borderline Personality Disorder (- Revised); DSM-III or IV Diagnostic and Statistical Manual for Mental Disorders III or IV; DSS Dissoziations-Spannungs-Skala; F Analysis of variance coefficient; HAMA Hamilton Anxiety Scale; HAMD Hamilton Depression Scale; OAS-M Overt Agression Scale - Modified; r Correlation coefficient; RR Risk ratio; SASII Suicide Attempt Self Injury Interview; SBQ Suicidal Behaviors Questionnaire; SCID-II Structured Clinical Interview for DSM-IV Axis II; SCL-90-R Symptom Checklist 90 Revised; SSI Suicide and Self-harm Inventory; STAI Spielberger State Trait Anxiety Inventory; STAXI State Trait Anger Expression Inventory; ZAN-BPD Zanarini Rating Scale for Borderline Personality Disorder.

Dissociation severity

Findings on the effect of dissociation are shown in Table 3.1. Using predictor analyses of varying quality, three studies found evidence that more severe pre-treatment dissociation was linked to greater improvement in dissociation during treatment (Bohus et al. 2004, r=0.43[a], medium effect; Braakman et al. 2007, F(2, 27[a]) = 36.1; Yen et al. 2009, r = 0.57[a] with endorsement of BPD emptiness as covariate, large effect).

Conflicting results have been found on the effect of dissociation on improvement in general psychiatric symptoms. One study, with low quality predictive analysis, found a significant positive association (Braakman et al. 2007 – F(2, 27[b]) = 6.38) whilst another with high quality predictive analysis found a significant negative association (Kleindienst et al. 2011, β = -0.02 ± 0.006). Although measured on different scales, when calculated as a percentage of the total scale range, mean dissociation severity was approximately 10% higher in Braakman's study. Additionally, Braakman's study assessed dissociation over the past seven days, whereas Kleindienst's study assessed "present" dissociation over an unspecified time frame. It is possible that these differences could be linked to the discrepant results between these two studies.

A fifth study found pre-treatment dissociation severity did not significantly affect which patients achieved remission from self-harm (Harned et al. 2010, poor predictor analysis quality).

Anger severity

In predictor analyses of moderate and low quality respectively, both Bohus et al. (2004) and Meehan (2008) found higher pre-treatment anger predicted greater change in anger (respectively, r = 0.59[b] and r = 0.49[a], medium-large effect sizes). Conversely, Yen et al (2009), in a predictor analysis of high quality, found no significant association.

Axis I symptom severity

As shown in Table 3.1, pre-treatment Axis I symptom severity was sometimes found associated with greater symptom improvement. Black et al. (2009) found that higher general psychiatric symptom severity was associated with greater improvement in BPD symptoms (r = 0.30, medium effect size), whilst Bohus et al. (2004) and Kleindienst et al. (2011) found the same for improvement in general psychiatric symptoms (respectively, r = 0.32[b] and r = 0.31[b,] medium effect sizes), albeit in somewhat overlapping samples. Bohus et al. (2004) also found that higher initial depression or anxiety severity predicted greater improvement in depression and anxiety respectively (r = 0.50[b] and r = 0.39[b], moderate-large effect sizes). These three studies all used predictor analyses of moderate or high quality. Conversely, Harned et al. (2010) found that patients with more severe PTSD symptoms were less likely to achieve remission from self-harm (r = 0.44[a], medium effect, poor predictor analysis quality). In other studies, general psychiatric, depression or anxiety severity was not found associated with outcome (Bateman & Fonagy 1999, Koons et al. 2001, Laddis 2010, Ryle & Golynkina 2000, Yen et al. 2009).

History of self-harm

The duration over which self-harm history was measured ranged from the 10 weeks prior to baseline, to the patient's entire lifetime. All of the predictor analyses in studies assessing this were of moderate or high quality with the exception of one. Four studies found no evidence that patients' self-harm history was associated with treatment outcome (Bateman & Fonagy 1999, Davidson et al. 2010, Giesen-Bloo et al. 2006, Yen et al. 2009). Harned et al. (2010) found that a higher number of suicide attempts in the four months prior to treatment predicted a lower chance of achieving remission from self-harming behaviour during treatment, whilst Ryle and Golynkina (2000) found that patients with a recent or lifetime history of self-harm were less likely to achieve remission from BPD. The size of the effect in both studies could be classified as medium, approaching large ($r = 0.48$[a], $r = 0.49$[a] respectively). Conversely, Black et al. (2009) found that patients with a lifetime history of self-harm achieved greater improvement in BPD symptoms during treatment. This was a small effect ($r = 0.19$). It is possible that a positive effect of self-harm was found in Black's study versus a negative effect in Harned and Ryle's studies due to differences in the outcome used in these studies: symptom improvement in Black' study versus symptom remission in Harned and Ryle's studies. Thus, it is possible that patients with a self-harm history achieve a greater degree of improvement in symptom severity overall but are less likely to manage to completely stop self-harming or to no longer meet full criteria for BPD.

Axis I comorbidity

Patients' Axis I comorbidities were generally not found significantly associated with outcome, including current major depression (Bateman & Fonagy 1999, Black et al. 2009), current or lifetime anxiety disorders (Bateman & Fonagy 1999, Black et al. 2009, Harned et al. 2010), current or lifetime substance use disorders (Bateman & Fonagy 1999, Ryle & Golynkina 2000) and total number of current Axis I disorders (Bohus et al. 2004, Harned et al. 2010, Spinhoven et al. 2008). Predictor analyses in all of these studies were of moderate or high quality. An exception was the finding that patients with a lifetime history of substance use disorder achieved greater improvement in BPD symptoms during treatment (Black et al. 2009, r = 0.19 small effect, moderate predictor analysis quality). The proportion of patients with a lifetime history of substance abuse was higher in Black and colleagues' (2009) study than in Bateman and Fonagy (1999) or Ryle and Golynkina (2000), (61% versus 45% and 37%). These differences may partially account for the stronger association between substance abuse and outcome in the former study.

Social adjustment

Social adjustment refers to a person's functioning in terms of employment, leisure activities, family life and interpersonal situations. In six studies, there was no significant effect of this variable on symptom change (Bateman & Fonagy 1999, Black et al. 2009, Bohus et al. 2004, Harned et al. 2010, Kleindienst et al. 2011, Ryle & Golynkina 2000). Predictor analyses in all studies were of moderate or high quality, with one exception.

Psychiatric medication use

Most studies assessing this predictor used a binary variable (taking psychiatric medication at pre-treatment versus medication-free), with the exception of Black and colleagues (2009), who considered the total number of medications taken. No studies gave details of the types of medication taken by their samples. All predictor analyses were of moderate or high quality. In three studies there was no significant association between patients' medication usage and their outcome (Bateman & Fonagy 1999, Black et al. 2009, Ryle & Golynkina 2000). However, two studies found that patients initially taking psychiatric medication had a poorer outcome in terms of general psychiatric symptom improvement (Doering et al. 2010) and BPD symptom improvement (Giesen-Bloo et al. 2006). In both studies this was a large effect (r = 0.55 and risk ratio = 0.40 respectively).

Pre-treatment characteristics evaluated in fewer than three studies

The following characteristics evaluated in fewer than three studies were found associated with symptom change: special educational needs (negatively associated with remission from suicide attempts, Davidson et al. 2010); endorsement of individual BPD criteria (various positive and negative associations with outcome, Yen et al. 2009); comorbid paranoid personality disorder (positively associated with improvement in BPD symptoms, Black et al. 2009); experiential avoidance (negatively associated with change in depression, Berking et al. 2009); personality as rated by Cloninger's temperament dimensions (various positive and negative associations, Chapman et al 2009); positive attitude towards talking to a therapist (positively associated with improvement in depression and suicidality, Wenzel et al.

2008); and expectations for improvement (positively associated with improvement in BPD symptoms and suicidality, Wenzel et al. 2008). The following were not significantly associated with symptom change: living alone (Bateman & Fonagy 1999, Davidson et al. 2010); age at first self-harm (Davidson et al. 2010); recent major life events (Ryle & Golynkina 2000); sexual orientation (Ryle & Golynkina 2000); timing of index trauma in patients with comorbid PTSD (Harned et al. 2010); history or severity of childhood abuse (Bateman & Fonagy 1999, Ryle & Golynkina 2000); history of alcohol abuse (Ryle & Golynkina 2000); history of eating disorder (Bateman & Fonagy 1999, Ryle & Golynkina 2000); total number of Axis II comorbidities (Spinhoven et al. 2008); history of violence (Ryle & Golynkina 2000); treatment history (Bateman & Fonagy 1999, Ryle & Golynkina 2000); and patient-therapist schema dissimilarity (Spinhoven et al. 2007).

Treatment Processes

Therapeutic alliance

The only treatment process evaluated in more than two studies was the therapeutic alliance. The timepoint at which the alliance was evaluated varied from one month (Marziali et al. 1999) to one year (Leerer 1997) into treatment. Five studies evaluating the patient-rated therapeutic alliance found evidence of a relationship with outcome improvement, as shown in Table 3.2, with some studies finding associations between the alliance and multiple symptom constructs (Leerer 1997, Marziali et al.1999, Nadort et al. 2011, Spinhoven et al. 2007, Turner 2000). However, predictor analyses in these studies were all of poor (Leerer 1997, Marziali et al. 1999) or moderate (Spinhoven et al. 2007, Turner et al. 2000) quality, with the

exception of one study of high quality (Nadort et al. 2011). A fifth study, using

predictor analyses of moderate quality, found no evidence for association with

symptom change (Gunderson et al. 1997). In three studies, the effect sizes for

statistically significant associations were generally large according to Cohen's

classification (Cohen 1988), ranging from r = 0.40 to 0.68 (Leerer 1997, Turner 2000,

Marziali et al. 1999). Two studies reported odds ratios (Nadort et al. 2011,

Spinhoven et al. 2007), indicating that for each unit increase in the rating of the

therapeutic alliance the odds of achieving reliable improvement or recovery from

BPD increased by 1.67 and 1.50 times respectively (Nadort et al. 2011), and 1.36

and 1.39 times respectively (Spinhoven et al. 2011). Since these odds ratios refer to

a continuous predictor, Cohen's classification for odds ratio size does not apply, but

they may be considered clinically meaningful effects.

 A sixth study measured the observer-rated alliance, and, using analysis of

moderate quality, found a positive correlation with reliable change in BPD

symptoms (Goldman & Gregory 2010). Again, this was a large effect (r = 0.74).

Table 3.2 Association between patient-rated alliance and symptom change

Paper	Sample size for analysis	Timepoint of alliance measurement (months)	Timepoint of outcome measurement (months)	Outcome	Association	Effect size	Instruments
Gunderson et al. 1997	15	1.5	36	Improvement in BPD symptoms	0	/	HAQ, DIB
				Improvement in general psychiatric symptoms	0	/	HAQ, SCL-90-R
Leerer 1997	12	6 or 12	6 or 12	Improvement in anger	(+)	r= 0.55 [a]	HAQ, OAS-O
					+	r = 0.67 [a]	HAQ. OAS-P
					+	r = 0.68 [a]	HAQ, OAS-V
				Improvement in self-harm	0	/	HAQ, LSRAS
Nadort et al. 2011	62	1	18	Recovery from BPD	+	OR = 1.67	WAI, BPDSI-IV
				Improvement in BPD symptoms	+	OR = 1.50	WAI, BPDSI-IV
Marziali et al. 1999	34	1	12	Improvement in general psychiatric symptoms	0	r = 0.65 [a]	TAS_e, SCL-90
		2			+	r = 0.60 [a]	TAS_l, SCL-90
		1			0	r = 0.17 [a]	GTAS_e, SCL-90
		2			+	r = 0.57 [a]	GTAS_l, SCL-90
		1		Improvement in depression	+	r = 0.57 [a]	TAS_e, BDI
		2			+	r = 0.57 [a]	TAS_l, BDI
		1			0	r = 0.00 [a]	GTAS_e, BDI
		2			+	r = 0.41 [a]	GTAS_l, BDI
Spinhoven et al. 2007	78	3	36	Improvement in BPD symptoms	+	OR = 1.36	WAI, BPDSI-IV
				Recovery from BPD	+	OR = 1.39	WAI, BPDSI-IV
Turner 2000	24	6	12	Improvement in clinical outcomes (aggregate)	+	r = 0.63	HRQ, HRSD BPRS TBR BDI BAI BSSI

0 No association; + Positive association (p≤ 0.5); (+) Trend positive association (0.5 p<0.10); / No effect size given; [a] Effect size converted to r by candidate; BAI Beck Anxiety Inventory; BDI Beck Depression Inventory; BPDSI-IV Borderline Personality Disorder Severity Index Version IV; BPRS Brief Psychiatric Rating Scale; BSSI Beck Scale for Suicidal Ideation; DIB Diagnostic Interview for Borderline Personality Disorder; F Analysis of variance coefficient; GTAS_e Group Therapeutic Alliance Scale- early; GTAS_l Group Therapeutic Alliance Scale – late; HAQ Helping Alliance Questionnaire; HRQ Helping Relationship Questionnaire; HRSD Hamilton Rating Scale for Depression; LSRAS Lethality of Suicide Attempt Rating Scale; OAS-O Overt Agression Scale – Objects; OAS-P Overt Aggression Scale- People; OAS-V Overt Aggression Scale – Verbal; OR Odds ratio; r Correlation coefficient; SCL-90-(R) Symptom Checklist 90 (Revised); TAS_e Therapeutic Alliance Scale – early; TAS_l Therapeutic Alliance Scale- late; TBR Target Behaviour Ratings ; WAI Working Alliance Inventory

Treatment processes evaluated in fewer than three studies

Treatment processes evaluated in fewer than three studies and found associated with symptom change were the balance between acceptance and change-oriented techniques used by the therapist in DBT sessions (positive association with reduction in self-harm, Shearin & Linehan 1992); therapist use of DDP techniques (positively associated with improvement in BPD symptoms, Goldman & Gregory 2010); therapist adherence to the DBT manual (positively associated with improvement in substance use, Linehan et al. 1999); therapist level of training (positively associated with improvement in suicide attempt frequency, Pasieczy & Connor 2011); affective communication between patient and therapist (positive association with reduction in anger, Meehan 2008); patient shame after reporting self-harm (negatively associated with self-harm reduction, Brown et al. 2009); patient use of behavioural skills taught in DBT (positively associated with self-harm improvement, Neacsui et al. 2010); patient improvement in emotion regulation ability (positively associated with reduction in substance use, Axelrod et al. 2011); patient reduction in experiential avoidance (positively associated with improvement in depression, Berking et al. 2009); patient change in attachment status (various associations with change in general psychiatric symptom severity, Strauss et al. 2011). The only treatment process found not to be significantly associated with outcome was therapist prediction of patient outcome (Spinhoven et al. 2008).

DISCUSSION

Main Findings

This review synthesised research findings on patient characteristics and treatment processes as predictors of symptom change during psychotherapy for BPD. Predictors evaluated in three or more studies were considered sufficiently well-studied to permit research synthesis. Most research on patient characteristics at pre-treatment has focused on the predictive value of sociodemographics, symptom severity or comorbidity. Findings on the predictive value of sociodemographics have mainly been non-significant, although a few studies have found that characteristics such as gender or employment can influence symptom change (Black et al. 2009, Ryle & Golynkina 2000). The few studies with significant findings on sociodemographics did not markedly differ in the quality of their predictive analyses from those with non-significant findings, although the relatively large sample size of Black and colleagues (2009) may have increased statistical power. Perhaps most notably age is consistently not found associated with symptom change. This was true even for analyses of high quality and/or large sample size.

When considering symptom severity, a fairly common finding was that higher pre-treatment BPD or Axis I severity predicted greater symptom change. This was particularly common when the effect of symptom severity on change in the same symptom construct was considered, and was found both in studies with high and those with moderate or poor quality predictor analyses, and those with small or large sample sizes. The effect size, however, varied from small to large from study to study. Countering the argument that the results reported here simply reflect

regression to the mean, there was little indication that studies reporting significant

severity-change associations had samples with higher initial symptom severity. The

only exception was the finding that anxiety severity seemed notably higher in the

one study to find a positive association between anxiety severity and symptom

improvement, i.e. that of Bohus and colleagues (2004). It should also be noted that

some studies of high quality did not find a significant effect of symptom severity on

outcome, whilst a few found an opposite effect, such as higher pre-treatment

dissociation predicting *less* symptom change (Kleindienst et al. 2011).

Findings on the influence of self-harm on outcome were mixed. Two studies found

that patients with a recent or lifetime history of self-harm achieved poorer

outcomes during therapy (Harned et al., 2010, Ryle and Golynkina, 2000) , whilst a

third found a positive effect of self-harm (Black et al. 2009), and another four

studies found no association with outcome. These discrepant results could be

explained by the differences in outcome criteria between studies, such that

patients with a self-harm history achieve a greater degree of improvement in

symptom severity overall but are less likely to manage to completely stop self-

harming or to no longer meet full criteria for BPD.

 Pre-treatment comorbidity with Axis I disorders, including depression, anxiety and

substance abuse, was often not found significantly associated with outcome.

However, there were a few exceptions, such as the finding that patients with a

history of substance abuse achieved greater change in BPD symptoms (Black et al.

2009). There was also some indication that patients using psychiatric medication at

pre-treatment achieved less symptom change, although other analyses of equal

quality found no such association. There is no evidence to date that patients with

poor social adjustment do less well in psychotherapy.

The only treatment process assessed in more than two studies was the therapeutic

alliance. The patient-rated alliance was found to consistently and strongly predict

greater symptom change, across different studies and treatment models. However,

the quality of the predictor analyses assessing this variable was mainly moderate or

poor. Other treatment processes have commonly been assessed in single studies

only, nearly always with significant results. This could reflect the potential relevance

of these variables to outcome, or could reflect publication bias.

Comparison with the wider literature

It is perhaps surprising that sociodemographics such as age or gender were rarely or

never found associated with symptom change. That older age is not associated with

lesser change in BPD traits runs counter to the assumption made by notable

personality researchers, such as Costa and McCrae, that personality becomes

relatively immutable by mid-late adulthood (McCrae & Costa 1994). More recent

findings have challenged this view, illustrating that personality can change

throughout adulthood (Roberts et al. 2006). Indeed, in unpublished results shared

at the Association for Advancement of Behavior Therapy, Linehan and colleagues

reported that older age predicted superior outcome in their trial of DBT versus

treatment by community experts (Linehan et al. 2002, referenced in Robins &

Chapman 2004), whilst Robins and colleagues reported the same for patients in the

DBT arm of their trial (Robins et al. 1999, referenced in Robins & Chapman 2004). However, the findings are inconsistent with a ten year epidemiological study of BPD, which found that younger patients were more likely to achieve recovery (Zanarini et al. 2006).

Pre-treatment BPD severity was found a consistent positive predictor of greater improvement in BPD symptoms, with one exception. Axis I symptom severity was also often found to be a positive predictor of change in Axis I symptoms. Such effects are apparent in the wider psychiatric literature, including that on antidepressant treatment (Fournier et al. 2010, Kirsch et al. 2008) and psychotherapy for Axis I mental illness (Gjestad et al. 2011) although results in the opposite direction are often reported (Hamilton & Dobson 2002, Keeley et al. 2008). In a sample with BPD symptoms (not all meeting full diagnostic criteria), superior response to STEPPS psychotherapy over TAU was also predicted by higher pre-treatment BPD symptoms (Bos et al. 2011). The present findings could be interpreted either as a statistical artefact, resulting from phenomena such as floor effects in those with low initial symptom severity and regression to the mean in those with high initial symptom severity– or could be interpreted as a meaningful indication that more severely ill patients actually have greater potential for change. The former interpretation was not generally supported when initial symptom severity levels were compared across studies, whist the latter interpretation accords well with findings that even some of the most behaviourally severe symptoms of BPD, such as self-harm and affective instability, are more likely than not to remit over a ten year period (Zanarini et al. 2007).

The findings on the use of psychiatric medication are difficult to interpret, since the studies assessing this variable did not detail the types of medication or reasons for prescription. Perhaps those patients prescribed medication are more ill, or have certain comorbidities disposing them to poorer outcomes. However, this explanation seems contrary to the findings of this review that patients with higher symptom severity or Axis I comorbidities do not achieve less improvement. Alternatively, the negative association may be due to the palliative effect of medication, resulting in lower symptoms pre-therapy and thus a floor effect for symptom reduction. Indeed, perhaps patients on medication tend towards reliance on pharmacological amelioration of their symptoms and hence are less motivated to engage with therapeutic work. Another possible explanation is that these results represent an absent or even negative effect of psychiatric medication for patients with BPD, as reflected in the most recent NICE guidelines which state that medication should not be used to treat the symptoms of BPD (NICE 2009).

 The findings on the patient-rated alliance accord well with the large body of literature identifying the alliance as a strong predictor of therapy outcome, across diagnosis and therapeutic modality (Horvath & Greenberg 1994, Orlinsky et al. 1986, Priebe et al. 2011). As reviewed in Chapter Two, the therapeutic alliance has been described as one of the core common factors enabling psychotherapy patients to achieve change, regardless of therapeutic modality (Frank 1971, Wampold 2001). These findings may suggest that the alliance as a common factor extends to BPD also, and highlight the importance of common factors even in highly specific

therapy models. However, it should be noted that most of the included studies did

not adjust for potential confounders when assessing the effect of the alliance.

Implications of the Findings for Clinical Work and Further Research

The implications of the findings for clinical work and further research are beyond

the scope of this thesis, but were discussed in depth when published in Barnicot et

al. (2012) - see Appendix A. Briefly, in terms of clinical implications, it was suggested

that the findings supported not excluding patients from treatment on the basis of

age or initial symptom severity, and emphasised the importance of building a

strong therapeutic alliance. In terms of research implications, it was suggested that

further research could concentrate on better understanding the alliance-outcome

association in BPD, and on identification of new theory-driven treatment process-

outcome links for investigation.

Strengths And Limitations

Again, the strengths and limitations of the review methods and findings were

discussed in depth in the linked publication – see Appendix A – and are beyond the

scope of this thesis. Briefly, strengths of this review include the wide and systematic

search strategy, the use of multiple independent reviewers, the inclusion of both

naturalistic and efficacy studies, and the inclusion of non-English papers.

Limitations included the likelihood that publication bias had precluded

identification of some non-significant findings, the difficulty in synthesising findings

caused by variability across studies in measurement timepoints, instruments,

operationalisation of outcome and treatment lengths, and the fact that synthesis

relied on a 'vote count' of statistically significant findings since it was not possible to use effect size synthesis procedures such as meta-analysis. Furthermore, the use of numerical ratings for quality scores has been criticised by the Cochrane Collaboration because simply giving each criterion a score of 0 or 1 and then adding them up does not allow for differences in the importance of the quality criteria included, and can result in somewhat arbitrary quality scores that are difficult to interpret or ascribe substantive meaning to (Higgins et al. 2011). A better alternative could have been to use the same criteria but to then agree amongst a panel of raters whether each study should be assigned a 'low', 'medium' or 'high' quality score according to these criteria, and provide readers a full explanation of what 'low', 'medium' and 'high' quality means in the context of this review.

Conclusion and Relation to the Thesis Aims

This review established two consistent findings from research on predictors of therapy outcome for patients with BPD: patients who experience a stronger alliance with their therapist, and patients with more severe initial symptoms, may often achieve greater symptom reduction. This confirms the alliance as an important common factor even in highly disorder-specific treatments, and dispels the myth that more severely ill patients will not benefit from therapy. However, interpretation of these findings is complicated by the heterogeneity in research methods and analysis quality, and beyond these two factors, there is still a lack of consensus on what influences the outcome of therapy for these patients.

The consistent finding across studies that the patient-rated alliance is positively associated with outcome is particularly important for the present thesis, given the identification of the alliance as a key common therapy factor by contextual theorists (see Chapter Two). Congruent with this notion, this systematic review found that alliance predicts outcome across varied therapeutic modalities for BPD. The findings of the review also highlight that no study to date has explored the role of other common therapy factors identified by contextual theorists, such as treatment credibility and self-efficacy, in predicting the outcome of psychotherapy for BPD. Furthermore, very few studies to date have explored the role of variables linked to specific theories of therapeutic change in BPD. Finally, no studies to date have explored the role of extratherapeutic factors relating to social support. In order to address this gap in the literature, Chapter Five will evaluate the association between the skills, common and extratherapeutic factors and the outcome of DBT for BPD.

Chapter Four

Treatment completion in psychotherapy for borderline personality disorder: systematic review and meta-analysis.

INTRODUCTION

A version of the work presented in this chapter has been published in Acta Psychiatrica Scandinavica as Barnicot et al. (2011). See Appendix A for the publication manuscript.

In existing reviews, BPD has been associated with problematically low treatment completion (Bornovalova & Daughters 2004, Horner & Diamond 1996, Kelly et al. 1992), with rates as low as 37%, 33% and 8% in individual studies (Budman et al. 1996, Gunderson et al. 1989, Skodol et al. 1983). A low treatment completion rate may imply that the treatment is not effective in addressing the needs of the target patient group. Indeed, patients who drop out early from psychosocial treatment may not gain any benefit from the treatment (Baruch et al. 1998, Hynan 1990). Of particular relevance to this thesis, the trial from which part of the sample for the empirical chapters is drawn found that dropouts achieved a smaller reduction in self-harm during DBT than completers (Priebe et al. 2012). In addition, cost-effectiveness may suffer when funding assessment and treatment sessions for those who eventually drop-out. Furthermore, treatment dropouts may be more likely to drop out of research assessments than treatment completers. Research data may therefore become skewed towards outcomes for treatment completers even when an intention-to-treat analysis is used, thus limiting its generalisability (Kelly et al. 1992, Bateman & Fonagy 2000). Thus, a consideration of treatment completion rates is crucial when evaluating the effectiveness of treatment. Several new psychotherapies, such as DBT, mentalization based therapy and transference

focused psychotherapy, have been developed specifically to treat BPD, and have

been shown to be effective compared to TAU in reducing self-harm and suicidality,

amongst other variables (see Chapter One). Completion rates in these treatments

have not been systematically reviewed. Thus, the association of BPD with low

treatment completion rates has not been re-evaluated in the light of the recent

evidence on the new, more effective psychotherapeutic treatment that is available.

This may be especially important since evaluating dropout rates in a therapy with as

yet unproven effectiveness could conflate high dropout with ineffectiveness. The

first aim of the work presented in this chapter was therefore to conduct a meta-

analysis of completion rates in psychotherapy models identified as effective for BPD

and to test possible study characteristics associated with completion. The average

completion rate identified in the meta-analysis can then be compared to the

completion rate in the empirical study presented in Chapters Five and Six.

It is also important to systematically review factors associated with completion

versus dropout in psychotherapy for BPD. This could provide an understanding of

which individuals these treatments may be less suitable for, which treatment

processes may encourage retention, and which treatment processes may lead to

dropout. This in turn may inform modification of existing interventions or the

development of new interventions in order to improve completion rates. Such a

systematic review could also be helpful when designing studies to evaluate

processes leading to patient dropout, as in the present thesis (Chapter Six), as it

could provide an idea of potentially important confounders to consider. The second aim of the work presented in this chapter was therefore to systematically review patient-level predictors of dropout from psychotherapy for BPD. In contrast to the meta-analysis, studies on any psychological intervention, (not just interventions with evidence for effectiveness), were included, so that as many potentially important predictors could be identified as possible. These findings then informed the design of the analysis in Chapter Six.

METHODS

Inclusion Criteria

Studies were included in the meta-analysis of completion rates if:

1) They reported original research;

2) They reported treatment completion rates in one of the psychotherapy models identified as effective for BPD (see Search Strategy for a list of included models); and

3) They reported completion rates for a sample in which all patients met full diagnostic criteria for BPD.

Studies were only included in the meta-analysis if the intervention sufficiently closely followed a format which has been demonstrated to be effective. For example, only the full DBT protocol with both individual and group therapy has

been evaluated in an RCT and demonstrated effective, and so studies evaluating DBT skills groups alone were not included.

Studies were excluded from the meta-analysis if their sample overlapped with other studies already included in the analysis.

Studies were included in the systematic review of factors predicting treatment completion if:

1) They reported original research;

2) They reported predictors of treatment completion in any psychological intervention applied to patients with BPD; and

3) They reported predictors of treatment completion for a sample in which all patients met full diagnostic criteria for BPD.

Associations between dropout and patient biological (e.g. amygdala activity) or neuropsychological (e.g. working memory capacity) characteristics were excluded.

For both the meta-analysis of completion rates and the systematic review of factors predicting treatment completion, non-English language papers and dissertations were not excluded. Studies were excluded if they had a sample size of less than ten (as this was considered too small to be representative), or if attendance of treatment was compulsory.

Treatment completion was defined as the proportion of patients initiating

psychotherapy who completed the full course of treatment.

Search Strategy

Searches were performed in October 2009 and updated in August 2012, in the

PsycInfo and Medline databases. In a first step, an initial search aimed to identify

psychotherapy models which had been demonstrated as effective for treating BPD.

"Effectiveness" was defined as demonstration in at least one RCT that the

treatment was effective in improving one or more of the symptoms of BPD as

defined by DSM-IV, compared to a control psychological treatment. In a second

step, studies were identified in which one or more of the interventions identified in

the first step were evaluated – whether in an RCT, quasi-experimental or

observational design, and in which completion rates or factors associated with

completion were described. Thirdly, studies evaluating predictors of treatment

completion in any other psychological interventions for BPD were also identified.

For the first step, Psycinfo and Medline were searched using the term "randomised

controlled trial" and "borderline personality disorder". Known reviews of

psychotherapeutic treatment for BPD, such as the Health Technology Asessment

review (Brazier et al. 2006) and the Cochrane reviews (Binks et al. 2006, Stoffers et

al. 2012) were also consulted. This initial search identified the following effective

treatments for BPD: cognitive behaviour therapy (CBT) (Davidson et al. 2006); dialectical behaviour therapy (DBT) (Linehan et al. 1991); dynamic deconstructive therapy (DDP) (Gregory et al. 2008); emotion regulation group therapy (ERGT) (Gratz & Gunderson 2006); mentalization based therapy (Bateman & Fonagy 1999); schema focused therapy (Giesen-Bloo et al. 2006); systems training for emotional predictability and problem solving (STEPPS) (Blum et al. 2008); transference focused therapy (TFP) (Doering et al. 2010).

For the second step, a systematic search for papers reporting treatment completion rates or factors associated with treatment completion rates in these psychotherapy models was conducted. Psycinfo and Medline were searched using combinations of the term "borderline personality disorder" with the following: "cognitive behavio(u)r(al) therapy", "dialectical behavio(u)r (al) therapy", "dynamic deconstructive psychotherapy", "emotion regulation group therapy", "mentalisation based therapy", "mentalization based therapy", "schema therapy", "STEPPS ", "transference focused psychotherapy".

A third search was then conducted to ensure inclusion of papers evaluating predictors of treatment completion in psychological interventions for BPD other than those listed above. The search terms used were "borderline personality" and "psychotherapy" or "therapy".

The doctoral candidate and another researcher screened the search results together and decided which abstracts to screen, which full texts to screen, and which studies to include in the meta-analysis and the systematic review of predictors respectively. The study selection process is depicted in Figure 4.1.

Data extraction was then completed independently by the doctoral candidate and another researcher for each study using a data extraction sheet developed for the review. Any conflicting answers were discussed and reconsidered until agreement was reached. The authors of fifteen studies were contacted to clarify information or to obtain additional information not presented in the published papers; primarily in order to clarify the treatment completion rate. Responses were obtained from eight.

Some criteria were established to assess the quality of the included studies, based on some of the criteria suggested by Gerber for analysis of RCTs (Gerber et al. 2011). Many of the studies assessed were not RCTs and thus the criteria generated a very conservative evaluation of quality. Some of the criteria reflected the adequacy of the information presented on treatment dropout whilst others reflected the rigour of the methodology used in the study as a whole. Studies were assigned a quality score from 0 to 8 as follows:

1) Sample allocated to treatment ≥30 (1 point)

2) Clear description of numbers screened, included and excluded (1 point)

3) Clear description of numbers dropping out of treatment (1 point)

4) Intention-to-treat analysis (1 point)

5) Randomised controlled trial (1 point)

6) Blind assessment of outcome (1 point)

7) Outcome distribution checks reported and appropriate analyses used (1 point)

8) No missing data or missing data adequately addressed such as through use of

random or mixed effects modelling, maximum likelihood estimation or multiple

imputation (1 point).

Meta-analyses of treatment completion rates were then conducted, using

Comprehensive Meta-analysis software (Borenstein et al. 2005). Separate meta-

analyses of treatment completion rates for interventions less than twelve months

long and interventions of twelve months duration or more were conducted, as

completion rates were not thought to be comparable across very different

intervention lengths. A random effects model was planned as this assumes that the

intervention and patient characteristics are not identical across studies, and that

completion rates may vary accordingly. The model assumes therefore that there is a

distribution of "true" effect sizes rather than a single true effect, and aims to

estimate the mean of this distribution of true effect sizes. The Q-statistic and the I^2

statistic were calculated to assess the level of between-study heterogeneity. Egger's

test of the intercept (Egger et al. 1997) and a funnel plot were computed in order to

evaluate the evidence for publication bias. The following variables were considered

as moderator variables in the meta-analysis by stratification (categorical variables) or meta-regression (continuous variables): psychotherapy model, sample size, intervention length, treatment setting (outpatient versus inpatient versus forensic), exclusion criteria (excluding psychotic disorders and bipolar disorder versus excluding just psychotic disorders versus excluding neither), and quality score.

For the systematic review of predictors of dropout, many studies, in particular those with non-significant findings, did not provide effect size data, and so a meta-analysis would have produced biased findings. Instead, studies which evaluated the relationship between one or more variables and dropout from psychotherapy for BPD were narratively analysed. Any significant association, trend or absence of association between a variable and dropout from psychotherapy was recorded, and any associations found consistently across more than one study were noted. Findings on predictors examined in three or more studies are presented in detail, since this was deemed a sufficient number of studies to permit cross-study synthesis. Predictors evaluated in fewer studies are more briefly described.

RESULTS

Meta-Analysis of Treatment Completion Rates

Studies Included

Fifty -two studies were identified as eligible for inclusion in the meta-analysis.

Figure 4.1 below is a QUOROM diagram detailing the study retrieval process. Five

non-English language papers were included (two Dutch, two German and one

Spanish). Some papers provided information on more than one of the

psychotherapies under review. Studies included are fully described in Appendix B

Table B3, p.514-523.

Quality Analysis

Study quality ranged from 1 to 8, with a mean score of 4.2 (s.d. = 2.19).The

calculation of the quality scores for each study is presented in Appendix B Table B4,

p. 524-527.

Between-Study Heterogeneity

There was significant heterogeneity in the completion rates reported:

(interventions shorter than 12 months – Q (26) = 71.4, $p < 0.01$, $I^2 = 65\%$;

interventions 12 months or longer- Q (29) = 69, $p < 0.01$, $I^2 = 58\%$), with the I^2

statistic implying the magnitude to be substantial. The high degree of heterogeneity

suggested that a random effects model might be appropriate.

Figure 4.1. QUOROM diagram for paper selection process

Unique electronic search
results

N = 671

→ Excluded following electronic title
screen

N = 159

Abstracts screened

N = 512 from search results

N = 20 from reference screen

N = 36 from BPD psychotherapy studies
identified in previous reviews

→ Excluded following abstract screen

N = 273

Full texts screened

N = 248 from search results

N = 11 from reference screen

N = 36 from BPD psychotherapy
studies identified in previous
reviews

→ Excluded following full text screen

N = 223

Papers included

N = 72

[Meta-analysis: n = 52
Systematic review of predictors:
n = 30]

Treatment Completion Rates

Random effects meta-analysis yielded an overall completion rate of 71% for interventions of 12 months or greater duration (95% confidence interval: 66% - 75%). A separate analysis yielded a completion rate of 75% for interventions of a shorter duration (95% confidence interval: 68% - 80%).

When the effect of potential moderators was considered, there was no significant effect of psychotherapy model, intervention length, treatment setting (outpatient versus inpatient versus forensic), exclusion criteria (excluding psychotic disorders or bipolar disorders) or quality score on completion rates in either of the meta-analyses. However, for interventions shorter than 12 months, both study sample size and quality score were significantly negatively correlated with completion rate (β = -0.01, S.E. = 0.01, 95% C.I. = -0.02 - -0.01, $p<0.01$; β = -0.15, S.E. = 0.04, 95% C.I. = -0.23 - -0.07, $p<0.01$). There was also a trend towards a negative effect of sample size in interventions 12 months or longer (β = -0.01, S.E. = 0.01, 95% C.I. = -0.01 - 0.00, p = 0.09). The results of the meta-analyses are shown in Tables 4.1 and 4.2 below.

Table 4.1 Meta-analysis of completion rates in psychotherapy for borderline personality disorder – intervention length under 12 months

Study	Treatment	Sample initiating treatment (N)	Treatment completion (%)	% Completing Treatment
Axelrod et al. 2011	DBT	27	56	
Ben-Porath et al. 2004	DBT	26	88	
Black et al. 2008	STEPPS	12	83	
Blum et al. 2008	STEPPS	92	48	
Bohus et al. 2004	DBT	40	78	
Bos et al. 2010	STEPPS	42	79	
Brassington et al. 2006	DBT	10	100	
Carter et al. 2010	DBT	38	53	
Farrell et al. 2009	SFT	16	100	
Fleischaker et al. 2006	DBT	12	75	
Gratz & Gunderson 2006	ERGT	13	92	
Harley et al. 2007	DBT	10	60	
Koons et al. 2001	DBT	14	77	
Kröger et al. 2006	DBT	50	88	
Linehan et al. 2008	DBT	24	67	
Nee & Farman 2005	DBT	17	53	
Pascienzy & Connor 2011	DBT	43	93	
Rüsch et al. 2008	DBT	60	68	
Schornstein et al. 2008	DBT	10	80	
Simpson et al. 2004	DBT	25	80	
Stanley et al. 2007	DBT	20	95	
Van Wel et al. 2009	STEPPS	45	80	
Williams et al. 2010	DBT	31	68	
Woodberry & Popenoe 2008	DBT	46	63	
Overall estimate			75	

Study	Treatment	Sample initiating treatment (N)	Treatment completion (%)	% Completing Treatment
Andion et al. 2012	DBT	14	93	
Bateman& Fonagy 1999	MBT	25	88	
Bateman & Fonagy 2009	MBT	71	73	
Brown et al. 2004	CBT	32	75	
Clarkin et al. 2001	TFP	23	74	
Clarkin et al. 2007	TFP	30	77	
Clarkin et al. 2007	DBT	30	57	
Cottraux et al. 2009	CBT	33	69	
Doering et al. 2010	TFP	52	62	
Giesen-Bloo et al. 2006	SFT	45	73	
Giesen-Bloo et al. 2006	TFP	43	49	
Gregory et al. 2008	DDP	15	67	
Harned et al. 2012	DBT	13	77	
Heij & Barelds 2011	DBT	39	73	
James et al. 2008	DBT	16	88	
Kennedy et al. 2007	DBT	14	71	
Linehan et al. 1991	DBT	24	81	
Linehan et al. 1999	DBT	11	63	
Linehan et al. 2002	DBT	11	73	
Linehan et al. 2006	DBT	52	83	
Lopez et al. 2004	TFP	14	71	
Low et al. 2001	DBT	13	77	
McMain et al. 2009	DBT	61	90	
Nadort et al. 2009	SFT	62	85	
Nee 2005	DBT	13	54	
Perseius et al. 2007	DBT	27	89	
Turner 2000	DBT	12	75	
van den Bosch et al. 2010	DBT	29	76	
Verheul et al. 2003	DBT	27	63	
Zinkler et al. 2007	DBT	50	36	
Overall estimate			**71**	

Table 4.2 Meta-analysis of completion rates in psychotherapy for borderline personality disorder – intervention length 12 months or longer

Publication Bias

Egger's test of the intercept suggested the presence of publication bias in both meta-analyses (interventions shorter than 12 months: $t(24) = 2.9$, $p<0.01$; longer interventions: $t(30) = 2.1$, $p<0.01$). The funnel plots are presented in Figure 4.2 and 4.3, and could be interpreted as suggesting that smaller studies were more likely to be published if they had a high completion rate.

Figure 4.2 Funnel Plot of Log Completion Rate by Standard Error in Interventions Shorter than 12 Months
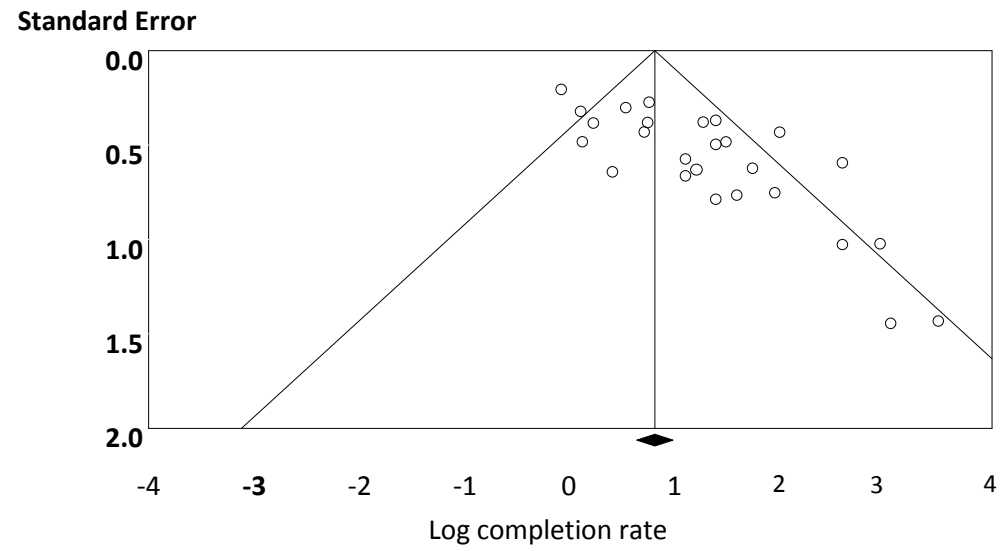
Standard Error

Figure 4.3 Funnel Plot of Log Completion Rate by Standard Error in Interventions 12 Months or Longer
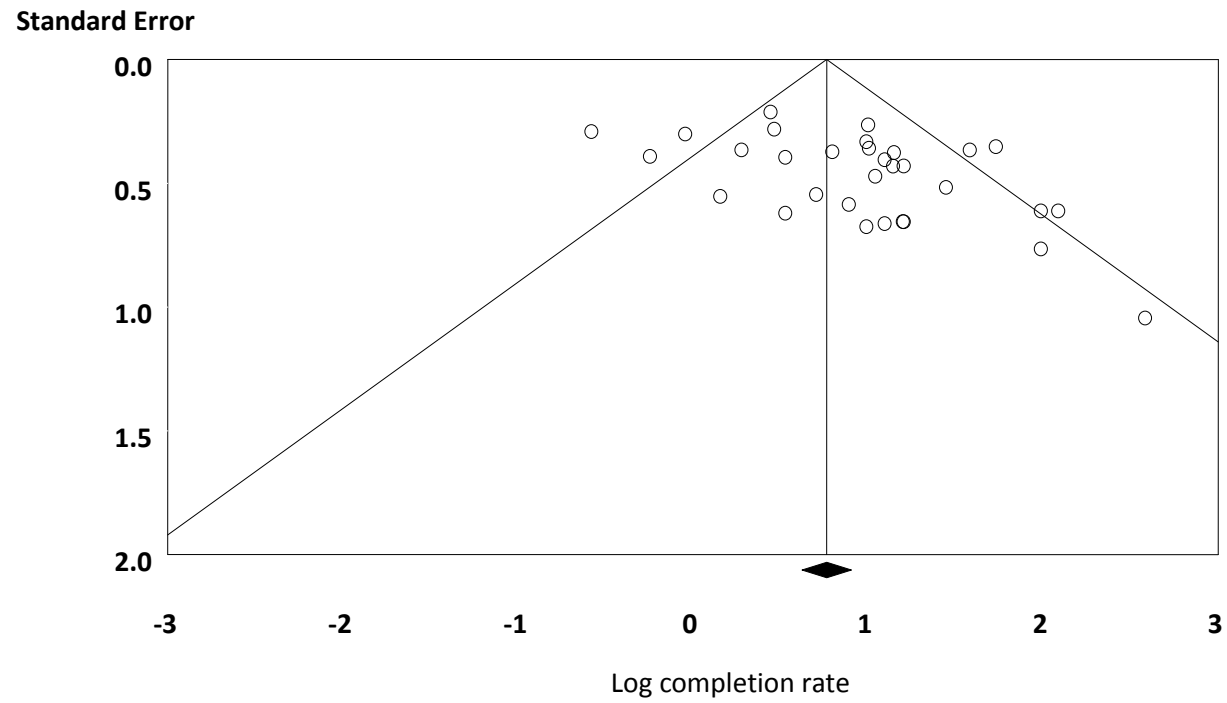
Systematic Review of Factors Associated with Treatment Completion

Studies Included

Thirty studies were identified which evaluated predictors of treatment completion in patients with BPD. The study characteristics, including sample size and treatment model, are summarised in Appendix B Table B 3(p.515-524).

Study Quality

 Study quality ranged from 1 to 8, with a mean score of 5(s.d. = 1.85). The quality scores are presented in Appendix B Table B4 (p. 524 - 527).

Study Findings

The effect sizes and confidence intervals for all of the associations between variables reported below were too numerous to report in the text, but have been reported fully in Appendix B Table B5 (p. 528 - 538).

Sociodemographics

Almost all studies which evaluated the association of sociodemographic variables with completion of psychotherapy for BPD found no significant association. Exceptions were a significant positive association between age and completion in two studies *(Lindenboim 2010, Smith et al. 1995- trend),* a significant positive association between employment and completion in another study *(Nysaeter et al. 2010),* a significant positive association between educational level and completion in another *(Lindenboim 2010),* and a trend for more female than male patients to

complete in a third study *(van den Bosch et al. 2012, p = 0.09).* In other studies, non-significant associations were found between treatment completion and age *(Black et al. 2009, Blum et al. 2008, Bos et al. 2010, Clarkin et al. 2001, Cottraux et al. 2009, Gunderson et al. 1989, Harley et al. 1997, Kelly et al. 1992, Kleindienst et al. 2010, Leerer 1997, Munroe-Blum & Marziali 1995, Rusch et al. 2008, Smith et al. 1995, van Wel et al. 2009, Webb & McMurran 2009, Woodberry & Popenoe 2008),* gender *(Black et al. 2009, Blum et al. 2008, Bos et al. 2010, Gunderson et al. 1989, Kelly et al. 1992, Lindenboim 2010, Munroe-Blum & Marziali 1995, Nysaeter et al. 2010, Kroger et al. 2006, Ragsdale 2006, Soler et al. 2008, van Wel et al. 2009, Woodberry & Popenoe 2008),* marital status *(Bos et al. 2010, Clarkin et al. 2001, Frederici 2010, Gunderson et al. 1989, Kelly et al. 1992, Lindenboim 2010, Munroe-Blum & Marziali 1995, Nysaeter et al. 2010, Smith et al. 1995, Soler et al. 2008, van Wel et al. 2009, Woodberry & Popenoe 2008),* living alone *(Frederici 2010, Munroe-Blum & Marziali 1995, van Wel et al. 2009),* education level *(Black et al. 2009, Bos et al. 2010, Clarkin et al. 2001, Frederici 2010, Gunderson et al. 1989, Harley et al. 1997, Leerer 1997, Nysaeter et al. 2010, Ragsdale 2006, Rusch et al. 2008, Smith et al. 1995, Soler et al. 2008, Spinhoven et al. 2008, van Wel et al. 2009),* employment status *(Bos et al. 2010, Clarkin et al. 2001, Frederici 2010, Gunderson et al. 1989, Kroger et al. 2006, Ragsdale 2006, Soler et al. 2008, Spinhoven et al. 2008, van Wel et al. 2009)* and ethnicity *(Clarkin et al. 2001, Kelly et al. 1992, Lindenboim 2010, Ragsdale 2006, Woodberry & Popenoe 2008).*

BPD symptoms

All thirteen studies evaluating the association between BPD symptom severity and treatment completion found no significant associatio*n (Black et al. 2009, Blum et al. 2008, Bos et al. 2010, Frederici 2010, Gunderson et al. 1989, Harley et al. 1997, Leerer 1997, Munroe-Blum & Marziali 1995, Nysaeter et al. 2010, Soler et al. 2008, Spinhoven et al. 2008, van Wel et al. 2009, Yeomans et al. 1994).* However, there was some indication that individual BPD criteria could be associated with completion. In relation to DSM-IV criterion five, recurrent suicidal and self-harming behaviour, one study found that completers had more lifetime suicide attempts *(Rusch et al. 2008),* whilst another found they thought about suicide and self-harmed more frequently *(Gunderson et al. 1989*). However, eight other studies found that patients' self-harm or suicide history was not associated with completion *(Andion et al. 2012, Black et al. 2009, Bos et al. 2010, Cottraux et al. 2008, Frederici 2010, Leerer 1997, Smith et al. 1995, vanWel et al. 2009).* In relation to DSM-IV criterion 8, inappropriate and intense anger, four studies found evidence that anger severity was associated with completion, although in three the association was *negative (Kelly et al. 1992, Rusch et al. 2008, Smith et al. 1995)* whilst in one it was positive *(Frederici 2010).* Lastly, in relation to DSM-IV criterion 4, self-damaging impulsivity, four studies found that patients' degree of impulsivity was negatively associated with treatment completion *(Black et al. 2009, Cottraux et al. 2009, Kelly et al. 1992, Yeomans et al. 1994).* However, two studies found no significant association *(Frederici 2010, Gunderson et al. 1989).*

Axis I symptoms

Ten studies found that treatment completers and dropouts did not significantly differ in terms of current or lifetime comorbid Axis1 diagnoses, such as anxiety disorders, major depression, substance abuse, eating disorders, bipolar disorder and psychotic disorders *(Black et al. 2009, Clarkin et al. 2001, Frederici 2010, Kelly et al. 1992, Leerer 1997, Lindenboim 2010, Nysaeter et al. 2010, Ragsdale 2006, Rusch et al. 2008, Woodberry & Popenoe 2008).* The only exception was the finding by Nysaeter and colleagues (2010) that dropouts were more likely than completers to have post-traumatic stress disorder. Similarly, sixteen studies found that dropouts and completers did not differ in terms of Axis I symptom severity, such as general psychiatric symptom severity, depression severity and anxiety severity *(Black et al. 2009, Blum et al. 2008, Bohus et al. 2004, Bos et al. 2010, Frederici 2010, Harley et al. 1997, Kleindienst et al. 2011, Kroger et al. 2006, Munroe-Blum & Marziali 1995, Nysaeter et al. 2010, Rusch et al. 2008, Smith et al. 1995, Soler et al. 2008, van Wel et al. 2009, Webb & McMurran 2009).* The only exceptions were the findings by Cottraux and colleagues (2009) that dropouts had been more depressed at baseline than completers, by Gunderson and colleagues (1989) and Kelly and collegaues (1992) that they had been less depressed, and by Rusch and colleagues (2008) that they had been more anxious.

Axis II symptoms

Five studies evaluated the association between non-BPD Axis II symptoms and completion. Black and colleagues(2009) and Nysaeter and colleagues(2010) found that no particular Axis II comorbidities were associated with completion, whilst Clarkin and colleagues (2001) found that completers were less likely to have schizoid personality disorder but did not differ from dropouts in terms any other Axis II comorbidities. Kroger and colleagues (2006) and Spinhoven and colleagues (2008) each found that total number of Axis II comorbidities did not differ between dropouts and completers, whilst Webb and McMurran (2009) found that dropouts were more likely than completers to have complex Axis II comorbidity i.e. to have Axis II disorders from more than one personality disorder cluster.

Social Functioning

Variables related to social functioning were generally not found significantly associated with treatment completion. Eight studies found no significant association between global functioning and treatment completion *(Black et al. 2009, Harley et al. 1997, Kelly et al. 1992, Kleindienst et al. 2011, Kroger et al. 2006, Leerer 1997, Lindenboim 2010, Nysaeter et al. 2010)*, whilst Munroe-Blum and colleagues (1995) and Smith and colleagues (1995) found no association with social adjustment, Nysaeter and colleagues (2010) found no association with severity of interpersonal problems, and Webb and McMurran (2009) found no association with

social problem solving ability. An exception was the finding by Cuevas and colleagues (2000) that dropouts had poorer social functioning at baseline.

Psychiatric Medication

Black and colleagues (2009) found that the number of psychiatric medications taken at baseline was positively associated with treatment completion, whilst Gunderson and colleagues (1989) found a trend towards the opposite, i.e. that dropouts were more likely than completers to have been prescribed medication ($p < 0.10$). Bos and colleagues (2010), Clarkin and colleagues (2001) and Doering and colleagues (2010) found no significant association.

Prior Treatment

Gunderson and colleagues (1989) found that dropouts had had significantly less prior psychotherapy than completers, whereas Smith and colleagues (1995) found that dropouts did not differ from completers in how much prior psychotherapy they had received. Kelly and colleagues (1992) found that number of lifetime inpatient days was negatively associated with completion, whilst Harley and colleagues (1997), Leerer (1997), Smith and colleagues (1995) and Woodberry and Popenoe (2008) found that dropouts did not differ from completers in terms of their history of inpatient hospitalisation.

Motivation for Change

Several factors related to motivation for change were found associated with completion. Frederici (2010) found that dropouts had lower motivation to change

self-harming and eating behaviours at baseline than completers, whilst Webb and McMurran (2009) found that dropouts had lower internal motivation to change and higher external motivation to change. Relatedly, Soler and colleagues (2008) found that patients in a 'precontemplation' stage of readiness to change at baseline - i.e. no current intention to change - were more likely to drop out of treatment than patients in contemplation (considering change), preparation (committed to change) or action (actively trying to change) stages.

Therapeutic Alliance

Three studies found that patients with a stronger working alliance early on in treatment were less likely to subsequently drop out, although the method of assessing the alliance varied. Gunderson and colleagues (1997) found a positive association between completion and the therapist-rated alliance at week 6 and a marginally significant association between completion and the patient-rated alliance at week 6 (p < 0.10). Spinhoven and colleagues (2007) found a positive association between completion and both the patient-rated and therapist-rated alliance at month 3. Yeomans and colleagues (1994) found a positive association between completion and the observer-rated alliance during the first few treatment sessions. However, a fourth study found no association between completion and the patient-rated alliance at the third session (Nysaeter et al. 2010).

Variables Evaluated in Fewer than Three Studies

Baseline variables evaluated in fewer than three studies and found associated with completion were experiential avoidance *(negative association with completion-*

Rusch et al. 2008), perceived mental illness stigma *(marginally significantly negative association with completion, p < 0.10 - Rusch et al. 2008)*, confidence in ability to change *(positive association with completion - Frederici 2010)*. Baseline variables not found significantly associated with completion were income *(Lindenboim 2010, Ragsdale 2006)*, intelligence *(Leerer 1997)*, history of childhood abuse *(Leerer 1997)*, history of adoption or fostering *(Lindenboim 2010)*, dissociation severity *(Kleindienst et al. 2011)*, age at self-harm onset *(Frederici 2010)*, age at first hospitalisation *(Leerer 1997)*, body mass index *(Frederici 2010)*, affective lability *(Frederici 2010)*, mindfulness ability *(Frederici 2010)*, emotion regulation ability *(Axelrod et al. 2011)*, hopelessness *(Cottraux et al. 2009)*, maladaptive schemas *(Cottraux et al. 2009)*, difference between patient and therapist maladaptive schemas *(Spinhoven et al. 2007)* and difference between patient and therapist personality organisation *(Spinhoven et al. 2007)*. One variable, therapist rating of prognosis, was found significantly associated with completion in one study *(Spinhoven et al. 2008)* but not in another *(Ragsdale 2006)*.

Variables assessed during treatment and found associated with completion but evaluated in fewer than three studies were degree of affective communication between patient and therapist *(positive association with completion - Meehan 2008)*, negative affect during treatment *(positive association with completion - Meehan et al. 2012)*, fuller range of emotions during treatment *(trend towards positive association with completion, p< 0.10 - Meehan et al. 2012)*, adequacy of contract setting *(positively associated with completion - Yeomans et al. 1994)*, concurrent psychiatric care *(positive association with completion - Morey et al.*

2010), therapist frustration with patient *(negatively associated with completion-Spinhoven et al. 2007)* and having a therapist of the opposite sex (*negatively associated with completion - Nysaeter et al. 2010)*. Variables assessed during treatment and not found significantly associated with completion were therapist gender, age and years of experience *(Nysaeter et al. 2010).*

DISCUSSION

Main Findings

In 52 studies evaluating eight psychotherapy models with evidence of effectiveness for treating BPD, (cognitive behavioural therapy, DBT, dynamic deconstructive psychotherapy, emotion regulation group therapy, mentalization based therapy, schema focused therapy, systems training for emotional predictability and problem solving, and transference focused psychotherapy), a meta-analysis yielded an overall completion rate of 71% for interventions of 12 months or greater duration, and 75% for interventions of a shorter duration. There was a high degree of heterogeneity in completion rates between studies. There was also evidence of a bias towards publication of studies with higher completion rates, although the test used may be subject to a high false positive rate (Sterne et al. 2008). Possibly linked to this, a meta-regression demonstrated that increasing sample sizes were associated with lower treatment completion rates. Between-study differences in treatment model, study design and treatment length were not associated with differences in completion rates between studies.

In the systematic review of predictors of completion, five factors were consistently found associated with treatment completion across more than one study: baseline impulsivity severity (negative association), baseline anger severity (direction of association varies), baseline self-harm frequency (positive association), degree of motivation for change (positive association) and early therapeutic alliance (positive association). However, there were also some studies in which these variables were not found significantly associated with treatment completion. Sociodemographic variables, baseline Axis I symptoms and baseline Axis II symptoms were usually not significantly associated with completion. However, there were a few isolated findings suggesting that patient age, gender, employment, anxiety and depression severity could differ between dropouts and completers. In addition, a single study found that dropouts were more likely to have comorbid PTSD than completers, another found they were more likely to have comorbid schizoid personality disorder, and another found they were more likely to have complex personality disorder comorbidity. Findings from single studies also indicated a possible predictive role for taking psychiatric medication and social functioning at baseline, but associations between these variables and completion failed to reach statistical significance in all other studies. Many other variables were assessed in single studies only, and so it was not possible to compare findings on these variables across studies.

Interpretation of Findings and Comparison with Previous Research

The treatment completion rates found in the present meta-analyses are fairly high, and are in fact higher than that found in a meta-analysis of completion rates across 110 psychotherapy studies including patients with a wide variety of both Axis I and Axis II disorders, in which the overall completion rate was 65% (Sharf 2008). Thus, in interventions for BPD which have been demonstrated to be effective, treatment completion is generally fairly high, and is in fact on average higher than that found in the wider psychotherapy literature. Furthermore, the completion rates were similar across interventions which were shorter than 12 months or those which were longer. Thus, a diagnosis of BPD should no longer be associated with a high probability of dropping out of treatment, even when the treatment course is long. One could speculate that perhaps the earlier low completion rates resulted from a mismatch between people with BPD and the treatments available for them, rather than being a problem with BPD itself. The papers included in earlier reviews all described dropout rates from unstructured, non-specialised treatments. In contrast, the increasing specialisation of the treatments for BPD reviewed here may have led to a better fit for these patients and thus lower dropout rates. In support of this argument, dropout rates from the TAU condition were very high in some of the RCTs included in this review (Linehan et al. 1999, Turner 2000), and were significantly higher than in the intervention condition in at least two studies (Verheul et al. 2003, Linehan et al. 2006). However this was not the case in all studies (Linehan et al. 2002, Farrell et al. 2009, van Wel et al. 2009). Alternatively,

perhaps the decrease in the stigma associated with treating BPD in recent years, as most notably demonstrated in the Department of Health publication "*Personality Disorder: No Longer a Diagnosis of Exclusion*" (NIMHE 2003), has meant that health professionals are now believing more and more that these individuals can be treated effectively without therapist burnout, and are thus working with more confidence to keep patients with BPD in treatment. Nonetheless, although the overall completion rate was high, there was considerable variability, with a few studies reporting much lower completion rates. Even when the high overall completion rate is considered, the averaged 25% of patients who drop out of treatment is still not ideal.

Furthermore, the finding that there may have been a bias against publishing studies with lower treatment completion rates suggests that the present positive findings should be interpreted with caution. The significant negative association between both study sample size and quality and treatment completion may relate to this publication bias. That is, larger and more methodologically rigorous studies may be more likely to be published regardless of low completion rates, whereas bias against publishing studies with high dropout rates may predominantly apply to small studies of low quality.

The present findings on predictors of treatment completion in BPD are broadly consistent with the wider psychiatric literature. Consensus is particularly strong on the role of the therapeutic alliance, patients' motivation for change and impulsivity.

A meta-analysis of adult individual therapy found that these three factors were consistently strong predictors of dropout (Sharf 2008, Sharf et al. 2010). The same meta-analysis also found that sociodemographic variables were not strong predictors of dropout, consistent with the findings of the present review. The role of anger and self-harm has been less widely evaluated in the general psychiatric literature. Consistent with the findings of most of the studies reviewed here, a few studies have found that anger is a positive predictor of dropout, such as in psychotherapy for bulimia nervosa (Fassino et al. 2003) and for social anxiety disorder (Erwin et al. 2003). However, the few studies to evaluate the role of baseline self-harm frequency have found that it was positively rather than negatively associated with dropout, inconsistent with the present findings (Favaro & Santonastoso 2000).

It is perhaps unsurprising that patients with a stronger alliance and higher motivation are less likely to drop out of treatment, since these patients are likely to be more engaged with the treatment process. The association between impulsivity and dropout may suggest that this trait promotes 'impulsive' decisions to drop out in some patients. Impulsivity has also been linked to difficulties prioritising long-term over short-term goals (Rachlin 2000), which may relate to difficulty tolerating short-term distressing experiences during therapy (Marshall-Berenz et al. 2011). A possible explanation for the association between anger and dropout could be that individuals prone to anger are more likely to become irritated by their therapist or other aspects of the therapeutic process and consequently to drop out. However,

the contrary finding in Frederici (2010) that dropouts were less angry than completers is more difficult to explain. The finding in two studies that higher self-harm frequency positively predicts treatment completion is also difficult to understand. It may relate to the focus of many treatments for BPD on targeting self-harm. Potentially, individuals for whom self-harm is less of a problem therefore feel that the treatment is not for them, and so are more likely to drop out. Conversely, individuals with high rates of self-harming behaviour who achieve reductions in self-harm early on in treatment may value this achievement very highly and may therefore engage better with treatment in the long-term. Alternatively, individuals with more self-harming behaviour may experience a very high level of subjective distress – perhaps they are therefore more motivated to change and thus more committed to therapy than those with less suicidal behaviour. In support of this, Ray et al. (2006) found that the positive association between alcohol problem severity and treatment completion in their study was mediated by motivation for change.

Strengths and Limitations

The strengths and limitations of the review were discussed in detail in the linked publication, Barnicot et al. (2011), and a detailed discussion is beyond the scope of this thesis. Briefly, strengths included the wide and systematic search strategy, the relatively large number of studies included, the inclusion of non-English language papers, and the inclusion of more pragmatic, naturalistic studies as well as efficacy studies, which may render its conclusions more applicable to everyday clinical practice.

The main limitation of this review is that it included eight different interventions, which moreover were applied in a variety of treatment settings, patient groups and treatment lengths. This may limit the comparability of completion rates and factors predicting dropout across studies. Another limitation is that intervention take-up rates could not be assessed, which could have influenced the dropout rate since if a low proportion of patients offered the treatment actually take it up, then the patients who would have been more likely to drop out of treatment later on may have self-selected out before even starting treatment. Furthermore, the use of numerical ratings for quality scores has been criticised by the Cochrane Collaboration because simply giving each criterion a score of 0 or 1 and then adding them up does not allow for differences in the importance of the quality criteria included, and can result in somewhat arbitrary quality scores that are difficult to interpret or ascribe substantive meaning to (Higgins et al. 2011). A better alternative could have been to use the same criteria but to then agree amongst a panel of raters whether each study should be assigned a 'low', 'medium' or 'high' quality score according to these criteria, and provide readers a full explanation of what 'low', 'medium' and 'high' quality means in the context of this review.

Conclusion and Relation to the Thesis Aims

Treatment completion rates in psychotherapy for BPD are on average higher than had been previously thought, although there is substantial heterogeneity between studies, and there is evidence of publication bias whereby smaller and/or lower quality studies are less likely to be published if a large proportion of their sample does not complete treatment. The meta-analysis presented here provides a

benchmark against which to judge the completion rate obtained in the sample of patients evaluated in Chapters Five and Six.

Most research on predictors of dropout has focused on the influence of patient sociodemographic and clinical characteristics. A number of these have been shown to predict treatment completion and will therefore be included as potential confounders in Chapter Six. By contrast, research on the relation of treatment processes to dropout has been minimal, with the exception of studies evaluating the role of the alliance. The consistent finding across studies that a stronger early therapeutic alliance is positively associated with treatment completion is particularly important for the present thesis, given the identification of the alliance as a key common therapy factor by contextual theorists (see Chapter Two). The findings of the review also highlight that no study to date has explored the role of other common therapy factors identified by contextual theorists, such as treatment credibility and self-efficacy, in predicting dropout from BPD. Furthermore, very few studies to date have explored the role of variables linked to specific theories of therapeutic change in BPD, and none have evaluated the role of specific factors in DBT, such as use of the DBT skills. Finally, no studies to date have explored the role of extratherapeutic factors relating to social support. In order to address this gap in the literature, Chapter Six will evaluate the relation of skills, common and extratherapeutic factors to treatment completion in DBT

Chapter Five

The association between skills, common, and extratherapeutic factors and the outcome of dialectical behaviour therapy

INTRODUCTION

As reviewed in Chapter One, DBT is a complex intervention designed specifically for the treatment of BPD with self-harm (Linehan 1993). It has been evaluated in twelve RCTs, seven of which found evidence that it was more effective than control treatments at reducing the occurrence of self-harm (Koons et al. 2001, Linehan et al. 1991, Linehan et al. 2006, Pistorello et al. 2012, Priebe et al. 2012, Turner 2000, Verheul et al. 2003).

However, we do not know how it enables patients to reduce self-harm i.e. via what mechanism(s). As reviewed in Chapter Two, psychotherapy process research – the study of the relationship between therapy processes and outcome – can help to address this question. The Medical Research Council has emphasised this type of research as a crucial stage in developing and refining a complex intervention (Craig et al. 2008). By studying how what happens during therapy – and outside of therapy – is related to the outcome of therapy, key change mechanisms can be delineated and the intervention can then be modified to enhance these particular mechanisms. Alternatively, routine treatment could potentially be modified to enhance these processes. Such research in the field of treatment for BPD has been minimal, as reviewed in Chapters Two and Three. A debate of particular relevance is the relative importance of specific versus common and extratherapeutic factors. That is, how important are factors identified as key change processes in the treatment manual or underlying theory of a particular therapy model, compared to the role of factors which are common elements of all or most therapy models, and

how do these compare to the role of factors in patients' lives outside of therapy (see Chapter Two).

The DBT treatment manual outlines skill acquisition as a 'specific factor' that is crucial for the reduction of self-harm and other symptoms of BPD during therapy (Linehan 1993a). This refers to the four types of skills that patients are taught during DBT skills teaching groups: Mindfulness, Interpersonal Effectiveness, Emotion Regulation and Distress Tolerance. As reviewed in Chapter Two, three studies to date have generated empirical evidence on the role of the DBT skills in DBT, with two showing that use of the DBT skills was positively associated with BPD symptom reduction (Stepp et al. 2008) and self-harm reduction (Neascui et al. 2010a), and a third with more ambiguous findings on the association between perceived helpfulness of the skills and outcome (Miller et al. 2000). Findings from qualitative research with patients learning the DBT skills have suggested that it may also be important to evaluate patients' perceived understanding of the skills, since patients report finding some skills difficult to understand (Araminta 2000, Cunningham et al. 2004). Relatedly, Linehan writes that ensuring patients understand how to use the skills is a key aim of the skills teaching classes (Linehan 1993b). The present research therefore evaluated the association between outcome and three factors related to patients' learning and use of the DBT skills: perceived understanding of the skills, frequency of use of the skills, and perceived helpfulness of the skills.

The present research also evaluated the association between outcome and three factors theorised to be common to all successful psychotherapeutic interventions. The contextual model (Frank & Frank 1990, Wampold 2001) argues that all successful therapy interventions, regardless of the specific model they employ, have these three factors in common: they are perceived as credible by the patient, they create a positive therapeutic alliance between patient and therapist, and they foster the patient's sense of self-efficacy. As reviewed in Chapter Three, the patient-rated therapeutic alliance is the only treatment process that has been consistently shown to be positively associated with the outcome of psychotherapy for BPD. However, it has only been shown to positively predict the outcome of DBT in two small studies (Leerer 1997, Turner 2000). The relevance of treatment credibility and self-efficacy to the prediction of psychotherapy outcome in personality disorder has never been studied.

In addition to the specific and common aspects of treatment itself, what happens outside of therapy - extratherapeutic factors - may influence outcome. As reviewed in Chapter Two, social support received from friends and family may be a particularly important extratherapeutic factor. The only study to date to assess this in relation to BPD is that of O'Toole and colleagues (2012), who found that perceived social support was positively associated with emotional well-being in patients receiving DBT. In assessing social support, both subjective and objective indicators can be considered. The level of social support perceived by a person may not be synonymous with the level of social support as assessed by objective

indicators such as the number of people in which a person is able to confide about their problems (Dunn et al. 1990). The present research evaluated the association between outcome and one subjective indicator of social support - 'perceived level of social support', and two objective indicators - number of social contacts and number of social confidantes. Feeling able to confide in a person has been theorised to represent the highest level of social bonding (Dunn et al. 1990).

Proponents of the contextual model argue that specific factors are often associated with the outcome of psychotherapy, but only because they facilitate and are facilitated by the common factors, which are the true drivers of change (Frank & Frank 1990, Wampold 2001). For instance they would argue that the therapeutic alliance is built by the patient and therapist working together based on a specific treatment rationale and using a method they both find credible, which in the case of DBT, will include the practise of the DBT skills. Contextual model proponents would argue that using the DBT skills is likely to enhance the formation of the alliance and treatment credibility, which will contribute to positive outcome and will in turn encourage increased use of the DBT skills. Furthermore, contextual model proponents would argue that learning and being able to put into practise the DBT skills would enhance a patient's self-efficacy, which will contribute to positive outcome and will also encourage further use of the skills. Thus, skills use and self-efficacy are likely to be highly confounded - and contextual theorists would argue that it is self-efficacy and other common factors that is really driving any association between skills use and outcome. T he contextual model would therefore predict that perceived understanding, helpfulness and frequency of use of the DBT skills

will be positively associated with outcome, but will not be independently associated with outcome after adjusting for the influence of common factors such as treatment credibility, the therapeutic alliance and self-efficacy. It is also possible that extratherapeutic factors related to social support could be an important confound to the association between the DBT skills and outcome, and whether the DBT skills are independently associated with outcome after adjusting for the influence of extratherapeutic factors has not been tested. Evaluating the association between DBT skill use and outcome after adjusting for the influence of common and extratherapeutic factors could enable a clearer understanding of whether DBT skills make an independent contribution to outcome in their own right, or whether their influence on outcome is mediated by common or extratherapeutic factors. The present research therefore aimed to address Research Question One as posed in the Thesis Outline, (p.16-21):

Are the DBT skills associated with outcome independently of common and extratherapeutic factors?

Specifically:

a) Are the DBT skills associated with self-harm frequency during treatment independently of common and extratherapeutic factors?

b) Are the DBT skills associated with BPD symptom severity during treatment independently of common and extratherapeutic factors?

Specific, common and extratherapeutic factors, self-harm and BPD symptom severity were assessed on repeated occasions during treatment. The association

between outcome and baseline sociodemographic and clinical variables was also assessed in order to identify potentially confounding factors. To further aid interpretation of the findings, change in the skills, common and extratherapeutic factors over time was evaluated. An increase in frequency of use and perceived understanding and helpfulness of the DBT skills would be consistent with the DBT model whereby patients learn more skills over time and become more confident in understanding, using and benefiting from them. An increase in self-efficacy over time would be consistent with the contextual model. The correlation between skills, common and extratherapeutic factors was also analysed. If skills, common and extratherapeutic factors were found to be highly correlated, this could support an interpretation that their effect on outcome may be partly interdependent.

METHODS

Design

This was a prospective longitudinal study in a sample of patients initiating DBT for BPD with self-harm, where repeated measurements of skills, common and extratherapeutic factors and outcome were taken up to seven times over the course of a year, and their association over time was evaluated using multi-level modelling. This repeated measures design maximised the amount of data available, increasing the statistical power of the analyses and allowing changes over time to be evaluated.

Inclusion and Exclusion Criteria

Participants were included if they:

1) Had a diagnosis of BPD

2) Had at least one day with self-harm in the 12 months prior to recruitment

3) Received at least one session of DBT at Newham DBT Service.

The only exclusion criteria were learning or English language difficulties of sufficient severity to prevent participation in DBT skills teaching groups.

Sample Size Calculation

One of the main predictor-outcome relationships of interest, and the only one for which suitable existing data was available at the time of planning the present study,

was the relationship between frequency of DBT skills use and BPD symptom severity. A sample size calculation was therefore conducted in order to determine what sample size would be needed to detect such a relationship. In order to perform a sample size calculation for a mixed model with repeated measures data nested within participants, MLPowSim software was used (Browne & Golalizadeh 2009) to generate code to be run by MLwiN statistical software (CMM 2009). A two level model was specified, where Level 1 was repeated measures within participants and Level 2 was the individual participant, and estimated using an IGLS estimation method and assuming data normality. It was specified that power estimates should be made for sample sizes between 10 and 80, increasing in steps of 10, and for numbers of observations per participant ranging from 1 to 6, and increasing in steps of 1. Estimates of the mean and standard deviation of the predictor, together with estimates for the coefficient of the predictor-outcome relationship, the coefficient of the intercept, and the degree of level 1 and level 2 (residual) variance were drawn from a recent paper evaluating the relationship between frequency of DBT skills use and BPD symptom severity (Stepp et al. 2008). This paper used a multilevel model with repeated measures nested within participants - a very similar analysis to that planned for the present research - and it therefore seemed appropriate to use their figures as estimates for the sample size calculation. The results were as follows. In order to have at least 85% power at the 5% significance level to detect an association between skills use and BPD symptom severity equivalent to that found in Stepp et al. (2008), the model suggested that complete data (i.e. 6 observations) on at least n = 20 participants, or at least 4

observations on at least n = 30 participants, or at least 3 observations on n = 50

participants, or at least 2 observations on n = 80 participants would be required. It

became apparent during recruitment that missing data would be substantial due to

participants missing research follow ups and/or certain measures being non-

applicable due to participants dropping out of DBT treatment. It was therefore

planned to recruit at least 80 participants.

Newham DBT Service

Newham DBT Service was initiated in 2003 and is a multidisciplinary team including

psychiatrists, psychologists, social workers and psychiatric nurses, all of whom have

received training from Behavior Tech USA as dialectical behaviour therapists

between 2004 and 2009, including training from expert DBT trainers such as Charlie

Swenson, Katie Korslund, Ronda Reitz and Susanah Whitiholt, and some of whom

receive regular expert supervision from Behavior Tech trainers including Heidi

Heard. The service offers a twelve month course of DBT, including an hour of

individual therapy each week, two hours of group skills training each week, and out

of hours telephone skills coaching. At the beginning of treatment, patients receive

individual sessions alone, known as 'pre-treatment', during which orientation to the

DBT process is conducted and commitment to the treatment contract is gained.

After signing the treatment contract, patients then attend skills training groups for

twelve months, during which they study the Interpersonal Effectiveness, Emotion

Regulation and Distress Tolerance skills modules twice over, and the Mindfulness

module between five and seven times. Between March 2008 and May 2011, individual treatment and group skills training sessions were recorded and 10% of the available recordings were assessed for adherence to the DBT model by a trained adherence rater (AG) using a 63-item rating scale. Both group and individual sessions were found to be adherent to the DBT model, as shown by a mean score of 4.1 where score of 4 and above indicate good adherence.

Referrals are accepted from primary, secondary and tertiary mental health services in the East London Borough of Newham. If patients miss four consecutive treatment sessions (group and/or individual), they are discharged. Patients who are discharged before completing the full twelve months of DBT are referred back to the service that referred them to DBT, and may then receive treatment from that service or be referred on elsewhere.

Procedure

All participants were recruited via the Newham DBT service between March 2008 and March 2011. Participants recruited between March 2008 and May 2010 were recruited as part of an RCT of DBT versus TAU, the methods and findings for which are published in Priebe et al. (2012). Ethical approval for the present study was granted as a substantial amendment to the RCT protocol (see Appendix C for ethical approval documents). Measures of the skills, common and extratherapeutic factors were added to the test battery administered to participants every 2 months during the trial, in order to address the research questions of the present study. Whilst recruitment to the trial finished in May 2010, participants for the present study

continued to be recruited until March 2011. The recruitment of participants into the present study is summarised in Figure 5.1.

Whilst recruitment to the trial was ongoing, patients referred to the Newham DBT team were only accepted for possible treatment if they agreed to take part in the trial and met the trial's inclusion criteria. These criteria were similar to those for the present study, except that participants had to have at least 5 days with self-harm in the 12 months prior to treatment, and participants with a diagnosis of any personality disorder were included (see Priebe et al. 2012). These criteria were assessed by the Newham DBT team. Participants meeting inclusion criteria were then given information about the study and were able to discuss it with a researcher before consenting to take part (see Appendix D for information sheet and consent form). They then underwent a baseline interview with a researcher and were randomised to a year of either DBT or TAU. Participants randomised to DBT and taking part in at least one session were included in the present study, as long as they had a diagnosis of BPD. This applied to all but one of the participants randomised to DBT (see Figure 5.1). Every participant randomised to receive TAU was then offered the chance to receive DBT after completing their year of TAU. Participants taking up this offer and receiving at least one session of DBT were included in the present study, as long as they had a diagnosis of BPD and had self-harmed at least once in the year they were receiving TAU.

Figure 5.1 Recruitment of participants into the study
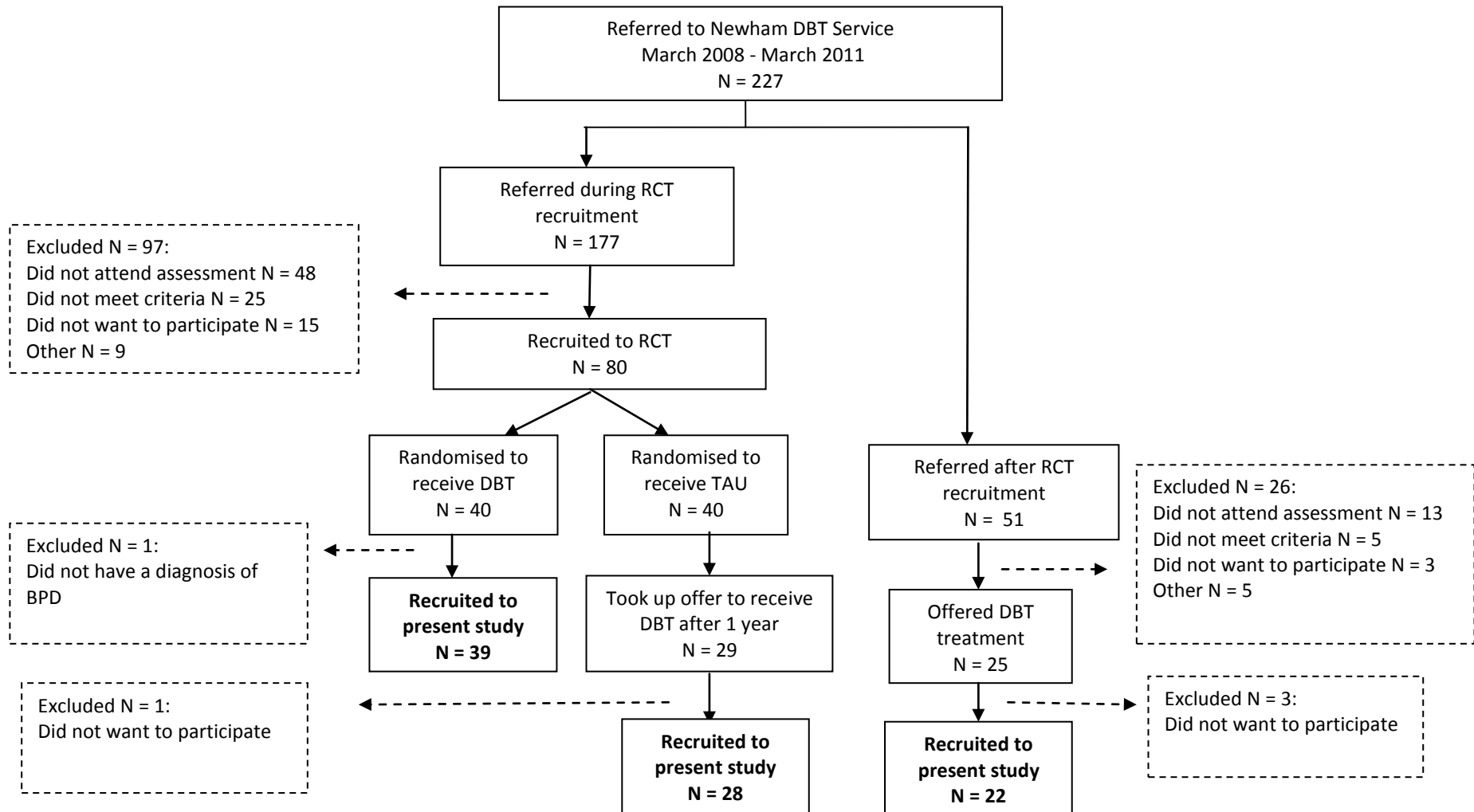
After recruitment to the RCT had ended, the DBT service relaxed their inclusion criteria and processed new referrals as they had before the trial, i.e. without the requirement to take part in research and without a randomisation procedure. Newly accepted patients were then asked by the team if they would agree to be contacted by a researcher, and those who did and who met criteria were asked to participate in the present study. The patient information and consent form are included in Appendix D (p. 543-553).

Following recruitment to the present study researchers arranged to interview participants every two months for a year. The doctoral candidate was involved in data collection throughout and collected approximately 60% of the data used in the present thesis - the remainder was collected by research colleagues SM, NF, NB or MS. During these interviews, observer-rated and self-report measures of outcome and skills, common and extratherapeutic factors were taken. Interviews were conducted in person, either at the research department, the treatment centre, hospital if the participant had been hospitalised, or the participant's home. Where this was not possible, interviews were conducted by phone, or in a few cases, self-report measures were sent by post to the participants. Every effort was made to continue to follow up participants who dropped out of DBT before completing the full course.

Measures

The main measures used in the study are available in Appendix D (p.554-574). They are categorised below by the types of variables they were used to measure. Most measures were self-reported and patient-rated; however, the researchers assessing the observer-rated measures were not blind to patients' responses on other measures or to patients' treatment status.

Baseline Measures

Participants' Axis I diagnoses were assessed using the Mini International Neuropsychiatric Interview (MINI) (Sheehan et al. 1998). This DSM-IV based structured interview has been shown to have good inter-rater and test-retest reliability (Lecrubier et al. 1997, Sheehan et al. 1997).

Participants' Axis II diagnoses were assessed using the Structured Clinical Interview for DSM-IV, Axis II (SCID-II) (First et al. 1997), to ascertain that they met criteria for BPD, and to document their personality disorder comorbidity. This semi-structured interview can be used to diagnose each of the ten personality disorders. Reliability is generally good - for example, the Cohen's kappa for the inter-rater reliability for BPD has been found to be 0.91 (Maffei et al. 1997).

The number of days with self-harm in the 12 months prior to treatment was assessed using a standardised self-report form, where self-harm was classified as any intentional act of tissue damage. Gender, employment and psychiatric medication usage were also documented by researchers at baseline.

General psychiatric, depression and anxiety severity were assessed during the baseline interview using the Brief Psychiatric Rating Scale (Ventura et al. 1993). This is an observer-rated semi structured interview during which symptoms in 24 domains over the past two weeks are rated on a 1-7 point Likert scale. Anxiety and depression severity are assessed via the second and third item scores respectively, and range from 1 (not present) to 7 (extremely severe). General psychiatric symptom severity is assessed via the mean item score. In the present study, inter-rater reliability between five researchers who independently rated symptoms was excellent, with an intraclass correlation coefficient of 0.87.

Treatment received

The treatment received by participants over the 12 month study period was recorded every 2 months using the Client Service Receipt Inventory (Beecham & Knapp 2001), and the details of treatment received and date of treatment completion or dropout were also recorded by researchers using a standardised form.

DBT skills

At the time this study was developed, no published measures of DBT skill use existed, and so a new self-report measure, 'The DBT Skills Questionnaire' was developed, and administered every two months. This questionnaire assesses three concepts: 1) to what extent patients feel they understand how to use the skills they

have been taught; 2) how often they use the skills; and 3) how helpful they feel the

skills are for them. These concepts were chosen because they were identified as

important in the existing theoretical literature and qualitative research on skills in

DBT (Linehan 1993, Cunningham et al 2004, Perseius et al 2003). Piloting with two

patients who have completed DBT and two DBT therapists confirmed that they felt

these concepts were useful and potentially linked to post-treatment outcome.

Discussions with these same patients and therapists, as well as with a

multidisciplinary team of psychologists and psychiatrists working in the field of

social psychiatry research, resulted in production of a self-report questionnaire

assessing each concept (understanding, frequency of use and helpfulness) for each

of the four skills types, i.e. Mindfulness, Interpersonal Effectiveness, Emotion

Regulation and Distress Tolerance. Each concept was assessed using a single

question for each skill type, resulting in a total of 12 questionnaire items. Perceived

understanding and helpfulness are each rated on a Likert scale from 0 to 4 where 0

is "Not at all" and 4 is "Completely " or "Very". Frequency of use is rated as the

number of days out of the past seven on which the skill type was used. For

example, perceived understanding of Mindfulness is assessed by asking "How far do

you understand how to use the Mindfulness skills?", frequency of use is assessed by

asking "How often did you use the Mindfulness skills in the past seven days?", and

perceived helpfulness by asking "How helpful is Mindfulness in your opinion?".

Since the focus of this research is on the DBT skills in general rather than their

specific sub-types, summary scores for each concept were calculated, so that

participants' mean perceived understanding of the skills, mean perceived

helpfulness of the skills, and total skill use over the past seven days could be

assessed. The use of mean scores to assess perceived understanding and

helpfulness was chosen rather than total scores so that these would not be biased

by having not yet learned all skill types earlier on in treatment. By contrast, total

scores for skill use were calculated to reflect the hypothesis that skill use increases

as more skill types are learnt over the course of treatment, as found in previous

research (Neacsiu et al. 2010, Stepp et al. 2008). Thus, the possible ranges for the

perceived understanding and perceived helpfulness scores were 0 to 4, whilst the

possible range for the frequency of use score was 0 to 28, where 28 would mean

the participant reported using each skill type every day in the past week. It was

hypothesised that some participants dropping out from DBT before completing the

full course would continue to use the DBT skills, and so researchers continued to

administer this questionnaire to these participants as long as they had attended at

least one skills training group session.

The internal consistency of the measure was good, with a Cronbach's alpha of 0.88

for the four skills understanding items, 0.87 for the four skill use items and 0.84 for

the four skills helpfulness items at month 12. Test-retest reliability for perceived

understanding, frequency of use and perceived helpfulness of the skills was

moderate or strong at all time points. For instance, the intraclass correlation

coefficient (ICC) was 0.46 for perceived understanding of the skills from month 2 to

month 4, and 0.71 for month 10 to month 12. For frequency of skill use, the ICC was

0.47 for month 2 to month 4, and 0.68 for month 4 to month 6. For perceived

helpfulness of the skills, the ICC was 0.47 for month 2 to month 4, and 0.65 for

month 10 to month 12. The finding that test-retest reliability was often only

moderate likely reflects the significant change in perceived understanding,

frequency of use and perceived helpfulness of the skills over time (see p. 187), and

also indicates that the measure has good sensitivity to change.

Common factors

The three 'common factors' assessed in the present research were self-efficacy, the

quality of the therapeutic alliance, and treatment credibility.

Self-efficacy was assessed every two months using the Generalized Self-Efficacy

Scale (Schwarzer & Jerusalem 1995). This scale assesses self-reported global

confidence in coping with problems across a wide range of situations (Schwarzer et

al. 1997). For example, the first item is " I can always manage to solve difficult

problems if I try hard enough" which is scored from 1 (Not at all true) to 4 (Exactly

true). The total score can range from 10 to 40, with higher scores reflecting higher

self-efficacy. In other studies, the internal consistency of this measure has been

found to be good or excellent, with Cronbach's alpha ranging from 0.81 to 0.91

(Schwarzer et al. 1997). It has also been demonstrated to have convergent validity,

correlating positively with self-esteem and optimism, and negatively with anxiety

and depression symptoms (Schwarzer 1993).

The quality of the therapeutic alliance was assessed every two months using the

Scale To Assess Therapeutic Relationships in Community Mental Health Care:

Patient Version (STAR-P) (McGuire-Sneakus et al. 2007). This scale was selected

because it was specifically developed to assess the alliance in a community

psychiatry setting and would therefore be appropriate for use both with patients

receiving DBT or, in the case of those who dropped out of treatment, those

receiving more generic community psychiatric care such as provided by a

Community Mental Health team or an outpatient psychiatrist. It was also

developed using a rigorous scale development process, including qualitative

interviews with patients about what is important to them in their relationship with

their key mental health worker, and has been demonstrated to have a sound factor

structure. In other research, this scale has been shown to have acceptable test-

retest reliability (McGuire-Sneakus et al. 2007), and in the present study

demonstrated good internal consistency at month 2 (Cronbach's alpha = 0.89).

Treatment credibility was assessed every two months using the Treatment

Credibility Scale (Borkovec & Nau 1972). This scale assesses to what extent

participants find the treatment they are receiving credible and believe that it can

help them with their problems, with possible scores ranging from 4 to 20. This

measure has been shown to have high internal consistency, ranging from 0.88 to

0.92, and to discriminate well between intervention and control conditions in

clinical trials (Borkovec & Nau 1972, Kirsch & Henry 1977). It was administered both

to patients receiving DBT, and to those who had been referred on to other

treatments after dropping out from DBT.

Extratherapeutic factors

The three 'extratherapeutic' factors assessed in the present study were perceived

social support, number of social contacts and number of social confidantes.

Perceived social support was assessed every two months using the

Multidimensional Scale for Perceived Social Support (Zimmet et al. 1988). It has

been shown to have good internal consistency and test-retest reliability, and

moderate construct validity (Zimet et al. 1988, Zimet et al. 1990).

Number of social contacts and number of social confidantes were both assessed

using the Social Network Schedule (Dunn et al. 1990). These variables were

assumed to be less subject to change over time than other variables and were thus

assessed only every six months. The Social Network Schedule is a structured

interview which is not a scale, but instead asks several questions about social

contacts during the past month, the response to each of which is of interest in its

own right (Dunn et al. 1990, Dickinson et al. 2002). In the present research, the

focus was on just two of the questions: 'Who have you seen or spoken to in the

past month?' and 'Of those people, who do you confide in about your feelings or

problems?' The latter activity, confiding, is assumed by Dunn and colleagues to

represent the highest quality of social bonding. Contact with individuals in a

professional capacity, e.g. mental health professionals, was not included. The interview has been shown to have excellent inter-rater reliability (Dunn et al. 1990).

Outcome

The number of days with self-harm per 2 month period during treatment was assessed every 2 months using a standardised self-report form, and using the same definition as described under Baseline Measures.

BPD symptom severity was assumed to be less subject to fluctuations over time than self-harm, given the classification of BPD as a personality disorder composed of 'traits' rather than symptoms, and was thus assessed only at baseline, month 6 and month 12. It was assessed using the Zanarini Scale for Borderline Personality Disorder (ZAN-BPD) (Zanarini 2003), which has been shown to have high convergent and discriminant validity, good inter-rater reliability and good test-retest reliability (Zanarini et al. 2003). In the present study, the internal consistency was acceptable at baseline and month 6, and good at month 12 (Cronbach's alpha = 0.73, 0.71 and 0.83 respectively).

Statistical Analysis

Analysis was conducted in STATA/SE version 11.0 (StataCorp 2009). For all analyses, $p<0.05$ was taken to indicate statistical significance, whilst p values above 0.05 but below 0.10 were interpreted as showing a trend towards statistical significance.

Analysis Prior to Addressing the Main Research Questions

A number of analyses were conducted prior to addressing the main research questions, in order to describe the dataset and to obtain information on the changes over time and inter-relationship between the skills, common and extratherapeutic factors.

Descriptive statistics on the characteristics of the sample at baseline were generated. Descriptive statistics on the amount and patterns of missing data were also generated. To explore reasons for data missingness, binary variables representing data missingness were created for each of the skills, common, extratherapeutic and outcome variables. The association between baseline variables and the probability of data missingness was then evaluated using multilevel random-effects logistic regression, in order to get an indication of whether data was likely to be missing completely at random or missing at random.

The assumed linear effect of time on the outcome variables and on the skills, common and extratherapeutic factors was then evaluated using multi-level modelling. For the skills variables and the therapeutic alliance, available timepoints were month 2, 4, 6, 8, 10 and 12, and for BPD symptom severity, number of social

contacts and number of social confidantes, baseline, month 6 and month 12.

Multilevel random effects linear regression was used for the continuous variables.

Distribution checks suggested that these variables did not conform to a normal

distribution and could not be transformed to approximate normality, and so the

sandwich estimator for standard errors was used since this is robust to violations of

the normality assumption (Rabe-Hesketh & Skrondal 2012). For the count

variables, (number of days with self-harm, frequency of skill use, number of social

contacts, number of social confidantes), a multilevel random effects Poisson

regression was used. Initial goodness of fit tests suggested significant

overdispersion in the data for each of these variables, and so a generalised linear

latent and mixed model (glamm) with robust standard errors was used to handle

this, as suggested by Rabe-Hesketh and Skrondal (2012). This method uses adaptive

quadrature to fit the model, producing more reliable estimates than many other

methods (Rabe-Hesketh et al. 2002).

Multi-level modelling was then used to determine how perceived understanding,

use and helpfulness of the DBT skills, self-efficacy, the therapeutic alliance,

treatment credibility, perceived social support, number of social contacts and

number of social confidantes are related to each other, and whether these

variables are associated with the following variables assessed at baseline: gender,

employment, baseline self-harm frequency, BPD, general psychiatric, depression or

anxiety symptom severity. As above, multilevel random effects linear regression

with robust standard errors was used to model the continuous variables, whilst the

count variables were modelled using multilevel random effects Poisson regression with robust standard errors via a generalized linear latent and mixed model (gllamm).

Main Research Questions

Research Question One, Part A: Are the DBT skills associated with self-harm frequency independently of common and extratherapeutic factors?

The analysis addressing Research Question One, Part A, proceeded through several stages. First, the unifactorial associations between self-harm frequency during treatment and perceived understanding, use and helpfulness of the DBT skills, self-efficacy, the therapeutic alliance, treatment credibility, perceived social support, number of social contacts and number of social confidantes were assessed one at a time. The skills, common and extratherapeutic factors and number of days with self-harm per 2 month period were assessed at month2, 4, 6, 8, 10 and 12, giving rise to serial correlation or 'clustering' of repeated measurements within individuals. This necessitated the use of multilevel analysis, which adjusts the model estimates to take account of such serial correlation. Since self-harm frequency is a count variable and initial model fit statistics indicated significant overdispersion, multilevel random effects Poisson models with robust standard errors were used, via the gllamm procedure as described above. The association between outcome and baseline sociodemographic and clinical variables was also evaluated. All such

variables which were identified in Chapter Three as predicting outcome in at least one previous study of psychotherapy for BPD, and which were available in the current dataset, were tested. These were age, gender, employment, number of days with self-harm in the 12 months prior to baseline, baseline BPD severity, baseline general psychiatric symptom severity, baseline depression severity, baseline anxiety severity, baseline anger severity, comorbid substance dependence and taking medication at baseline. It was thought important to evaluate the effect of these variables so that those which were associated with outcome could then be included in the final multifactorial model, in order to adjust for potential confounders of the association between outcome and skills, common and extratherapeutic factors.

In a second stage, variables that were significant in the unifactorial models at the p<0.10 level were then entered into a multifactorial model, in several blocks. The order in which variables were entered into the model was driven by theory, since the aim was to determine whether the DBT skills are independently associated with outcome after adjusting for common factors, and then extratherapeutic factors, and then baseline clinical severity and sociodemographic factors. Therefore, unifactorially significant skills variables were entered first into the model (Block 1), followed by unifactorially significant common factor variables (Block 2), followed by unifactorially significant extratherapeutic variables (Block 3), followed by unifactorially significant baseline clinical severity or sociodemographic variables (Block 4).

A sensitivity analysis was conducted whereby the models described above were

fitted to a dataset in which missing values had been imputed using multiple

imputation. Data was assumed to be missing at random, a necessary condition for

the use of such imputation (Sterne et al. 2009). Multiple imputation was conducted

using REALCOM, a statistical package allowing multi-level imputation (Bartlett

2011). It was important to use a multi-level imputation model in order to

incorporate the clustering effect of repeated observations within the same

participant, and in order to incorporate the effect of time. The software fits

multivariate response models to two-level data, imputing the values of missing data

conditional on the value of other variables in the dataset. The model is fitted using

the Markov Chain Monte Carlo method to sample possible values for the missing

data from the conditional distribution of likely values (Carpenter et al. 2011). The

variables chosen for the imputation equations were all variables included in the

models planned to address the research questions. Importantly, this included both

the predictor and the outcome variables to be used in the planned analyses, which

is necessary to ensure that any relationships between predictor and outcome

variables are preserved in the imputed dataset (Sterne et al. 2009). The imputation

model also included two variables shown to predict the probability of data

missingness, baseline self-efficacy and months of DBT completed (see p. 185-6),

which is important if data is missing at random (Sterne et al. 2009). Since the

software uses the multivariate normal distribution to model continuous responses,

and most of the variables of interest did not conform to this distribution, the nscore

command in STATA SE/11 was first used to normalise the variables to be imputed,

using a ranking procedure. This procedure is recommended before imputing

variables with skewed responses, since violations of the assumption of normality

can lead to generation of impossible values, including negative values (Lunt 2011).

One thousand imputations were conducted, and these were then randomly

sampled to produce ten imputed datasets, which were imported back into Stata

SE/11. These ten datasets were combined and the normalisation procedure was

reversed, generating an imputed dataset with no missing values in the variables of

interest. The models described above were then re-run in the imputed dataset.

Research Question One, Part B: Are the DBT skills associated with BPD symptom

severity independently of common and extratherapeutic factors?

Again, the analysis addressing Research Question One Part B took place in two

stages. In the first stage, the unifactorial associations between BPD symptom

severity during treatment and perceived understanding, use and helpfulness of the

DBT skills, self-efficacy, the therapeutic alliance, treatment credibility, perceived

social support, number of social contacts and number of social confidantes were

assessed. BPD symptom severity was assessed at month 6 and 12 necessitating the

use of multilevel analysis to adjust for repeated measurement of BPD symptoms in

the same individual over time. Distribution checks suggested that BPD symptom

severitu did not conform to a normal distribution and could not be transformed to

approximate normality, and so multilevel linear regression with the sandwich

estimator for standard errors was used since this is robust to violations of the

normality assumption (Rabe-Hesketh & Skrondal 2012). As above, the unifactorial

association with age, gender, employment, number of days with self-harm in the 12

months prior to baseline, baseline BPD severity, baseline general psychiatric

symptom severity, baseline depression severity, baseline anxiety severity, baseline

anger severity, comorbid substance dependence and taking medication at baseline

was also tested. Again, unifactorially significant predictors of BPD severity ($p<0.10$)

were entered into a multifactorial model, using the same block entry method

described above for predictors of self-harm frequency.

Again, a sensitivity analysis was conducted using a multipley imputed dataset. The

multipley imputed dataset used was the same as that created to address Research

Question One Part A.

RESULTS

Recruitment

Of the 227 individuals referred to the DBT team between March 2008 and March 2012, 89 were recruited into the present study. Participant recruitment into the study is summarised in Figure 5.1.

Description of the Sample

The sociodemographic and clinical characteristics of the sample are presented in Tables 5.1 to 5.3 below.

Treatment Received

Of the 89 patients initiating DBT treatment, only 39 completed the full 12 months. The remaining 50 completed between 1 and 11 months of DBT (mean = 5.3 months, s.d. = 3.0, see Chapter Six for further details). After dropping out from DBT, they were referred on to various other forms of psychiatric treatment, including treatment by a community psychiatric nurse (N = 2), treatment by a psychiatrist (N = 11), treatment by a clinical psychologist (N = 3), care from a support worker (N =1), care from a social worker (N = 1), inpatient care (N = 4), counselling (N = 2), care coordination (N=1), GP care alone (N = 15), or unknown care due to nonattendance of research follow-ups (N = 10). There was often a substantial gap between their dropout from DBT and their beginning treatment with a new service, while their referral was being processed.

Table 5.1. Sociodemographics (N = 89)

	Gender		Age	Ethnicity					Employment status	
Mean (s.d.)	Female	Male	33 (10.7)	White	Black	S. Asian	E. Asian	Mixed	Employed	Unemployed
N	78	11		55	13	15	2	4	25	64

Table 5.2. Axis I and Axis II diagnoses (N = 89 unless otherwise stated)

	Current major depression or dysthymia		Current manic or hypomanic episode		Current panic disorder		Current agoraphobia (n = 88)		Current social phobia		Current P.T.S.D.		Current O.C.D. (n = 88)		Alcohol dependence or abuse (past year, n = 88)		Substance dependence or abuse (past year)	
Mean(s.d.)	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
N	77	12	18	71	27	62	54	34	49	40	51	38	49	39	35	53	30	59

	Current psychotic disorder		Current anorexia nervosa (n = 88)		Current bulimia nervosa		Current G.A.D. (n = 88)		Number of Axis I diagnoses (n = 88)	Avoidant P.D.		Dependent P.D.		Obsessive-compulsive P.D.		Paranoid P.D.	
Mean (s.d.)	Yes	No	Yes	No	Yes	No	Yes	No	6.1 (2.7)	Yes	No	Yes	No	Yes	No	Yes	No
N	36	53	5	83	18	71	67	21		56	33	22	67	40	49	42	47

	Schizotypal P.D.		Schizoid P.D.		Histrionic P.D.		Narcissistic P.D.		Borderline P.D.		Antisocial P.D.		Number of P.D. diagnoses
Mean (s.d.)	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	3.2 (1.4)
N	12	77	4	85	2	87	11	78	89	0	18	71	

Table 5.3 Clinical severity at baseline

	Number of days with self-harm in 12 months prior to baseline (n = 90)	BPD symptom severity (n = 89)	General psychiatric symptom severity (n = 83)	Anxiety severity (n = 83)	Depression severity (n = 83)
Mean (s.d.)	82.3 (113.5)	16.9 (6.6)	2.1 (0.33)	4.8 (1.3)	4.8 (1.1)

Missing Data

For some participants, data could not be collected on all variables at the planned timepoints, as shown in Table 5.4. The pattern of missingness was often not simply monotone (i.e. data collected at all follow-ups, up to a timepoint after which all data is missing). For most participants with missing data, data missingness was either intermittent (i.e. alternating between present and missing in a non-systematic fashion) or mixed (i.e. intermittent, and then always missing following a certain timepoint). As an example, the various patterns of missingness for the variable 'Treatment Credibility' are shown in Table 5.5.

In some cases, data could not be collected because assessment of the variable was not applicable at the planned timepoint. For instance, many participants had not yet started the skills training groups by the month 2 assessment, and a few had still not by month 4, and so the Skills Questionnaire could not be administered. Others dropped out before starting the skills groups, so the questionnaire could not be administered at any timepoint. Furthermore, as detailed above, 15 of the 50 treatment dropouts received only care from their GP following drop out and so could not be administered the STAR to assess the therapeutic alliance or the TCS to assess treatment credibility. Other treatment dropouts did eventually begin treatment with other mental health services, but there was often a substantial gap between their dropout from DBT and their beginning treatment with a new service, while their referral was being processed, during which time the STAR to assess the alliance and the TCS to assess treatment credibility could not be administered.

Other missing data occurred because participants did not continue to attend research follow-ups – either because they did not attend despite repeated arrangement of appointments, or because they changed their telephone number and did not inform researchers, or, in just two cases, because they informed researchers that they no longer wished to take part in research follow-ups. 3 participants attended no further follow-ups after the baseline assessment, 3 attended only 1 further follow-up, 3 attended only 2 further follow-ups, 4 attended 3 further follow-ups, 10 attended 4 further follow-ups, 16 attended 5 further follow-ups and 51 attended all 6 follow-ups.

The full baseline interview typically took 2 hours and had to be face-to-face. For some participants, it was very inconvenient to be interviewed in a location other than the therapy offices, in which rooms were very difficult to obtain and could only be booked for a maximum of one hour. In a few cases, this meant that assessment of certain baseline variables had to be dropped in order to prioritise collection of data on the outcome variables and on the predictors of most theoretical interest. This meant that for a few participants, data on baseline general psychiatric, anxiety and depression symptom severity was not collected since the BPRS is a lengthy interview typically taking one hour to complete.

In order to increase the sample size given the amount of missing data, data that had been collected from thirteen participants who began receiving DBT before the full corpus of questionnaires for the present research had been finalised was included

in the present research. This meant that for these participants baseline

observations on all of the predictors of interest could not be collected.

Multi-level logistic regression models to determine whether baseline variables

could predict missing follow-up data identified months of DBT completed and

baseline self-efficacy as particularly important. As shown in Table 5.6, completing

more months of DBT significantly reduced the chance of having missing follow-up

data on any of the skills, common, extratherapeutic or outcome variables (all p

values <0.01). Similarly, as shown in Table 5.6, a higher level of baseline self-efficacy

was associated with a significantly lower probability of missing follow-up data on

any of the skills, common or extratherapeutic variables (all p values < 0.05), and a

trend towards a significantly lower probability of missing self-harm or BPD

symptom severity outcome data (p < 0.10). These results demonstrate that data

was not missing completely at random, and is likely to be either missing at random

or missing not at random. It is impossible to determine which of these last two

missingess methods is the case (Sterne et al. 2009). Subsequent analyses proceeded

with the assumption that data was missing at random, which implies that, once the

association between data missingess and the values of other variables had been

adjusted for, there would be no association between missingness of a particular

value and the magnitude of that value had it been obtained (Rabe-Hesketh &

Skrondal 2012).

Table 5.4 Number of participants with data at baseline and number of follow-ups per participant (N = 89)

Variable	N of Participants with data at ….							
	Baseline	6 Follow Ups	≥5 Follow Ups	≥4 Follow Ups	≥3 Follow Ups	≥2 Follow Ups	≥1 Follow Up	0 Follow Ups
TIME-INVARIANT PREDICTORS								
Gender	89	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Employment at baseline	89	n.a.	n.a.	n.a	n.a.	n.a.	n.a.	n.a.
Baseline general psychiatric severity	82	n.a.	n.a.	n.a	n.a.	n.a.	n.a.	n.a.
Baseline anxiety severity	82	n.a.	n.a.	n.a	n.a.	n.a.	n.a.	n.a.
Baseline depression severity	82	n.a.	n.a.	n.a	n.a.	n.a.	n.a.	n.a.
Taking medication at baseline	89	n.a.	n.a.	n.a	n.a.	n.a.	n.a.	n.a.
TIME-VARYING PREDICTORS								
Perceived understanding of the skills	n.a.	26	44	53	64	71	75	14
Frequency of use of the skills	n.a.	26	44	53	64	71	75	14
Perceived helpfulness of the skills	n.a.	26	44	53	64	71	75	14
Self-efficacy	72	41	57	70	76	81	85	4
Therapeutic alliance	n.a.	31	50	62	72	81	84	5
Treatment credibility	68	28	44	60	71	81	85	4
Perceived social support	75	38	56	69	74	79	84	5
Number of social contacts	73	n.a.	n.a.	n.a.	n.a.	48	77	12
Number of social confidantes	73	n.a.	n.a.	n.a.	n.a.	48	77	12
OUTCOME VARIABLES								
Number of days with self-harm	89	61	72	77	79	81	86	3
BPD symptom severity	88	n.a.	n.a.	n.a.	n.a.	61	78	11

Table 5.5 Patterns of missingness in the variable 'Treatment Credibility'

Pattern of Missingness (+ = present, 0 =missing)	Frequency (N)
+++++++	21
0++++++	6
+++0000	6
+000000	4
++++++0	3
+++++0+	3
+++0+++	3
+++++00	3
++++000	3
0+00000	3
++++0++	2
+++0++0	2
+++0+0+	2
0++0+++	2
+++00+0	2
Other unique patterns of missingness	24

Table 5.6 Factors predicting lower odds of missing data

Variable	Association with odds of MISSING data on....	Odds ratio	Standard Error	95% confidence interval	p value
Number of months of DBT completed	Perceived understanding of the DBT skills	0.65	0.04	0.57 - 0.73	< 0.001
	Frequency of use of the DBT skills	0.65	0.04	0.57 - 0.73	< 0.001
	Perceived helpfulness of the DBT skills	0.65	0.04	0.57 - 0.73	< 0.001
	Treatment credibility	0.74	0.03	0.68 - 0.80	< 0.001
	Therapeutic alliance	0.71	0.03	0.65 - 0.78	< 0.001
	Self-efficacy	0.71	0.04	0.64 - 0.80	< 0.001
	Perceived social support	0.77	0.04	0.70 - 0.85	< 0.001
	Number of social contacts	0.88	0.03	0.82 - 0.94	< 0.001
	Number of social confidantes	0.88	0.03	0.82 - 0.94	< 0.001
	Self-harm frequency	0.59	0.07	0.47 - 0.73	< 0.001
	BPD symptom severity	0.68	0.08	0.54 - 0.85	0.001
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Variable	Association with MISSING data on....	Odds ratio	Standard Error	95% confidence interval	p value
Baseline self-efficacy	Perceived understanding of the DBT skills	0.87	0.05	0.78-0.96	0.01
	Frequency of use of the DBT skills	0.87	0.05	0.78-0.96	0.01
	Perceived helpfulness of the DBT skills	0.87	0.05	0.78-0.96	0.01
	Treatment credibility	0.93	0.03	0.87 - 0.99	0.04
	Therapeutic alliance	0.91	0.04	0.84 - 0.99	0.02
	Self-efficacy	0.88	0.04	0.80 - 0.97	0.01
	Perceived social support	0.90	0.04	0.83 - 0.97	0.01
	Number of social contacts	0.94	0.03	0.89 - 0.99	0.03
	Number of social confidantes	0.94	0.03	0.89 - 0.99	0.03
	Self-harm frequency	0.88	0.07	0.76 - 1.02	0.09
	BPD symptom severity	0.86	0.07	0.73 - 1.01	0.06

Analysis Prior to Addressing the Main Research Questions

Change in outcome, skills, common and extratherapeutic factors over time

Over the course of 12 months, the frequency with which participants self-harmed decreased significantly (I.R.R. = 0.94, 95% C.I. = 0.90 – 0.98, p <0.01), as did their BPD symptom severity (β = -0.37, 95% C.I. = -0.53 – -0.21, p <0.01). During the same period, participants' perceived understanding of the DBT skills increased (β = 0.06, 95% C.I. = 0.03 – 0.10, p <0.01), as did the frequency with which they used the DBT skills (IRR = 1.07, 95% C.I. = 1.04 – 1.09, p < 0.01), the perceived helpfulness of the DBT skills (β = 0.03, 95% C.I. = -0.01 – 0.07, p = 0.08), self-efficacy (β = 0.31, 95% C.I. = 0.17 – 0.46, p<0.01) and treatment credibility (β = 0.08, 95% C.I. = 0.01-0.15, p = 0.03). There was also a trend towards an increase in perceived social support over time (β =0 .23, 95% C.I. = -0.03 - 0.49, p = 0.08), although the confidence interval crossed zero, and there was no significant effect of time on the patient-rated therapeutic alliance (β = -0.19, 95% C.I. = -0.45 - 0.06, p = 0.13), number of social contacts (IRR = 0.98, 95% C.I. = 0.96 - 1.04, p = 0.91) or number of social confidantes (IRR = 1.03, 95% C.I. = 0.99 - 1.06, p = 0.10). The values of each of these variables over time is shown in Figure 5.2.

Figure 5.2 Mean values of variables over time
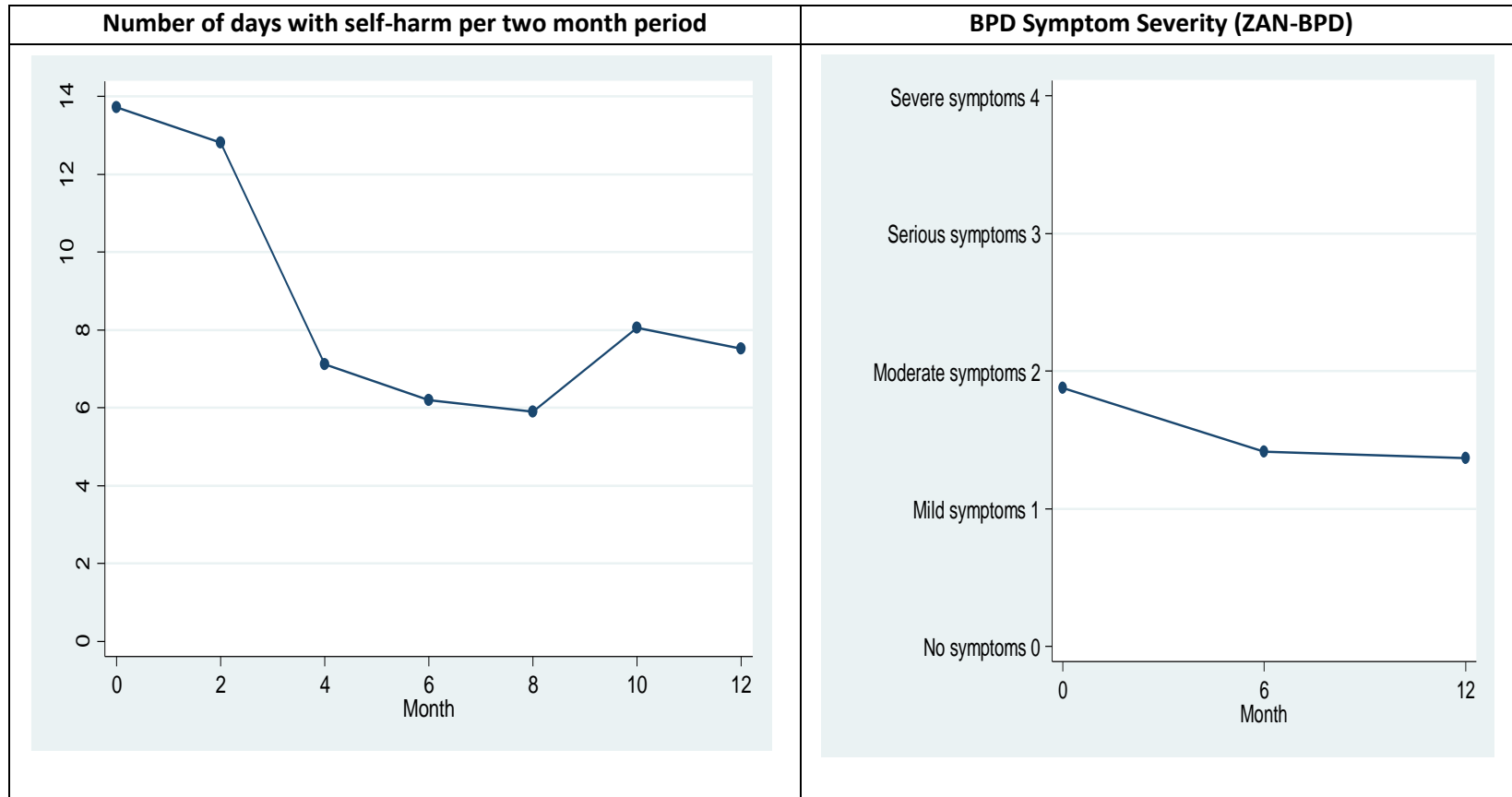
Perceived Understanding of the DBT Skills
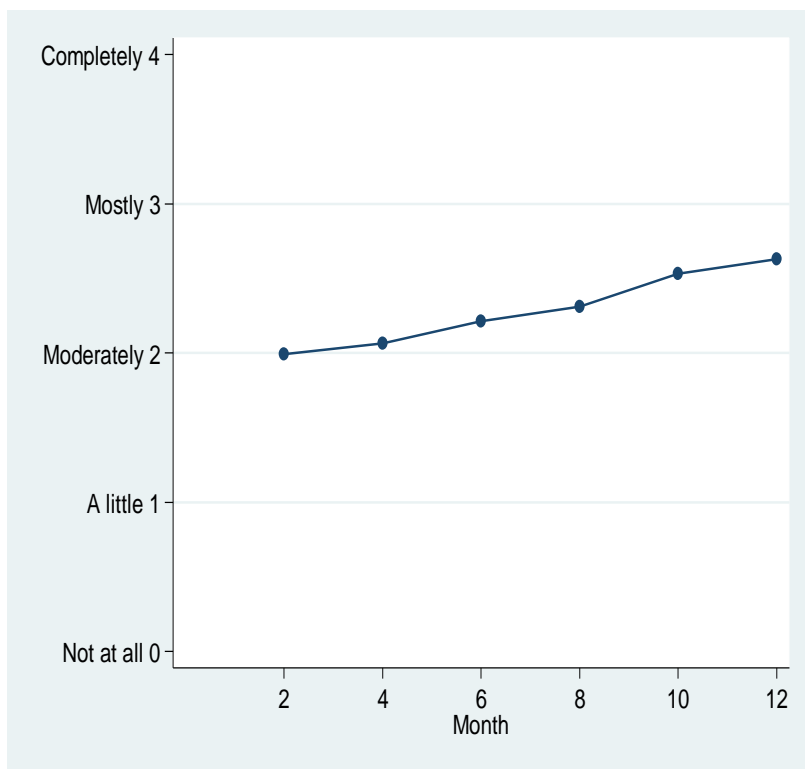
Perceived Helpfulness of the DBT Skills
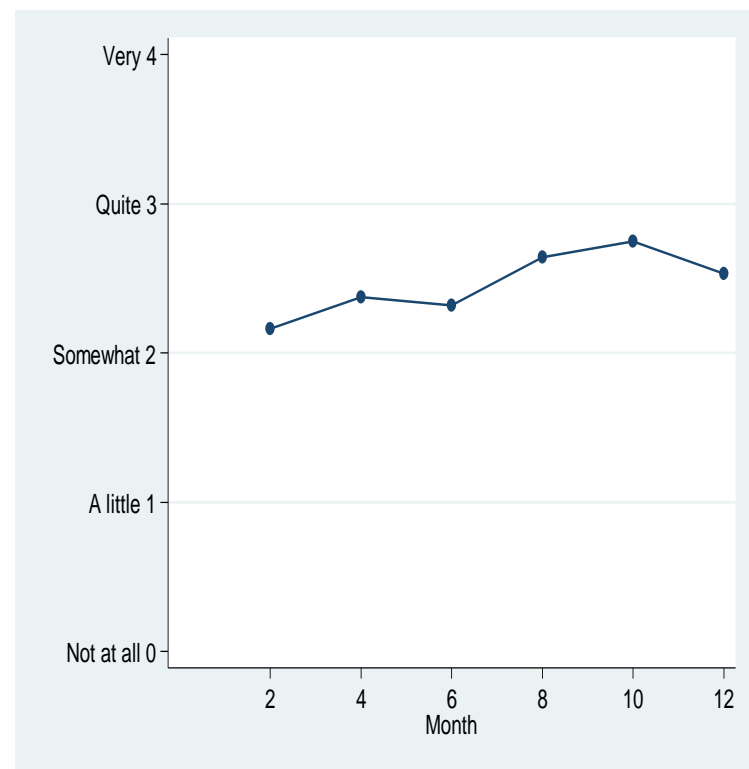
| Frequency of Use of the DBT Skills per Seven Days | Self-efficacy (GSE scale range 10-40) |
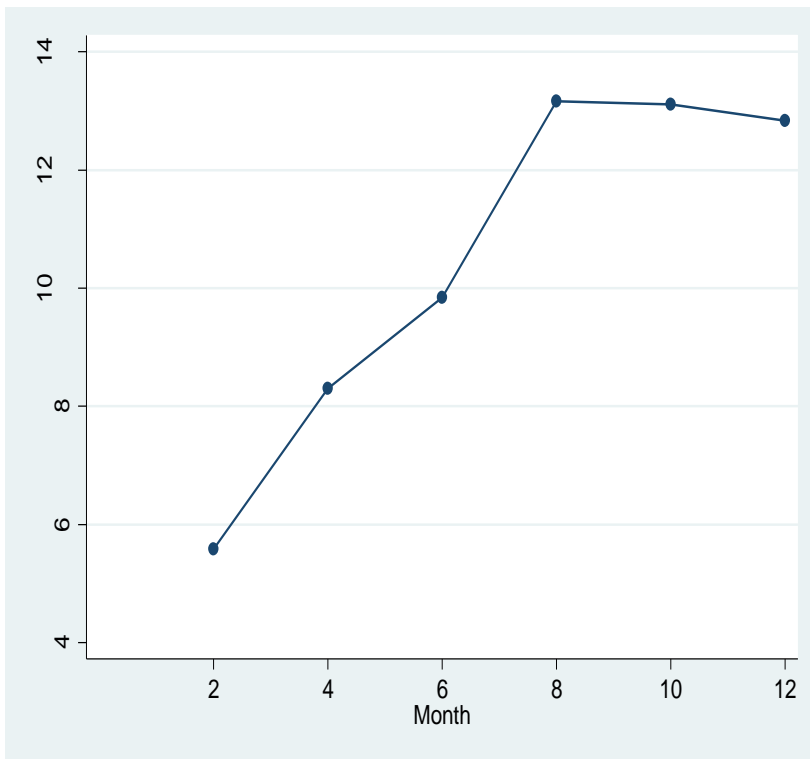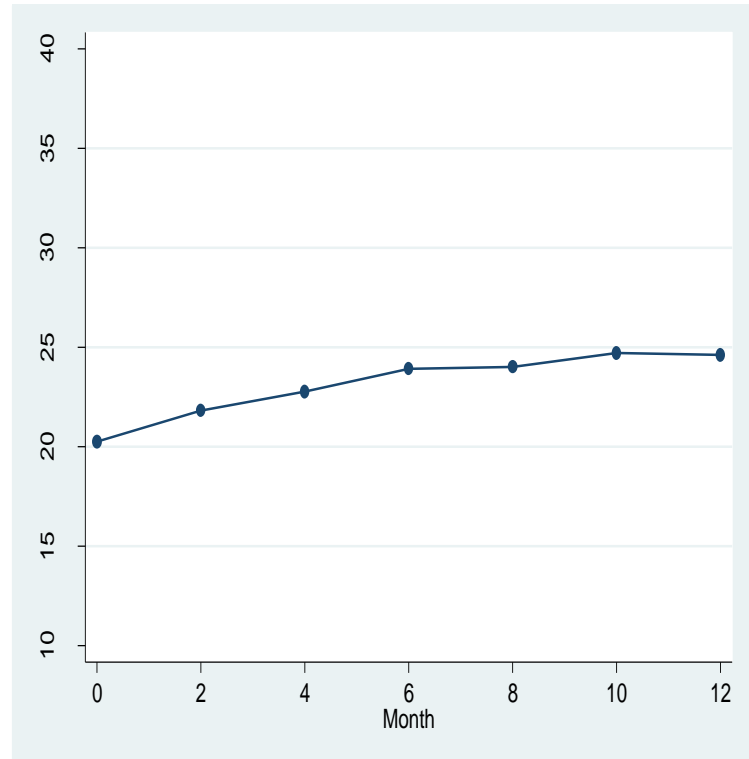
Therapeutic Alliance	Treatment Credibility
(STAR scale range 0-48)	(TCS scale range 4-20)
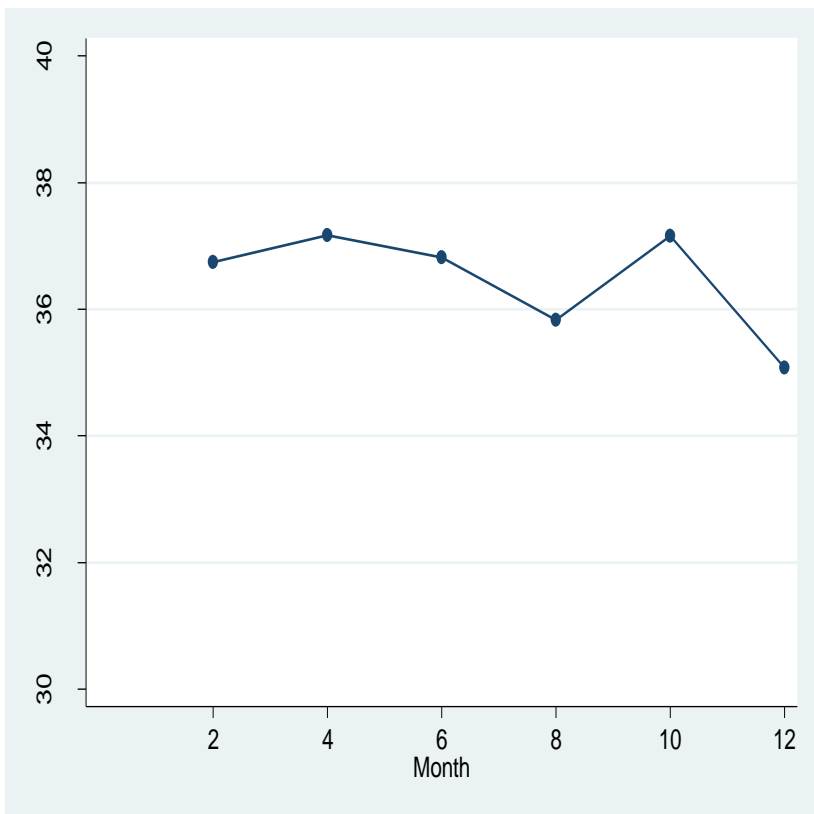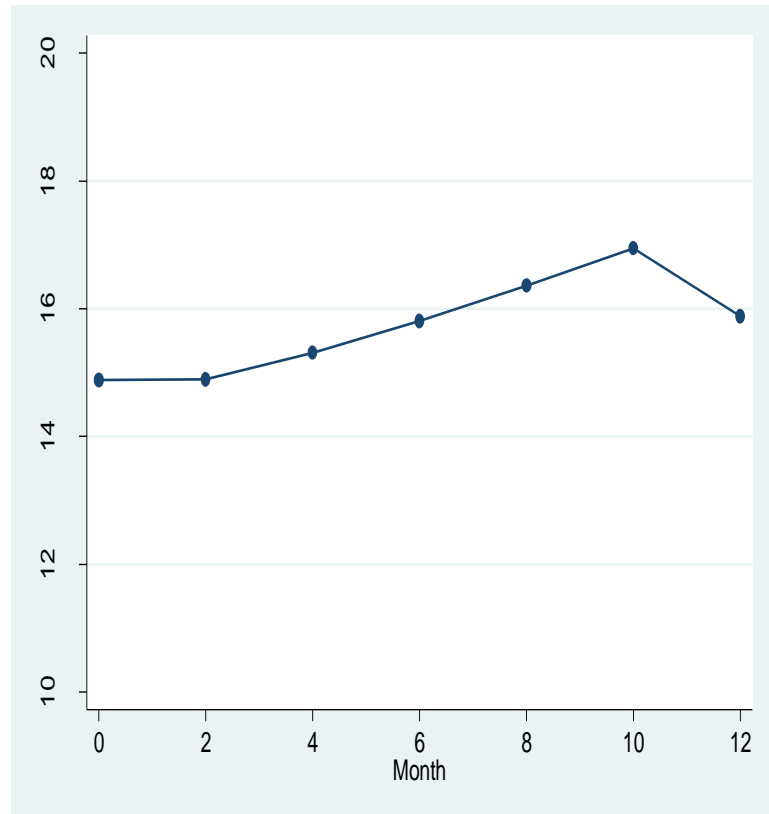
Perceived Social Support (MSPSS scale range 7-84) | **Number of Social Contacts and Social Confidantes**
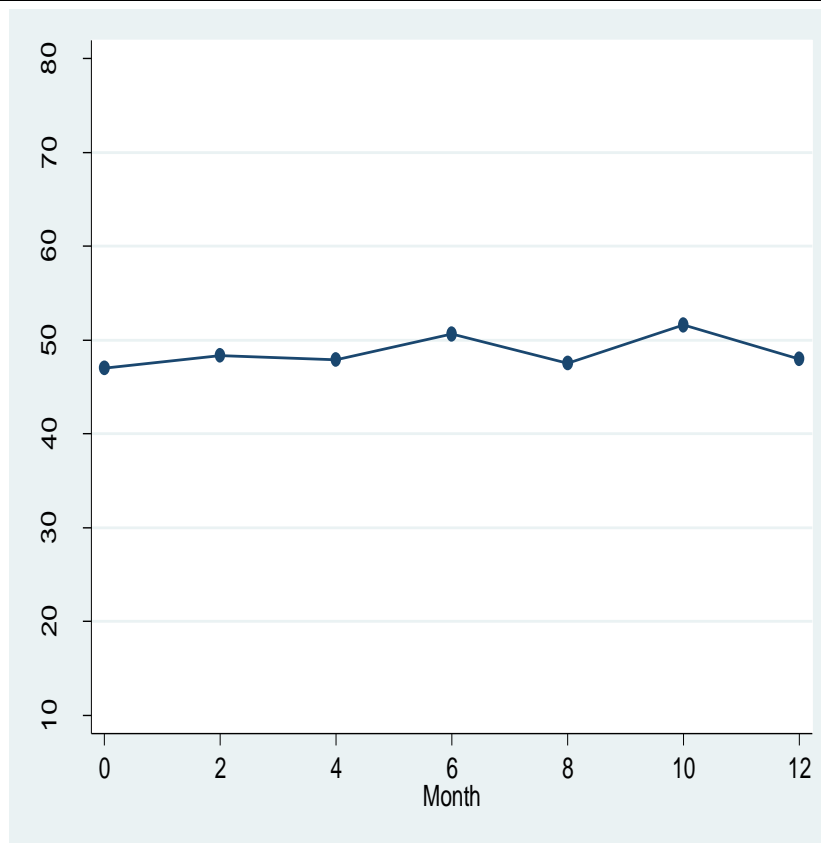
Number of social contacts — Number of social confidantes
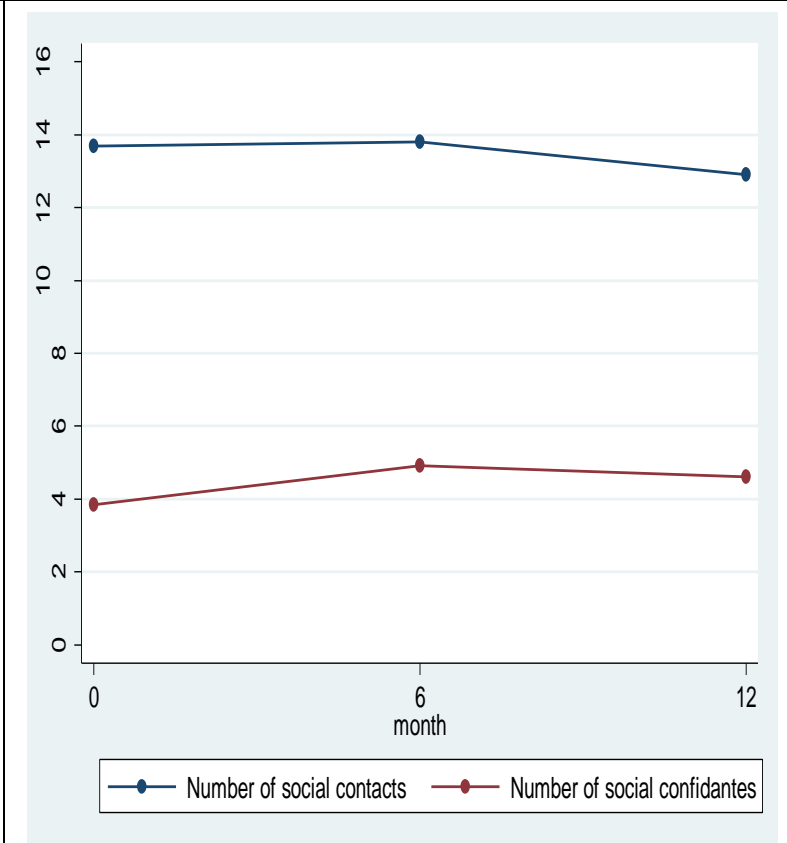
Association of the skills, common and extratherapeutic factors with each other and with baseline sociodemographic and clinical factors

The prediction of participants' use of the DBT skills was of primary interest and hence the findings of this analysis are presented in Table 5.7, whilst factors predicting the other variables of interest are only briefly summarised in the text. Employed participants reported using the DBT skills more frequently than unemployed participants (IRR = 2.72, 95% C.I. = 1.64 - 4.54, p<0.01). The R^2 for this effect was 0.07, a medium effect size according to Cohen's classification (Cohen 1992). Employed participants also found the skills more helpful (β = 0.50, 95% C.I. = 0.06 - 0.95, p = 0.03), found their treatment more credible (β = 1.60, 95% C.I. = 0.47 - 2.74, p < 0.01), had a more positive therapeutic alliance (β = 3.60, 95% C.I. = 0.25 - 6.96, p = 0.04) higher self-efficacy (IRR = 3.64, 95% C.I. = 1.49 - 5.79, p < 0.01), had more social contacts (IRR = 1.71, 95% C.I. = 1.15 - 2.52, p < 0.01) and had more social confidantes (IRR = 1.59, 95% C.I. = 1.04 - 2.43, p = 0.03), and reported a trend towards significantly greater understanding of the skills (β = 0.31, 95% C.I. = -0.01 - 0.63, p = 0.06).

Baseline self-harm frequency and BPD severity were not associated with any of the skills, common or extratherapeutic factors. Baseline depression and anxiety severity were negatively associated with self-efficacy (β = -1.12, 95% C.I. = -2.16 - -0.08, p = 0.04 and β = -0.65, 95% C.I. = -1.35 - 0.04, p = 0.06 respectively), and baseline depression severity was negatively associated with perceived social support (β = -3.42, 95% C.I. = -6.24 - -0.61, p = 0.02). Baseline depression and anxiety severity

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were not associated with any of the other skills, common or extratherapeutic

factors. The effect sizes for these associations were all small, with the largest

association (R^2 = 0.05) that between depression and perceived social support.

As presented in Table 5.7, frequency of skill use was positively associated with

perceived understanding of the skills, perceived helpfulness of the skills, the

therapeutic alliance, treatment credibility and self-efficacy ($p<0.05$) - see Table 5.7

for incident rate ratios and confidence intervals. However, it was not associated

with any of the three extratherapeutic factors. Similarly, perceived understanding

and perceived helpfulness of the skills were positively associated with the common

factors (perceived understanding of the skills and treatment credibility β = 0.10,

95% C.I. = 0.06 - 0.14, p< 0.01; perceived understanding of the skills and therapeutic

alliance β = 0.02, 95% C.I. = -0.00 - 0.04, p = 0.06; perceived understanding of the

skills and self-efficacy β = 0.04, 95% C.I. = 0.02 - 0.06, p < 0.01; perceived

helpfulness of the skills and treatment credibility β = 0.18, 95% C.I= 0.14 - 0.22, p <

0.01; perceived helpfulness of the skills and therapeutic alliance β = 0.05, 95% C.I. =

0.04 - 0.07, p < 0.01; perceived helpfulness of the skills and self-efficacy β = 0.05,

95% C.I. = 0.03 - 0.07, p < 0.01), but not with any of the extratherapeutic factors

(perceived understanding of the skills and perceived social support β = 0.01, 95%

C.I. = -0.00 - 0.01, p = 0.20; perceived understanding of the skills and number of

social contacts β = -0.00, 95% C.I. = -0.01 - 0.00, p = 0.53; perceived understanding

of the skills and number of social confidantes β = 0.01, 95% C.I. = -0.02 - 0.03, p =

0.82; perceived helpfulness of the skills and perceived social support β = 0.01, 95%

C.I. = -0.01 - 0.01, p = 0.83; perceived helpfulness of the skills and number of social

contacts β =0.01, 95% C.I. = -0.01 - 0.01, p = 0.36; perceived helpfulness of the skills

and number of social confidantes β = 0.02, 95% C.I. = -0.01 - 0.04, p = 0.25) . The

associations between skill use and perceived understanding and perceived

helpfulness were large in magnitude according to Cohen's classification (Cohen

1992), with an R^2 of 0.28 and 0.27 respectively. Associations between skill use and

the common factors tended to be smaller but nonetheless not insubstantial, with

an R^2 value of 0.08 for the therapeutic alliance, 0.18 for treatment credibility and

0.11 for self-efficacy.

The common and extratherapeutic factors, i.e. the therapeutic alliance, treatment

credibility, self-efficacy, perceived social support, number of social contacts and

number of social confidantes were all positively associated with each other at the

p< 0.05 level or the p<0.10 level (therapeutic alliance and treatment credibility β =

1.09, 95% C.I. = 0.77 - 1.40, p < 0.01; therapeutic alliance and self-efficacy β = 0.14,

95% C.I. = -0.01 - 0.30, p = 0.06; therapeutic alliance and number of social contacts

β = 0.11, 95% C.I. = 0.04 - 0.19, p< 0.01; therapeutic alliance and number of social

confidantes β = 0.02, 95% CI. = 0.05 - 0.41, p= 0.01; treatment credibility and self-

efficacy β = 0.11, 95% C.I. = 0.06 - 0.17, p < 0.01; treatment credibility and

perceived social support β = 0.05, 95% C.I. = 0.03 - 0.07, p < 0.01; treatment

credibility and number of social confidantes β = 0.13, 95% C.I. = 0.05 - 0.20, p <

0.01; self-efficacy and perceived social support β = 0.14, 95% C.I. = 0.08 - 0.19, p <

0.01; self-efficacy and number of social contacts β = 0.06, 95% C.I. = -0.00 - 0.12, p =

0.07; self-efficacy and number of social confidantes $\beta = 0.23$, 95% C.I. = 0.04 - 0.43,

p = 0.02; perceived social support and number of social confidantes $\beta = 0.47$, 95%

C.I. = 0.07 - 0.87, p = 0.02; number of social contacts and number of social

confidantes IRR = 1.04, 95% C.I. = 1.02 - 1.06, p < 0.01). The only exceptions were

that perceived social support was not associated with the therapeutic alliance (β =

0.10, 95% C.I. = -0.06 - 0.26, p = 0.23) or number of social contacts ($\beta = 0.10$, 95%

C.I. = -0.02 - 0.22, p = 0.12), and number of social contacts was not associated with

treatment credibility ($\beta = 0.02$, 95% C.I. = -0.02 - 0.05, p = 0.28). The strongest

association was between the therapeutic alliance and treatment credibility, R^2 =

0.33, which is a large effect according to Cohen's classification (Cohen 1992), whilst

the weakest association was between number of social contacts and treatment

credibilty, $R^2 < 0.01$.

Table 5.7 The unifactorial association between the frequency with which participants use

the DBT skills and baseline characteristics, perceived understanding and helpfulness of the

skills, common factors and extratherapeutic factors.

Variable	N in analysis (Level 2)	Incident rate ratio	95 % confidence interval	Standard error	P value
TIME-VARYING FACTORS					
Perceived understanding of the skills	**74**	**1.46**	**1.31 - 1.64**	**0.08**	**< 0.01**
Perceived helpfulness of the skills	**73**	**1.37**	**1.22 - 1.53**	**0.08**	**< 0.01**
Therapeutic alliance	**74**	**1.02**	**1.00 - 1.04**	**0.01**	**0.03**
Treatment credibility	**74**	**1.08**	**1.02 - 1.13**	**0.03**	**0.01**
Self-efficacy	**74**	**1.04**	**1.03 - 1.06**	**0.01**	**< 0.01**
Perceived social support	74	1.00	0.99 - 1.01	< 0.01	0.55
Number of social contacts	65	1.01	1.00 - 1.03	0.01	0.11
Number of social confidantes	65	1.00	0.97 - 1.03	0.02	0.98
BASELINE CHARACTERISTICS					
Gender	74	1.69	0.54 - 5.31	0.99	0.36
Employment	**74**	**2.73**	**1.64 - 4.54**	**0.71**	**< 0.01**
Number of days with self-harm in 12 months pre-treatment	74	1.00	1.00 - 1.00	< 0.01	0.75
BPD symptom severity	73	1.01	0.96 - 1.07	0.03	0.74
General psychiatric symptom severity	67	1.22	0.46 - 2.36	0.61	0.69
Depression severity	67	1.07	0.80 - 1.44	0.16	0.64
Anxiety severity	67	0.92	0.76 - 1.11	0.09	0.38

Variables for which p <0.05, indicating statistical significance, or p<0.10, indicating a trend towards statistical significance, are bolded.

Multi-collinearity

Variance inflation statistics for the predictor variables of interest were all close to 1 and far below 10, indicating that the degree of collinearity between variables was not problematic (Henseler et al. 2009).

Main Analysis

Research Question One, Part A: Are the DBT skills associated with self-harm frequency independently of common and extratherapeutic factors?

The unifactorial associations between self-harm frequency and the skills, common and extratherapeutic variables are presented in Table 5.8. More frequent use of the skills during treatment was negatively associated with self-harm frequency. This was a small effect ($R^2 < 0.01$). Perceived understanding and helpfulness of the skills were not associated with self-harm. All three of the common factors, therapeutic alliance, treatment credibility and self-efficacy, were negatively associated with self-harm frequency. These were also small effects. None of the three extratherapeutic factors were associated with self-harm frequency. The number of days with self-harm in the prior 12 months, baseline BPD symptom severity, baseline general psychiatric symptom severity and baseline anger severity were positively associated with self-harm frequency during the treatment year.

The multifactorial analysis of factors predicting self-harm frequency is presented in Table 5.9. In the second step, adding the common factors into the model resulted in the p value for frequency of skill use increasing such that it only showed a trend

towards statistical significance ($p < 0.10$), and the incidence rate ratio (IRR) for the effect of skill use on self-harm changed from 0.96 to 0.98, indicating a reduced effect size (i.e. IRR closer to 1.00). Correspondingly, the size of the effect of common factors on self-harm frequency also decreased slightly after adjusting for DBT skill use. In the final step, including indices of participants' baseline severity, the only statistically significant predictors at the $p<0.05$ level were baseline self-harm frequency and baseline anger severity, whilst frequency of skill use and the therapeutic alliance still showed a trend towards significance ($p<0.10$).

Table 5.8 Unifactorial association between number of days with self-harm and baseline characteristics, skills, common and extratherapeutic factors

Variable	N in analysis at Level 2	N in analysis at Level 1	Incident rate ratio	95% confidence interval	Standard error	P value	% variance explained R^2
TIME VARYING FACTORS							
Perceived understanding of the DBT skills	74	325	0.72	0.45 - 1.15	0.17	0.17	0.02
Frequency of use of the DBT skills	**74**	**325**	**0.96**	**0.94 - 0.99**	**0.01**	**<0.01**	**< 0.01**
Perceived helpfulness of the DBT skills	73	323	0.93	0.69 - 1.25	0.14	0.61	0.03
Self-efficacy	**89**	**481**	**0.93**	**0.88 - 0.99**	**0.03**	**0.02**	**0.03**
Therapeutic alliance	**83**	**371**	**0.98**	**0.96 - 0.99**	**0.01**	**0.03**	**0.03**
Treatment credibility	**88**	**429**	**0.91**	**0.85 - 0.98**	**0.03**	**0.01**	**0.05**
Perceived social support	89	480	0.99	0.97 - 1.01	0.01	0.45	< 0.01
Number of social contacts	86	198	0.99	0.96 - 1.01	0.01	0.27	< 0.01
Number of social confidantes	86	198	0.98	0.94- 1.02	0.02	0.30	< 0.01
BASELINE CHARACTERISTICS							
Age	89	544	0.98	0.95 - 1.02	0.02	0.30	< 0.01
Gender	89	544	1.30	0.58 - 2.88	0.53	0.53	< 0.01
Employment	89	544	1.21	0.50 - 2.92	0.54	0.60	< 0.01
BPD symptom severity	**88**	**538**	**1.12**	**1.05 - 1.18**	**0.03**	**<0.01**	**0.04**
Number of days with self-harm in previous 12 months	**89**	**544**	**1.01**	**1.01- 1.01**	**0.01**	**<0.01**	**0.27**
General psychiatric symptom severity	**82**	**503**	**3.43**	**1.16 - 10.2**	**1.91**	**0.03**	**<0.01**
Depression severity	82	503	1.10	0.98-1.24	0.07	0.11	< 0.01
Anxiety severity	82	503	0.93	0.70 - 1.25	0.14	0.64	< 0.01
Anger severity	**88**	538	**1.40**	**0.97 - 2.02**	**0.27**	**0.07**	**< 0.01**
Comorbid substance dependence	89	544	1.88	0.79 - 4.48	0.83	0.16	< 0.01
Taking psychiatric medication	89	544	1.29	0.43 - 3.85	0.72	0.65	< 0.01

Variables for which p <0.05, indicating statistical significance, or p<0.10, indicating a trend towards statistical significance, are bolded.

Table 5.9 Multifactorial association between number of days with self-harm and baseline characteristics, skills, common and extratherapeutic factors

Variable	N in analysis (Level 2)	N in analysis (Level 1)	Incident rate ratio	95% confidence interval	Standard error	P value	% variance explained by model R^2	Wald test for additional variables χ^2	p
Block 1:	74	325					< 0.01	**8.97**	**< 0.01**
Frequency of skill use			**0.96**	**0.94 - 0.99**	**0.01**	**0.01**			
Block 2:	74	288					0.06	4.15	0.25
Frequency of skill use			**0.98**	**0.95 - 1.00**	**0.01**	**0.09**			
Self-efficacy			0.97	0.91 - 1.04	0.03	0.43			
Therapeutic alliance			0.98	0.96 - 1.00	0.01	0.10			
Treatment credibility			0.93	0.84 - 1.03	0.05	0.18			
Block 3: not applicable									
Block 4:	66	261					0.18	**45.9**	**< 0.01**
Frequency of skill use			**0.97**	**0.95 - 1.00**	**0.01**	**0.08**			
Self-efficacy			0.97	0.90 - 1.04	0.04	0.42			
Therapeutic alliance			**0.98**	**0.96 - 1.00**	**0.01**	**0.09**			
Treatment credibility			0.95	0.85 - 1.06	0.05	0.37			
Baseline BPD symptom severity			**1.10**	**0.99 - 1.21**	**0.06**	**0.06**			
Number of days with self-harm in previous 12 months			**1.01**	**1.01 - 1.01**	**0.01**	**< 0.01**			
Baseline general psychiatric symptom severity			2.84	0.62 - 13.0	2.20	0.18			
Baseline anger severity			**0.45**	**0.25 - 0.79**	**0.13**	**< 0.01**			

Variables for which p <0.05, indicating statistical significance, or p<0.10, indicating a trend towards statistical significance, are bolded.

Sensitivity Analysis Using Multipley Imputed Data

The full results of the analyses in the multipley imputed dataset are shown in Appendix E Tables E1 and E2 (p.576-577). In unifactorial models, all variables significant in the original dataset remained significant in the imputed dataset at the $p < 0.05$ level, with the exception of the therapeutic alliance, which dropped to $p = 0.09$. In multifactorial analyses, the only variables to remain significantly independently associated with self-harm frequency were frequency of skill use (IRR = 0.97, $p < 0.01$), self-efficacy (IRR = 0.96, $p = 0.04$) and baseline self-harm frequency (IRR = 1.01, $p < 0.01$). The IRR for skill use changed from 0.95 to 0.97 after adjusting for the common factors, i.e. a slightly reduced effect size , whilst that for self-efficacy changed from 0.93 to 0.96 after adjusting for DBT skill use, again suggesting a slightly reduced effect size. Thus, the results of the analyses were largely similar in the multipley imputed dataset, expect that frequency of skill use was now strongly significantly independently associated with self-harm, and self-efficacy rather than the alliance emerged as an independent predictor.

Research Question One, Part B: Are the DBT skills associated with BPD symptom severity independently of common and extratherapeutic factors?

The unifactorial associations between skills, common and extratherapeutic factors and BPD symptom severity are presented in Table 5.10. Perceived helpfulness of the skills was negatively associated with BPD severity. This was a moderately sized effect. Perceived understanding and frequency of use of the skills were not associated with BPD severity. Of the three common factor variables, self-efficacy and treatment credibility were negatively associated with BPD symptom severity whilst the therapeutic alliance was not. The size of the effect of treatment credibility on BPD severity was moderate, whereas that of self-efficacy was approaching large. Perceived social support and number of social confidantes were both negatively associated with BPD severity, although number of social confidantes only showed a trend towards statistical significance (p <0.10). Baseline BPD, general psychiatric and depression severity were positively associated with BPD symptoms during treatment, as was the number of days with self-harm in the 12 months prior to treatment. Taking medication at baseline was also positively associated with BPD symptom severity, although this was only a trend (p< 0.10).

Table 5.10 Unifactorial association between BPD symptom severity and baseline characteristics, skills, common and extratherapeutic factors

Variable	N in analysis at Level 2	N in analysis at Level 1	β	95% confidence interval	Standard error	P value	% variance explained R^2
TIME-VARYING FACTORS							
Perceived understanding of the DBT skills	64	108	-0.86	-2.52 - 0.81	0.85	0.31	0.02
Frequency of use of the DBT skills	65	109	-0.11	-0.25 - 0.03	0.07	0.14	0.02
Perceived helpfulness of the DBT skills	**64**	**108**	**-1.52**	**-2.66 - -0.38**	**0.58**	**<0.01**	**0.06**
Self-efficacy	**86**	**201**	**-0.35**	**-0.52 - -0.18**	**0.09**	**<0.001**	**0.12**
Therapeutic alliance	70	112	-0.06	-0.20 - 0.09	0.07	0.46	< 0.01
Treatment credibility	**84**	**172**	**-0.47**	**-0.76 - -0.18**	**0.15**	**0.001**	**0.07**
Perceived social support	**85**	**202**	**-0.09**	**-0.15 - -0.02**	**0.04**	**<0.01**	**0.04**
Number of social contacts	86	196	-0.04	-0.09 - 0.01	0.03	0.11	0.02
Number of social confidantes	**77**	**196**	**-0.18**	**-0.38 - 0.02**	**0.10**	**0.08**	**0.03**
BASELINE CHARACTERISTICS							
Age	89	227	-0.08	-0.20 - 0.04	0.06	0.19	< 0.01
Gender	89	227	1.34	-1.75- 4.42	1.57	0.40	< 0.01
Employment at baseline	89	227	-1.63	-4.02 - 0.75	1.22	0.18	0.02
BPD symptom severity	**77**	**226**	**0.35**	**0.14- 0.56**	**0.11**	**< 0.01**	**0.13**
Number of days with self-harm in previous 12 months	**89**	**227**	**0.01**	**0.00- 0.02**	**0.01**	**0.01**	**0.04**
General psychiatric symptom severity	**82**	**211**	**7.08**	**3.86 - 10.3**	**1.64**	**<0.01**	**0.11**
Depression severity	**82**	**211**	**2.05**	**0.76 -3.34**	**0.66**	**<0.01**	**0.10**
Anxiety severity	82	211	0.66	-0.36 - 1.67	0.52	0.20	0.01
Anger severity	**88**	226	**2.03**	**1.04- 3.01**	**0.50**	**< 0.01**	**0.09**
Substance dependence	89	227	1.76	-1.02 - 4.53	1.42	0.22	0.01
Taking psychiatric medication	**89**	**227**	**2.07**	**-0.25 - 4.38**	**1.18**	**0.08**	**0.01**

Variables for which p <0.05, indicating statistical significance, or p<0.10, indicating a trend towards statistical significance, are bolded.

The multifactorial model for the prediction of BPD severity is presented in Table 5.11. In the final model, perceived helpfulness of the skills predicted BPD severity during treatment even after adjustment for common factors, extratherapeutic factors and clinical severity. The size of the coefficient for perceived skill helpfulness decreased slightly after adjusting for common factors, suggesting that these factors may partly mediate the effect of skill helpfulness. Correspondingly, whilst two common factors, self-efficacy and treatment credibility, also remained significant predictors in the final model, the size of their effect reduced slightly after adjusting for perceived skill helpfulness. In terms of extratherapeutic factors, only perceived social support showed a trend towards independent association with BPD severity (p<0.10).

Table 5.11 Multifactorial association between BPD symptom severity and baseline characteristics, skills, common and extratherapeutic factors

Variable	N in analysis (Level 2)	β	95% confidence interval	Standard error	P value	% variance explained by model R^2	Wald test for additional variables	
							χ^2	p
Block 1:	**64**					0.06	6.85	< 0.01
Perceived helpfulness of the DBT skills		**-1.52**	**-2.66 - -0.38**	**0.51**	**< 0.01**			
Block 2:	58					0.27	23.3	< 0.01
Perceived helpfulness of the DBT skills		-0.57	-1.65- 0.52	0.55	0.31			
Self-efficacy		**-0.48**	**-0.70 - -0.26**	**0.11**	**< 0.01**			
Treatment credibility		-0.22	-0.56 - 0.12	0.17	0.21			
Block 3:	55					0.25	5.31	0.15
Perceived helpfulness of the DBT skills		**-1.17**	**-2.20 - -0.14**	**0.52**	**0.03**			
Self-efficacy		**-0.34**	**-0.57 - -0.10**	**0.12**	**<0.01**			
Treatment credibility		**-0.33**	**-0.62 - -0.03**	**0.15**	**0.03**			
Perceived social support		**-0.08**	**-0.15 - -0.01**	**0.04**	**0.02**			
Number of social confidantes		0.07	-0.20 - 0.35	0.14	0.44			
Block 4:	52					0.43	25.1	< 0.01
Perceived helpfulness of the DBT skills		**-1.24**	**-2.23 - -0.24**	**0.51**	**0.02**			
Self-efficacy		**-0.31**	**-0.57- -0.05**	**0.13**	**0.02**			
Treatment credibility		**-0.38**	**-0.68 - -0.08**	**0.15**	**0.01**			
Perceived social support		**-0.08**	**-0.17 - 0.01**	**0.05**	**0.08**			
Number of social confidantes		0.19	-0.09 - 0.47	0.14	0.20			
Number of days with self-harm in prior12 mths		0.01	- 0.00 - 0.02	0.01	0.18			
BPD symptom severity at baseline		**0.35**	**0.06 -0.64**	**0.15**	**0.02**			
General psychiatric symptoms at baseline		0.35	-7.58 - 8.28	4.04	0.93			
Depression severity at baseline		0.96	-1.07 - 2.99	1.04	0.36			
Anger severity at baseline		-1.04	-2.67 - 0.58	0.83	0.21			
Taking medication at baseline		0.93	-2.56 - 4.42	1.78	0.60			

Variables for which p <0.05, indicating statistical significance, or p<0.10, indicating a trend towards statistical significance, are bolded

Sensitivity analysis in multipley imputed dataset

The results of the analyses in the multipley imputed dataset are shown in Appendix E Tables E3 and E4 (p.578-579). In unifactorial models, all variables significant in the original dataset were also significant in the multipley imputed dataset. The only exception was that perceived helpfulness of the DBT skills was no longer significant. However, a new finding was that frequency of DBT skill use was significantly negatively associated with BPD symptom severity (β = -0.19, $p < 0.01$). In a multifactorial model incorporating all unifactorially significant variables, the only significant independent predictors of BPD symptom severity were frequency of DBT skill use (β = -0.12, $p = 0.03$), self-efficacy (β = -0.24, $p < 0.01$) and baseline BPD symptom severity (β = 0.43, $p < 0.01$). Thus, DBT skill use was associated with BPD symptom severity independently of common and extratherapeutic factors, but the size of the coefficient for skill use decreased after adjusting for these factors, suggesting some shared variance. Correspondingly, the size of the coefficient for self-efficacy decreased after adjusting for DBT skill use. The results of the analysis in the imputed dataset were similar to those in the original dataset but some of the key findings differed in that skill use rather than perceived skill helpfulness emerged as a significant independent predictor, and treatment credibility was no longer a significant independent predictor.

DISCUSSION

Main Findings

This study aimed to evaluate whether the DBT skills were independently associated with self-harm and BPD symptom severity during DBT, after adjusting for common and extratherapeutic factors, and for baseline sociodemographics and clinical severity. After adjusting for the effect of common, extratherapeutic and baseline factors, frequency of skill use still showed a trend towards significant association with self-harm, whilst perceived helpfulness of the skills remained significantly associated with BPD symptom severity. A sensitivity analysis in a multipley imputed dataset suggested that DBT skill use, (rather than perceived helpfulness), was significantly independently associated with both self-harm and BPD symptom severity. This may suggest that power to detect a significant effect of DBT skill use on both outcomes was attenuated by the presence of missing data. Overall, these findings suggest that the DBT skills can influence outcome, at least to some extent independently of common and extratherapeutic factors. However, in both datasets, the effect size of skills on outcome decreased slightly after adjusting for common factors, suggesting that their effect may be partly inter-related. Supporting this interpretation, the skills and common factors were found to be highly inter-correlated.

In terms of common factors, only the therapeutic alliance still showed a trend towards association with self-harm after adjusting for skills, extratherapeutic and

baseline factors, whilst self-efficacy and treatment credibility remained significantly

associated with BPD symptom severity. In the multipley imputed dataset, self-

efficacy was the only common factor to independently predict outcome, remaining

significantly associated with both self-harm and BPD symptom severity. Thus,

missing data in the original dataset may have attenuated the power to detect a

significant independent effect of self-efficacy on self-harm, but may also have

created systematic biases which artificially strengthened the associations between

treatment credibility, the therapeutic alliance and outcome. In both datasets, the

size of the effect of common factors on outcome decreased after adjusting for the

DBT skills, suggesting that common factors can influence outcome independently of

the skills but that their effect may be partly inter-related.

None of the extratherapeutic factors considered were associated with the

frequency of self-harm, whilst only perceived social support still showed a trend

towards association with BPD symptom severity after adjusting for skills, common

and baseline factors. This effect was not apparent in the multipley imputed dataset.

<h2 style="text-align:center">Comparison with Previous Research</h2>

The findings on DBT skill use accord well with previous research which has shown

that frequency of skill use and perceived skill helpfulness are associated with better

treatment outcomes (Miller et al. 2000, Neacsiu et al. 2010, Stepp et al. 2008). The

finding that a stronger therapeutic alliance predicts better outcomes is also not

new, as this has been found consistently across various therapeutic modalities in

patients with BPD, as reviewed in Chapter Three. A completely novel finding in BPD

research was that two other common factors, treatment credibility and self-effiacy,

are also associated with better BPD symptom outcomes. Furthermore, the inter-

relation of skills and common factors has not previously been evaluated, and the

finding that that they are highly inter-correlated is new. Leading on from this, a

completely novel finding from the present research was that the DBT skills are still

associated with outcome after adjusting for common and extratherapeutic factors,

and, vice versa, that common factors are still associated with outcome after

adjusting for skills and extratherapeutic factors. Lastly, the finding that social

support is associated with better outcomes is in accordance with O'Toole and

colleagues' (2012) finding that higher social support during DBT is associated with

better mental well-being. However, this is the first study to show that the

association with outcome is no longer significant after adjusting for skills and

common factors.

Interpretation of Findings

The findings suggest that both skills and common factors may be useful

independent predictors of self-harm and BPD symptoms during DBT, but that their

influence on outcome is also to some extent inter-related. The finding that the DBT

skills can influence outcome independently of the common factors is in line with

Linehan's characterisation of skill acquisition as a key change mechanism in DBT (Linehan 1993a), and is contrary to the contextual model (Frank & Frank 1991, Wampold 2001), which would predict that specific factors are only incidentally associated with outcome due to their association with the common factors. In the original dataset, the role of perceived skill helpfulness seemed particularly important, since this remained significantly associated with BPD severity after adjusting for common factors. By contrast, analysis following multiple imputation suggested that frequency of skill use was a more important predictor, as this was significantly independently associated with both self-harm and BPD severity.

The results also to some extent supported the contextual model, since self-efficacy increased significantly during treatment, and the three common factors were found to predict self-harm and/or BPD severity independently of the DBT skills. Whilst the original analysis suggested that all three common factors were independently important, analysis following multiple imputation suggested a particularly strong independent predictive role of self-efficacy for both self-harm and BPD severity outcomes. Further supporting the contextual model, skills and common factors were intercorrelated, and the association between the the DBT skills factors and outcome reduced slightly in effect size after adjusting for the common factors. The significance of this reduction in effect size was not tested, but if significant, would suggest that the effect of skill use on outcome may be partially mediated by the common factors, according to the criteria suggested by Baron and Kenny (1986). This is as predicted by the contextual model. Correspondingly, the effect of the

common factors on outcome also decreased slightly after adjusting for the skills

factors. Although the significance of this decrease in effect size was not tested, it

suggests that the effect of the common factors on outcome may be partially

mediated by DBT skill use. Most likely, the relationship between each of these

factors is bidirectional, with, for instance, those who initially find the treatment

rationale most credible going on to use the DBT skills more often, resulting in

enhanced belief in the treatment rationale. Likewise, patients who develop a strong

alliance with their therapist are likely to use the DBT skills more which in turn is

likely to enhance the alliance, whilst patients who initially have a strong sense of

self-efficacy are likely to use the skills more which in turn is likely to increase their

self-efficacy. However, the decrease in effect size in the multifactorial models was

small, suggesting any meditational effect is likely to be correspondingly small. Thus,

the findings suggest that the effects of skills and common factors on outcome are

to some extent independent, and also to some extent inter-related.

Lastly, the findings do not provide strong evidence of an independent role for

extratherapeutic factors related to social support. Whilst perceived social support

and number of social confidantes were negatively correlated with BPD severity,

these associations dropped below significance after adjusting for other factors. At

least part of the association between social support and outcome could be

explained by the association between social support and the common factors, since

they were shown to be positively correlated. This could perhaps be mediated by

variables such as attachment style, since patients with more secure adult

attachment styles form stronger therapeutic alliances (Bair 2008, Hietanen &

Punamaki 2006), and are also likely to experience greater social support from their

environment. Greater social support could also give patients a greater sense of self-

efficacy by enhancing their self-esteem and providing a source of encouragement,

which in turn could promote a more positive attitude towards treatment and hence

enhance treatment credibility. Furthermore, it is difficult to know what perceived

social support reflects in terms of actual environmental input, and indeed, it was

found to be positively associated with depression severity and hence could be

influenced by negative self and other schema rather than an objective view of the

situation.

Chapter Conclusion

The findings of the present study suggest that specific and common factors are each

relevant predictors of outcome in DBT for BPD. They further suggest that each of

these variable types are statistically inter-related and contribute to a shared portion

of variance in outcome, but also make an independent contribution to outcome.

Perceived helpfulness of the DBT skills was significantly associated with BPD

symptom severity independently of common factors, extratherapeutic factors and

baseline clinical severity. Similarly, frequency of DBT skill use showed a trend

towards significant association with self-harm independently of these factors, and

was strongly significantly independently associated with both outcomes following

multiple imputation. This could indicate that, contrary to the predictions of the

contextual model, specific factors relating to skill use are a change mechanism in

DBT over and above the influence of common factors. Conversely, consistent with

the view of the contextual theorists, treatment credibility, the therapeutic alliance

and self-efficacy were also predictive of outcome, independently of the influence of

skills and extratherapeutic factors. Analysis following imputation suggested a

particularly important independent role for self-efficacy. Alternative

interpretations, the strengths and limitations and the clinical and research

implications of these findings will be discussed in Chapter Eight.

Chapter Six

The association between skills, common, and

extratherapeutic factors and treatment

completion in dialectical behaviour therapy

INTRODUCTION

Patients who discontinue treatment without receiving the full course may fail to benefit from treatment and may have a negative impact on cost-effectiveness. Patients with BPD have been identified as a group at particularly high risk for treatment dropout. A recent meta-analysis of 52 studies of patients receiving psychotherapy for BPD (Barnicot et al. 2011, see Chapter Four) found that the average treatment completion rate was not as low as had previously been thought, with an average of 71-75% of patients completing treatment. Nonetheless, the analysis revealed a substantial heterogeneity in completion rates between studies. The study with the lowest completion rate (36%) (Zinkler et al. 2007) was an audit of the same DBT service from which the thesis sample was drawn, whilst treatment completion was 48% in the RCT from which some of the thesis sample were drawn. Thus it seems that treatment completion may be particularly problematic in the DBT service from which the thesis sample is drawn.

Identifying factors predicting early treatment discontinuation could enable a better understanding of why patients drop out, and how to prevent it. It may be particularly useful to focus on the role of specific, common and extratherapeutic factors in order to determine what types of patient experiences during therapy and outside of therapy are associated with dropout. This could facilitate earlier identification of patients at risk for dropout, which could enable therapists to take additional measures to maintain these "at risk" patients in treatment. Such research could also provide the basis for a theory concerning the psychological

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mechanisms driving patient dropout, which in turn could enable development of better techniques for maintaining these patients in treatment, and/or could enable development of alternative treatment models to suit their particular needs.

The work presented in this chapter focused on the role of DBT-specific, common and extratherapeutic factors in predicting treatment completion, namely: perceived understanding, frequency of use and perceived helpfulness of the DBT skills, treatment credibility, the therapeutic alliance, self-efficacy, perceived social support, number of social contacts, and number of social confidantes. The potentially confounding influence of patient sociodemographic and clinical characteristics was also considered. In particular, the chapter examined Research Question Two as posed in the Thesis Outline (p.16-21):

Do the DBT skills predict treatment completion independently of common and extratherapeutic factors?

METHOD

Design

This was a longitudinal study using an observational design. The study evaluated the prospective association between skills, common and extratherapeutic factors assessed at baseline and month 2, and months of treatment completed, in a sample of patients initating a 12 month course of DBT.

Sample and Entrance Criteria

The sample, inclusion and exclusion criteria were identical to that described in Chapter Five, i.e. N = 89 patients with BPD and a history of self-harm who began a course of DBT at the Newham DBT service between March 2008 and March 2011.

Predictors of interest

All baseline sociodemographic and clinical variables available in the current dataset which had been found to predict treatment dropout in at least one previous study of psychotherapy for BPD, as reviewed in Chapter Four, were included as potential predictors. These were: age, gender, employment status, baseline BPD symptom severity, number of days with self-harm in the 12 months pre-treatment, baseline anger severity, baseline impulsivity severity, baseline depression severity, baseline anxiety severity, comorbid post-traumatic stress disorder, comorbid schizoid personality disorder, complex personality disorder (i.e. having personality disorders from more than of Clusters A, B and C), taking psychiatric medication at baseline

and the number of inpatient days in the 12 months pre-treatment. In addition, several baseline characteristics relating to common and extratherapeutic factors were considered: treatment credibility and self-efficacy (common factors), and perceived social support, number of social contacts, and number of social confidantes (extratherapeutic factors).

Skills, common and extratherapeutic factors measured at month 2 of treatment were also considered as potential predictors, but for these analyses only data from individuals still in treatment at month 2 was used, in order to restrict the analysis to prospective prediction of dropout. DBT specific factors considered were perceived understanding of DBT skills, frequency of DBT skills use, and perceived helpfulness of the DBT skills. Some participants reported that they had not yet been taught any of the DBT skills at month 2; these participants were excluded from the analyses of skills-related predictors. Common factors considered were the therapeutic alliance, treatment credibility and self-efficacy. Extratherapeutic factors considered were perceived social support, number of social contacts and number of social confidantes.

Outcome

The outcome considered was the number of months of treatment completed. It was thought important to operationalise treatment completion in this way, rather than simply as a binary outcome, in order to reflect the wide range of timepoints at which participants dropped out.

Procedure

The procedure was identical to that described in Chapter Five (see).

Measures

The measures used have all been described fully in Chapter Five (see).

Statistical analysis

For all analyses, $p<0.05$ was taken to indicate statistical significance, whilst p-values above 0.05 but below 0.10 were interpreted as showing a trend towards statistical significance. The association between the predictors of interest and months of treatment completed was evaluated using a zero-truncated negative binomial regression with robust standard errors. Model fit statistics indicated that this provided the best fit for the skewed, overdispersed count outcome data. In a first step, the unifactorial association between the predictors and outcome was tested in two separate models: one in the whole sample and using baseline characteristics as predictors, and one in participants who had completed at least three months of DBT and using specific, common and extratherapeutic factors at month 2 as predictors. In a second step, variables significantly associated with treatment months completed (at the $p <0.10$ level) were then entered into a multifactorial model in order to assess the independent association of each predictor with time in treatment, after adjusting for the effect of the other predictors. This loose inclusion

criterion was used to ensure that no potentially relevant confounders were

excluded from the analysis. Since the hypothesis tested was whether DBT-specific

skills factors would be associated with treatment completion after adjusting for the

effect of common and extratherapeutic variables, the multifactorial analysis was

conducted using a forward forced entry block method. Unifactorially significant

skills factors were entered in the first block (Block 1), followed by addition of

unifactorially significant common factors (Block 2), extratherapeutic factors (Block

3) and then baseline sociodemographic and clinical characteristics (Block 4) in

subsequent blocks. The Wald test was used to assess whether the additional

variables added at each step significantly improved model fit. A sensitivity analysis

was then conducted in a dataset for which all missing values had been imputed, to

assess the potential biasing effect of missing data on the relationships between

variables. This was done using the same imputed dataset described in Chapter 5,

which was created using multi-level multiple imputation in

REALCOM software.

RESULTS

Patient Characteristics

The sociodemographic characteristics, Axis I and Axis II disorders, and baseline clinical severity of the sample have been described in Chapter Five.

Patient Dropout from DBT

Of the 89 patients recruited, 39 (44%) completed the full 12 months of treatment, and 50 (56%) dropped out of treatment at various points in time. Figure 6.1 shows the months of treatment completed by patients. The average number of months of treatment completed was 8.2 months (s.d. 4.1). Amongst treatment dropouts this figure reduced to 5.3 months (s.d. 3.0)

Figure 6.1 Months of DBT treatment completed
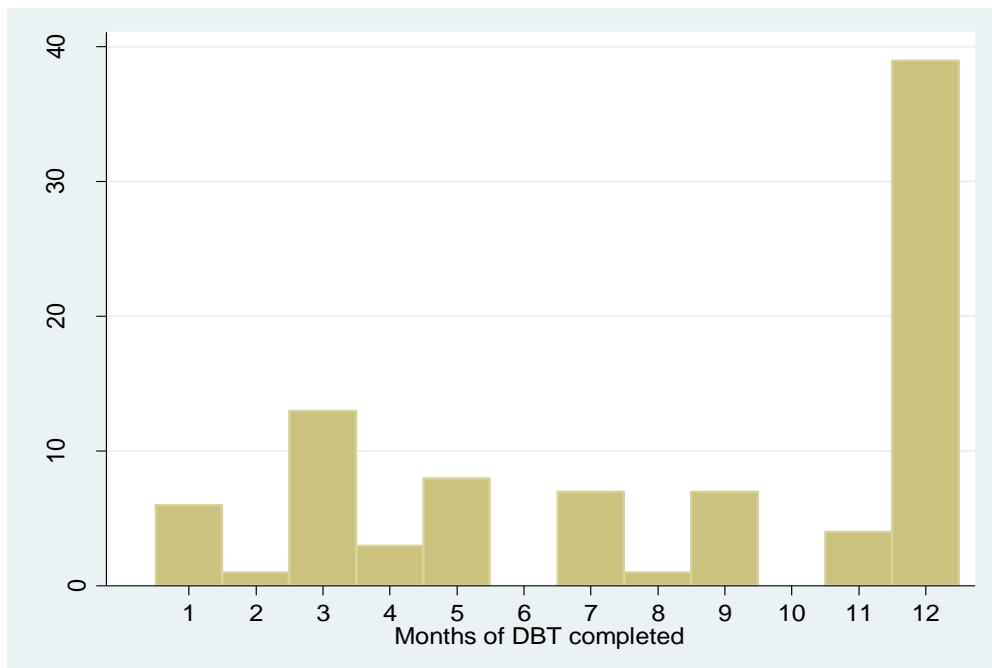
Missing Data

The missing data on many of the variables included in the present analyses has already been documented in Chapter 5 and so will not be described here again.

Multi-collinearity

Variance inflation factors for the predictor variables of interest were all close to 1 and far below 10, indicating that the degree of collinearity between variables was not problematic (Henseler et al. 2009).

Unifactorial Analyses

The predictive value of baseline characteristics.

The unifactorial association between baseline patient characteristics and treatment months completed is shown in Table 6.1 below. In the whole sample (N = 89), two baseline characteristics predicted completing a greater number of months of treatment: being employed and having a larger network of social confidantes. There were two variables significant at the $p < 0.10$ level but not at the $p < 0.05$ level: taking psychiatric medication and self-efficacy.

The predictive value of specific, common and extratherapeutic factors at month 2.

The unifactorial association between specific, common and extratherapeutic factors at month 2 and treatment months completed is shown in Table 6.2 below. In participants completing at least 3 months of DBT, the only factor to significantly predict treatment months completed at the $p < 0.05$ level was frequency of DBT skills use at month 2. Treatment credibility and the therapeutic alliance were only trend significant ($p < 0.10$).

Multifactorial Analysis in participants completing at least 3 months of DBT

This analysis included all participants having begun DBT skills training by month 2 and completing at least 3 months of treatment. As shown in Table 6.3, frequency of DBT skills use at month 2 remained a significant predictor of treatment months completed after adjusting for the effect of the therapeutic alliance and treatment credibility at month 2 and baseline self-efficacy (common factors), number of social confidantes (extratherapeutic factor) and baseline employment and medication. No other factors significantly predicted treatment completion. The Wald test indicated that adding the common and extratherapeutic factors and baseline characteristics to the model did not increase the variance explained. Furthermore, the effect size of DBT skill use on treatment completion remained the same after adjusting for these factors.

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Table 6.1 The association between baseline characteristics and treatment months completed in all participants (N = 89)

Baseline characteristics	Early DBT dropouts (completed 1-5 mths) N = 31 n (%)/mean (s.d.)	Late DBT dropouts (completed 6-11 mths) N = 19 n (%)/mean (s.d.)	DBT completers N= 39 n (%)/ mean (s.d.)	Incident rate ratio	Standard error	p value	95% confidence interval	% variance explained R^2
Age	34.5 (11.3)	31.8 (13.1)	31.4 (8.87)	0.99	< 0.01	0.20	0.98 - 1.00	0.02
Female gender	25 (81%)	16 (84%)	37 (95%)	1.34	0.24	0.10	0.94 - 1.91	0.03
Employed	**4 (13%)**	**9 (47%)**	**12 (31%)**	**1.28**	**0.13**	**0.01**	**1.06-1.55**	**0.05**
Number of days with self-harm in past 12 months	65.1 (101)	88 (108)	95 (127)	1.00	<0.01	0.35	1.00 – 1.00	<0.01
BPD symptom severity	16.3 (7.8)	17.8 (5.9)	17.3 (5.6)	1.01	0.01	0.50	0.99-1.03	<0.01
Impulsivity severity	3.5 (2.7)	4.3 (2.6)	3.8 (2.3)	1.01	0.02	0.63	0.97 – 1.06	<0.01
Anger severity	1.6 (1.1)	1.6 (1.1)	1.8 (1.1)	1.04	0.05	0.45	0.94 – 1.16	<0.01
Anxiety severity	4.7 (1.1)	4.8 (1.6)	4.7 (1.4)	1.00	0.04	0.96	0.93 - 1.08	<0.01
Depression severity	4.7 (0.9)	4.9 (1.5)	4.9 (1.0)	1.04	0.05	0.37	0.95 - 1.14	<0.01
Comorbid PTSD	19 (61%)	10 (53%)	22 (56%)	0.94	0.10	0.56	0.76 - 1.16	< 0.01
Comorbid schizoid PD	1 (3%)	0 (0%)	3 (8%)	1.27	0.20	0.14	0.93 - 1.74	0.01
Complex PD	27 (87%)	13 (68%)	34 (87%)	0.99	0.13	0.95	0.77 - 1.29	< 0.01
Taking psychiatric medication	**27 (87%)**	**14 (74%)**	**29 (74%)**	**0.82**	**0.09**	**0.07**	**0.66 – 1.02**	**0.03**
Number of inpatient days in past 12 months	20.3 (53.5)	4.1 (12.2)	12.0 (27.8)	1.00	< 0.01	0.26	0.99 – 1.00	0.02
Self-efficacy	**19.1 (6.5)**	**18 (6.6)**	**22.1 (6.3)**	**1.02**	**< 0.01**	**0.08**	**1.00 – 1.03**	**0.04**
Treatment credibility	15.2 (3.4)	14 (3.5)	15.0 (2.7)	0.99	0.03	0.72	0.94 – 1.04	< 0.01
Perceived social support	48.0 (15.5)	37.6 (22.1)	50.8 (16.6)	1.00	< 0.01	0.68	1.00 – 1.01	< 0.01
Number of social contacts	13.5 (23.9)	12.8 (15.6)	14.4 (16.3)	1.00	< 0.01	0.48	1.00 – 1.01	< 0.01
Number of social confidantes	**2.8 (2.3)**	**3.4 (4.0)**	**5 (5.7)**	**1.02**	**< 0.01**	**< 0.01**	**1.01 – 1.04**	**0.05**

Variables for which $p < 0.05$, indicating statistical significance, or $p < 0.10$, indicating a trend towards statistical significance, are bolded - N.B. the analysis used months of DBT completed as a continuous outcome; comparison between early dropouts, late dropouts and completers is shown only for illustration

T*able 6.2 Unifactorial association between specific, common and extratherapeutic factors at month 2 and treatment months completed in participants completing at least 3 months of* treatment *(n = 82)*

Variable	Early DBT dropouts (completed 3-5 months) N = 24 Mean (s.d.)	Late DBT dropouts (completed 6-11 months) N = 19 Mean (s.d.)	DBT completers N= 39 Mean (s.d.)	Incident rate ratio	95% confidence interval	Standard error	p value	% variance explained R^2
SPECIFIC								
Perceived understanding of DBT skills at m2	1.6 (1.0)	2.3 (0.8)	2.0 (1.1)	1.06	0.95 – 1.19	0.06	0.27	0.03
Frequency of DBT skills use at m2	**2.7 (4.4)**	**2.3 (4.1)**	**7.4 (8.0)**	**1.02**	**1.00-1.03**	**< 0.01**	**< 0.01**	**0.08**
Perceived helpfulness of DBT skills at m2	1.9 (1.8)	2.4 (1.4)	2.2 (1.5)	1.03	0.95 – 1.11	0.04	0.46	0.01
COMMON								
Therapeutic alliance at m2	**34.6 (8.6)**	**36.1 (9.9)**	**38.7 (7.6)**	**1.01**	**1.00 – 1.02**	**< 0.01**	**0.07**	**0.04**
Treatment credibility at m2	**13.7 (3.5)**	**15.1 (4.3)**	**15.8 (3.8)**	**1.03**	**1.00 – 1.05**	**0.01**	**0.06**	**0.06**
Self-efficacy at m2	21.8 (6.5)	20.9 (7.7)	22.4 (6.0)	1.00	0.99 – 1.02	< 0.01	0.83	< 0.01
EXTRATHERAPEUTIC								
Perceived social support at m2	48.4 (15.3)	47.1 (17.6)	49.2 (17.6)	1.00	0.99– 1.01	< 0.01	0.97	< 0.01

Variables for which p <0.05, indicating statistical significance, or p<0.10, indicating a trend towards statistical significance, are bolded .N.B. the analysis used months of DBT completed as a continuous outcome; comparison between early dropouts, late dropouts and completers is shown only for illustratation.

Table 6.3 Multifactorial prediction of treatment months in participants completing at least 3 months of DBT and having started the skills teaching group by month 2 (N = 47)

Predictor	Incident rate ratio	Standard error	p value	95% confidence interval	% variance explained by model R^2	Wald test for additional variables	
						χ^2	p
Block 1:					0.08	7.14	< 0.01
Frequency of skill use at month 2	**1.02**	**< 0.01**	**< 0.01**	1.00 - 1.03			
Block 2:					0.15	1.75	0.63
Frequency of skill use at month 2	**1.01**	**< 0.01**	**0.03**	**1.00 – 1.03**			
Therapeutic alliance at month 2	1.00	0.01	0.99	0.98 – 1.02			
Treatment credibility at month 2	1.03	0.03	0.35	0.97 – 1.09			
Self-efficacy at baseline	1.00	0.01	0.94	0.98 - 1.02			
Block 3:					0.19	0.28	0.60
Frequency of skill use at month 2	**1.02**	**< 0.01**	**0.02**	**1.00-1.04**			
Therapeutic alliance at month 2	1.00	0.01	0.91	0.98 – 1.03			
Treatment credibility at month 2	1.02	0.03	0.48	0.96– 1.09			
Self-efficacy at baseline	1.00	0.01	0.55	0.97 - 1.01			
Number of social confidantes at baseline	1.00	0.01	0.60	0.99 - 1.02			
Block 4:					0.20	0.90	0.63
Frequency of skills use at month 2	**1.02**	**0.01**	**0.01**	**1.00-1.04**			
Therapeutic alliance at month 2	1.01	0.01	0.63	0.98 - 1.03			
Treatment credibility at month 2	1.01	0.04	0.71	0.95 - 1.08			
Self-efficacy at baseline	0.99	0.01	0.53	0.97 - 1.01			
Number of social confidantes at baseline	1.00	0.01	0.97	0.98 - 1.02			
Employment at baseline	1.00	0.12	0.98	0.79 - 1.27			
Taking medication at baseline	0.86	0.14	0.35	0.62 - 1.18			

Variables for which p <0.05, indicating statistical significance, or p<0.10, indicating a trend towards statistical significance, are bolded.

Sensitivity Analysis using Multipley Imputed Data

The results of the analyses in the multipley imputed dataset are shown in Appendix

E Tables E5, E6 and E7 (p.580-584). In unifactorial analyses, all variables significant

in the original dataseFt were also significant in the imputed dataset, with the

exception of baseline number of social confidantes. As in the original dataset, using

the DBT skills more often at month 2 independently predicted completing more

months of treatment, after adjusting for common factors and other potential

confounders (IRR = 1.02, p <0.01), whilst no common or extratherapeutic factors

were independently predictive. A new finding was that higher perceived

understanding of the DBT skills at month 2 also independently predicted

completing more months of treatment (IRR = 1.11, p = 0.05).

DISCUSSION

Main Findings

Although skills, common and extratherapeutic factors were all significantly associated with months of DBT completed in unifactorial analyses, in the multifactorial analysis, the only finding that remained statistically significant was that more frequent use of the skills at month 2 predicted completing more months of treatment. Thus, DBT skills use predicted longer time in treatment even after adjusting for common and extratherapeutic factors and baseline characteristics. These variables did not explain additional variance above that explained by skill use.

There was considerable missing data on frequency of skill use at month 2, largely because many participants had not begun skills training by month 2, and the analysis presented in Chapter 5 indicated that this was not missing completely at random (see p. 182). Following multiple imputation of missing values, frequency of skills use at month2 remained a significant independent predictor of treatment completion - as in the original dataset. Results from the imputed dataset suggested that perceived understanding of the skills at month 2 also independently predicted completing more months of treatment.

Interpretation of Findings and Comparison with Previous Research

Skills and Common Factors

This is the first study to demonstrate that more frequent use of the DBT skills at month 2 is associated with completing more months of treatment. Furthermore, this is the first study to demonstrate that this association holds even after adjusting for the influence of common, extratherapeutic, sociodemographic and clinical factors, and after imputing missing data using multiple imputation.

The three common factors only showed a trend towards association with treatment completion. These trends are in line with previous research. For instance, other studies in psychotherapy for BPD have shown that the alliance predicts treatment completion, as reviewed in Chapter Four. Treatment credibility has not been studied in relation to BPD, but has been shown to predict   completion of psychotherapy in other patient groups (Burnett et al. 1992, Heimberg et al. 1990). Across the wider medical literature, higher self-efficacy has been shown to predict treatment completion, although primarily in relation to behavioural change regimes such as weight loss or smoking cessation interventions (Bernier & Avard 1986, Dijkstra et al. 1999, Mitchell & Stuart 1984).

These trends support the contention of contextual theorists that common factors are important in influencing the outcome of psychotherapy. However, the common factors were no longer associated with outcome after adjusting for other factors.

The finding that common factors no longer predicted treatment completion after adjusting for the frequency of DBT skills suggests that DBT-specific skills factors can predict completion over and above the influence of common factors, and may in fact be a better predictor of completion than these factors. One possible interpretation is that patients who were using the skills frequently early on had experienced early improvements in outcomes such as self-harm, which motivated them to stay for longer in treatment. In addition, the use of DBT skills such as distress tolerance could enable participants to better cope with the frustrations of the therapy process and thus to remain in treatment for longer. Alternatively, the frequency of DBT skill use may just be an index of engagement with the treatment process – and may perhaps be a better measure of engagement than the questionnaires used to assess treatment credibility and the alliance. A difficulty with interpreting these findings is that skills use was only assessed at month 2 of treatment, so it is unclear what happened in the intervening period that could have influenced treatment engagement. Possibly those patients who were using the skills most frequently by month 2 had already experienced symptom improvement earlier on in treatment – perhaps due to other factors – causing them to be more engaged with the treatment process and/or to attribute early gains to skill use, and hence to use them more.

Extratherapeutic Factors

The association between treatment completion and variables relating to social support has not previously been evaluated in psychotherapy for BPD, and thus the finding that patients with more social confidantes complete more months of treatment is new. The finding is consistent with a few studies in the general psychiatric literature, such as the finding that patients completing substance abuse treatment had more close friends (Lang & Belenko 2000). The relevance of social confiding to treatment completion could be as an index of social functioning, in line with the finding of Cuevas et al. (2000) that treatment completers had better social functioning than dropouts in transference focused psychotherapy for BPD. This could also be linked to the association found between employment and treatment completion. It is possible that participants with better social functioning adapt more easily to the social demands posed by attending DBT: interaction with individual and group therapists, interaction with other skills group members, and commitment to a regular twice weekly timetable of therapy attendance. However, the finding that number of social confidantes no longer predicted treatment completion after adjusting for skills and common factors suggests that these variables may mediate the association. Linked to this, patients' number of social confidantes was positively associated with treatment credibility and the therapeutic alliance in the present study, as described in Chapter Five. Participants who are used to discussing their concerns with others may adapt more easily to sharing their experiences during therapy, and could even be more trusting and hence form

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a therapeutic alliance more readily. Relatedly, they may find the idea of discussing their concerns with a therapist a more credible means of improving their mental health.

Chapter Conclusion

The findings suggest that the frequency with which participants use the DBT skills early on in treatment is positively associated with treatment completion, independently of common and extratherapeutic factors and baseline sociodemographic and clinical characteristics. Thus, early skill use may be an important indicator of treatment engagement. The findings also point to a predictive role for treatment credibility, the therapeutic alliance, self-efficacy, number of social confidantes, employment and psychiatric medication, although not independently of skill use.The strengths and weaknesses and the research and clinical implications of these findings will be discussed in Chapter Eight.

Chapter Seven

A qualitative study of patients' experiences learning, using and gaining benefit from the DBT skills

INTRODUCTION

Quantitative research is concerned with quantifying relationships between variables whereas qualitative research is concerned with understanding how such relationships come about and how they work in practice (Denzin & Lincoln 1994). In relation to this thesis, the quantitative work presented in Chapters Five and Six has sought to quantify the relationship between skills, common and extratherapeutic factors and outcome; whilst the qualitative work presented in this Chapter will seek to understand *how* this relationship works in practice and what processes are involved. Qualitative research emphasises the use of rich, detailed sources of data which are verbal or descriptive rather than numerical in nature (Greenhalgh & Taylor, 1997), and can thus be a valuable source of information on how a process works in practice. It allows researchers to understand a process from the perspective of those who are involved, in their own words, and in rich detail (Denzin & Lincoln 1994, van Manen, 1977), and allows patients to highlight what they feel is important about their experiences rather than assessing only that which is pre-determined as important by the researcher (Greenhalgh & Taylor 1997). It can yield valuable insights on how processes evolve over time, how they interact with different personal characteristics or environmental factors, and how they differ between individuals (Black 1994, Miles & Huberman 1994). Hodgetts and Wright (2007) emphasise that 'We cannot fully understand how psychotherapy facilitates change without asking clients about their experiences' (p. 161), and

recommends that qualitative research be used to achieve a better understanding of therapeutic processes and to inform the debate on the relevance of specific versus common factors.

As previously outlined, one of the main processes by which its creators theorise that DBT promotes positive outcome in borderline patients is by teaching them skills to be able to better manage their emotions (Linehan 1993). To date, qualitative research has consistently found that patients who complete DBT feel that using the skills in their lives has been essential to helping them improve. Four qualitative studies have explored patients' perceptions of DBT through in-depth interviews (Araminta 2000, Perseius et al. 2003, Cunningham et al. 2004, Hodgetts et al. 2007). Three studies in particular highlighted that patients had felt the skills to be very helpful in multiple areas of their lives, including intense negative emotions, anxiety, urges to self-harm and interpersonal relationships (Araminta 2000, Perseius et al. 2003, Cunningham et al. 2004). Quotes illustrating these experiences include: *"What's effective is that you get a new kind of understanding of the problems, and you learn the skills to deal with them"* (Perseius et al. 2000, p.222*);* *"The skills help me a lot when I get overrun by my feelings and I don't know what to do"* (Cunningham et al. 2004, p. 251); *"If we have a problem with where we are and if we are having conflicts, then here are some skills that you can help yourself with. It feel's great. It's empowering. I can really actually control my behaviour"* (Araminta 2000, p. 147). However, because the focus of most of these studies was very broad, the skills were touched on only briefly as part of the larger DBT

package. Thus, no research has as yet established an in-depth picture of how patients actually use the skills in their daily lives. Furthermore, no research has as yet explored the process by which patients come to gain benefit from using the skills in their lives. It is not clear whether this is an easy and rapid process – or a challenging and lengthy one. If there are challenges, it is not clear how are these overcome. A detailed picture of what factors can facilitate patients in gaining maximum benefit from the skills, and what factors can act as barriers, has not yet been established. Moreover, only one study has so far explicitly interviewed patients who drop out of DBT, in order to access their experiences of therapy (Hodgetts et al. 2007). In relation to the skills, questions remain as to how patients who drop out experience learning and using the skills, and what role, if any, their experiences of the skills played in their decision to drop out. Finally, all existing studies used small sample sizes (ranging from 5 to 14). Whilst small sample size in itself is not problematic for qualitative research (Miles & Huberman 1994), it is generally advised that sampling should only stop where saturation of themes emerging from the interviews is achieved (Corbin & Strauss 2008). None of the existing studies appear to have made use of this principle.

On this basis the following study aims to build on and improve the work of previous studies in understanding patients' experiences of using the DBT skills. Using thematic analysis, the chapter will address Research Question Three as posed in the thesis outline, (p.16-21):

How do patients experience learning, using and gaining benefit from the DBT skills?

Specifically:

a) How do patients use the DBT skills?

b) How do patients come to gain maximum benefit from the DBT skills?

c) What factors facilitate patients in gaining maximum benefit from the DBT skills?

d) What factors act as barriers to gaining maximum benefit from the DBT skills?

METHODS

Participants

Participants were any person initiating a course of DBT at the Newham DBT Service and fulfilling the following criteria:

1) Diagnosis of BPD

2) At least one day with self-harm in the 12 months prior to starting DBT

Participants were interviewed as soon as possible after completing 12 months of DBT or, if they had terminated treatment early, as soon as possible after this occurred. Purposive sampling was used to actively select both participants who completed 12 months of DBT, and those who terminated treatment early. Sampling also aimed to include both patients who achieved at least a 50% reduction in self-

harm in the treatment year and those who did not. This was to ensure that the

sample interviewed did not constitute just those who had had positive experiences

and/or had benefited from DBT. Furthermore, sampling purposively encompassed a

wide range of ethnicities and ages, and included patients of both genders. The aim

of this sampling strategy was not to achieve 'representativeness' - a concept which

is more relevant to quantitative research - but rather to be able to consider a range

of similar and contrasting cases in order to build a rich understanding of similarities

and differences in people's behaviour (Miles & Huberman 1994). The sample size

was not determined a priori. Instead, sampling ceased once the doctoral candidate

determined that no new themes were apparent in the data – i.e. the data had

reached 'saturation' (Corbin & Strauss 2008).

Materials

The topic guide for the interviews was developed in collaboration with two patients

(SO and BF) who have completed DBT, and two DBT therapists, who gave advice on

potentially important questions to ask, and how to phrase questions in a way that

patients would find relevant and would engage with. Following initial use with

patients, the guide was further modified to reflect areas which emerged as

important in early interviews. The order of questioning was also modified such that

initial discussion topics were very broad, and became progressively narrower over

the course of the interview. The latter was based on feedback from a

multidisciplinary team of psychologists and psychiatrists working in the field of

social psychiatry research. The topic guide was designed to be relatively unstructured. The order of questioning was flexible, following the order of the topic guide where appropriate, but otherwise following the topics brought up by the interviewee rather than rigidly sticking to a prescribed order. The topic guide contained suggested question wording- but these were followed only loosely, with questioning adapted according to the language used and understood by the interviewee, and according to what followed naturally in the course of the conversation. The topic guide focused on four areas: how easy patients found learning the skills, in what ways they use the skills, in what ways the skills help them, and what the process of learning and using the skills was like over the course of therapy. In each of these areas, the topic guide also included questioning on factors which act as facilitators or barriers to these processes. (See Appendix F for topic guide, p. 586-589).

Procedure

The interviews began following informed consent. (See Appendix F for information sheet, p. 584 - 585). They took place in a private room, either in the research office or the patients' home, depending on the choice of the patient. The interviews were tape recorded for later transcription and lasted between twenty minutes and an hour and a half. Questioning was open, flexible and, as far as possible, followed the natural course of the conversation. Anything potentially relevant the patient said

was followed up in greater depth as far as possible. The patient had the option to

terminate the interview at any point without giving a reason.

Data analysis

The interview data was analysed qualitatively using thematic analysis (Boyzatis

1998, Braun & Clarke 2006). Thematic analysis aims to determine what patterns or

'themes' occur within qualitative data, across different data sources such as

interviews with different participants (Braun & Clarke 2006). This aim is common to

many methods for qualitative analysis. However, unlike methods such as

interpretive phenomenological analysis or grounded theory, thematic analysis is not

bound to a particular epistemological theory. That is, researchers can choose to

approach it from either a realist or a social constructionist viewpoint, or anywhere

in between. The current thesis approaches the interview data from a realist

viewpoint, and is thus based on the understanding that participants' reports of their

experiences are based in reality and are valuable sources of information about what

actually happens (Smith & Osborn 2003). However, the candidate acknowledges

that any communication between one person and another is inherently a social

phenomenon influenced by the drive to appear socially desirable and by the cues

each participant consciously or unconsciously gives the other (Durkheim 1895,

Willig 1999). Thematic analysis can be either data-driven (inductive) or theory-

driven. In the present work, analysis was inductive, that is, the structure and

content of themes was based entirely on what ideas seemed to be a) most

prevalent and b) most important in the data, rather than being based on pre-determined notions of what ideas would be of interest. Furthermore, although the analysis began with certain broad research questions in mind, concerning the process of learning and using the DBT skills, the precise research questions were delineated only during the course of data analysis, based on what was found in the data. Importantly, whilst describing the analysis as 'data-driven', it must be acknowledged that the decision on what was sufficiently 'prevalent' and 'important' to constitute a theme was based on the judgement of the candidate and co-researchers and was thus inevitably subjective (Braun & Clarke 2006). Analysis focused on meanings at the semantic rather than latent level i.e. focused on what the participants had actually said rather than interpreting what was latent within their speech. The analysis also aimed to fulfil the following quality criteria for qualitative research, developed by Elliott and colleagues (Elliott et al. 1999): owning one's perspective, situating the sample, grounding in examples, providing credibility checks, coherence, accomplishing general versus specific tasks, resonating with readers. These criteria and how they were met are discussed further in Chapter Eight, the Final Discussion Chapter. Having been involved in research evaluating DBT for the past four years, the doctoral candidate was already very familiar at the time of analysis with the way in which Linehan describes the teaching and application of the skills, and the biosocial theory which underpins this (Linehan 1993a, 1993b). This will inevitably have affected the interpretation of the interview data.

Data analysis proceeded following the guidelines suggested by Braun and Clarke (2006). Following transcriptions, the doctoral candidate and a service user researcher (LC), who has experience of DBT and was herself an interviewee, independently read carefully through the transcripts of the first five interviews in order to look for patterns or experiences that stood out from the data. This provided material on which to base an initial coding frame. The ideas of each analyst about what patterns and meanings were present in the data were compared and discussed, and then reduced into shorter summary phrases which were used as codes in the initial coding frame, and imported into MAXQDA coding software (MAXQDA Version 10). The doctoral candidate and service user researcher LC then coded the additional transcripts against the coding frame, modifying codes, adding new codes, and re-coding material that had already been coded as they went along. Once all the data had been coded, the candidate sorted the codes into broad themes, and within these, sub-themes. The themes and sub-themes were then reviewed and revised with the aid of another researcher (SS). The aim was for the sub-themes and themes to be internally homogenous – that is, quotes assigned to the same theme should be clearly related, and quotes assigned to the same sub-theme even more so – and externally heterogenous – i.e. quotes assigned to different sub-themes should be clearly different from each other, and quotes assigned to different themes should be even more so (Patton 1990). Where there did not seem to be sufficient homogeneity within a sub-theme or theme, it was

broken up and rearranged into new sub-themes or themes with greater

homogeneity. Similarly, where the quotes within two sub-themes or themes

seemed to overlap to a large extent, the sub-themes or themes were merged.

However, because the research questions of the current work concerned processes,

in which certain experiences would sometimes but not always follow sequentially

from other processes, there were sometimes multiple sub-themes or even themes

contained within a single quote as participants explained how one experience led

into the next. These links between (sub-)themes were explored fully in the analysis.

Some sub-themes or even themes that were insufficiently endorsed by participants

and did not stand out as salient were dropped from the coding frame. Another

researcher, NB, then independently coded ten percent of the transcripts against the

coding frame in order to establish inter-rater reliability. For each section of

transcript coded by both the doctoral candidate and the independent rater, both

raters applied the same code in 82% of cases, and Cohen's kappa was 0.82 (S.E. =

0.03), indicating almost perfect agreement (Landis & Koch 1977). Following

finalisation of the thematic structure, the candidate engaged in a process of

'interpretative analysis' (Braun & Clarke 2006) whereby the meanings inherent in

the sub-themes and themes – according to the candidate's interpretation – were

described, and inferences about the relation between sub-themes and themes, and

how they fitted into the larger 'story' were drawn. For each sub-theme, divergent

quotes were identified to illustrate the diversity of experiences within that

category.

RESULTS

Description of the Sample

The candidate determined that very few new ideas or experiences were apparent with the addition of new interview data once 40 interviews had been conducted, and thus that 'saturation' had been achieved. Descriptive data on the sample is provided in Table 7.1. The purposive sampling of men, women, different ethnicities and different age ranges was successful, as was the sampling of both treatment dropouts and completers. Both participants achieving at least 50% reduction in self-harm and those not were well represented. However, neither of the two East Asian participants in the larger research sample (see Chapter 5) could be recruited.

Table 7.1 Sociodemographic and clinical characteristics of the qualitative interviewees (N = 40)

	Gender		Age				Employed		Ethnicity			
	Male	Female	17-25 years	26-35 years	36 -45 years	46 -55 years	Yes	No	White	Black	South Asian	Mixed
N (%)	6 (15)	34 (85)	12 (30)	12 (30)	11 (27.5)	5 (12.5)	13 (32.5)	27 (67.5)	22 (55)	8 (20)	7 (17.5)	3 (7.5)
	Baseline BPD symptom severity		Number of days with self-harm in 12 months pre-treatment				At least 50% reduction in self-harm in treatment year		Treatment completion			
	Mild-moderate (0 -18)	Serious - severe (19 - 36)	1- 7 days	8- 30 days	31 - 150 days	151-365 days	Yes	No	Completed		Dropped out	
N (%)	20 (50)	20 (50)	11 (27.5)	9 (22.5)	10 (25)	10 (25)	22 (55)	18 (45)	22 (55)		18 (45)	

Research Question Three, Part A: How Do Patients Use the DBT Skills?

Coping with Distressing Emotions.

 The participants described how and in what kinds of situation they used the DBT skills in their everyday lives. Participants described using skills in many different kinds of situations, but it was apparent from the data that the key context in which skills were used was "Coping with distressing emotions."

All 40 participants described struggling at times with distressing emotions such as extreme anger, anxiety, sadness, depression and suicidality, which would then lead to behaviour which damaged themselves or their relationships with others, such as angry outbursts, drinking, self-harm and/or suicide attempts.

"My problems were mostly anger. Um... but not um, sort of um, out of the blue, just um, with triggers, for example someone bumping into me, I'd sort of, really let out on them, or sometimes even lash out if it was bad." [Participant 5, DBT completer].

"I was very depressed. and... didn't really know where my life was going. I was kind of fed up.. I was having suicidal thoughts.... and self-harming because of that a lot." [Participant 39, DBT completer].

"I was a bit out of control with mood swings and coping with things.... I was taking overdoses a lot.... I was really depressed. I think I was a bit manic, like highs and lows and just crazy" [Participant 24, DBT dropout].

All but two of the participants described that the key purpose for which they used the skills taught in DBT was to enable them to cope with these distressing emotions without resorting to such damaging behaviour.

"But if I do feel sad then I've got things in place to um, help me get through it more. Whereas before, I wouldn't have been able to... my coping mechanisms are different." [Participant 37, DBT completer].

"Instead of reaching a peak of upset where it just festers. I can cope with it. I can use other tactics now which I didn't use. And it doesn't work 100% of the time, but it works at least 90-95% of the time." [Participant 35, DBT completer].

Within this context, the data on how participants use the skills was categorised into five themes: *Identifying Emotional Distress (Theme i); Deciding Not to React Impulsively (Theme ii); Trying to Change the Emotion (Theme iii); Trying to Change the Cause of the Emotion (Theme iv); Accepting (Theme v)*. The way in which participants used the skills to cope with their emotions seemed to be a multi-stage process. Firstly, for some participants, *Identifying Emotional Distress* seemed to be

an important pre-requisite to then using the skills described in the other four themes. Use of the skills in each theme could then sometimes lead on to use of the skills described in the other themes. For instance, *Deciding Not to React Impulsively* could lead into *Trying to Change the Emotion*, *Trying to Change the Cause of the Emotion*, or *Accepting*. Furthermore, when *Trying to Change the Emotion* or T*rying to Change the Cause of the Emotion* were not successful, participants often then moved on to *Accepting*. This process is depicted in Figure 7.1 and is summed up in the following quote:

"What's worrying you? Is there anything you can do about the cause of it?.... If there is something that is causing you a problem, you can change your reaction, you can change the situation and if you can't change the situation you can change your reaction, if you can't change your situation or reaction, you'll just have to radically accept it for what it is, and I like that because it is like a three stage diagnostic" [Participant 38, DBT completer].

Figure 7.1 How do participants use the DBT skills?

RECOGNISING EMOTIONAL DISTRESS

(N = 27)

- Identifying emotional distress (N = 24)
- Identifying the cause of emotional distress (N = 19)

DECIDING NOT TO REACT IMPULSIVELY

(N = 30)

- Considering the consequences (N=21)
- Putting the brakes on (N = 22)

TRYING TO CHANGE THE EMOTION

(N = 35)

- Taking control of emotions (N = 20)
- Challenging appraisals (N = 23)
- Distracting activities (N = 30)

TRYING TO CHANGE THE CAUSE OF THE EMOTION

(N = 21)

- Communicating feelings (N = 21)

ACCEPTING

(N = 19)

- Accepting situations causing emotional distress (N = 14)
- Accepting emotional distress (N = 15)

Recognising Emotional Distress (Theme i)

Twenty-seven participants identified this as important for them. This was described as a process of recognizing the nature of their emotional response to a situation. This was further sub-divided into two sub-themes: Identifying emotional distress; and Identifying the cause of emotional distress.

Identifying emotional distress. Twenty-four participants described a process of becoming aware of their emotional response to a situation. In some cases this was more of a general awareness whereas in other cases participants were able to think about their emotional experience in a more complex way and to disentangle the exact nature of the emotion they were feeling.

Increased awareness. For twelve participants, this increased awareness of their emotional state was described as a contrast to their previous lack of awareness:

"I've learnt to identify what I'm feeling because before it was... it was more of a case that I don't know what's going on." [Participant 15, DBT dropout].

"I'm more aware of how I feel and how to tag the name of it. Like if I'm angry, I know when I'm going to be angry." [Participant 17, DBT completer].

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However, two participants described continuing difficulties in being aware of their emotional state, especially in being aware of when they are feeling sad:

"I don't feel sad... I can't feel...... how do you act when you're sad? I feel like there's no description how you should be when you're sad" [Participant 1, DBT completer].

Body scans. Eleven participants mentioned that monitoring their body for the physical manifestations of emotions is particularly helpful for identifying when they are becoming emotional, or identifying which particular emotion they are feeling.

"Well when I first started I didn't realise my anger states..... So I have to do a lot of body scans, a lot of breathing...... Like, 'cause the anger – 'cause I always thought it was in your head. And that was it. Not everywhere else. And when I did that, I started to realise that when I'm feeling angry I can feel my heart racing, my jaws clenching, my hands..." [Participant 29, DBT completer].

"It's like, when you're gonna get angry, yeah, your body gives you that symptom, like your palms... My palms of my hands yeah, get sweaty and my upper lips, and my heart starts beating fast. When I'm sad, yeah, my eyes, the side of it starts twitching and I feel like a tight feeling on my heart, like a sadness." [Participant 17, DBT completer].

Participant 40, (DBT completer), explained what a difficult skill this was for her to master: *"I couldn't figure out how I'm meant to know when I'm angry.... you're meant to feel it, your heart's meant to be racing or , you know, you get a little warm, you feel hot, nothing like that – just anger, straight away, red, that's it. So it was hard, it took me a long long time, and it only really, I only really got it about two months from the end."*

Explicit labelling of emotions. This seemed particularly helpful to participants who had previously had difficulties knowing exactly what they were feeling, perhaps being unable to put words to their emotions or getting confused between one emotion and another.

"The one that I feel has been most beneficial to myself is identifying and labelling emotions. Because quite often I would... know that I was feeling... in my, oh so descriptive way, really shit and low and depressed and everything else like that. But I wouldn't really know what that emotion was." [Participant 3, DBT dropout].

"Well, I didn't even recognise my emotions to be honest with you. I've only been able to start labelling them since I've been with DBT. ... 'Cause I never used to be able to, like, put a pin on it and say oh, I'm feeling sad or this and that or its anger I

just used to think it was all one big thing coming at once but..... now I can put a

label on them" [Participant 16, DBT completer].

Distinguishing anger. Four participants mentioned that it had been particularly

important to learn to distinguish anger from other emotions. They described that

anger can often rapidly follow on from and then "mask" other emotions, especially

sadness, and that learning to recognise this had been key.

"I always sort of knew that I was quite an angry person but I wasn't aware that like

immediately I felt anything, I just felt angry instead, and I know that now .... if you

ask anyone they're all like '[Participant 33] likes anger and doesn't like sad.'"

[Participant 33, DBT completer].

Participant 39 (DBT completer) describes the moment when she realised that a lot

of her feelings of anger were actually sadness: *"She was like 'So what emotion did*

you feel then?' And I was like 'Anger'. ....And the thing is, she said, 'Are you sure it

wasn't sadness?' And I just broke down, like ' Oh my god!'"

She further describes how her reaction to distressing events always manifested itself

as anger rather than sadness:

"Because I used to – as soon as something happened, if it was a negative emotion, it

was anger.... I just bottled everything inside and I'd be like 'I'm not sad'. And I'd put

on such a wicked front, and I'd be like 'I'm fine, there's nothing wrong with me, I'm just angry, I'm pissed off about this'. And really and truly it was, I was just very sad about a lot of things."

Precursor to other skill use. Twenty participants described that recognising their emotional state was an important precursor to using other skills to cope with distressing emotions. The realisation that their emotions are escalating acts as a trigger to 'step in' with the skills to change the situation.

"If I start to have a worry thought, or I start to have a sort of negative judgement or a, you know, a feeling that things are starting to get a bit worrying..... I then start... it's my way of going, ok....let's go back to the DBT skills" [Participant 6, DBT completer].

"Because as long as you're mindful and you know like 'Okay I'm getting anxious right now', you know that all you need to do is just take deep breaths and stuff and that's what I do. And I find myself less and less irritated or less…not as emotional as I used to be" [Participant 19, DBT completer].

Catching emotions early. For nine participants, a key part of using emotional awareness as a trigger for skill use was noticing the beginning of an emotional

reaction, however small, and using the skills to intervene before the emotion

escalates and becomes too intense to handle.

"If I let myself go too far in any situation it's too late. So the slightest emotion,

anger, distress, anxiety, the slightest bit I feel- I just remember me DBT and I think

what I've learnt" [Participant 9, DBT completer].

"It depends what level of anxiety I've got. If it's at its peak then no, nothing will help

me – I don't contact my friends at all, but if I feel the anxiety rising then I will, I do it

before it gets to a certain level.....The idea is yeah, to intervene before. Sometimes

it can spiral really quickly but other times you can sense it" [Participant 19, DBT

completer].

"Knowing that you're beginning to get very panicky and sort of putting the distress

tolerance in before you're getting to the climbing the walls panic attack stage......

Before it gets too bad. Because once you go too far down the road you can't do

anything about it" [Participant 31, DBT completer].

Using awareness of self-harm urges. For two participants, a key to preventing self-

harming was to increase their awareness of urges to self-harm, and then use this as

a trigger to intervene with the skills.

Participant 2 (DBT completer) explains this is a contrast to her usual lack of awareness: *"Being able to recognise that I wanted to hurt myself, because sometimes I'd be hurting myself before I realised it. Um, I just got caught up with it. But for me to realise that that was what I wanted to do... then I could stop myself"*.

Identifying the cause of emotions. Nineteen participants endorsed the sub-theme "Identifying the cause of emotions". Participants described a process of questioning themselves about what had caused their emotional reaction:

"Then you question yourself : 'Why am I feeling grumpy?' 'It's because you haven't eaten properly'" [Participant 13, DBT dropout].

"Now, I've learnt that if it is a worry, dissect it, find out what the problem is" [Participant 8, DBT completer].

Three participants contrasted this with their previous lack of awareness of the causes of their emotions:

"Before I used to get angry and not know why I was angry. And now, it makes much more sense. I do understand a lot better – I may not necessarily like it – like what I understand – but I do" [Participant 32, DBT completer].

For five participants, realising what had caused their emotional response enabled them to take further action to improve the situation or to change their reaction to the situation:

"When I was feeling sad I used to think, 'Well why am I feeling sad?' And then I'd look at the thing and say, 'That's why I'm feeling sad so that has to go'. And at the time I had a really horrible boyfriend, and um, I just thought, he has to go" [Participant 24, DBT dropout].

Thus, considering the cause of an emotion can be a precursor to use of other skills, particularly those categorised under the themes "Trying to change the emotion" and "Trying to change the cause of the emotion." Similarly, three participants described that thinking more broadly about the cause of their emotions had enabled them to challenge their appraisals of the situation they were facing; thus, "Thinking about the causes of emotions" can feed into the sub-theme "Challenging appraisals", which is also part of the theme "Trying to change the emotion".

"I'd like look at what was going on around me, why it pissed me off, or why it upset me, what the real reason behind it was, so I didn't read anything more in to it if it wasn't there" [Participant 27, DBT completer].

"Thinking about the causes of emotions" could also sometimes link to the theme "Deciding not to react impulsively". This is illustrated by quotes from two participants, both of whom explained that thinking about the cause of their emotion could help them to consider whether it was a good idea to engage in impulsive behaviour such as drinking.

"Just mull over and realise why you're feeling the way you are..... your impulsive 'Grab a bottle off the shelf and have a couple of drinks', has actually faded to, 'No, I'm not gonna do that', because you've just got a slightly better understanding of the situation" [Participant 3, DBT dropout].

Deciding Not to React Impulsively (Theme ii)

In this second theme, thirty participants explained that when feeling the urge to react to strong emotions by engaging in behaviours such as shouting, drinking or self-harming, they would take time to carefully consider the consequences of such behaviour, rather than immediately acting on their urges. This theme was broken down into two sub-themes: "Considering the consequences", and "Putting the brakes on".

Considering the consequences. Twenty-one participants described the importance

of considering the consequences of impulsive behaviour. They emphasised that it

was particularly important to be able to consider the consequences of such

behaviour even when feeling strong emotions and/or urges to behave in certain

ways. Participants spoke about considering the consequences of various types of

behaviour, including shouting, avoiding anxiety-provoking situations, and drinking,

in response to feeling distressing emotions. However, by far the most common

context in which this skill was used (17 of 21 participants) was in relation to

considering the consequences of self-harm.

For two participants, when feeling the urge to self-harm, considering the effect on

other people helped them decide not to:

"Cause I think, 'It's only gonna backfire'. 'Cause I never go through to killing myself

entirely, and um... and then it's just um, the effects... the after effects are not so

good on my children. I get thinking like that as well and... 'Do I want to leave my

kids behind?' and things like that." [Participant 15, DBT dropout].

For six participants, a salient negative consequence of self-harm was the resultant

scars. They explained how thinking about this could put them off from self-harming.

For instance, Participant 39 (DBT completer) explains:

"I don't want any more scars! I've got so many scars, and people can see it, and I don't want somebody to see it and make a judgement about me straight off the bat. I just – there's so many reasons not to." [Participant 39, DBT completer].

For four participants, realising that self-harm actually made them feel worse, and in particular, made them feel guilty, was an important motivator not to do it:
"I had to think about how I'm gonna feel after... Because how I felt... not immediately after but a couple of hours later: 'Why [Participant 18], why did you do that? Oh my god, why, why? Now [Boyfriend] is gonna see it, oh my God [Participant 18]!' So that... trying to make myself think about how I felt afterwards, trying to put that in the forefront of my mind when I felt like self harming... is what I think stopped me from self harming" [Participant 18, DBT completer].

Another consequence of self-harm that participants considered was the negative impact that it had on the therapy process. In particular, six participants found discussing self-harm with their individual therapist unpleasant, and knowing they would have to do this helped to put them off harming in the first place. The unpleasantness of this process related to both the process itself – including form-filling and conducting behavioural analyses (B.A.s), and also to the resulting embarrassment and guilt that they experienced.

"Oh my god I got so sick of, like 'I can't do these B.A.s anymore!' ... it's like 'Bloody hell, I don't want to talk about it anymore, I can't be bothered - I'll just stop!' [Participant 33, DBT completer].

"It's like the embarrassment of having to go in and tell them. Kind of at first, you know, it's like 'Aaargh!' - that stops it at first. 'Cause I used to hate it, I used to hate having to go in."[Participant 18, DBT completer].

"In the beginning, I was like, I don't really care what my therapist says, if I self harm, what does it matter, I don't really care. But then I kind of developed – not a relationship but some kind of understanding with her, a kind of she understood me and I understood her. I kind of felt I was letting her down after a while, doing this.... I don't want to feel guilty with my therapist.... it kind of put me off." [Participant 32, DBT completer].

Putting the brakes on.

Twenty-two participants described that, when experiencing distressing emotions and feeling urges to react in certain ways, they would take time to carefully consider how they would react, rather than immediately going with what they felt like doing. They likened this to 'putting the brakes on' or 'taking a step back' from their emotions and from the precipitating situation. In some cases this was a

psychological 'putting the brakes on' i.e. pausing mentally to consider their actions, whilst in other cases, usually in the context of interpersonal conflict, this was a physical 'putting the brakes on' by ending a conversation or leaving the scene of conflict.

"You just have that awareness that you're just putting the brakes on, I suppose a bit like the panic attacks, you just, you know a bit more, you're not… this isn't a road I want to go down" [Participant 31, DBT dropout].

"Usually I'd just get, sort of get angry about it and not really think about it and just take what I want from it but then being in DBT I sort of learned to take a step back, analyse the situation and decide what was the best way to deal with it" [Participant 27, DBT dropout].

Participant 15 and Participant 2 both highlight that recognising their emotions and urges to self-harm is an important precursor to being able to 'put the brakes on' and consider their behaviour:

"I know now if I have the urge to do it.....It's like recognising that I'm feeling that... and thinking, 'What am I thinking?, I'm not gonna do that!' Whereas before it wasn't thinking like that at all, it was just straight away then the... not having to think about what I'm doing." [Participant 15, DBT dropout].

For 17 participants, a key context in which they learnt to 'put the brakes on' was in situations of interpersonal conflict. They did so by walking away from conflict – either by physically leaving the room or by verbally ending the conversation. They explained that, in addition to preventing them from becoming aggressive, this allowed them to calm down so that, if necessary, they could return to the conversation at a later time.

Participant 33 (DBT completer) explains how 'putting the brakes on' is linked to walking away from conflict: *"I do have this thing about impulsivity. Like if I want to say something as soon as I am angry, I just like sort of worked out a system, like try and be aware of it and tell yourself 'Don't, don't don't'. Like just wait and give yourself time."*

Several participants explained how putting on the brakes by walking away from conflict enabled them to calm down:
"I was getting anxious and I was getting a bit angry. So I learnt not to keep on screaming and shouting. You've got to walk away from the situation and… you calm down and go away and let it go away" [Participant 21, DBT dropout].

Three participants explained that walking away from conflict or ending the

conversation enabled them to return to talking about the topic of conflict at a later

time, once they had calmed down.

For instance, Participant 29 (DBT completer) explains:

"I tell [partner] to leave me alone, and then I come back to it when I'm more cooled

down".

However, two participants expressed difficulty with using this skill. For Participant

28 (DBT completer), using this skill actually made her feel worse, because she had

not been able to react to the person with the aggression she felt they deserved:

"A girl she decided to be, she was rude to me and I decided to take DBT on and say

'Okay, I am not going to hit her, I am not going to say anything to her, I am just

going to go'...... I struggled with that for about a week that I, I felt like I didn't give

her what she deserved for doing what she did to me ....I really began to hate

myself."

Trying to Change the Emotion (Theme iii)

Thirty-five participants described responding to distressing emotions by using

various skills to try to change the emotion itself – to either dampen it, let go of it

completely, or replace it with another emotion. This theme was categorised into

three sub-themes: Taking control of emotions; Challenging emotion-driven

appraisals; Distracting activities.

Taking control of emotions. This sub-theme was endorsed by twenty participants.

They described a process of taking control of their emotions and of their

behavioural responses to their emotions; rather than letting their emotions take

control of them and dictate their behaviour. Participants expressed the idea that

emotions are not as powerful as they seem and hence do not have to control a

person's thoughts and behaviours. Participants described this process as "turning"

away from or "letting go" of their emotions; refusing to "entertain" them.

"Every now and again the anxiety kind of wells up and I feel like… it wants to take

control… And I'm just kind of like… 'I'm not, I'm just not going to go there.' ….. Just

like turning, turning the mind, isn't it…..I just don't entertain it really anymore"

[Participant 10, DBT completer].

"I think once I learned to control.... Once I learned that you can be angry and let it

go I stopped being as angry... Cause I use to hold onto things and made things

worse" [Participant 35, DBT completer].

"I used to sort of, carry things on, and I wouldn't let things go, but now I let... just let it go....I think of the tephlon mind, you know it just... slips off" [Participant 1, DBT completer].

Part of using this skill was to realise that emotions are just internal experiences which do not represent reality. Nine participants expressed particular comfort in realising that emotions are temporary experiences which will pass. This seemed to reduce the power that emotions had for participants.

For instance, Participant 9 (DBT completer) explains that she will *"identify it and say 'It's gonna pass, this is just anger.' You don't let it go too far, just take notice of it and realise it's just an emotion."*

Similarly, Participant 21 (DBT dropout) explains that *"When you're stressed out.... they said 'You know it's not real is it so just try and forget about it and um, they pass'. ...Like, waves they come and go, and you know, it will pass. And that's true, you know, I never thought that before."*

Challenging appraisals.

For twenty-three participants, an important way to try to change their emotions was to challenge their appraisals of the precipitating situation. Participants explained that an important insight they had gained through DBT was that often

their emotions resulted from their interpretation or perception of a situation, but that these interpretations did not necessarily reflect reality, and were often not the only possible interpretation of a situation. Participants described that this knowledge enabled them to challenge their initial appraisal of a situation – and hence to change or lessen their emotional response. The terminology they used reflected this process, with phrases such as "taking it as it is" (e.g. Participant 34, DBT dropout) and "seeing things for what they are" (e.g. Participant 40, DBT completer) reflecting the emphasis on remaining connected to the reality of a situation. Phrases such as "not judging" (e.g. Participant 6, DBT completer), "sticking to the facts" (e.g. Participant 12, DBT completer), and "not adding to the situation" (e.g. Participant 19, DBT completer) reflected the idea of not adding their own perceptions or interpretations to their view of the situation.

For instance, Participant 34 (DBT dropout) explains:

"*Trying to not be judgemental about anything, and just take it as it is. That's where I've found most benefit from DBT. Because I've been very quick to judge the state of things, and the state of my head and the state of my body. ....It was becoming a really overwhelming feeling of, just, permanent upset I suppose... I'd be very resentful if I see somebody running up the road: 'Oh I can't remember the last time I ran anywhere', you know? ..... DBT definitely did help me to realise that my perceptions could be totally off. And, like, you would act on your perceptions, and if you perceive that everyone around you is in a better position than you, then it plays*

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on your mind. So it helped me like that, just to sort of say, 'Well chances are that

half the people out there who are laughing and joking might be playing make

believe as well'. Until you know.... you can't judge something that you don't know

about. As long as you don't know about it, then you can't judge it."

Similarly, Participant 1 (DBT completer) explains how trying to take away the layers

of his own judgements of a situation so that he is left only with the facts has been

helpful: *"Taking away judgement and... examining the facts before going through*

and .... having a reaction, has been I'd say one of the biggest influential things in my

change."

Five participants referred to this process as using their "Wise Mind". For instance,

Participant 25 explains how she recognises her initial appraisal of a stressful

situation as coming from her "Emotion Mind", and is then able to access her

"Rational side" to challenge this appraisal, resulting in a feeling of calm, or "Wise

Mind":

" I was so angry, and like 'Why are these people on the road at this time of the day?

They're all losers, they're doing it to piss me off, I just want to kill them!' And

obviously I had no option but to stay where I was. And I used the wise mind skills

there..... Obviously the emotional mind was there with the anger and the, 'Oh I

want to kill people'. And then ... I sort of went to the rational side and I was like,

'What is going to happen if I'm late for work? Is the world going to end?' And I'm

like, 'No'. 'Can you do anything about being stuck in this traffic jam?' I was like, 'No'.

And then, by thinking that, I just felt so calm after. I genuinely did. ... If you focus on

getting yourself into that kind of middle area of the wise mind, it really does work."

[Participant 25, DBT completer].

For three participants, a key method to prevent themselves from coming up with

interpretations of situations that were not based in fact was to focus only on what

was actually happening, and not allow themselves to think about related situations

in the past, or to worry about possible future scenarios. For instance, Participant 33

(DBT completer) explains:

"Me and my sister are very different and don't get along very often at all... and I

was trying to be mindful in terms of like not thinking about all of the stuff that has

happened to us in the past - just think about what she's saying now and be in that

moment" [Participant 33, DBT completer].

However, a few participants expressed difficulty with this skill. For example,

Participant 20 (DBT completer) found it difficult to stop herself from making

judgements about a situation:

"They said to me, 'Don't make more judgements'..... That's really hard. Because I'm

always thinking about what they're thinking, making predictions of what's gonna

happen in the future."

Distracting activities. Thirty participants described responding to distressing emotions by engaging in distracting activities. The primary function of these activities was usually described as to distract participants from their emotions and/or from thinking about the precipitating situation. By distracting themselves in this way, participants were able to allow their emotional reaction to gradually dissipate, together with their urge to react in impulsive ways. Participants emphasised that this strategy was most effective when they were able to focus their entire attention on the activity. Engaging in distracting activities also sometimes served other secondary functions such as "soothing" (e.g. Participant 35, DBT completer), "cheering" (e.g. Participant 40, DBT completer), or allowing participants to release their energy in constructive rather than destructive ways.

For instance, Participant 13 (DBT dropout) explains:

"If I was low, I would go and do something different. So the state I was in, the low state, wouldn't take a hold of me. I could distract myself."

Participant 26 (DBT completer) explains how engaging in a distracting activity allows her to have a break from a stressful situation and to thus lift the "emotional cloud" over the situation so that she can deal with it "practically" in a "clear minded" fashion:

"I read a bit more - I use that for distracting..... Like yesterday amongst all of the stress of work I just took out fifteen minutes and just sat and read. And it's kind of nice to just switch, just switch off the switch and then go back to it. And then, yeah, that way, because you ... don't want to be dealing with the stress in terms of like with an emotional cloud around it. Just deal with it practically, like 'Oh yeah, I have got so much to do, I need to do it', so that would be more clear minded."

Six participants explained that making the effort to engage in activities was particularly important when they were feeling depressed, as inactivity led to maintenance of depression, whereas being active could help to shift the feeling:

"Normally I'd lie there and went deeper and deeper into my emotions and turning the mind helped. I used to just jump up. My body didn't want to do it, nothing wanted to move but the brain says you're not gonna get anywhere sitting here, you gotta get up and do dishes or ... and it does 'cause you get distracted." [Participant 9, DBT completer].

For eighteen participants, activities that they found soothing or relaxing, or that cheered them up, were particularly helpful:

"When you're um, stressed out, I kind of sit in the bath with bubble bath and things like that so that helps a lot as well, yeah. So that just makes me feel relaxed."
[Participant 21, DBT completer].

"Only Fools and Horses…if I'm quite emotional I will watch that because it's quite funny. When I watch that, my emotions do change I suppose, it does cheer me up quite a bit." [Participant 32, DBT completer].

For five participants, the types of distracting activities they chose to engage in seemed to serve the dual purpose of allowing them to release built up energy or adrenaline:

"When I feel myself getting angry … I go out and ride on a bike to use all my energy and adrenaline on that, instead of punching someone's head in" [Participant 16, DBT completer].

Thirteen participants emphasised that engaging in an activity was most helpful in distracting them from their emotions when they were able to really give it their full attention – thus excluding all thoughts not relevant to the activity. This was sometimes referred to as doing the activity "mindfully". Participant 20 (DBT completer) summarises this process quite simply and eloquently:

"I just take my mind out... put it somewhere else."

Similarly, Participant 35 (DBT completer) explains:

"When you're mindful, I'm just doing the dishes, and I'm not stopping until the dishes are done. I'm not thinking about anything but these dishes here. You're less likely to flit upon something you don't want to think about."

A particular activity that eleven participants found useful was concentrating on their breathing. Participants described that concentrating on this was both relaxing and distracting. For instance, Participant 26 (DBT completer) explains:

"I breathe in for three and out for four and count in my head..... It just kind of focuses.... my mind on to my breathing when I am stressed..... just calms you down.... it kind of just makes your mind more still and you're more aware again."

However, several participants reported having difficulties with using this skill. For these participants, being able to totally focus on the distracting task was difficult. For instance, Participant 31 (DBT completer) says *"I'm better at it now but the concentration involved in mindfulness is a skill that you need to practice. It sounds very simple but actually, you sort of – difficult to stop your mind wandering when you first start"*.

Trying to Change the Cause of the Emotion (Theme iv)

Twenty-one participants explained that they sometimes used the skills to try to change the external situation causing their emotional distress. The actions they took were varied and could include ending unhealthy relationships or deciding to leave their jobs. However, only one type of action was sufficiently endorsed to form a sub-theme: *Communicating Feelings.* In this sub-theme, participants explained

that a primary cause of distressing emotions was often interpersonal situations

such as disagreements with another person, being asked to do something they did

not want to do, or needing to ask somebody to do something for them.They

described a key skill they had was to be able to handle these interpersonal

situations effectively, by expressing their feelings without their emotions escalating

and without becoming aggressive.

Communicating feelings. Twenty-one participants described that a key way in which

they tried to tackle the cause of distressing emotions was to communicate their

feelings to the people who had caused the distress. They described gaining the

confidence to express their opinions, and in particular to say no or to ask for their

needs to be addressed. They further described having learnt to do so in a way that

maximised their chances of getting what they needed, whilst minimising

interpersonal conflict and aggression. By doing so, they were sometimes able to

persuade people to behave differently towards them, thus directly addressing the

cause of their distress.

For instance, Participant 31 (DBT dropout) explained how learning to be able to ask

for things has been helpful:

"One thing that I think DBT really helped with was realising that I wasn't asking for

help when I needed it. ... I do find asking for things very difficult..... I still don't

manage it all the time but I have got a lot better at things like, 'I can't go to this

hospital appointment by myself - can someone go with me?' And then that means

that, well, I do go to the hospital appointment rather than not going."

She further explains how learning to say "No" has helped prevent her emotions
from escalating:

"Just sometimes being able to say, 'No I really don't feel up to that right now' or 'I

actually can't do that' whereas before I'd always say yes and feel resentful, or say

yes and then not do it, and then I'd feel guilty and they'd feel angry."

Thirteen participants referred to the "DEARMAN" protocol which they had been

taught to help to structure conversations about their feelings. For instance,

Participant 33 (DBT completer) explains that this involves describing how she feels,

asking for what she wants and reinforcing how the other person could benefit:

"I don't do asking.... And part of it was sort of like not knowing how I say what I

want...... So like the DEARMAN skills I think are actually really good because if I ever

have to ask anyone for anything...I definitely think of that. ....Like describe how you

feel..... like say somebody had hurt you would say like.... 'That hurt me.' And then

like assert sort of asking what you want, like .... 'Can you not do that in the future?',

or like 'Can you do this?', or whatever. Reinforce like what they would get out of it

..... so like, usually if like it's a relationship then I'll say like 'If you didn't do it in the

future then maybe I would be more likely to trust you' or.... 'Because it would be

good for both of us because it would be good for our relationship'...... It does help,

that helps." [Participant 33, DBT completer].

Thirteen participants placed particular importance on explaining their feelings fully.

They described how this ensured that the other person understood their position

clearly:

"Describing how it feels to me, 'cause I think I don't put enough emphasis on that

sometimes. I'll say to somebody 'No I don't want you to do that', but I won't ever

say why I don't want them to do that. So in their mind they're like 'Well she don't

want me to do that because of...' , and then they jump to conclusions, and that's

why they don't think it's as important as I do." [Participant 40, DBT completer].

Ten participants further described the importance of remaining clear and calm

when describing their feelings:

" I found that I was, I was able to talk about.. what my problem was, more.. like, in

a way that the other person would have to understand... I knew I was making

sense.....I wasn't shouting, and I wasn't crying, I wasn't making random points, I

wasn't threatening to hit them..... I think being in that situation just kind of showed

me how much I have actually learnt." [Participant 39, DBT completer].

Accepting (Theme v)

The final theme characterising how participants used the skills was that of

"*Accepting*". This theme embodies participants' learning to accept reality as it is

rather than trying to change it. This applied to both accepting situations that cause

distressing emotions and also accepting the distressing emotions themselves. The

theme was thus broken down into two subthemes: Accepting situations causing

emotional distress, and Accepting emotional distress.

Accepting situations causing emotional distress. For fourteen participants, an

important skill learnt in DBT was to be able to accept that certain distressing

situations could not be changed. This could apply to past or present events.

Participants often referred to this using the DBT term "Radical Acceptance."

For five participants, a key context in which acceptance was important was in

accepting that sometimes it is not possible to change other people's behaviour,

even if that behaviour is distressing:

"I realised that we were in a cycle where she was repeating herself and become so

that we were going round and round and round and it wasn't leading anywhere and

I was getting frustrated with her.... I didn't want it to escalate any more so I just let

things go and said 'Alright if that's the way you feel, that's the way you're feeling.'

Much more kind of laid back, things are what they are [Participant 38, DBT

completer].

For three individuals, a key aspect of accepting that they couldn't change other

people was equally to accept that they could change their own behaviour:

"You want your partner and your children and your family to treat you and be the

way you want them to be. But it doesn't always happen and you have to accept

that. I'm who I am and they are who they are..... Accepting that I'm not going to

change the world but I can change my world. I'm never going to get you to do what

I want you to do but I can do what I want to do." [Participant 35, DBT completer].

"Knowing that you can't change them - that's the biggest killer as well, just

accepting something, knowing that you can't change this......Obviously I can't

change the other person's feelings or I can't control what they're feeling, but ....as

long as I walk away from it knowing that I did everything that I could do - there's

nothing, absolutely nothing more that I could have done. Knowing that I did s**t

effectively, and the other person, if they still don't wanna take it then that's them, I

can't change them. And that in itself helps me feel better about myself..... Cause I'm

no longer blaming myself and kicking off and thinking "if I hadn't kicked off, this

person might have listened to me"[Participant 39, DBT completer].

This last quote followed a description of using the skills outlined in the sub-theme

"Communicating feelings" during which the participant was unable to successfully

get the other person to meet her needs. The quote thus illustrates how "Accepting"

can follow on from the skills outlined in "Trying to change the cause of the

emotion." It also illustrates how reducing self-blame can be an important aspect of accepting distressing situations.

Several participants spoke about accepting suffering as an inescapable part of life, in particular in relation to painful past events. For instance, Participant 13 (DBT dropout) explained:

"One skill that did help me was Radical Acceptance about pain and suffering. And it just helped me get over one turmoil which was my mother's passing away... It's not just you, it happens to everyone. Life will show you these things, you just have to get along and accept it.... It helped me accept that- not to keep on going over it in your mind, to move forward."

Accepting situations causing emotional distress could also apply to more everyday situations, such as recognising that there is nothing that can be done about traffic jams or other people's poor driving, other than to accept them:

"'Can you do anything about being stuck in this traffic jam?' I was like, 'No'. And then, by thinking that, I just felt so calm after. ....I just thought, well there's nothing... It's kind of like radical acceptance. You can't do anything about it."
[Participant 25, DBT completer].

The above quote illustrate the calming effect that such acceptance can have - a theme echoed throughout the data.

However a few participants expressed difficulty with accepting some things:

"I find it really difficult to understand – how some people can just accept things. I think it just encourages people to just be soft and like a doormat.....I don't necessarily agree with it." [Participant 33, DBT completer].

Accepting emotional distress. For fifteen participants, an important skill was to accept that emotional distress and the consequences of distress are at times an unavoidable aspect of life. Within this, a key understanding was to accept that emotions are an important part of life, which serve a purpose, and which, sometimes, need to be experienced rather than suppressed. Participants described that sometimes, rather than seeking to use skills to change the emotion or to change the situation causing the emotion, they would actively allow themselves to experience the emotion. Sometimes this seemed to be a very conscious premeditated decision. At other times, use of this skill seemed to be a last resort, used when they felt unable to use other skills or when other skills had not worked. An important aspect of this skill was to reduce guilt and self-blame in relation to feeling distressing emotions. Similarly, participants described learning to accept the consequences of emotional distress, i.e. that sometimes they would behave in ways

that they afterwards regretted. Again, they emphasised the importance of learning to reduce guilt and shame about the times when things went wrong.

 Participant 25 (DBT completer), explains: *"There's no such thing as a good or bad emotion. So all emotions are there, they say, to give you information about how you're feeling.... like they say it can be about communicating with people if you're sad or you're happy or… it motivates you to do stuff or it can be self-validating."*

The participants explained that, whilst painful, allowing themselves to experience emotions rather than continually trying to suppress them was helpful in the long run:

 "I've let the mood in.... let things in rather than pushed them to the side and gone 'Nah, I don't like that feeling'" [Participant 29, DBT completer].

"I'm just learning to accept the pain and deal with the pain as opposed to trying to escape from it, which is a lot of what DBT has taught me, that you have to learn to deal with it, accept it. Go through it rather than trying running away from it"
[Participant 18, DBT completer]

Two participants explained that it was particularly important for them to accept that it was 'okay' to feel distressing emotions, and not to judge themselves for it:

"In the past, you know, if I was feeling low and depressed and miserable or whatever, I'd get really upset about that and think that's wrong and bad and... and that would then lead to even further misery, depression and destructive behaviour. Um, and it was just a sort of vicious cycle, whereas, you know, there being some bad times, particularly over the last three of four months, things haven't gone well or things haven't gone right... But I've been able to.... accept them for what they are."
[Participant 6, DBT completer].

Participant 39 (DBT completer) explained that, when her emotions were very intense, sometimes the only skill she felt able to use was just to do nothing and let herself experience the emotional distress. She referred to this as "riding the wave":
"The only thing that worked for me was just riding the wave. I had to, I had to. Because if not, then the only other option is to self-harm.....Just keep with the emotion. You have to deal with it. It's.... it doesn't last very long. It feels like it's gonna last a lifetime, but it lasts, I mean for me it lasts, maybe at most 45 – 50 minutes. Which felt like hell. But it went away. It does go away."

However, not all participants agreed that letting themselves experience distressing emotions was helpful. Indeed, Participant 17 (DBT completer) commented that it makes her feel weak:

"DBT makes you... think of those things that you don't wanna think of, you know. But for me, to think of those things, it won't make me...... it doesn't make me strong.... I feel more weak....when emotion comes, I'm weak."

For seven participants, a key aspect of accepting emotional distress was to accept that sometimes their distress would lead them to behave in ways they later regretted. They emphasised that, by accepting this, they were able to reduce the guilt they felt afterwards:

"You just kind of have this… I don't think it's intentional but you have this disregard for what's going on around you and all that… there's just so much going on and you're in so much sort of pain and suffering that you can't see beyond what you're going through yourself. Um, and it is hard to deal with ..... there's the element of guilt that I have. But then, it's not about blaming yourself or you know, burdening yourself with that because… beating yourself up, what does that achieve? Nothing. It's about learning ways to cope with that emotion and to move on..... within reason, now is now and you can always make a new start from now." [Participant 25, DBT completer].

"One of the great things is that no-one ever says, 'You were wrong to do that'... it's very much a question of understanding why you did it......I might not make the right choice, but the thing is I made the choice, and then it helps reduce the guilt afterwards..... and takes away a lot of the worry and the shame and the fear and the anxiety, so that you don't then start blaming yourself, and I... I'm out of this cycle of locked in blame, and er, downward spiral, and... it's sort of... it's far more linear. Something happens, it might go right, it might go wrong, whatever happens, it's finished. Move on." [Participant 6, DBT completer].

Research Question Three, Part B: How Do Patients Gain Maximum Benefit from the Skills?

Participants described how, over the course of therapy, they came to be able to apply the skills to their lives and, gradually, to be able to gain increasing benefit from using them. The overwhelming emphasis was that this was a difficult process that required commitment, perseverance and hard work, but that by doing so, they were eventually able to make the skills such a part of their lives that they came to use them automatically, without needing to think about it. Participants described gaining a great deal of benefit from this process. The data on this process was categorised into three themes: *Commitment to work towards change (Theme i); Making the skills my own (Theme ii); Automaticity (Theme iii)*. The participants indicated that the relationship between these three themes was to some extent sequential, with *Commitment to work towards change* being particularly important earlier on in treatment whilst *Making the skills my own* occurred later and *Automaticity* was achieved only towards the end of treatment. Thus, one theme led into the next over time, as summarised in Figure 7.2.

Figure 7.2 How do participants gain maximum benefit from the
DBT skills?

COMMITMENT TO WORK

TOWARDS CHANGE

(N = 32)

- Wanting to get the most out of DBT (N = 15)
- Perseverance (N = 24)
- Making it part of everyday life (N = 15)

MAKING THE SKILLS MY OWN

(N = 13)

- Adapting the skills to me (N = 13)

AUTOMATICITY

(N = 18)

- Using the skills becomes automatic (N = 18)
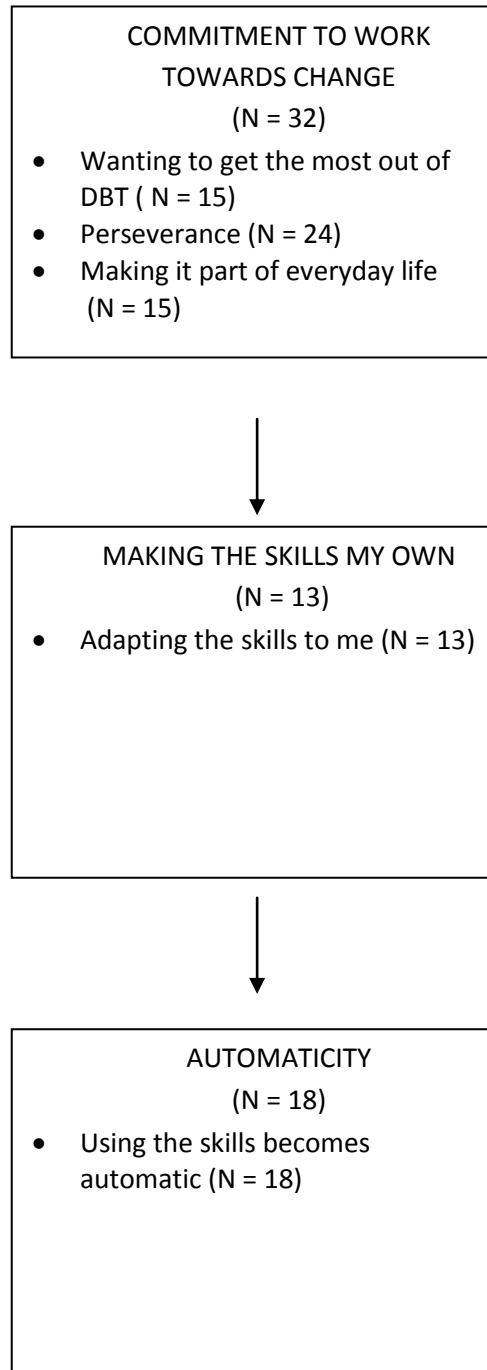
Commitment to Work Towards Change (Theme i)

This theme was endorsed by 32 participants and incorporated three sub-themes: Wanting to get the most out of DBT; Perseverance; Making it part of everyday life. Overall, participants described that wanting to gain as much benefit for themselves as possible from doing DBT gave them the motivation to persevere through difficulties understanding and using the skills, and through doubts that the skills would be able to help them. They emphasised that this process involved a lot of hard work, and they explained the importance of their commitment to the DBT process. They further described that by making the effort to use the skills in their everyday lives, they gradually overcame these difficulties through practising and refining their skill use. Through this process they were gradually able to achieve change in their lives by using the skills to cope with their emotions.

Wanting to get the most out of DBT. For fifteen participants, a key aspect of committing to work towards change was their determination to get the most they could out of DBT. For some participants, this determination was present from the start of therapy and drove them to commit to the process throughout. Often a key motivation behind this determination was being unhappy with their current mental health and behaviour and wanting to embrace this chance to change things. For other participants, the decision to commit to trying to get the most out of DBT happened after an initial period of uncertainty.

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"I just thought, 'Okay I have given in to it' ...... by the time I signed [the contract] I had kind of given myself over to it ......I think probably being more committed in your mind that you are going to do this... probably makes it easier for you because you don't want to be there like wrestling with whether or not you want to be there and whether or not you want to take part in this because then it is detracting from what you are learning" [Participant 26, DBT completer].

"I knew I wanted to go, I knew I had to go.... I guess once you realise that it's either, you come and you learn the skills and try and better yourself, or you suffer with what you've known for however long you've been on the face of the earth..... it was the only option I had." [Participant 40, DBT completer].

"I worked harder at it than I would have done 'cause I was pregnant, because I wanted to give her a better future.... I was at a point in my life I needed to change, I desperately needed to change...... I know when I went in DBT I was desperate for it to work.....Because I was going to do real injury to myself.... I started hitting myself with an iron and just taking blows. I was starting to get constant headaches from the blows I was giving myself" [Participant 35, DBT completer].

Four participants described undergoing this process of commitment later on in the therapy process.

For instance, for Participant 32, after an initial period of not wanting to use the skills, a challenge from one of the therapists persuaded her to try to get the most out of therapy:

"One of the staff members, one of the team members, well she spoke to me at break time and she said I need to try and if I don't try, there's no point in being here. And like, if I feel I'm going to fail then at least you know you've tried ..... it's worth the risk. And I kind of just thought – she made sense at the time she talked to me and I thought 'Well that does make sense because what is the worst that could happen? Like everyone else is really trying so it's only fair that if I turn up then I should do the same'" [Participant 32, DBT completer].

Perseverance. Twenty-four participants described persevering through initial difficulties with understanding the skills, with using the skills and/or with believing that the skills could help them. They described that only by sticking with learning and trying to use the skills, despite these difficulties, had they been able to realise that the skills could help them.

Participant 26 (DBT completer) said that her existing way of thinking had to shift in order to overcome her initial difficulties in understanding the skills:

"I remember some parts of it were quite hard to understand or get your head around.....

I remember in the first session they said for most of you like this won't make any sense and for most of you so far you're going to feel like you know you're struggling, but don't worry and keep it up.... like people say they only really understand what it's about two maybe three months in. And they were right, it kind of clicked maybe two or three months in. So it's almost like your existing mind needs to kind of start to, the way you think needs to start to change a little bit before you start to be able to get enough from it."

Participant 25 emphasised how distressing this confusion in relation to the DBT skills can initially be, but how important it was for her to persevere:

"When I first started I was like, 'What the hell are they talking about?' ... I sat there and I remember getting quite upset because I'm thinking to myself, 'I'm relying on this and I don't have a clue what they're going on about'. And it is… there is that element of anger and frustration and kind of despair 'cause… You do kind of initially pin all your hopes on… Or I certainly did, pin all my hopes on it. And then to just sit there and think, they might as well be speaking Latin to me. Um, but you just stick with it, and obviously the more times you go, the more familiar you get with the group...... Everybody says that it can take up to two, three months before you kind of find your feet. And there's a slight element of um… understanding. You know, it does take a little while".

For several participants, initially not understanding the skills led to feeling that the skills were 'rubbish' – and hence led to doubting that the skills could work for them. They described overcoming both these doubts and their confusion during the course of therapy. For example,

Participant 37 (DBT completer) described difficulties understanding the skills coupled with doubts about whether they would work for her. Again, she emphasised the importance of persevering through this:

"When you sit in group and you listen to all this, you think, 'What a load of old rubbish. What's the point in coming here? Is it worth it?' But then a couple of the girls almost finished said, that's how you feel, and then it will suddenly make sense. And it did. And I don't know how long down the line it did. I can't rightly say 'cause it could have been four months, six months, whatever. But I know at this point in my life I understand exactly what they're talking about. And you know, you sit there week after week and you think it doesn't go in, and it just suddenly clicks and it starts to kick in…..Suddenly you take an interest in what's going on and you start participating a bit more and you understand. And it makes you feel better and then you look forward to going to group."

Five participants described feeling initially that the skills would not work for them because their emotional distress was too extreme. They explained that by actually trying to use the skills and finding that they did work, they were able to overcome these doubts:

"I'm much more willing to accept that they could help...... I think it was probably around the self-harm, actually.....I always thought that that would never stop, because the emotions were so intense. And I always thought there'd never be anything strong enough to sort of sort that out. And I think, once that started to happen... 'Cause each week when I see [individual therapist], um, she gives me um... a report of how long it's been, she'll say how many weeks it's been. Um, and that's really helpful, 'cause it sort of... it gives you something to... gauge yourself on, really." [Participant 4, DBT completer].

"I was very like, 'This is not going to help me, I'm mad and nobody is ever going to change my brain and the way that I think, nobody can change the way that I feel 'cause it's a feeling'. So I was actually quite closed off I suppose at the beginning...... Now I've got a lot more confidence in myself and my ability to use them.....I suppose if I've practiced and succeeded in using the skills it kind of reinforces that I can do it.....it's kind of made me feel a little bit more confident in myself" [Participant 32, DBT completer].

Participant 6 (DBT completer) describes how hard using the skills was at first:
"None of it's been easy. I would say absolutely none of it's been easy. I mean it's very easy now to sit, twelve months down the line towards the end of the sessions, er... and to sit there and think, 'Oh it's easy', because I'm doing it quite often. None of it was easy to start with, it was really hard and it was very, it was... it was a very

big challenge on me and the way I thought and, you know, breaking habits that I'd

been doing for [xxx] years is quite tough, you know..... At the beginning it was very

hard, and you know, slipped up quite a lot, things like that. .....It's become a lot

easier now, it's become a hell of a lot easier now."

Similarly, Participant 18 (DBT completer) describes how difficult and tiring using the

skills can be initially, and that persevering with trying to use them through the

course of therapy is a journey with lots of ups and downs, but does eventually pay

off:

"It was a journey of going up and down, up and down, of using them, them helping,

but it's hard work. You know, it's... it's trying to train yourself to do things that you

don't do...... Sometimes you just get f**ked off with trying, that you just can't be

assed anymore. And then you kind of realise that... then you can kind of look back

and think, no it did help. And then you start again. And it's sort of like that, up and

down, up and down, up and down...... For me... most of my improvements were

done in the last six months, it took me a long time."

Making it part of everyday life. Fifteen participants emphasised the importance of making the effort to think about the skills and to use them in their everyday lives as often as possible.

"In the grand scheme of things, there isn't… you know, it doesn't take up hours and hours of your day every day. You know, it's only a little bit of effort that is needed. You know, a little bit of reading every now and again, write your diary card out each day. People don't need to sort of be under the illusion that it's gonna take up six or seven hours of your day 'cause it's not like that at all. But you've got to have some element of focus 'cause if you don't, it's not going to work ….it's just about giving yourself five, ten minutes, even if it's only that a day, just to have that little bit of focus". [Participant 25, DBT completer].

"If you just go to class and you go to your one to one then walk away and then never think about it, it doesn't... it's not gonna help you. You've really got to try, and then when you try you start realising down the line, oh you know what, actually it does work" [Participant 18, DBT completer].

Relatedly, some participants highlighted that making the effort to use the skills frequently – even daily – gave them an opportunity to practise their skill use and hence to improve:

"I was doing meditation before, but now I mean I do it daily and try and improve daily" [Participant 35, DBT completer].

"Sometimes I try and sit myself down and say, right, for an hour you're going to do this, this skill to help you improve" [Participant 16, DBT completer].

"I try to be mindful every day in something or other, so I get used to practising the skills. 'Cause you... it's really peculiar, you do have to practise". [Participant 8, DBT completer].

However, two participants explained that they found practising the skills every day quite difficult to achieve:

"Sometimes I struggled with putting the homework into practice. Sort of, you know, remembering to do stuff every day.......I don't think anyone did really, not every day" [Participant 31, DBT completer].

"He'd say like 'Try and make it as part of your daily routine. Before you go to bed, do like five minutes of breathing'. But I'm lazy.....I'll be playing Playstation all day and then I'll be like 'It's bed time now, nah, I ain't doing nothing else, I'll just go get on my bed and go to sleep'" [Participant 40, DBT completer].

Making the Skills My Own (Theme ii)

Thirteen participants emphasised the importance of personalising the way they understood and/or used the skills, in order to adapt the skills to their own particular lives and way of thinking. This theme had only one sub-theme: Adapting the skills to me.

Adapting the skills to me. Participants described a process whereby, over the course of DBT, they would gradually learn to associate their own personal meanings and interpretations with the skills. They then incorporated these meanings into their understanding of the skills, and into the way they used the skills. Furthermore, as therapy progressed, they learnt that not all skills were equally effective for them. They then learnt to concentrate on using the skills that worked best for them and their personal circumstances.

For four participants, their personal understanding of the skills was informed by their existing knowledge or framework for understanding the world. For example, Participant 38 explained:

"I found there was a really good fit between the kind of psychological input and the more kind of zen part of it. Both were areas I was intensely interested in as a kid, so concepts like radical acceptance, they just slotted straight in to my existing value

structure....An awful lot of the techniques I was able to integrate in to my existing

value system or modify my existing value system to accept them" [Participant 38,

DBT completer].

Seven participants described using the skills according to their own personal

understanding of what they meant. They explained that this did not necessarily

correspond to the ways in which the textbook suggested the skills should be used –

and indeed, that sometimes their own understanding of the skills and the

surrounding terminology was more important to them than whether or not their

understanding matched the 'textbook' definitions.

Participant 26 explained that being able to develop her own understanding of the

skills in terms of how they fit into her own personal life had been very helpful:

"When you're in the group sessions.....in your mind you kind of learn to associate

what the lesson is about with what your own life, so then you can make notes to say

'Oh like this'. And you read back through, so yeah, you understand exactly what it

means to you" [Participant 26, DBT completer].

Other participants described similar examples of developing their own, non-

textbook, ways of using the skills:

"I think well, you know, 'What does emotional regulation mean?' But of course,

once you've gone through the actual structure of the course and that particular

element of it, you do understand it, so it just becomes a word, it doesn't necessarily

have the meaning... the clinical meaning or the technical meaning....I tend to use

the headings, and then sort of use my own language underneath that.....So I now

know that for me, emotional regulation is about how to understand my emotions,

how to... how to deal with them, the emotions, how to look at the function of

emotions and what... what... what they mean and what they... what they do for

me" [Participant 6, DBT completer].

Relatedly, Participant 19 explains that trying to use the skills strictly according to

the textbook actually hindered their effectiveness and caused her anxiety. Only

when she was able to be more flexible and independent in her use of the skills did

they really start to work for her:

"Because I was so focused at trying to be perfect at it and making it making it work

just as it should by the book, I think that...it was hindering like the actual

effectiveness of it...I think it was a fear thing...Since I've left and I've just had the

skills in my head and in my mind, they just sort of click into place whenever I want to

use them….. …..I'm just, I'm not so focused on doing everything exactly as it says in

the manual". [Participant 19, DBT completer].

For four participants, learning over the course of therapy which skills worked for them and which ones did not had been very important in order to get the most out of their skill use:

"I began to have favourite skills and less favourite ones and as soon as you start choosing what you like and what you don't like, it's not something scary anymore. It's almost your friend, your thing to turn to when you're low, when you're down, when you don't know how to get out of a situation" [Participant 12, DBT completer].

"People can pick bits from the course that are relevant and do work, 'cause not everything that is taught works for everybody..... Now for me, a nice forty mile bike ride is the way to blow the cobwebs away and feel better. Now, not everyone's going to want to get on their bike and do forty miles are they? You know, it's all about what people want to do to make themselves feel better" [Participant 25, DBT completer].

Automaticity (Theme iii).

Eighteen participants described a process whereby, through using the skills frequently over the course of therapy, they eventually found that they were using the skills without having to think about it. That is, their automatic response to

experiencing emotional distress became to use the skills. They no longer had to actively remember to use the skills, or to think about which skills to use or how they were going to use them. This theme had only one sub-theme: Using the skills becomes automatic.

Using the skills becomes automatic. Participants described skill use becoming automatic, such that they did not have to think before using them, and indeed sometimes only realised they had done so after the event:

"It becomes automatic and you use them so frequently that it just becomes a part of your day to day life" [Participant 12, DBT completer].

"I do use the skills without even noticing so that's all right. Like, I mean the first day I went to college, I was really scared about going there, it's massive, I mean there's this massive building and all these teenage kids all rolling about like they rock and that ..... I tried to observe what was going on, tried to think 'Right, I can do this', cheerleading myself, challenging myths... Without even realising it I just done them and it wasn't until I got home and looked at my diary I was like 'Okay!'" [Participant 36, DBT completer].

"People who'd been in the group ....before me used to say like 'You do it without realising', but I was like 'Well not me, I won't do it without realising!', but yeah you

do. Eventually. Yeah you do eventually do it and think like 'Oh yeah I was mindful then!'" [Participant 33, DBT completer].

For four participants, the DBT skills became so ingrained that they referred to them as "part of" themselves, an integral aspect of their identity:

"I can't break the mindfulness skills from who I am" [Participant 10, DBT completer].

"The good thing about DBT is that skills become ingrained. Over that year, the more you do it the more it becomes a part of you, till you're doing it without knowing you're doing it...... I really think they do become really like a glass of water - you just do 'em" [Participant 35, DBT completer].

"Yeah I suppose towards the end.... it become a bit more part of you... Towards the end of it, it doesn't feel like you're using them so much because they... you're not having to make such a forceful effort to use them." [Participant 18, DBT completer].

Research Question Three, Part C: What Factors Facilitate Patients in Gaining Maximum Benefit From the Skills?

Participants highlighted some factors which they felt had been helpful in enabling them to learn, use and gain maximum benefit from the DBT skills. These factors were categorised into three themes: *The Skills Group (theme i); The Individual Therapist (theme ii); Friends and Family (theme iii),* as presented in Figure 7.3.

Figure 7.3 What factors facilitate participants in gaining maximum benefit from the skills?

THE SKILLS GROUP (N = 20)	THE INDIVIDUALTHERAPIST (N = 23)	FRIENDS AND FAMILY (N = 13)
• Sharing of knowledge (N = 17) • Everybody engaging together (N = 14)	• Help explaining skills (N = 9) • Help applying skills (N = 20)	• Supporting skill use (N = 13)

The Skills Group (theme i)

Twenty participants emphasised that certain aspects of the skills groups were particularly helpful in aiding the process of learning and applying the DBT skills. Overall, what seemed to be most helpful about the group was that it was a shared learning experience, in which everybody was included. Additionally, the group seemed to be most helpful when it was a fun and interactive environment. The aspects of the skills group that participants found helpful were categorised into two subthemes: Sharing of knowledge; and Everybody engaging together.

Sharing of knowledge. Seventeen participants highlighted that the group offered them an essential opportunity to exchange knowledge relating to the skills with each other. In particular, they emphasised the importance of being able to learn from each other's understanding of the skills and experiences using them. Participants explained that this enabled them to build on their own understanding of the skills, and also to gain insights on how best to apply them to their own lives.

"Other people would come and be like 'Oh, this happened, this situation was happening and this is how they acted'. .....You can always think about situations of your own that are similar to that, and then you think ' Ah I guess I could do it that way', y'know....... I thought it was useful, cause I can take more from someone's

personal experience than if they just give me sometimes a hypothetical question"
[Participant 40, DBT completer].

"As we started going over the skills and we'd hear one another's answers when presenting homework in class, that's when it really sunk in. Although I'd already written the homework, understood it, demonstrated it throughout the week, when I heard the other classes... other members' answers, I'd think, 'Okay, that's another way of using my skill'. 'That's a third way of using her skill'.....And when you hear how they've implemented certain skills, you think, 'You know what, I used this skill this week but next time that could work for me'" [Participant 12, DBT completer].

Several participants highlighted that, at the beginning of therapy, talking to more experienced group members about the process of learning and using the skills had encouraged them to persevere through difficulties understanding or using the skills, or doubts that the skills would work for them. This process was highlighted in the previous section as essential for participants to gain maximum benefit from the skills (see p. 290-294).

"I was like 'This is never gonna work'..... [But] other people were saying it worked.....It was like nothing else has worked, if people are saying this shit works, I might as well try it" [Participant 39, DBT completer].

However, four participants did not find hearing about other patients' use of the skills particularly helpful. For Participants 34 and 27, this was because they felt their own understanding was sufficient:

"We had to do the homework and that, and everyone's gotta read their homework next week. It.... gave you a bit of insight into what... into how they put it into practice. I didn't find that that helpful in a sense because I thought I had quite a good handle on it myself, you know" [Participant 34, DBT dropout].

For Participant 24 (DBT dropout) this was because she did not believe them when they said the skills had helped them:

"I felt like when other people were saying, oh yeah it really helps me, I just thought, you're lying. Even though I didn't know if they were lying, I just thought, you're lying, because this is stupid."

For three participants, learning from the group therapists about how they used the skills to deal with problems in their own lives was particularly helpful. Importantly, it gave the participants a sense of connectedness with their therapists and made learning the skills a less isolating experience; less of a 'them and us'. This leads into the next sub-theme: Everybody engaging together.

"They would sometimes give examples from their own lives where you'd see that actually outside of DBT they have their own problems that were common to you, you know, perhaps loneliness or trying to balance life work, you know, family tensions. And that was nice, that wasn't sort of smug 'Look, I've got the answers, I have got the perfect life, you need to do this,' it wasn't prescriptive at all, you know....and I thought that was commendable..... You got the feeling of flawed humans teaching other flawed humans how best to get through a difficult life" [Participant 38, DBT completer].

"Sometimes they put their personal experience in as well which I think is helpful.... they do talk about using the skills in their own lives..... It stops you feeling quite so much like a schoolchild; makes it more of an interactive experience...… It stops you as well from feeling disconnected from the rest of humanity rather than just being sort of… someone who always has problems" [Participant 31, DBT dropout].

Everybody engaging together. Fourteen participants explained that learning how to use the skills during skill group was much easier when there was a fun, lighthearted atmosphere in the group, with everybody participating, and with everybody included. They explained that this atmosphere was created through the interactions between group members and through the efforts of the therapists to teach in a fun way and to make sure that everybody understood what was being taught.

For example, Participant 2 (DBT completer) explains that is easier to concentrate and take in the skills teaching when the atmosphere in group is light hearted:
"I find the groups where I learn... where sort of everything sinks in a bit more, are the ones that have been a bit lighter and there's been a bit of laughter... Groups where there's sort of just more talking, and not a lot of lightness, they're harder to take in, harder to concentrate on the skills, because your mind starts to wander and it's harder to focus".

Similarly, Participant 37 explains that is it easier to understand the skills material when it is explained in a fun way:
"I think some of them are better at making you understand than others.... I think particularly one of them is more on our wavelength than the other two. Um, because I think that one of them… both of the other two make you feel like we're

school kids. And um, the one that you understand more, he's more like, a little bit

more jokey."

Participant 25 (DBT completer) emphasised that interaction within the group, with

everybody involved, was important for maintaining attention:

"There are certain teachers that will work round and ask people for examples, and I

think that needs to be kind of maintained to keep people's attention.... you need to

keep that interaction going, be it a bit of board work from the tutor or… or just

getting the interaction as opposed to someone standing there and just reading stuff

out" [Participant 25, DBT completer].

Linked to this, seven participants emphasised that the therapists put in the effort to

check that everyone had understood and were always willing to re-explain things:

"If I don't understand then I do ask and they explain .....I think they must think 'Oh

god I've explained this like a hundred and ten times', but they don't act like 'Oh my

god I am so bored of this'" [Participant 33, DBT completer].

"During the fifteen minutes break, if I don't understand anything, they'll just go

through it again......Because obviously they know that sometimes it might be a bit

hard for me to understand something. So, even yesterday, I was like, writing at the

back of my paper, and so at the end of it, they went through all the questions that I

had" [Participant 20, DBT completer].

The Individual Therapist (theme ii)

Twenty-three participants said that their individual therapist had been important in helping them to understand and use the skills, by explaining the skills, and giving suggestions and feedback on how they could use the skills with their particular problems.

Help explaining skills. Nine participants said that their individual therapists had played an important role in helping explain the skills to them, especially when they did not understand the explanation that had been given in the skills teaching group:

"When I didn't [understand], I'd go to see my one to one therapist, and he would explain them to me, and they would become clear....I understood after I went to him" [Participant 13, DBT dropout].

"Anything that I didn't understand, I knew that I could ask him without feeling dumb. Like I said, I don't like for it to look like I don't know shit. So yeah, it was very hard for me to even ask him for help, but once I got to it and I got used to doing it, it was - he gave me a lot of support. A lot of help. Whenever I needed it basically." [Participant 39, DBT completer].

However, three participants did not find the explanations from their individual therapists helpful:

"*He said to me he'd go through the homework with me, but I still didn't understand it*" [Participant 21, DBT dropout].

Help applying skills. Twenty participants mentioned that their individual therapist played an important role in helping them to apply the skills to their daily lives. In particular, individual therapists would suggest skills to use to help with particular situations that were problematic for individual participants and would work on helping them to put the skills into practise. Therapists seemed to suggest skills to use in three contexts: prospectively i.e. for future difficult situations that were likely to arise, in the moment i.e. when participants called them during a moment of crisis outside of therapy, and retrospectively i.e. when giving feedback on participant's behaviour over the past week.

Participants 4 and 39 explain how their therapist suggested skills for use in situations that were likely to arise in the future:
"*I have a problem in that I spend... most days, I spend a lot of the time in bed....and that's something that I'm working on with [individual therapist]..... we're coming up with a timetable of things to do to stop you doing that*" [Participant 4, DBT completer].

Participant 39 further explains how her therapist helped her to overcome her

doubts about trying to use the skills he had suggested:

"He was the one who a lot of times pointed out where in my life I could use what

skills. So - because he was the one who I used to talk to and he had all my diary

cards and he knew what happened on a daily basis....He'd do it in a very sly way.

He'd be like 'Okay, fine, don't use it, and then this will happen!' And you know it's

true, you know it's gonna happen. And then he'll be like 'Or, since you've got nothing

to lose, you could give this a shot'" [Participant 39, DBT completer].

For six participants, role playing with their therapists was a particularly helpful way

to practise future skill use for situations they knew would arise:

"I had a problem with my boss. Um, he was giving me too much work...And

[individual therapist] and I went through the DEAR MAN, to sort of say, you know,

'No, look, I can't take on anything else'... sort of just be positive about it and have a

good outcome" [Participant 4, DBT completer].

"In the role play, right, you've got nothing to lose, you know that this is pretend. But

you can come up with every single scenario, and every single 'He might say this or

he might say this or this might happen or this might happen - so what will you do if

this happens?' And so you know what to expect. You know you've got everything

down before you actually go into the situation. So yeah, it helped." [Participant 39, DBT completer].

However, three participants found that role playing conversations with their therapist was not helpful, because their therapist could not realistically 'play' the other person in the conversation:

"One of the things - I've only ever done it once -was a role play exercise with my therapist, which I found incredibly hard to do. Because the therapist is trying to react the way she thinks my wife would react to a situation, they don't know each other, therefore it's completely false. And doesn't really work at all....The therapist was trying to role play my wife and getting it completely wrong" [Participant 3, DBT dropout].

Five people said that they found it helpful to telephone their individual therapist when they were feeling very distressed, so that their therapist could help them apply the skills to cope with their emotions:

"When I phoned him today I said, 'Argh'... I said 'I've had enough of this now, I'm frustrated with it all... I just wanna cut myself' ....and I was crying and all that....He said, 'Well why don't you take your bike....and you'll use up a bit of energy?'.....So you know, he'll sort of, remind me of skills to try" [Participant 1, DBT completer].

"She just… you know, says on the phone if I'm upset, 'Well have you tried this, have you tried that?'" [Participant 37, DBT completer].

However, for 7 participants, calling their therapist for help with applying the skills was not helpful at times of distress, usually because they did not want to ring:

"I didn't use the telephone option. 'Cause obviously with your therapist you can call them if you're in crisis ….I just have this thing about phones, I hate talking on telephones" [Participant 25, DBT completer].

"When you're really low, even when you know how to use skills, you're so upset you don't even ring [individual therapist] and come up with a crisis call. You don't wanna talk about it and you don't wanna use what you know" [Participant 12, DBT completer].

The most common context in which participants reported finding their therapist's input helpful was in giving feedback on their behaviour over the past week; specifically, highlighting whether their behaviour was 'effective' and where they could have used skills to improve the situation. Thirteen people explained that this helped them to realise how they could apply the skills to their particular problems and thus helped them to behave differently the next time a similar situation arose:

"If there was an incident over the course of a week or whatever, she would focus on that and she would ....take me back even the day before and....she would make me go through the process of examining my emotions, my thoughts, my feelings, my judgements, what I was doing. And seeing where the points were that I had a choice. Um, and was the choice I took appropriate at that time, was the choice helpful, was it based on a judgement....or was it a... was it a factual thing?"
[Participant 6, DBT completer].

"I remember a lot where I would end up doing something, like an instance where I felt really sad and felt to self-harm, we would talk about what could have happened differently before that thought came that you know like, Distress Tolerance, what you could have done to...to change that situation, different distress techniques, tolerance techniques that you could use" [Participant 19, DBT completer].

Friends and Family (theme iii)

Thirteen participants explained that their friends and/or family supported them in learning and using the DBT skills. This theme had only one sub-theme: Supporting skill use.

Supporting skill use. Participants reported that their friends and family had supported their skill use in a number of ways: by discussing the skills with them, helping them understand difficult concepts, encouraging them to use the skills, or even using the skills themselves.

Participant 29 described how her partner helps her when she doesn't understand the homework she has been given from the skills group:

"When I go home.... I go '[Partner], what do I do?' And [Partner] explains it..... He's quite good at understanding things – better than I am!" [Participant 29, DBT completer].

Participant 38 explained how discussions with his wife about some of the concepts in the skills teaching had been helpful:

"'The desire to fix everything is wilful' - I took that back to (Wife) and we both found that a fascinating concept, you know. I mean, threw it up in the air, turned it round, looked at it, tasted it, see if it rolled, and I thought it was really useful......talking to

her about stuff, about the skills and you know what I've done and so on and so forth

was really useful for us both" [Participant 38, DBT completer].

Seven participants explained that their family or friends had actively encouraged them to use the skills:

"Most of the teachings I have learned I have spoken to my sister about..... It helped

me with the skills because it kind of encouraged me to do my homework, like my

sister would be like 'Have you done your homework?', and make sure I did it and so

it was just really nice" [Participant 26, DBT completer].

"I spoke to [Partner], my other half, about what I learnt.....Just being able to sort of

explain to him what I'd learnt, he can then in turn sometimes when I was maybe

lacking in using my skills, he would be able to give me that kick up the backside"

[Participant 25, DBT completer].

Participants 4 and 35 noted that their partners began using the DBT skills to communicate during conflict, having learnt how to do so by attending the family group or by observing the participant. They explained that this in turn helped them to use the skills, and helped to diffuse the conflict:

"Cause [Partner]'s also gone on the family DBT group. Um, she'll sort of say... 'This is

a fact'. Or 'What you... what you're saying is not based on fact, give me a fact'. And

then it'll just... it just seems to take the heat out of the argument somewhat"
[Participant 4, DBT completer].

However, not all participants found their friends and family were supportive of their skill use. For example, Participant 18 explained:*"My partner wasn't very supportive.....He pretended like he was. He went to the family group. He just walked in and walked out, didn't ever talk to me about one thing that was said in there or... I thought, 'Why did you even bother going?'"* [Participant 18, DBT completer].

Research Question Three, Part D: What Factors Act as Barriers to Gaining

Maximum Benefit From the Skills?

Participant's descriptions of factors acting as barriers to learning, using and gaining help from the skills were categorised into two major themes*: Negative Aspects of Skills Training (theme i); Emotions Take Control (theme ii).* The first theme concerns difficulties learning the skills, whereas the second theme is more concerned with difficulties putting them into practise. The themes and their sub-themes are depicted in Figure 7.4.

Figure 7.4 What factors act as barriers to gaining maximum benefit from the skills?

NEGATIVE ASPECTS OF SKILLS TRAINING

(N = 34)

- Anxiety during skills groups (N = 23)
- Too much information (N = 25)

EMOTIONS TAKE CONTROL

(N = 35)

Overwhelming emotions

(N = 32)

Skills do not enter mind
(N = 18)

Giving up
(N = 18)

Why should I?
(N = 13)

Anxiety - provoking
(N = 19)

Revert to old coping strategies

(N = 19)
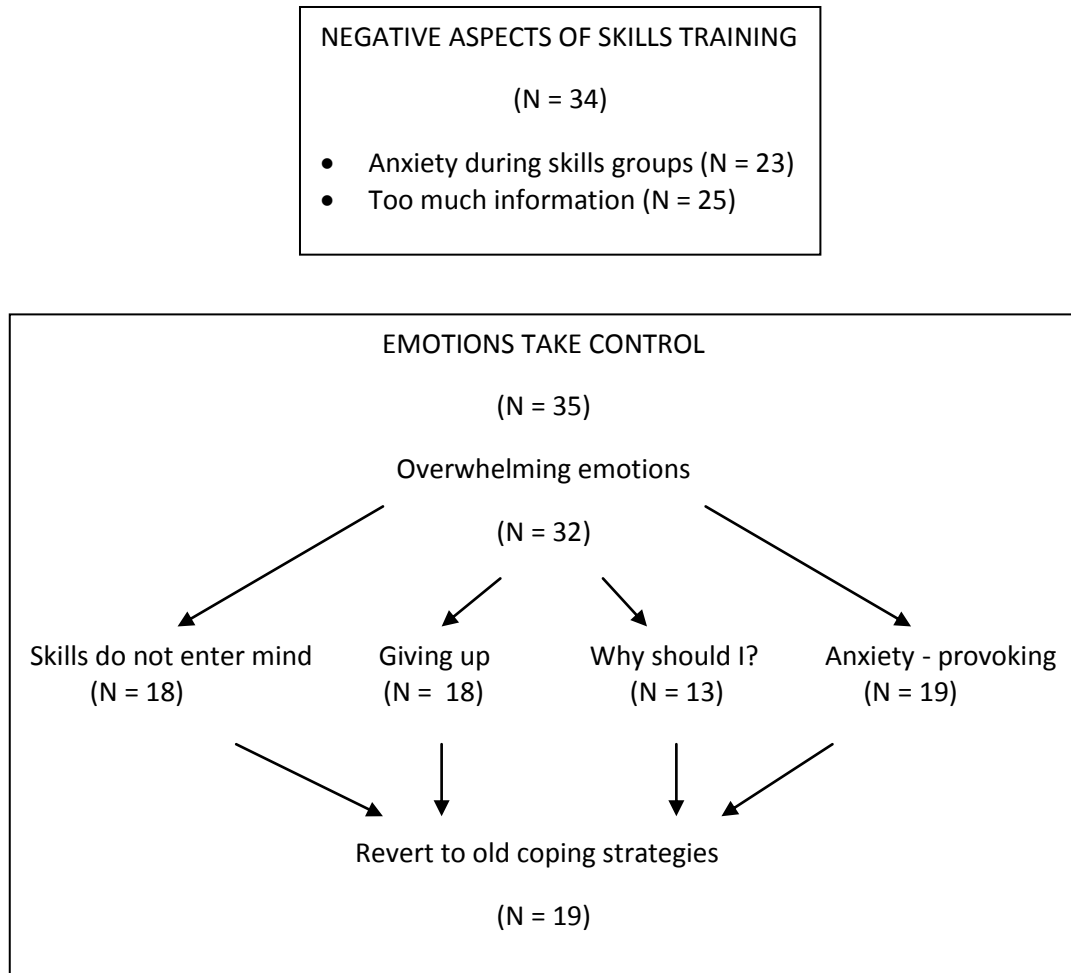
Negative Aspects of Skills Training (theme i)

Thirty-four participants reported that problematic experiences with the skills training had interfered with their ability to learn the skills. These problematic experiences were categorised into two sub-themes: Anxiety during skills groups; Too much information.

Anxiety during skills groups.

Twenty-three participants described how various anxieties during the skills teaching groups had interfered with their ability to learn the skills. In particular, they reported feeling anxious about meeting new people and participating in the groups. Sometimes this interfered with their ability to concentrate during the group sessions, and hence made it difficult for them to take in what they were being taught. For some of these participants, this anxiety was restricted to the first few group sessions:

"When I finally got there it was still quite shocking. A bit much......Because it's such a small room as well. And there was loads of people round the table. .....I felt kind of a bit claustrophobic and nervous...... It's kinda like a daze, and you don't remember it.....You've still got worry thoughts, still in your sad.. your mood's still there and stuff, and you're still in that frame of 'Is this gonna work?' "or 'I'm never gonna feel like people that have finished'" [Participant 29, DBT completer].

"I think you have to write off the first couple of classes because it's very much overwhelming. You're like, 'Oh my god I'm a new person, what am I doing here? I don't understand it'. And you've just got too much going on to focus on what is being taught anyway" [Participant 25, DBT completer].

For others, this anxiety did not subside and contributed to their eventual drop out from treatment:

"I didn't take nothing in, everything just went over my head......All I can put it down to is that I didn't feel comfortable in the group and I didn't wanna be in there, so... like, I was, I was like, listening, but it weren't going in. So it just went over my head. I just... I just couldn't... I just couldn't understand it. I just wanted to get out of the room, that's all I was thinking of, is getting out of the room" [Participant 11, DBT dropout].

"The minute I kind of walked in the room and I thought, 'They're all strangers', and straight away the panic welled up and I just felt sick..... I didn't learn anything to be honest with you because… I was so nervous.....that I wasn't really taking it in… I was listening but it kind of wasn't going in. It was in Chinese sort of thing and I wasn't… I wasn't processing it....So all the time, after every time I went, I was thinking,

'Please, please let me be ill so I don't have to go'. And then it genuinely happened"
[Participant 22, DBT dropout].

For some, their anxiety about admitting that they did not understand, or asking
questions, meant that they were left not understanding certain aspects of the skills:

*"Probably one module I don't think I really understood was Interpersonal Skills. I had
a bit of trouble with that one......What the tutor was explaining sometimes - I was
ashamed to ask for him to be repeating that..... I didn't want to say"* [Participant 13,
DBT dropout].

*"My first three months I was … I didn't understand most of it and then, I wouldn't
ask for help cos I was shy and withdrawn and… and they used to say 'Do you all
understand it? I just used to say 'Yeah'.....Now I'm alright, I ask them. After three
months of being there I started being able to talk and asking them"* [Participant 9,
DBT completer].

*"I didn't want to keep saying, 'I don't understand'… 'cause that was humiliating to
keep saying"* [Participant 22, DBT dropout].

Related to this, some participants felt that the therapists responded to them
reading out their homework or answering questions in a strict fashion. They likened
this to being 'told off'. There was a sense that these participants felt that they were

treated like school children, and this was offputting. Indeed, for some participants, it made them not want to come to the skills training, and contributed to their eventual drop out:

"I was telling to the therapist 'Coming home in the dark, I must be naïve.' She said 'I'm going to stop you there! Stop stop stop! No no, sorry [Participant 30], we are stopping you here'. And I didn't like it.....It made me feel like just to walk out..... I definitely knew that it was going to be difficult for me in the group.... to give the answers in the borderline book.... because I already found, in the past sessions, that they are strict. It's more or less like a school. The teacher wants answers from you" [Participant 30, DBT dropout].

"Reading your homework and plus reading a part of... what you've got to do in front of everybody, you know. And you don't understand it and you…. You're worried about, you've got your homework wrong when you go to the group. And they tell you off in the group, they don't actually tell you off by yourself" [Participant 21, DBT dropout].

"It was like a child being at school, and that's another thing you see, it's like a school environment. And school to me is a terrifying thought, I don't like school. It's… it's terror for me, school..... And it is like a school environment because you've got like a classroom, you've got the teachers as such, and it's just sort of nervy from the start

really. So I kind of… I kind of couldn't relax to give it a chance.....And um, they can be very firm at times, the staff… I mean obviously I appreciate they've got to, I'm not complaining on that score. But the more authoritative they were, the more that I was convinced it was school.....The more I was trying to sort of say to myself… you know, 'Sort yourself out, it's not school, it's… it's um, just a group meeting'...the other half of my voice was sort of saying, 'Well it is school. There's no two ways about it, you're in school. You've got to behave'. And I was getting more and more agitated" [Participant 22, DBT completer].

Too much information.

Twenty-five participants reported finding that the information presented in skills classes was difficult to take in, because it was a lot of information, presented quickly and with complex wording:

"The one thing is, is there is a lot of information... there is a lot coming at you....there is a lot to remember so it is... it does get a bit... mmm ok... very difficult at times" [Participant 6, DBT completer].

"I feel like with emotion regulation it's a lot in terms of content and even how many skills there are to it.....and sometimes I feel like it is a bit rushed .....and then it feels like 'Slow down, you've got to give us more time!' ...Sometimes it feels really

confusing if you try and teach us like more than one thing at once" [Participant 33, DBT completer].

Many participants in particular felt that the language used to explain the skills was too complicated, and that this made it difficult to understand and take in the information:

"They should explain to you more and in a better way instead of the way they explain to you now … instead of big letters, instead of big words, letters and things like that" [Participant 21, DBT dropout].

"It was the book that did it. It was like, it was just... if you read the stuff that is written about mindfulness right: 'Do this, but don't do this, do this and like this', and it's just like, just say it in English! It was too much to take in" [Participant 39, DBT completer].

"It's difficult to translate the way – the DBT language and the way they want you to speak - into normal interaction..... It's like the jargon....It took me quite a while, while I was in DBT, to understand some of the language that they're using" [Participant 32, DBT completer].

Thirteen participants reported finding the various acronyms used in DBT particularly difficult to understand, and difficult to remember:

"I don't understand them.....ACCEPTS......Each letter forms something, a word.....And in each one, I don't – I can't quite grasp the idea of it – of doing it" [Participant 29, DBT completer].

"The DEARMAN, that was quite hard to get your head around. I am still not quite sure if I can tell you what a DEARMAN is to be honest.....A lot of times when you need the DEARMAN you don't have time to sit there and structure it" [Participant 26, DBT completer].

"DEAR MAN - mnemonics, I can't do mnemonics. I think that… I can understand why they're there, because some people find er, mnemonics very helpful, but there's… I can't do them at all, I can't remember them. And automatically I'm very guilty for putting up a barrier 'cause I'm like, 'How are you supposed to remember that?' And I… so I'll remember the initial part of it so I'll get the gist of what it's about, but I probably don't use all of the skills for DEAR MAN because I can't remember them" [Participant 25, DBT completer].

Emotions Take Control (theme ii)

This theme was endorsed by thirty-five participants, and had six sub-themes:

Overwhelming emotions; Skills do not enter mind; Giving up; Why should I?;

Anxiety-provoking; Revert to old coping strategies. As depicted in Figure 7.4,

participants described that the experiences within the sub-themes sometimes

occurred sequentially. That is, participants reported experiencing intense and

overwhelming emotions, such as anxiety, fear, anger or depression, that 'took

control' of their mind (Sub-theme 1). Usually these were emotions related to the

precipitating situation but sometimes they could be related to intense anxiety

about using the skills. Some participants explained that intense emotions meant

that they did not think of using the skills (Sub-theme 2), gave up on using the skills

(Sub-theme 3), or did not see why they should use the skills (Sub-theme 4). For

others, intense anxiety about using the skills prevented them from doing so (Sub-

theme 5). The end result of each of the experiences in these sub-themes was often

that they reverted to their old coping strategies such as self-harm, aggression or

avoidance (Sub-theme 6). However, participants did not always explicitly link their

experiences in one sub-theme to that in another – thus Figure 7.4 represents the

way that the sub-themes are connected only in some cases.

Overwhelming emotions.

Thirty-two participants explained that experiencing overwhelming emotions could sometimes be a barrier to being able to use or benefit from the skills. For nineteen of these participants, this was linked to a feeling that these intense emotions seemed to 'take over' their mind such that they felt a loss of control over their own thoughts and behaviour, and hence were not able to use the DBT skills:

"There's absolutely nothing I could do to stop myself. It's like sitting there watching a TV programme. You know, you can see it's all happening but you can't switch it off, you've just got to go with it. You know, it's almost like something in my head: 'Go on, go on, keep going'. So I am my worst enemy" [Participant 22, DBT dropout]. *"Sometimes my mood swings take over so much....My emotions seem to take control of me a lot. I can't seem to get a grip of myself"* [Participant 13, DBT dropout].

"Sometimes I get too emotional and I just can't use it. It just gets above that line and I just can't. No matter what I do I just got to go with it, burst into tears or whatever 'cause I just can't stop it. You know, you get the odd occasion when it's like that, not very often though" [Participant 37, DBT completer].

"Sometimes I do just get consumed in what I'm doing and my emotions run away from me..... most people will experience a time when they will just get consumed by an emotion and they find it hard to use the skills" [Participant 25, DBT completer].

"There are times when you can't use the distress tolerance or emotion regulation....It's just, it just feels like too much sometimes.... it feels like I just can't, it feels like I am going to explode or something" [Participant 33, DBT completer].

Participant 32 emphasised that it is only once her emotions have escalated to an intense level that she experiences a lack of control – if her emotions are less intense, she can still use the skills:

P:"It depends what level of anxiety I've got. If it's at it's peak then no, nothing will help me – I don't contact my friends at all, but if I feel the anxiety rising then I will, I do it before it gets to a certain level.....The idea is to intervene before. Sometimes it can spiral really quickly but other times you can sense it."

Similarly, Participants 33 and 39 emphasised that it was imperative to notice their emotional reaction while it was still not too intense, as once it escalated, it was impossible to use the skills:

"Say you would have recognised it earlier, so if you were feeling like distressed or whatever then you sort of can intervene earlier but if you're like already at a five, it's already quite difficult to like stop it" [Participant 33, DBT completer].

N.B. *"at a five"* refers to the DBT scoring of level of emotional intensity and urges to self-harm, where 5 is the maximum.

"If you didn't clock yourself as soon as something happened, that's it, you would go down the wrong road. I wasn't able to pull myself out, and that's what happened a few times" [Participant 39, DBT completer].

This ties in with the sub-theme 'Catching emotions early' under 'How Do Participants Use the DBT Skills?' (p. 255-257).

Skills do not enter mind. Eighteen participants explained that, sometimes, using the skills at times of emotional distress did not even enter their mind. For fourteen participants, this was explicitly linked to experiencing intense and overwhelming emotions. Thus the experiences under the current sub-theme could often follow on from those described in the sub-theme 'Overwhelming emotions' (pp. 329 to 331). They explained that their emotions overwhelmed their thoughts to such an extent that it felt like *"blackness"* [Participant 22, DBT dropout] or a *"massive fog"* [Participant 25, DBT completer], and as a result it was very difficult to remember to use the skills or to think about using them:

I: *" Were there any times when you were feeling really emotional, I don't know,*

really sad or really angry and you tried to use something [individual therapist] had

said or..."

P: *"No. 'Cause when I am really sad or really emotional, nothing comes into my*

mind then. It's just... all I can focus on is that feeling. I can't think this or think that.

Nothing sort of... just blackness, that's all I kind of see, you know. It's terrible."

[Participant 22, DBT dropout].

"It just goes straight out my head, that's... When I'm in a state, perhaps that's

gonna be the last thing on my mind. .....I don't think, 'Ooh right, I'll self-soothe', or,

'Ooh, use my wise mind', I just can't... I feel like my head gets sort of shut in and

that's it" [Participant 1, DBT completer].

Five participants described not thinking to use the skills at times of distress, but did

not explicitly link this to being overwhelmed by their emotions. However, even for

these participants, there was a sense of being overwhelmed by distressing

experiences, and that these experiences drove thoughts of using the skills from

their mind:

"When I come out of the session it will be there with me in my mind until I get home

and then it's out my mind..... When I'm at home I'm too busy thinking about what

I'm doing instead of thinking about what I learnt. I'm just... because I have an

abusive husband, I... that kind of overtakes what I do at the class" [Participant 15,

DBT dropout].

Similarly for this participant, when talking about using the skills in relation to her

insomnia:

"It wouldn't even come into my head at the end. ....It was just like, this is ludicrous, I

can't even think of what I'm doing wrong or what is right, I can't think of anything.

Just the overwhelming feeling that I'm just so exhausted, so shattered all the

time....They're the only thoughts that I can remember, going through my head"

[Participant 34, DBT dropout].

Giving up. Eighteeen participants explained that sometimes, trying to use the skills

seemed too difficult, seemed pointless, or seemed like it would never work.

Participants emphasised that continually trying to use the skills in the face of

distressing experiences could be a difficult struggle and was often emotionally

exhausting. This sometimes led to them 'giving up' on using the skills. This could

occur prior to participants even trying to use the skills, but often occurred after

participants had tried to use the skills but found they weren't working. For some

participants, these experiences were more likely to occur when they were feeling

intense and overwhelming emotions, which made them feel that they did not even

want to try to use the skills. Hence 'Giving up' on skill use can follow on from the

prior sub-theme ' Overwhelming emotions' (pp. 329-331):

I: *"Say you were feeling really suicidal but you had some distress tolerance stuff that*

you could do, would it be easy to do that then?"

P: *"I don't - it depends like how suicidal I am. If I go back to the time, one, two*

months ago, I mean that was really difficult. And I was sick of hearing like 'What

distress tolerance are you going to do?' ' I don't want to do any fucking distress

tolerance stuff like, I can't!' ....In them situations I feel like, like 'Obviously you're not

understanding how distressed I am and this isn't going to cover it, like this doesn't

even come close!' [Participant 33, DBT completer].

I: *"Any other things that stop you using it more often?"*

P: *"Sometimes my levels of anxiety as well – if I'm really mad, I'm like, 'Don't want*

to use this, it's so stupid, it never bloody works - if it worked I wouldn't be feeling

like this. I'm not doing this' – so it's kind of stubbornness as well" [Participant 32,

DBT completer].

Several participants explained that finding the motivation to use the skills was

particularly difficult when they were feeling very depressed:

"Some days I don't even want to get out of…get out of bed… I mean some days I feel

like I don't want to do anything. I don't want to get dressed, I don't want to get

washed…. and I've got to find time to fit in this shit that I don't want to do!....I've

not got the mind for it" [Participant 14, DBT dropout].

Participant 12 explains that, when she is feeling very low, wanting to use the skills is

completely incompatible with how she is feeling – she wants to disengage from

everybody and everything and so using the skills seems pointless:

"The whole thing about being upset is I don't wanna be on this earth, I don't wanna

get on with life. So even getting on with a skill is getting on with life - you're

challenging your very thought. And although we're taught skills in therapy, we're

not taught how to accept the whole idea of, one, of just getting on with life, saying,

'Oh I do want to be alive'. Sometimes when you're really down, you're like, do you

know what, to hell with everything. Even if I do know skills, I don't wanna get up and

use them" [Participant 12, DBT completer].

Similarly, Participant 2 (DBT completer) explains:

"When I am really low, I find... practising the skills too much, too hard and I just

want to be left alone and not deal with anything."

For other participants, 'giving up' was not explicitly linked to feeling overwhelming

emotions, but nonetheless seemed linked to feelings of hopelessness and despair:

I: *"Okay, and did you try and use the skills at all after you stopped DBT?"*

P: *"No..... Not at all.....I tried so many times to use the new skills when I felt myself in a situation like... but every time I tried, it failed, so I just gave up trying.....I said to myself, 'This ain't working, so it ain't worth trying no more.'"*

I: *"Why do you think they didn't work for you? Any ideas?"*

P: *"Maybe it's the way I'm feeling all the time?..... I feel worthless, empty, I feel that no one loves me, I'm all by myself....The negative thoughts come in and they take over. And as I said earlier, they... the negative thoughts are saying things like, 'It ain't gonna work on you'"* [Participant 11, DBT dropout].

"It's at the beginning when you get annoyed with it all the time, 'cause it's like, you're constantly looking at your feelings and like, it just becomes tiring and annoy... you just don't... you just can't be bothered anymore.....It's hard, it's hard work trying to change... it's hard... it's just hard" [Participant 18, DBT completer].

Why should I? Thirteen participants sometimes felt that they did not want to use the skills when feeling distressed because they did not see why they should. This was especially common in situations of interpersonal conflict, when they did not want to back down in an argument or let the other person 'win'. Participants explained that it was irritating that they had to use the skills in situations of interpersonal conflict, but other people did not. This seemed unfair to them, and so they didn't see why they should have to use the skills. Participants also sometimes described feeling 'Why should I?' about using the skills when feeling strong urges to

self-harm or to behave avoidantly. Participants did not explicitly link their 'Why should I?' thoughts to being overwhelmed by their emotions – but it was apparent that this was more likely to occur when they were feeling intense anger or frustration. Thus, the experiences in the sub-code 'Why should I?' can follow on from those in the sub-theme ' Overwhelming emotions' [p. 329-331].

"I think, 'No ,I'm using the skills to calm down and then he thinks I'm backing down and thinks he's got the upper hand! No it's not happening like that.' That's when..... I don't use them. I'm right and you're wrong, I'm not backing down from it, yeah" [Participant 16, DBT completer].

"DBT yeah, sometimes teaches you.....if you say 'Yes, yes, yes', it's a bad thing. If you say 'No, no, no', it's a bad thing.....But with my brother, there's no such thing as no, it has to be yes. So if you think yeah, normal person can react like that, so why should us depression people react different? The way I see it, they make us feel more like, different, when the world is the same..... It's like, preach others, then preach me" [Participant 17, DBT completer].

"Sometimes I get a little angry – angry with myself – 'cause I think 'Why do I want all these skills? I don't want to have to use them around people – nobody else has to use them, why should I?'....I don't feel it's fair that I have to use these and

everybody else doesn't. I know why I have to but I just don't like it. The fact that I

have to be different" [Participant 32, DBT completer].

For one participant, feeling 'why should I' about using the skills was more linked to not seeing why she should have to tolerate her distress rather than end it by self-harming. She felt her therapists did not have to undergo her distressing experiences, so it was unfair of them to tell her to tolerate it:

"I always used to say to everyone 'Yeah like some people smoke, some people drink, I self harm it's not a problem', and sometimes I do get them thoughts again.....You sort of think 'No, I don't want to do it, like sod them – they don't have to experience it- it's not fair - why should I?'" [Participant 33, DBT completer].

Anxiety-provoking. For nineteen participants, the thought of trying to use the skills was an anxiety-provoking, frightening prospect. For some participants, it was the thought of trying unknown, new behaviours, rather than relying on their old coping mechanisms. Related to this, some felt that using the skills would force them to actively confront the distress they felt and the situations that had led up to them - a frightening prospect – whereas their old coping mechanisms of avoidance or of using self-harm to end emotional distress were somehow safer. For others, it was

more the thought of the interpersonal consequences – being worried that they would upset other people or cause conflict, or being embarrassed to use the skills around other people. These thought processes would lead the participants to not want to use the skills. Again, these experiences were linked to the subcode 'Overwhelming emotions' (p. 329 -331) – but this time, the overwhelming emotions resulted from the thought of using the skills, rather than necessarily from the precipitating situation.

"Emotionally, I don't have time to sit and think about things, to deal with things.... My therapist said that I tend to ignore things and say that things are ok and that's like my defence mechanism. And to be honest, right now, I'd prefer to do that than to have to deal with stuff, I just don't have the time it's way too much" [Participant 27, DBT dropout].

"The distress tolerance one where you let the emotions in, I thought 'Oh my God, I'm not gonna do that one!' I spent so long trying to push the emotion out to the side, and I was thinking 'I'm not letting that emotion in, it's pushed aside for a reason!'" [Participant 29, DBT completer].

"It was part of my homework in April, as far back as April or May, to have a certain conversation with her, and then I couldn't bring myself to do it and I just put it off

and put it off..... I was scared of what it would do to our relationship and I was

scared of hurting her, and of, I was scared of feeling bad and feeling guilty"

[Participant 26, DBT completer].

"Nothing is really particularly difficult except for the Interpersonal Effectiveness.

Very hard for me…..It's definitely a fear thing. Because…. I feel like if I say no to

someone…..even worse stuff is going to happen ….I'm either going to say it too

sheepishly and they're not gonna take me seriously or I'm gonna say it too harshly

and worse stuff is gonna happen" [Participant 19, DBT completer].

For other participants, using the skills was anxiety-provoking simply because it was embarrassing to do so in front of other people:

P: *"I was thinking, 'I don't want to do this to calm down, this is stupid! I'm not going*

to do this in real life so why am I going to pretend now?'

I: *"And what sort of things do you think would put you off doing that in real life?"*

P: *"Just looking like an idiot....If I was in the… in the street and then I just suddenly*

stood there and shut my eyes and started breathing I would just look like an idiot, so

yeah, pointless......I felt very self-conscious. I felt it was ridiculous. I felt like I looked

ridiculous." [Participant 24, DBT dropout].

"The DBT team try to encourage you to.....describe to the person you're having a problem with .....how you're feeling – and I keep explaining to them that in the real world, especially East London, you can't tell somebody that you are feeling angry and that their behaviour is, I don't know, upsetting you – because the normal reaction would be 'What are you going on about you weirdo?' ....We use a lot of slang and if you're asking someone how they're feeling, you say "Y'alright?" or if you're really angry about something you say, "I'm really pissed off, this person's done this…" whereas DBT steer you away from using statements like that.....I don't want to draw attention to myself while I'm with friends and using the skills will draw attention to myself because it's an unusual way of talking or perhaps behaving" [Participant 32, DBT completer].

Some participants explained that a particularly anxiety-provoking aspect of using the skills was not necessarily the skills themselves, but more the fear of using a skill and not using it 'right' or not doing it 'properly'. For these participants, their perceived 'failure' could make them very anxious and angry with themselves:

'I used to think to myself 'I'm getting it wrong. Why's it not working? Why do I still feel like this? I'm trying my best, trying to use these skills but it's not working' – so I used to get even more upset and angry.... I start internalising it, 'It's my fault, I'm so stupid, I'm so thick'" [Participant 32, DBT completer].

"It all comes jumbled up, I start getting them mixed up - if things ain't right.....

because I've got all this OCD things have to be really perfect for me, so that's the

way I feel, so it does stress me out....." [Participant 16, DBT completer].

For some participants, the thought of using the skills was anxiety-provoking, again

not because of the skills themselves necessarily, but because using the skills

required not using their old coping behaviours such as self-harm. They explained

how frightening and difficult it was to let go of these coping behaviours:

"Cutting for me is a preventative measure of doing something more drastic. I will

use it as a diversion technique from attempted suicides.....and the kind of thought of

taking that, what has been an incredibly effective life line away... bloody

scary....Really scary, especially for someone who'd been doing it for as long as I

have. And, I suppose, as intensely as I have. So, I didn't want to stop" [Participant 3,

DBT dropout].

"If I hadn't used self harm then I would have been suicidal a lot earlier and a lot

more intensely, and self harm sort of like allowed me to block that.....And so it really

is difficult to let go" [Participant 33, DBT completer].

Revert to old coping strategies.

Nineteen participants explained that, in the face of overwhelming and intense emotions, they would sometimes revert to their old coping strategies such as aggression, self-harm or avoidance. They described that reverting to these behaviours was easier than going through the difficult challenge of using the skills, and provided immediate relief for their distress. For some of these participants, this process was mediated by the experiences described in the previous sub-codes, 'Skills do not enter mind', 'Giving up', 'Anxiety provoking' and 'Why should I?'.

Several participants explained how hard it was to break old habits which are somewhat automatic:

"It's a disease, a disease of anxiety if you like and it tries to cling on - I'm trying to change and it's fighting back. ….I've got quite strong neural pathways that have been formed and my brain is just used to having a certain reaction….. and sometimes it would just [snaps] it would be off, 'cause that's the way it's used to going" [Participant 10, DBT completer].

"Sometimes that old road was kind of nice for me, and I kind of felt it's easier to do the old ways…..It's harder to do new things than to do old things" [Participant 29, DBT completer].

"I think when so many years have gone of doing it your way....how can I all of a sudden kind of overnight change that to the right way? I mean my way is the wrong way, I know that...." [Participant 22, DBT dropout].

For two participants, when feeling very intense overwhelming emotions (being 'at a 5' in DBT terminology), knowing that self-harm would instantly make them feel better led them to revert to this strategy:

"I just felt too overwhelmed. And then it just kind of got the better of me and I thought "Oh I know what – I'll do that and then it'll feel better" [Participant 29, DBT completer].

I: "And when you've got to a 5, do you always manage to ride the wave or use the skills? Is that easy to do when you're at a 5?"
P: "It's fucking hard. Really hard. Like, it's right there, you know you can do it, and you know you can fix everything in your head in a minute. You can fix everything."
I: "You mean the self-harm?"
P: "Yeah, yeah." [Participant 39, DBT completer].

Some of the participants who experienced not being able to think about the skills when feeling distressed, as described in the sub-theme 'Skills do not enter mind' (p.

331-333), explained that this then led them to revert to old coping strategies such as self-harm:

"Sometimes if I'm in a really difficult situation I wouldn't think about it at all, I'd just be... do what I usually do and think things over for ages...... Instead of thinking, you know, 'This phase will pass' or, you know, 'Calm down', I just think about it again and again until I feel really bad, and then I feel like I have an urge to um, take an overdose or something. And then I... you know, just take it on from there" [Participant 15, DBT dropout].

Several participants linked the process of 'Giving up' to then reverting to old coping strategies such as arguing or self-harm. Thus, 'Giving up' (p. 333-336) can precede the current sub-theme:

"I tried to do a DEARMAN....I couldn't... like I tried to stay with it, for like, a few minutes, and then the other person was just going, and going, and going, and pissing me off and then I was just like 'fuck this' ....and I was like 'This is never gonna work'.....'This is just stupid' and I just went back to handling it how I usually handle it, and just ended up fucking arguing further" [Participant 39, DBT completer].

"I tried to use them .....but obviously I was too stressed out and they didn't work, but I didn't try other ones because I was so stressed out trying to use them and they

weren't working, so I thought, 'No sod it, they're not gonna work.' And that's when it would lead to the self harm" [Participant 16, DBT completer].

Others linked the experiences explained in the theme 'Why should I?' to reverting to old coping strategies. For instance, Participant 12 links being "wilful", (a DBT term relating to doing what you want to do in the short term rather than being willing to change your behaviour) to reverting to using self-harm:

"Sometimes when you're in a distress... a terrible situation where you know you wanna harm, it's very easy to fall back in your old ways, which is what I did this week. And even if you know skills, when you're feeling that crappy and being that wilful, you're gonna ignore what you've been taught and do your thing" [Participant 12, DBT completer].

Lastly, some participants linked the experiences in the sub-theme 'Anxiety-provoking' to reverting to old coping strategies such as avoidance or self-harm:

"Learning those skills is gonna be scary, it's gonna make you very nervous, agitated and it's gonna be damn hard. So somebody like me is instantly gonna go into your own comfort of what you've made yourself to comfort yourself, to stop yourself getting agitated, to stop yourself getting nervous. You're gonna do it your way again" [Participant 22, DBT dropout].

DISCUSSION

Summary of Findings

This qualitative study aimed to address four questions: how patients use the DBT skills, how patients come to gain maximum benefit from the DBT skills, what factors facilitate this process, and what factors act as barriers to this process. The candidate sought to determine the answers to these questions through thematic analysis and interpretation of interviews with patients who had experienced DBT for BPD with self-harm. From this analysis, the candidate derived several themes describing how participants' experiences related to these four questions. These themes and their interrelations are depicted as a whole system in Figure 7.5.

Figure 7.5 How Do Participants Use the Skills and Gain Maximum Benefit from doing so, and what Factors Facilitate or act as Barriers to this

FACILITATORS **GAINING MAXIMUM BENEFIT** **USING THE SKILLS** **BARRIERS**

THE SKILLS GROUP

- Sharing of knowledge
- Everybody engaging together

THE INDIVIDUAL THERAPIST

- Help explaining skills
- Help applying skills

FRIENDS AND FAMILY

- Supporting skill use

COMMITMENT TO WORK TOWARDS CHANGE

- Wanting to get the most out of DBT
- Perseverance
- Making it part of everyday life

MAKING THE SKILLS MY OWN

- Adapting the skills to me

AUTOMATICITY

- Using the skills becomes automatic

RECOGNISING EMOTIONAL DISTRESS

- Identifying emotional distress
- Identifying the cause of emotional distress

DECIDING NOT TO REACT IMPULSIVELY

- Considering the consequences
- Putting the brakes on

TRYING TO CHANGE THE EMOTION

- Taking control of emotions
- Challenging appraisals
- Distracting activities

TRYING TO CHANGE THE CAUSE OF THE EMOTION

- Communicating feelings

ACCEPTING

- Accepting situations causing emotional distress
- Accepting emotional distress

NEGATIVE ASPECTS OF SKILLS TRAINING

- Anxiety during skills groups
- Too much information

EMOTIONS TAKE CONTROL

Overwhelming emotions

Skills do not enter mind | Giving up | Why should I? | Anxiety-provoking

Revert to old coping strategies

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Discussion in Relation to Other Research Findings and Theoretical Literature

How Patients Use the Skills

This research sought to determine how patients experienced using the skills in practise. Whilst some of the themes and sub-themes developed here were reflected in earlier qualitative work (Araminta 2000, Cunningham et al. 2004, Hodgetts et al. 2007, Perseius et al. 2003), the clear, detailed nature of the themes and the emphasis on their interrelation and sequential nature is unique to the present research. It is important to discuss how the findings of this research map on to Linehan's conceptualisation of the skills. In the DBT manual, Linehan (1993a) categorises the skills into four groups: Mindfulness, Interpersonal Effectiveness, Emotion Regulation and Distress Tolerance (see Chapter One of this thesis, p. 35-39, for a full explanation). The ways in which skill use was categorised in the present findings are related but certainly do not map neatly onto Linehan's categorisations. The skills that Linehan describes as 'Interpersonal Effectiveness' seem more or less identical to those described in the sub-theme 'Communicating feelings'. Her assertion that these skills should decrease environmental stimuli associated with negative emotions is mirrored in the placement of this sub-theme within the theme 'Trying to change the cause of the emotion'. The relevance of skills for handling interpersonal situations is obvious given that disturbed interpersonal relationships are a diagnostic criterion for BPD, and people with BPD experience their

interpersonal interactions as more angry, sad, anxious and empty than people with other personality disorders (Stepp et al. 2009).

However, Linehan's Emotion Regulation, Distress Tolerance and Mindfulness skills seem to be scattered throughout the four remaining themes of this thesis. This is partly because, as Linehan asserts, her 'Mindfulness' skills are in fact 'core skills' that underlie and run through the skills used in her other categories. Being able to recognise emotional distress through mindful attention to one's thoughts, behaviours and bodily sensations is a key way in which Linehan argues that Mindfulness can inform her Emotion Regulation skills. In the current work, this is reflected in the placement of the theme 'Recognising emotional distress' as often preceding the skills used in the other four themes. Thus, the current findings reinforce Linehan's assertion of the centrality of this aspect of Mindfulness. In Araminta's (2000) qualitative interviews with DBT patients, increased awareness of emotions was also mentioned as important by three participants. Other research has found that BPD traits are associated with significantly elevated levels of alexithymia, i.e. difficulty identifying, describing and differentiating between emotions (Webb & McMurran 2008). It has been found that highly alexithymic individuals are poor at using awareness of their emotions to guide their behaviour intelligently (Parker et al. 2001), and instead use maladaptive coping strategies (Parker et al. 1998). Thus, the central positioning of 'Recognising emotional distress'

as a precursor to other skill use in the current framework could reflect a central role of alexithymia in determining dysfunctional responses to emotional distress in BPD.

Within the theme, 'Deciding not to react impulsively', Linehan's concept of Mindfulness as enabling 'distance' from internal and external events is perhaps reflected in the sub-theme 'Putting the brakes on', whereby participants described that taking a psychological or a physical step away from a situation could give them the time and space to carefully consider their response. The sub-theme 'Considering the consequences of behaviour' is very much similar to Linehan's idea of evaluating the pros and cons of any potential behaviour before engaging in it. Linehan places this under 'Distress tolerance', presumably because she views it as a precursor to deciding to tolerate distress rather than temporarily end it through self-harm or avoidance of anxiety-provoking situations. However, in the present analysis, 'Considering the consequences of behaviour' could be a precursor to deciding to use any of the other skills, including not only those described under 'Accepting' but also those under 'Trying to change the emotion' and 'Trying to change the cause of the emotion'. Thus, in the present analysis, 'Considering the consequences of potential behaviour' seems to be a broader skill with wider implications than in Linehan's conceptualisation. Given that impulsivity is a diagnostic criterion for BPD, the relevance of this set of skills is clear.

Linehan (1993a) reports that in her first randomised controlled trial of DBT (Linehan et al. 1991), by the end of treatment patients receiving DBT rated themselves as more successful at changing their emotions than patients receiving TAU. This may be reflected in the importance of the theme 'Trying to change the emotion' within the current research. Linehan (1993a) proposes that a key skill deficit in people with BPD is in being able to self-regulate their emotions, and a substantial body of empirical research indicates that this is indeed the case (Brendel et al. 2005, Sieswierda et al. 2007, Tebarz van Elst et al. 2003). The potential importance of skills enabling patients to change their emotional response is thus clear. Within this theme, the sub-theme 'Taking control of emotions', in which participants describe 'turning away' from or 'letting go of' emotions, can be related to Linehan's idea of 'pushing away painful situations'. She categorises this under 'Distress tolerance' - however, in the present analysis, it was felt that this skill was more about trying to change the emotional response rather than tolerate it, since participants described a consequent reduction in emotional intensity. Linehan's Mindfulness skills are reflected in the sub-theme 'Challenging appraisals'. Just as the experiences described in this sub-theme involve participants challenging their appraisals of distressing situations by realising that their perceptions may not reflect reality and by trying to focus only on factual information, Linehan describes a 'non-judgemental stance' as a key aspect of Mindfulness. In taking this non-judgemental stance, DBT teaches patients not to judge situations as 'good' or 'bad' but simply to accept them as they are. Again relating to the experiences described in 'Challenging

appraisals', Linehan describes another key aspect of Mindfulness as learning that one's thoughts and emotions do not necessarily reflect reality. She links this to learning to describe one's thoughts, emotions and environment in words, in order to gain the necessary 'distance' from such internal and external events. However, this link was not made by any of the participants in the current research. The sub-theme 'Distracting activities' seems to map directly onto Linehan's concept of 'distraction' as an aspect of distress tolerance. It also incorporates other aspects of 'Distress Tolerance' such as 'self-soothing', but places the soothing aspect of engaging in activities as secondary in importance to their distracting influence. Participants' descriptions of trying to be active when depression made them want to be passive were also categorised under 'Distracting activities'. This skill is similar to Linehan's 'Opposite action' skill, but whilst Linehan explains that the purpose is to send the brain 'opposite' 'competing' signals about what the person is feeling, the primary function for participants seemed to be just to distract them from their depressed feelings. Overall, participants emphasised distracting activities as a way of reducing their emotional response rather than merely tolerating it - hence the placement of this sub-theme within the theme 'Trying to change the emotion.' This emphasis on changing emotions differs from Linehan's conceptualisation of distraction as primarily concerned with tolerating distress.

The final theme in the current research, 'Accepting', seems to draw on skills that Linehan describes repeatedly under Mindfulness, Emotion Regulation and Distress

Tolerance. The idea of observing one's emotions without attempting to immediately change or judge them, as described in the sub-theme 'Accepting emotional distress', is a key aspect of Mindfulness, which Linehan explains makes tolerating them ('distress tolerance'), and/or subsequently attempting to change them ('emotion regulation'), easier. Both this sub-theme and the other sub-theme, 'Accepting distressing situations', ties in with the aspect of Distress Tolerance that Linehan names 'Radical Acceptance'. In addition to accepting emotional distress, this involves accepting one's environment as it is without attempting to change it. The relevance of this skill to BPD is supported by research demonstrating that BPD traits are associated with affect avoidance (Sturrock et al. 2009), and patients with BPD are less willing than Axis 1 patients to experience emotional distress in order to achieve behavioural goals (Gratz et al. 2006). However, Linehan (1993a) reports that in her first RCT (Linehan et al. 1991), patients receiving DBT did not rate themselves more adept than patients receiving TAU at accepting themselves or their situations. This seems to contradict the importance of the theme 'Acceptance' in the current research, or perhaps indicates that not all patients receiving DBT achieve this, or that some patients receiving TAU also attain this. In fact, 'Acceptance' was the least frequently endorsed of the five themes under 'Skill use' in the current research, endorsed by 19 participants. This could indicate that these skills are particularly difficult to use, or that not all patients find them helpful. Indeed, a few participants did express difficulties using this skill, explaining that the idea of accepting suffering is in itself painful to accept, and a few participants in

Cunningham's and Araminta's interviews expressed similar views (Araminta et al. 2000, Cunningham et al. 2004).

Gaining maximum benefit from the skills

It has been shown that, during many types of psychotherapy, some patients undergo a process of committing to engage with therapy and work towards change, and that this process is a predictor of positive outcome (Prochaska & Norcross 2001). This is in line with the theme 'Commitment to work towards change'. Similarly, in Araminta's (2000) and Perseius' (2003) qualitative interviews, DBT patients emphasised that having committed to the therapy process and being motivated to change was important in being able to benefit. Linehan states that ideally *"Patients who do not agree to work on decreasing suicidal and parasuicidal behaviors and interpersonal styles that interfere with therapy, as well as on increasing behavioral skills, are not accepted into treatment"* [Linehan 1993a, p. 98]. However, the experiences described in this theme indicate that not all patients have made this commitment by the time they enter treatment, and for some, making the commitment can be a lengthy process. The sub-theme 'Perseverance' illustrates how difficult the therapy process can be for people with BPD, both in terms of learning and using the skills material itself but also in believing that it can and will work. Other qualitative research with DBT patients has also highlighted these difficulties. For example, in Araminta's study (Araminta 2000), six of ten participants identified that doing DBT had been difficult in some way, including

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difficulties remembering the skills and difficulties changing their behaviour and integrating the skills in their lives. Similarly, a few participants in Cunningham's qualitative study mentioned initial difficulties understanding and using the skills, and a few participants in Hodgett's qualitative study mentioned difficulties using the skills and initial doubts that they would work (Hodgetts et al. 2007). Participants in all three of these studies emphasised the importance of persevering through these difficulties, although this was not presented as a strong theme.

Interestingly, none of the previous qualitative studies identified the importance of developing personalised understandings and ways of using the skills, as exemplified in the sub-theme 'Making the skills my own'. Furthermore, no previous studies have identified that, through frequent practise, patients find they are using the skills without needing to think about it, as exemplified in the sub-theme 'Automaticity'. Linehan (1993a) emphasises the importance of being able to integrate skill use into life outside therapy, but also does not mention this concept of automatic use. Thus, the concepts 'Making the skills my own' and 'Automaticity' seem to be new findings.

Factors facilitating gaining maximum benefit

Some of the ideas in the theme 'The Skills Group' are briefly discussed in other qualitative work on DBT. For instance, a few participants in Araminta (2000)

mentioned that humour and fun within the group was helpful, but did not specifically link this to facilitating learning. Four of her ten participants also mentioned benefiting from learning from other group members' experiences, as did some of the participants in Cunningham's study (Cunningham et al. 2004). Participants in Cunningham's study also mentioned that the therapists making sure that everyone was involved and understood was helpful (Cunningham et al. 2004), and Linehan emphasises this as an essential aspect of skills training (Linehan 1993b). In the general literature on learning in a group format, being able to learn from how other group members understand and apply what they have learned is also deemed important (Edmundson 2000, Gruenfeld et al. 2000). Similarly, a 'fun' teaching environment has been shown to promote learning in many different educational contexts (Bisson & Luckner 1996, Draper 1999, Langer 1997, McLeod 1990).

As in the current research, participants in other qualitative studies have mentioned that the individual therapist can play an important role in helping patients to use the skills (Araminta 2000). Supporting these findings, Linehan et al. (1993) found that patients in non-DBT individual therapy who received DBT skills training did no better on any outcome than patients receiving non-DBT individual therapy alone. Linehan concludes from this that DBT individual therapy may be an essential adjunct to DBT skills training, in part due to the role it plays in reinforcing skill use: *"The individual therapy provides an enormous amount of skills coaching, feedback, and reinforcement. This integration of both types of treatment, including the*

individual help in applying new behavioral skills, may be critical to the success of

standard DBT" [Linehan 1993, p.25]. Within the theme 'The Individual Therapist',

participants emphasised the importance of receiving feedback on their behaviour

over the past week, in order to see where they used the skills effectively and/or

how they could have done things differently. This reflects the emphasis in the DBT

manual on the use of 'behavioral analysis' (Linehan 1993, p. 101). However,

surprisingly few participants mentioned that telephone skill coaching had been

important for them, whilst quite a few mentioned that they found it difficult to

phone their therapists during crisis. It is possible that when participants discussed

conversations with their therapist about skill use they were sometimes referring to

phone conversations but did not make this explicit.

Lastly, the importance of support from friends and family with learning and using

the skills seems to be a new finding from this research. Linehan (1993) does

recommend that family and partners be invited to attend a few skills training

sessions, so that they can learn to reinforce skilled behaviour in the patient. Indeed,

the Newham DBT service runs a separate 'Family Group' specifically for teaching

family members and partners about the DBT skills. However, this theme was

endorsed by only thirteen participants. This may reflect that such support is only

important for a subset of patients and/or may indicate that not all patients' family

members are helpful. Indeed, a few participants mentioned unhelpful or even

punishing responses from family/partners when they tried to use the skills with

them.

Barriers to gaining maximum benefit

The experiences in the theme 'Negative aspects of skills training' have not appeared

strongly in other qualitative interviews with DBT patients. In particular, other than a

brief mention by a single participant in Hodgetts et al. (2007), experiences of

anxiety during the skills teaching group, and the negative effect this could have on

learning, seems to be a new finding in the present research. The anxiety caused by

'strict' responses from the therapists is a completely new finding, and it is not clear

whether this is to do with the particular teaching style of the Newham DBT

therapists, or the particular preferences of the Newham DBT patients, or whether it

is actually a feature of the DBT teaching style in general. Work throughout the

general education literature identifies anxiety- whether about the topics being

learnt or about participating in the learning interaction - as a key barrier to being

able to learn and assimilate information (Eysenck 1979, Horwitz 1995, Pekrun

1992). Linehan (1993b) does recognise anxiety as a possible barrier to learning,

stating that fear of criticism or of 'looking stupid' can interfere with people's ability

to participate in groups and to share information. She emphasises that therapists

should actively deal with these fears through a combination of validation and

problem solving.

With the exception of a brief mention by one participant in Araminta's interviews (Araminta 2000), the idea that the skills material is sometimes too much, too complex, and taught too quickly for thorough comprehension also seems to be a new finding from the current research. Linehan (1993b) does acknowledge that it may be better to teach fewer skills in greater depth, but nonetheless advocates teaching patients a large number of skills in order not to oversimplify matters for patients and to give them as many options as possible.

The experiences in this theme could relate to the issue of adherence versus competence. 'Adherence' refers to the whether the 'correct' therapy procedures were used as outlined by the treatment manual; 'competence' refers to how well the procedures were implemented (Fairburn & Cooper 2011). This necessitates having the knowledge and skills to deliver the therapy to a sufficient standard for it to be effective (Barber et al. 2007), which includes not only following the manualised procedures but applying them flexibly, with attention to individual patient requirements, with the awareness and skills to notice and solve barriers encountered by particular patients in benefiting from the treatment procedures, and with due attention to sustaining the therapeutic alliance (Fairburn & Cooper 2011). The Newham DBT skills group sessions were rated as adherent to the DBT model by a trained DBT adherence rater. However, this adherence rating did not assess competence, a concept which may be more complex to assess.

The theme 'Emotions take control' as a barrier to using and/or benefiting from the skills ties in with the substantial theoretical and empirical literature on the difficulties people with BPD have in regulating their emotional responses (Brendel et al. 2005, Sieswierda et al. 2007, Tebarz van Elst et al. 2003). It demonstrates that, even after receiving intensive training on how to regulate their emotions using the DBT skills, for many patients, their emotions can still escalate to the extent where using the skills does not seem possible or even effective. This experience was reflected also in Cunningham's qualitative interviews, which they summarised as follows: *'In cases such as these, the clients find that it is nearly impossible to separate themselves from what they are feeling in order to control it, and the emotions are too strong to be drowned out by skills'* (Cunningham et al. 2004, p. 255). Linehan acknowledges this difficulty with the following analogy: *'Focused skills training with the borderline patient is a bit like trying to teach an individual how to build a house that will not fall down in a tornado, just as a tornado hits. The patient knows that the appropriate place to be during a tornado is in the basement, crouching under a sturdy table; it is understandable if she insists on waiting out an emotional 'tornado' in the 'basement''* [Linehan 1993, p. 87]. This reinforces an aspect of using the skills that some participants emphasised as important: noticing their emotional distress whilst it is still at a relatively low level, and intervening with the skills before their emotions escalate to an extent that intervention is too difficult. The experiences encapsulated in the sub-themes 'Giving Up' and 'Why

Should I?' may also relate to Linehan's idea of 'willfulness' versus 'willingness', which is part of her concept of 'radical acceptance'. Willingness is accepting the world as it is and actively enaging in it, whilst wilfulness is refusing to take part in life as it is, trying to ignore it and saying "I can't" (Linehan 1993b). The interviewed patients will have been taught these ideas as part of the skills training, but this was evidently not sufficient to prevent such experiences from occurring - and such experiences could have contributed to the high dropout rate in this sample. It is not clear whether the teaching of this aspect of the skills training was lacking in this particular service, or whether the experiences portrayed here indicate that teaching 'willingness' is not always sufficient to prevent patients from being 'wilful'.

Chapter Conclusion

This chapter has presented a thematic analysis of qualitative interviews with DBT patients about their experiences learning, using and gaining benefit from the DBT skills. It has developed themes around how patients use the DBT skills, how they gain maximum benefit from doing so, and what factors act as facilitators or barriers to this process. The strengths and limitations, and research and clinical implications of the findings will be discussed in Chapter Eight, the Final Discussion.

Chapter Eight

Final Discussion

Summary of Thesis Aims

This thesis investigated the role of specific, common and extratherapeutic factors as potential mechanisms of change in DBT for BPD with self-harm, using both quantitative and qualitative methods. In particular, it assessed the role of three specific factors: perceived understanding, frequency of use and perceived helpfulness of the DBT skills; three common factors: treatment credibility, the therapeutic alliance and self-efficacy; and three extratherapeutic factors: perceived social support, number of social contacts and number of social confidantes. The following three research questions were addressed:

1) Are the DBT skills associated with outcome independently of common and extratherapeutic factors?

Specifically:

a) Are the DBT skills associated with self-harm frequency during treatment independently of common and extratherapeutic factors?

b) Are the DBT skills associated with BPD symptom severity during treatment independently of common and extratherapeutic factors?

2) Do the DBT skills predict treatment completion independently of common and extratherapeutic factors?

3) How do patients experience learning, using and gaining benefit from the DBT skills? Specifically:

a) How do patients use the DBT skills?

b) How do patients come to gain maximum benefit from the DBT skills?

c) What factors facilitate patients in gaining maximum benefit from the DBT skills?

d) What factors act as barriers to gaining maximum benefit from the DBT skills?

Chapters One to Four reviewed prior theoretical and empirical work relevant to these questions. Building on this literature review, Chapters Five to Seven reported the application of quantitative and qualitative methodology to a sample of patients receiving DBT, in order to directly address the research questions.

Answers to the Research Questions

Based on the findings from the literature reviews and from the empirical chapters, the research questions may be answered as follows.

Research Question One: Are the DBT skills associated with outcome independently of common and extratherapeutic factors?

a) Are the DBT skills associated with self-harm frequency during treatment independently of common and extratherapeutic factors?

b) Are the DBT skills associated with BPD symptom severity during treatment independently of common and extratherapeutic factors?

The literature reviews presented in Chapters One to Four found that one specific

factor: use of the DBT skills, and one common factor: the therapeutic alliance, have

been found associated with positive outcomes in psychotherapy for BPD (Leerer

1997, Marziali et al. 1999, Miller et al. 2000, Nadort et al. 2011, Neacsiu et al. 2010,

Spinhoven et al. 2007, Stepp et al. 2008, Turner et al. 2000). However, the role of

other common factors such as treatment credibility and the therapeutic alliance has

not been investigated. Furthermore, contextual theorists argue that the association

between specific factors such as the DBT skills and outcome is fully mediated by the

influence of common factors (Wampold 2001). Previous research has not shown

whether the DBT skills are associated with outcome independently of common

factors. Moreover, the association between the DBT skills and outcome may also be

confounded by the influence of extratherapeutic factors such as social support from

friends and family. Previous research has not shown whether the DBT skills are

associated with outcome independently of extratherapeutic factors.

Chapter Five assessed the association between the outcome of DBT and three

specific factors: perceived understanding, frequency of use and perceived

helpfulness of the DBT skills, three common factors: treatment credibility, the

therapeutic alliance and self-efficacy, and three extratherapeutic factors: perceived

social support, number of social contacts and number of social confidantes. This

was an observational longitundal study and all patients had a diagnosis of BPD with

recent self-harm. Predictor and outcome variables were measured repeatedly throughout the treatment year, and their association was evaluated using unifactorial and multifactorial multilevel modelling. The research question posed above was tested by evaluating whether, in multifactorial models, any of the three DBT skills factors predicted self-harm and BPD symptom severity independently of common and extratherapeutic factors. Baseline sociodemographics and clinical severity were also adjusted for if found to predict outcome in unifactorial models. As a sensitivity analysis, the models were then re-run in a dataset with no missing values, created using multiple imputation.

After adjusting for the effect of common, extratherapeutic and baseline factors, frequency of skill use still showed a trend towards significant association with lower self-harm, whilst perceived helpfulness of the skills remained significantly associated with lower BPD symptom severity. The sensitivity analysis in the multipley imputed dataset suggested that DBT skill use, (rather than perceived helpfulness), was significantly independently associated with both self-harm and BPD symptom severity. This may suggest that power to detect a significant effect of DBT skill use on both outcomes was attenuated by the presence of missing data. Thus, taking findings from both datasets together, the strongest finding may be that using the DBT skills more often is associated with both lower self-harm and lower BPD symptoms, independently of common and extratherapeutic factors. Overall, these findings suggest that the DBT skills can influence outcome independently of common and extratherapeutic factors. However, in both datasets, the effect size of

skills on outcome decreased slightly after adjusting for common factors, suggesting

that their effect may be partly inter-related. Supporting this interpretation, the

skills and common factors were found to be highly inter-correlated. It is unclear

from these findings exactly how the common factors influence the effect of DBT

skill use on outcome. The findings meet some of Baron and Kenny's criteria (1986)

for partial mediation, suggesting that the effect of DBT skills on outcome may be

partially mediated by the common factors. However, the reduction in effect size

was small and its statistical significance was not tested, so there is insufficient

evidence to suggest a strong meditational effect.

The findings in the original dataset suggested on the whole that the common

factors were also independently associated with positive outcomes during DBT,

after adjusting for skills and extratherapeutic factors. (The therapeutic alliance

showed a trend for independent association with lower self-harm, whilst treatment

credibility and the therapeutic alliance were significantly independently associated

with lower BPD severity). However, in the multipley imputed dataset, only self-

efficacy remained significant after adjusting for skills and extratherapeutic factors,

and was independently associated with both lower self-harm and lower BPD

symptom severity. Thus, taking findings from both datasets together, the strongest

finding on common factors may be the independent association between self-

efficacy and superior outcomes. Again, in both datasets, the effect size of the

common factors decreased after adjusting for skills factors, suggesting that their

effects may be partly inter-related, or even that the effect of common factors on outcome may be partially mediated by the DBT skills.

Weak evidence was found for an independent effect of extratherapeutic factors, with no independent association between outcome and number of social contacts or confidantes, and only a trend towards a significant independent association between perceived social support and BPD symptom severity. This trend was not apparent in the imputed dataset.

In summary, the research questions posed above may be answered as follows: yes, the DBT skills are associated with both self-harm and BPD symptom severity outcomes, independently of common and extratherapeutic factors. Overall, the findings suggest that the effect of the DBT skills is not fully mediated by common factors. Instead, using the DBT skills has a positive effect on both self-harm and BPD severity outcomes in its own right. This is contrary to the view of contextual theorists, who maintain that specific factors are only important because they facilitate the role of the common factors. However, the influence of the DBT skills on outcome was attenuated after adjusting for the common factors, and vice versa. This is in line with the view of contextual theorists that the effects of specific and common factors are inter-related. Thus, overall, one could conclude that the DBT skills and the common factors each exert an independent effect on outcome, but that their influence on outcome is also to some extent inter-dependent. Finally, one could conclude that extratherapeutic factors related to social support are not independently associated with outcome. However, this is only one interpretation of

the findings, and there are several methodological and conceptual limitations that should be considered, some of which may suggest alternative explanations.

Research Question Two: Do the DBT skills predict treatment completion independently of common and extratherapeutic factors?

The literature review presented in Chapter Four identified that one common factor, the therapeutic alliance has been found to consistently predict treatment completion in psychotherapy for BPD. However, the predictive value of DBT skill use, other common factors such as treatment credibility and self-efficacy, and extratherapeutic factors relating to social support, has not been established.

In Chapter Six, the prospective association between skills, common and extratherapeutic factors as measured at baseline and month two, and the number of treatment months subsequently completed, was evaluated in the same sample. The research question posed above was tested by evaluating whether, in multifactorial models, any of the three DBT skills factors predicted months of treatment completed independently of common and extratherapeutic factors. Baseline sociodemographics and clinical severity were also adjusted for if found to predict outcome in unifactorial models. As a sensitivity analysis, the models were then re-run in a dataset with no missing values, created using multiple imputation.

Of note, only 44% of patients completed the full twelve months of treatment - substantially lower than the average of 71% found in the meta-analysis of treatment completion presented in Chapter Four.

In multifactorial analyses, the only factor found to independently predict completing more months of treatment was the frequency of DBT skill use at month 2. Thus, patients who used the skills more often at month 2 were found to complete more months of treatment, even after adjusting for common and extratherapeutic factors.

Thus, in summary, the research question posed above can be answered as follows: yes, the DBT skills predict treatment completion independently of common and extratherapeutic factors.

The lack of independent association between common factors and treatment completion may run counter to the contention of contextual theorists that they are the most important drivers of psychotherapy outcome. However, there are many possible explanations for the association between skill use and treatment completion. More frequent use of the DBT skills may have equipped these patients with the emotion regulation, interpersonal effectiveness and distress tolerance skills needed to cope with the stresses and strains of treatment, and hence enabled them to stay for longer. Alternatively, it may be that patients who used the skills

more often at month 2 had already achieved early symptomatic improvement, which they (correctly or incorrectly) attributed to the DBT skills, and consequently both used the skills more and completed more months of treatment. Perhaps most likely, early frequent use of the DBT skills may indicate high levels of treatment engagement which in turn predicts staying in treatment for longer. Indeed, the frequency of DBT skill use may offer a better index of treatment engagement than the measures used to assess treatment credibility and the therapeutic alliance.

Research Question Three: How do patients experience learning, using and gaining benefit from the DBT skills?

The choice of qualitative methods to address this question in Chapter Seven was based on the premise that, whilst quantitative research can show *what* factors are associated with outcome, it cannot show *how* these factors lead to better outcomes. By contrast, in-depth qualitative interviews are rooted in participants' lived experiences and so can yield valuable insights on how patients' experiences in therapy enabled them to achieve change, and can also enable identification of barriers to change (Hodgetts & Wright 2007). The current thesis approached the interview data from a realist viewpoint, and is thus based on the premise that participants' reports of their experiences are based in reality and are valuable sources of information about what actually happens (Smith & Osborn 2003).

Participants were purposively sampled in order to include men and women, treatment completers and dropouts, those with positive and those with less positive outcomes, and a range of ages and ethnicities. Saturation was reached after forty interviews had taken place, and a thematic analysis was subsequently conducted to address the following four specific research questions.

a) How do patients use the DBT skills?

It was found that the most common and important purpose for which participants used the DBT skills was to cope with distressing emotions, without resorting to impulsive or unhelpful behaviours such as self-harm, drinking, aggression or avoidance. The ways in which participants used the skills to do so were categorised into five themes: i) Recognising Emotional Distress, ii) Deciding Not to React Impulsively, iii) Trying to Change the Emotion, iv) Trying to Change the Cause of the Emotion, and v) Accepting. 'Recognising Emotional Distress' involved identifying that they were feeling distressed, and trying to understand what particular emotion they were feeling and why. Once participants had recognised that they were feeling distressed, this could often trigger them to use the behaviours described in themes ii) to v) to try to change the situation. The skills described in 'Deciding Not to React Impulsively' (theme ii) involved taking time to carefully consider how they would react to a distressing situation, including considering the possible negative consequences of impulsive reactions such as self-harm or aggression. The ability to stop themselves reacting impulsively was compared to 'putting the brakes on' – i.e.

mentally pausing before reacting, and/or removing themselves physically from the situation. 'Deciding Not to React Impulsively' could sometimes lead into the skills described in sub-themes iii) to v). It could lead participants to try to change their emotional response (theme iii), or to try to change the situation causing distress (theme iv), or if these were not possible, to accept the situation and their distress without trying to change them (theme v). Ways in which participants tried to change their emotional response included reminding themselves that they had control over their emotions, re-evaluating the situation causing distress by trying to focus on factual information and realise that their interpretations could be incorrect, or distracting themselves from their distress by giving their full attention to an activity removed from the situation. Attempts to change the distressing situation usually involved describing their feelings fully, calmly and assertively to a person that had caused distress. Finally, accepting the situation involved accepting that painful emotions are a part of life that must sometimes be endured, that other people's behaviour or distressing circumstances cannot always be changed, and that guilt in relation to their own behaviour was pointless and unhelpful.

b) How do patients come to gain maximum benefit from the DBT skills?

It was found that participants were able to gain most benefit from using the skills in these ways if they underwent the following processes during therapy: i) committing to work towards change, ii) making the skills their own, and iii) practising the skills so often that their use becomes automatic. Again, these three processes often

seemed to operate sequentially. Committing to work towards change involved

deciding to try to get the most out of DBT, and therefore persevering through

difficulties with the skills and any doubts surrounding them. Overcoming these

problems involved hard work, which was aided by participants making sure to use

and practise the skills often in their day to day lives. By doing so, participants were

able to develop their own understandings and particular ways of using the skills, so

that they were able to work out which skills worked best for them, and how they

could best adapt the skills to their particular life problems (theme ii). Through

frequent use, participants eventually began to use the skills automatically, without

needing to think about it (theme iii).

c) What factors facilitate patients in gaining maximum benefit from the DBT

   skills?

Factors facilitating this process included the skills teaching groups being a fun and

interactive environment in which everybody was involved and felt confident to

participate, and in which members could exchange their experiences with using the

skills (theme i). In addition, this process was aided by participants' individual

therapists helping them understand the skills and advising them on how to apply

the skills to their particular life problems (theme ii), and if friends and family were

supportive of their skill use (theme iii).

d) What factors act as barriers to gaining maximum benefit from the DBT skills?

Barriers to this process were negative experiences during the skills teaching groups (theme i) and emotions taking control (theme ii). Negative experiences during the skills teaching groups included experiencing intense anxiety around participating in the groups, and feeling overwhelmed by the volume and complexity of the skills material. These experiences made it more difficult for participants to learn the skills. Many participants also reported that, when their emotions had escalated to an extreme level, they felt overwhelmed and felt they could no longer control their own thoughts or behaviour. As a result, using the skills often did not enter participants' minds. Additionally, experiencing overwhelming emotions seemed to encourage negative thought patterns relating to use of the skills. Participants were more likely to feel that using the skills was too difficult, pointless, anxiety-provoking or unfair, or to think "Why should I?" These overwhelming emotions and negative thought processes would often lead them to revert to their old coping strategies such as self-harm, aggression or avoidance, since these behaviours seemed easier and less anxiety-provoking than using the skills, and/or provided immediate relief from their distress.

Strengths and Limitations of the Quantitative Work

Strengths

Strengths of the quantitative work presented in Chapters Five and Six included the
longitudinal design with frequent follow-up assessments, the evaluation of DBT in a
real-world setting rather than a tightly controlled research setting and the inclusion
of participants with any comorbidity so that the sample resembled that seen in
normal clinical practice. This was also the first study to assess the independent
effect of specific, common and extratherapeutic factors on the outcome of therapy
for BPD, and indeed, few studies assessing all three factors exist in the general
psychiatric literature. Further strengths were the theory-driven selection of
independent variables and the use of multifactoral modelling to select out the
variance in outcome explained uniquely by each variable. In addition, the use of
multi-level modelling in Chapter Five allowed the inclusion of individuals with data
missing at some timepoints, provided there was at least one timepoint at which the
dependent variable and all independent variables in the model being estimated had
been observed. This reduces bias in the model estimates compared to other types
of model in which individuals without complete data at all timepoints are excluded,
such as repeated measures analysis of variance (Sterne et al. 2009). A further
strength was that multiple imputation was used to construct an imputed dataset
with no missing data, in which the models of interest were re-run so that the
biasing effect of missing data could be evaluated.

Limitations

Methodological and Practical Limitations

Assessment of skill use. The assessment of skill use may not have been optimal. Skill use was only assessed over a seven day period per each two month assessment, thus omitting the assessment of skill use in the intervening period. Furthermore, skill use was quantified in terms of whether or not a participant had used each of four skills types on a particular day, allowing a maximum frequency score of 4 per day, whilst in reality a participant may have used each skill type more than once in a day. Failure to capture this additional variance could have led to a more conservative estimation of the association with outcome. Use of diary card data, as used by Stepp et al. (2008), would have generated weekly data on skill use, as well as more detail on which particular skills had been used. However, since the diary card is given to the individual therapist, the pressure to report positive experiences of skill use would have been much greater, increasing the potential for reporting bias. Another alternative could be to use an 'experience sampling' method, in which patients could be prompted at random intervals to record their skill use as it occurs in their day to day life (Hektner et al. 2006). However, since an important context in which patient use the skills is at times of extreme emotional distress, during which using the skills can be a very effortful process (as suggested in the qualitative findings), they may find it difficult or even lack the inclination to record their skill use in such situations.

In addition, perceived understanding, frequency of use and perceived helpfulness of the skills were highly correlated (as shown in Chapter Five) and are also conceptually related, so patients may have had difficulty in considering their response to each separately. Linked to this, since patients learnt more skills over time as the skills teaching programme went on, it is difficult to know whether the observed significant increase in skills use resulted from participants actually using the skills more over time, or just having more skills in their repertoire as a function of having learnt more skills.

A further limitation of the skills assessment was that it depended on the patient's interpretation of terms such as 'mindfulness' and 'emotion regulation', which may have meant different things to different patients. Furthermore, as suggested in the qualitative interviews, there is a large degree of conceptual and practical overlap between the four skills categories (mindfulness, emotion regulation etc.) assessed in the questionnaire, which creates difficulties for assessing their individual impact.. A measure of DBT skills use which circumvents some of these problems has since been developed - the DBT Ways of Coping Checklist (Neacsiu et al. 2010). This measure does not use the DBT language to describe the skills, thus removing the reliance on patients' interpretation and understanding of DBT terminology. Instead, it uses neutral language to ask patients about their behaviour, including behaviours prescribed by the DBT skills teaching e.g. "I accepted my strong feelings, but let

them not interfere with other things too much", as well as behaviours proscribed in the skills teaching e.g. "I refused to believe that it had happened".

Confounding by educational level. The analyses in Chapters Five and Six adjusted for all potential confounders as far as possible, based on variables identified as associated with symptom change or treatment completion in the systematic reviews presented in Chapters Three and Four. However, one potentially important confounder, educational level, was not available in the collected dataset and so could not be adjusted for. It is possible that participants with a higher educational level may have found learning and using the skills earlier, both as a function of possibly higher IQ, and as a function of being more familiar with learning in the classroom-like environment of the skills teaching classes, and being more comfortable with the idea of 'homework'. Indeed, data from the qualitative element of the thesis (Chapter Seven) indicated that feeling overwhelmed by the volume and complexity of the skills material, and feeling intimidated by the 'school-like' environment of the skills teaching groups, were substantial barriers to learning the skills for some patients. In previous studies educational level has not been found significantly associated with dropout from psychotherapy for BPD (Black et al. 2009, Bos et al. 2010, Clarkin et al. 2001, Frederici 2010, Gunderson et al. 1989, Harley et al. 1997, Leerer 1997, Nysaeter et al. 2010, Ragsdale 2006, Rusch et al. 2008, Smith et al. 1995, Soler et al. 2008, Spinhoven et al. 2008, van Wel et al. 2009), or with patients' symptom improvement during therapy (Bateman & Fonagy

1999, Black et al. 2009, Davidson et al. 2010, Laddis 2010, Ryle & Golynkina 2000,

Spinhoven et al. 2008). However, only three of these studies were in patients receiving

DBT (Frederici 2010, Harley et al. 1997, Leerer 1997, Rusch et al. 2008) and thus the

impact of educational level on DBT has not been sufficiently investigated to date.

Reporting bias. Participants were aware that use of the DBT skills is an integral part

of DBT therapy, having been frequently told this by their individual therapist and

during the skills groups. They may therefore have felt it was socially desirable to

report positive experiences of using the skills, and may have felt they would 'please'

the researcher to do so. This effect may have been enhanced by regular research

assessments every two months, sometimes for two years in total. A need to 'please'

the researcher and/or to appear socially desirable could also have led participants

to under-report self-harm or BPD symptom severity. Furthermore, the patients

were aware that the researchers knew their DBT therapists, and may therefore

have been reluctant to report negative appraisals of treatment credibility or the

therapeutic alliance, despite assurances of confidentiality. However, reporting bias

is arguably an inevitable feature of any patient-reported data.

General appraisal tendency. It has been shown that, when completing multiple

patient-rated measures, an individual patient will have a global tendency to rate

consistently positively or negatively across measures (Hansson et al. 2007). This can

enhance the association between variables when both are patient-rated. The

measures used to assess skills, common and extratherapeutic factors were all

patient-rated, and mainly assessed subjective experiences. Whilst self-harm

frequency is not subjective, a positive or negative general appraisal tendency could

still have influenced participants' recall of events. Similarly, whilst BPD symptom

severity was assessed using an observer-rated interview, participants' answers to

researchers' questions could still have been influenced by a positive or negative

appraisal tendency. This could have enhanced the association between outcome

and the predictors of interest. However, the predictors of interest were also

associated with an entirely objective outcome, months of treatment completed,

suggesting that the measures assessed more than just a general appraisal tendency.

Recall bias. Many of the measures used assessed 'present' experiences. However,

participants were asked to recall skill use over the past seven days, BPD symptoms

over the past two weeks, social contacts in the past month, and number of days

with self-harm over the past two months. The greater the period of recall required,

the less accurate the information recalled is likely to be, and reporting is

increasingly likely to be affected by other biases (Sedgwick 2012).

Non-blinded assessors. Most of the measures used were self-report and patient-

rated. However, BPD symptom severity and general psychiatric symptom severity

were assessed by researchers using standardised observer-rated semistrutured

interviews. The researchers completing these assessments were not blind to

patients' self-reported responses to other measures, or to whether patients were

still in DBT treatment. The researchers' knowledge of these factors could have

biased their ratings of BPD symptom severity or general psychiatric symptom

severity.

Multiple testing. An additional limitation was the large number of variables tested,

which may have led to finding spurious associations by chance. The intention was to

adjust for as many potential confounding factors as possible - but there are

disadvantages to this approach. The analyses reported here were exploratory in

nature in a relatively small sample size, and so corrections for multiple testing were

not applied, since they are not recommended for exploratory research (Perneger

1998). Had the Bonferroni correction been applied, the alpha level for the

unifactorial analyses would have been set to 0.0025 (i.e. 0.05/20) in Chapter Five,

and 0.0021 in Chapter Six (i.e. 0.05/24). This would have meant that no skills,

common or extratherapeutic factor would be considered significantly associated

with any of the three outcome variables, with the exception of the associations

between self-efficacy and BPD symptom severity ($p < 0.001$) and treatment

credibility and BPD symptom severity ($p = 0.001$). However, this is an extremely

conservative correction and was not deemed appropriate for the present research.

Furthermore, the Bonferroni correction has been criticised for unfairly and

inappropriately increasing the likelihood of Type II errors (Perneger 1998).

Disentangling the association between process and outcome. In Chapter Six, the prospective association between early skills, common and extratherapeutic factors (assessed at baseline or month 2) and subsequent dropout was computed. Thus the direction of the association is clear – the factors assessed preceded dropout from treatment. However, the direction of the association beween these factors and self-harm or BPD symptoms, as assessed in Chapter Five, is less clear.

The multifactorial models presented in Chapter Five adjusted for baseline self-harm and BPD severity. (This has been recommended as superior to assessment of change scores when assessing what factors are associated with symptom change, because change scores are limited in that patients with worse initial severity will change more over time, via regression to the mean (Vickers & Altman 2010)). Thus, the significant findings reported from the multifactorial models imply that those variables were associated with outcome independently of initial severity. Consequently, the significant negative associations between skills and common factors and outcome cannot be explained simply by arguing that patients with lower initial symptoms are likely to use the skills more, find them more helpful, find their treatment more credible, form a stronger therapeutic alliance, or feel a stronger sense of self-efficacy.

However, it is still not clear whether the findings from Chapter Five reflect the skills and common factors driving symptom change, or whether the association is the other way round. It is plausible that patients who experience early symptom improvement – via whatever cause - then attribute this improvement to their use of the DBT skills, and therefore go on to use the skills more and to rate them as more helpful. Experiencing early symptom improvement and attributing this to DBT would likely also enhance perceptions of treatment credibility, and strengthen the patients' regard for and resolve to work with their therapist (i.e. the alliance), as well as increasing their sense of self-efficacy. Realistically, the relationship is likely to be bidirectional, and the pathways involved could be most usefully disentangled using methods such as structural equation modelling.

Missing data. Due to patients missing research appointments and/or certain questionnaires not being applicable following dropout from DBT, there was a large amount of missing data. Whilst the research was strengthened by the use of multilevel modelling to minimise the biasing effect of missing data, the results in the imputed dataset indicated that missing data may have biased the findings in the original dataset. In particular, missing data may have weakened the association between outcome and skill use and self-efficacy, but may have artificially inflated the association between outcome and perceived skill helpfulness, treatment credibility and the therapeutic alliance.

Furthermore, missing data may have reduced the power of the study to detect

significant associations between variables. Post-hoc power calculations are not

recommended because, if the analysis is underpowered, they will be based on

inaccurate effect sizes that do not necessarily reflect the true population effect

(Zumbo & Hubley 1998). However, the finding that skill use and self-efficacy were

both significantly independently associated with self-harm in the imputed dataset,

but not in the original dataset, may indicate that the original data was

underpowered to detect these effects.

Conceptual Limitations

The complexity of diagnosing, classifying and conceptualising personality disorders.

The sample studied had unusually high rates of avoidant, paranoid and obsessive-

compulsive personality disorder compared to other DBT studies. For example, 63%

of patients in the present study met criteria for avoidant personality disorder versus

21% in Linehan's 2006 study (Linehan et al. 2006), 45% of patients met criteria for

obsessive-compulsive personality disorder versus 8% in Linehan's study, and 47%

met criteria for paranoid personality disorder versus 3% in Linehan's study. The

unusually high rates of these disorders may mean that the results are not

generalisable to other BPD patient samples. This is particularly the case because

these personality disorders have been termed 'overcontrolled' personality

disorders, characterised by restricted expression of emotion, highly controlled

behaviour and perfectionistic standards (Lynch & Cheavens 2008). This is in direct

contrast with 'undercontrolled' personality disorders including borderline

personality disorder, which are characterised by emotional and behavioural

dysregulation. Furthermore, the treatment completion rate in the present study

was substantially lower than the average completion rate of 71-75% found in the

candidate's meta-analysis of completion rates in psychotherapy for BPD (Chapter

Three). It has been argued that standard DBT does not cater adequately for the

needs of patients with overcontrolled personality disorders (Lynch & Cheavens

2008) - and this could possible explain the high dropout rate in the present study.

Relatedly, a study conducted in a DBT service in North East London, a very similar

context to that of the present study, also had a very low treatment completion rate

(44%), and also had relatively high rates of comorbid avoidant personality disorder

(36%) and paranoid personality disorder (40%) (Feigenbaum et al. 2011). Thus, it is

possible that these samples are representative of the kinds of patients presenting

to North and North East London mental health services but not necessarily to DBT

teams in other contexts. The apparent contradiction of many patients in the

present study being diagnosed with both 'undercontrolled' (BPD) and

'overcontrolled' personality disorders may reflect wider problems with the

diagnosis and assessment of BPD. To be diagnosed with BPD a patient must meet

any 5 of 9 DSM-IV diagnostic criteria - and thus a patient can be diagnosed with BPD

based on 151 different possible combinations of these criteria (Skodol et al. 2002)

which may cast doubt on the idea that this is a unitary diagnosis. Thus, not all

patients with BPD necessarily fit the 'undercontrolled' type, particularly if they are

comorbid with 'overcontrolled' personality disorders. Furthermore, some of the

diagnostic criteria for BPD are also common in patients with overcontrolled

personality disorders - for instance, in one study 31% of adolescent females

engaging in self-harm met diagnostic criteria for avoidant personality disorder and

21% met criteria for paranoid personality disorder (Nock et al. 2006). Self-harm is

also associated with high levels of depressive symptoms (Briere & Gil 1998, Selby et

al. 2011), which would seem to reflect overcontrolled rather than undercontrolled

behaviour (Lynch & Cheavens 2008). Thus, the core dysfunction in some patients

diagnosed with BPD may in fact be overcontrolled, rather than undercontrolled

behaviour, which may make treatment with standard DBT problematic. These

difficulties with the diagnosis, classification and conceptualisation of personality

disorders have been reflected in the recent debate amongst experts in the field

about the proposed re-classification of personality disorders in DSM-V (APA 2010,

Skodol et al. 2011), which has been criticised as "inconsistent, incoherent,

impractical and frequently incompatible with empirical facts", partly because it fails

to address the comorbidity between personality disorders (Livesley 2010, p.304).

Other authors have suggested the proposals for DSM-V could be improved by

better linking to recent developments in thinking on personality disorders, such as

the concept of overcontrolled versus undercontrolled subtypes, and the relation to

normative personality trait variation such as that conceptualised in the Five Factor

model (Lynch et al. 2012). More radically, partly due to the excessive comorbidity

between personality disorders and empirical evidence suggesting that personality disorders represent extremes of a continuum of normative personality traits, the new ICD-11 will replace individual personality disorders with a single continuum of personality disorder severity, from 'no personality disorder' to 'personality difficulty' to 'mild personality disorder' to 'moderate personality disorder' to 'severe personality disorder' (Tyrer et al. 2011). The personality disorder can then be further classified along five trait domains, one of which will be 'emotionally unstable' (i.e. BPD), in order to clarify the exact nature of the disturbance - but this will not be essential to the diagnosis.

DBT in the 'real world' versus DBT 'at full dose'. When evaluating the effect of a treatment, it is usual to begin with an 'efficacy' study conducted by the treatment developers in highly controlled circumstances so that the model is delivered as closely as possible to its ideal format, and then to move on to 'effectiveness' studies in community settings conducted by therapists who were independent of the treatment development (Flay 1986). In terms of DBT mechanisms research, few studies have been conducted in such 'efficacy' settings, and it could therefore be argued that the present study, which evaluated DBT very much in a real world community setting, was premature. There are several indications that the delivery and outcomes of DBT in the present study may differ from that delivered in a more idealised setting. Firstly, the dropout rate in the present study was very high, much

higher than that seen in studies run by the treatment developer. Thus, at least half

of patients in the present study did not receive the full 12 months of DBT, and so

did not receive DBT at 'full dose' as intended by the treatment developers.

Furthermore, the qualitative interviews conducted in the present study highlighted

that some patients experienced several barriers relating to the delivery of the skills

training by therapists, including high levels of anxiety, the perception of 'strict'

responses from therapists, feeling overwhelmed by the skills material, and 'giving

up' on using the skills or questioning why they should use them. Since this is the

first qualitative study to ask DBT patients about such experiences in depth, it is not

clear if these experiences are common to some patients across all DBT services, or if

they reflect particular difficulties related to the type of patients presenting in East

London, or if they reflect particular difficulties with competent delivery of DBT by

the therapy team studied. Regardless, even though the team's delivery of DBT was

rated as adherent to the model by a trained adherence rater, these experiences

probably do not reflect DBT as it was intended to be delivered by the treatment

developer. Thus, the present study evaluated the treatment mechanisms of DBT in

the context of DBT delivered in a 'real world' East London community setting, and

the conclusions are not necessarily generalisable to DB T as delivered in an idealised

setting, by the treatment developers, and at full dose.

Are the DBT skills a 'specific' or a 'common' factor? The premise of this thesis was

that patients' use of the DBT skills is a specific factor in DBT, outlined in the

treatment manual as a key mechanism of change. However, it could be argued that,

in its broader sense, patients' use of the DBT skills can be conceptualised as a common factor. For instance, Wampold has recently argued that a key common factor in psychotherapy is that it 'uses the specific ingredients of treatment to induce the client to participate in healthy actions' (Wampold & Budge 2012, p.604). He further adds that 'all therapeutic activities, regardless of the therapeutic approach, induce (or should induce) the patient to do something helpful— substitute adaptive attributions for maladaptive ones, address emotional issues with significant others, act assertively, develop friendships, express repressed emotions, regulate affect, exercise, enjoy pleasurable activities, reduce stress, and so forth' (Wampold & Budge 2012, p.617). The behaviours prescribed by the DBT skills clearly fall under the category of 'healthy actions'. This new addition to the contextual theory thus allows the possible interpretation that the association between DBT skill use and outcome in actual fact reflects a common positive association between 'healthy actions' and outcome, and that the particular 'healthy actions' carried out are not important.

Another possible interpretation of the findings is that the patients' perceived understanding, frequency of use and perceived helpfulness of the DBT skills was associated with outcome not due to use of the skills in itself, but rather because these measures are indices of treatment engagement. Engagement of the patient in the treatment process could also be considered a factor which is common to all successful psychotherapy interventions (Wampold 2001). This interpretation is

potentially supported by the finding that frequency of DBT skill use at month 2 was the only independent predictor of treatment completion. It was argued in Chapter Six that this association is unlikely to reflect a direct effect of skill use on staying in treatment, but likely reflects that patients who use the skills more early on in treatment are more engaged in the treatment process. The finding that skill use remained a significant predictor of treatment completion in the multifactorial model, whilst treatment credibility and the alliance did not, may suggest it is actually a better indicator of treatment engagement than these variables.

Attempting to separate the inseparable.

A central part of the contextual model is that specific factors are essential for the common factors of therapy to occur. For instance, being presented with a specific therapy rationale will enhance a patient's belief in the credibility of their treatment, whilst having a set of specific therapeutic tasks upon which patient and therapist can collaborate will enhance the establishment of a therapeutic alliance (Frank & Frank 1991, Wampold 2001). Equally, it could be argued that common factors are essential for specific factors to operate. For example, a patient will only put the DBT skills into practice if they find them credible, and will be encouraged and guided in doing so by a strong alliance with their therapist. Whilst this thesis acknowledged the interdependence of specific and common factors in this way, it was based on the premise that the influence of specific and common factors could be

disentangled using multifactorial modelling. However, others have argued that the two are so intermeshed that attempting to investigate them independently is impossible (Butler & Strupp 1986). The distinction between them has been labelled a "false dichotomy" (Castonguay & Grosse 2006, p. 198), and the debate on their relative importance has been called "a pseudo-issue bedevilling the field and retarding scientific progress" (Strupp 1986, p. 513). However, the results of the present thesis suggest that it is possible to some extent to disentangle their influence. Furthermore, whilst labelling a therapeutic factor "specific" or "common" may not always be helpful, consideration of competing theories describing specific and common factors can help to ensure that researchers consider a wide range of possible explanations for the success of a therapy.

Are the 'extratherapeutic factors' considered truly extratherapeutic? This thesis defined extratherapeutic factors as "factors that influence outcome outside of the treatment context" (pg. 17). However, the extratherapeutic factors considered - perceived social support, number of social contacts and number of social confidantes - may not be truly extratherapeutic according to this definition. A core feature of BPD is chaotic and disturbed interpersonal relationships (APA 1994, Clarkin et al. 1993, Hill et al. 2008, Sanislow et al. 2002, Skodol et al. 2002), and poor social adjustment predicts suicide attempts in patients with BPD (Kelly et al. 2000). Thus, a treatment designed specifically for patients with BPD might be expected to help improve patients' interpersonal relationships - and thus social

support and number of social contacts and social confidantes might be expected to improve as a function of treatment with DBT. Furthermore, one of the four DBT skills modules, Interpersonal Effectiveness, specifically aims to help patients improve their interpersonal relationships and manage interpersonal conflict more effectively (Linehan 1993a, 1993b). Thus, treatment with DBT aims to change patients' interpersonal functioning and to improve their social support. In this sense, patients' perceived social support, number of social contacts and number of social confidantes cannot be considered truly 'extratherapeutic' since what happens in treatment is likely to affect them. However, this limitation is ameliorated by the finding that there were no statistically significant changes in social support, number of social contacts or number of social confidantes during the study period (see pg.184). Nonetheless, since this analysis included treatment dropouts, it is not known whether these factors may have improved in those receiving the full 12 months of treatment. Furthermore the conceptual limitation is still important even if social support did not change during treatment.

Strengths and Limitations of the Qualitative Work

Strengths

A strength of the qualitative work presented in Chapter Seven is that it was able to identify experiences and themes that have not been identified by previous qualitative research. In particular, it was able to provide a systematic framework for

understanding how participants use and benefit from the skills and via what interrelated processes, and was able to highlight several important facilitators and barriers to these processes that have not previously been identified. Further strengths were that, throughout the analysis process, Elliott and colleagues' guidelines for qualitative research were adhered to (Elliott et al. 1999), as follows. The candidate's theoretical orientation, relevant knowledge and initial beliefs were stated in advance. Descriptive sociodemographic and clinical data on the sample were provided to aid the reader in judging to what type of persons the results might be relevant. Many extracts from the data were provided to illustrate the themes and sub-themes that were developed from the data to allow readers to judge the goodness of fit between the candidate's interpretation and the data itself, and to develop their own alternative interpretations if necessary. The credibility of the candidate's interpretation of the data was tested by having another researcher code ten percent of the transcripts against the candidate's coding frame, for which an excellent inter-rater reliability was obtained. The candidate attempted to create a coherent thematic structure whilst preserving nuances within the data, and used pictorial representations to show the temporal-sequential and logical-hierarchical relationships between themes and sub-themes. The results were intended to reflect DBT patients' experiences learning and using the skills in general and not just to apply to a specific sub-group of participants within this. The candidate was particularly keen to be able to sample negative as well as positive experiences. In line with this aim, a range of age groups and

ethnicities were recruited, in addition to both men and women, employed and unemployed people, people with high initial BPD symptom severity and those with low, people who self-harmed frequently before treatment and those who self-harmed less frequently, treatment completers and treatment dropouts, and people who achieved at least a 50% reduction in self-harm frequency and those who did not. Lastly, the author attempted to provide an account that resonated with readers so that they felt the subject matter had been represented truthfully and/or their understanding of it had been enhanced.

Limitations

A limitation was that participants were interviewed at the end of an often lengthy period of therapy. Thus, recall of their feelings and experiences at the beginning of therapy may have been unclear and could have been subject to bias. In particular, participants' outcome could have coloured their recall of events, with participants who complete and/or substantially reduce their self-harm perhaps more likely to recall their experiences learning and using the skills in a positive light. Ideally, qualitative research concerning a lengthy process could overcome these issues by interviewing participants several times during the course of the process. However, this would have required far fewer participants to avoid overcomplicating the analysis, and since saturation was not achieved until forty participants had been recruited, recruiting fewer may have meant that valuable information was lost. A further limitation is that participants' descriptions of how they used the skills and their beliefs about how the skills work are likely to have been influenced by the DBT

language and by the DBT 'textbook' teachings about the skills. Thus, participants'

portrayal of their experiences may in part reflect an 'indocrination' into the DBT

mindset. Likewise, the candidate is highly familiar with the theoretical

conceptualistion of DBT skill use as described in the treatment manuals, and may

have interpreted the data in line with these existing theories. Lastly, although many

dropouts were recruited, the probability of recruiting a treatment completer was

disproportionately higher, and thus the results may not reflect the experiences of

some dropouts who did not want to be interviewed.

Implications of the Findings for Clinical Practice

The following section will discuss the clinical implications of the findings presented

in Chapters Five, Six and Seven. Overall, the findings from all three chapters suggest

that both skills and common factors are important for DBT clinical practice. They

emphasise the importance for clinicians of focusing on both specific and common

elements of treatment, and not over-focusing on one to the exclusion of the other.

They do not support the view held by some theorists that common factors should

be seen only as vehicles for specific factors to exert their influence – and nor do

they support the view of contextual theorists that specific factors should be seen

only as vehicles for common factors to exert their influence. Rather, clinicians

should view both as important in their own right. Furthermore, clinicians should be

aware that specific and common factors are inter-related. In particular, DBT

therapists should maintain an awareness that, by ensuring that patients find their

treatment credible, that they build a strong therapeutic alliance and that they

enhance patients' sense of self-efficacy, patients' use and benefit from the DBT

skills is also likely to increase. Likewise, therapists should bear in mind that

treatment credibility, the alliance and patients' self-efficacy will be enhanced by

encouraging them in using the DBT skills. Lastly, the research did not find strong

evidence for an independent effect of social support from friends and family, but

did show that it is associated with positive outcome when covariance with other

factors is not taken into account. Thus, whilst the findings suggest that the primary

therapeutic focus should remain on specific and common factors, they also suggest

that the role of extratherapeutic factors should not be neglected, and patients

could benefit from encouragement to seek social support from those around them.

How can DBT therapists ensure that patients gain maximum benefit from the DBT

skills, find their treatment credible, build a strong therapeutic alliance and increase

their sense of self-efficacy? Some ideas will be briefly outlined below, based on the

findings from the qualitative research in Chapter Seven and from the general

psychiatric literature on these factors.

Ensuring that patients gain maximum benefit from the DBT skills

The qualitative analysis presented in Chapter Seven highlighted at least four key

things that therapists can do to ensure patients gain maximum benefit from the

skills: encouraging commitment to work towards change, making the skills groups a

fun and interactive learning environment, focusing on early identification of

distress, and countering negative thinking about the skills.

Encouraging commitment to work towards change. The analysis identified that

patients often go through an initial period where they are not fully committed to

work towards change by using the skills, often resulting from doubts and scepticism

about the use of the skills, coupled with confusion about the new terminology and

ideas being presented. Participants emphasised that these experiences require

perseverance and hard work to overcome. Linehan (1993a) outlines in her manual

that a pre-requisite to starting skills teaching is for patients to sign a contract

indicating their commitment to change. However, it is clear that many patients

continue to struggle with this even after signing the contract. If therapists are

aware that this is a common experience, they can take action to address this during

therapy, by acknowledging to patients that this is common, by asking patients

whether they have ambiguous feelings about their readiness to change, and by

asking patients how they are feeling about the skills being taught. This would

enable any therapists to encourage patients to recommit to change, possibly

through the use of the 'commitment strategies' suggested by Linehan (1993a),

and/or using techniques taken from motivational interviewing (Miller & Rose 2009).

It could also allow any particular concerns about the skills to be explicitly

addressed. Findings from the qualitative interviews suggested that three things in

particular were important for establishing a commitment to change and for

overcoming initial difficulties: hearing from other patients that 'it works', keeping

going with the skills groups despite initial difficulties, and keeping going with using the skills until eventually they too could see that it works. Therapists should explain the necessity of these processes and encourage patients who are going through them.

Making the skills groups a fun and interactive learning environment. Participants said that they learnt best when the skills were taught in a fun and interactive way, and conversely, that negative experiences during the skills teaching groups could hinder learning. Based on this, therapists should avoid a didactic 'teacher talks, students listen' style as much as possible, and should ensure information is presented in a range of interactive ways including diagrams, role plays etc. The findings suggest that discussions between patients about their individualised understanding and use of the skills can be very helpful, and therapists should continue to ensure these occur. They should also be aware that many participants report finding the language overcomplex and offputting, especially the use of long acronyms. Therapists could consider moving away from the 'DBT language' more when teaching the skills and could instead aim to put the information across in a way that is more tailored to their audience. Lastly, therapists should maintain an awareness that many of their patients find group interactions challenging and frightening, and this should be identified and targeted in individual therapy where possible. Several participants mentioned that feeling like 'school children' being 'told off' by the therapists added to their anxiety during groups and contributed to subsequent drop out from treament. Therapists should be wary of coming across in

this way and could perhaps address during supervision the difficult balance between making patients feel reassured and comfortable versus setting boundaries and behaviour shaping.

Focusing on early identification of distress. When analysing the ways in which participants discussed using the skills, it was determined that identifying feelings of distress and deciding to respond by using the skills was often a key first step in successful application of the skills. Moreover, when discussing barriers to being able to use the skills, many participants described that it was important to 'catch' their emotions early on, before they escalated to the extent where they felt unable – or unwilling – to intervene. As discussed in Chapter Seven, BPD traits are associated with significantly elevated levels of alexithymia, i.e. difficulty identifying, describing and differentiating between emotions (Webb & McMurran 2008), which may make it difficult for patients to identify their emotional distress sufficiently early to intervene. Many participants who completed therapy described gaining increased awareness of their emotional states over the course of therapy, often by monitoring thoughts or body sensations. It seems that patients experience these skills as of central importance, and therapists should ensure that practise of these skills remains a key aspect of therapy.

Countering negative thinking about the skills. Many participants reported that, especially once their emotions had escalated, they were sometimes prone to negative thoughts about the skills, such as feeling hopelessness that they would work, or feeling that using them was too difficult, or questioning why they should

have to keep trying to change their behaviour. This often led to reverting back to old behaviours such as self-harm, aggression or avoidance. Therapists should be aware that patients are vulnerable to these thought patterns, and could perhaps probe for them during behavioural analyses.

Increasing treatment credibility

It has been shown that, in general, the more information a person has regarding the rationale of a psychological treatment, the more credible they will find it (Feeny et al. 2009). Furthermore, psychological treatments are perceived as particularly credible when they are presented as novel, based on scientific research, and tested in clinical trials (Kazdin & Krouse 1983). Therapists could perhaps focus on these aspects when initially presenting DBT to patients. Research has also shown that patients find psychological treatment more credible when presented with a clear link between the hypothesised function underlying the disorder and the treatment mechanism (Iselin & Addis 2003). In this case, therefore, therapists could aim to make a clear link between the emotional dysregulation hypothesised to underlie BPD and the skills taught in DBT. More generally, the ability to ensure that the client understands the rationale for the treatment, and to elicit and then deal with any client concerns or questions about the treatment, is a generic therapist competence outlined in national training guidelines (IAPT 2007). These competencies will both increase the credibility of the treatment for the client, and aid with building the therapeutic alliance.

Strengthening the therapeutic alliance

Prior research has shown that, in general, patients find formation of an alliance easier when they experience their therapist as empathic, understanding and trustworthy (Ackerman & Hilsenroth 2003, Bordin 1979, Norcross 2010, Wampold & Budge 2012). Linehan (1993a) recognised the importance of the therapeutic alliance when developing DBT, and emphasised the importance of developing attachment between patient and therapist early on in treatment. She further suggested that the therapist can nurture the patient's feeling of attachment and trust by validating the patient's emotional, cognitive and behavioural experiences, being warm and empathic, using self-disclosure where appropriate, and problem-solving where ruptures or difficulties arise in the therapeutic relationship. Thus, DBT already contains within it the strategies for building a strong alliance, and therapists should ensure these are valued equally with more specific techniques. One way of maintaining a focus on the alliance could be to request regular feedback from patients on their perception of the relationship. This has been shown to improve outcome in mixed diagnosis groups (Harmon et al. 2007, Whipple et al. 2003). More generally, the generic therapist competences outlined in clinical training guidance are of the utmost importance in being able to build and strengthen the therapeutic alliance (IAPT 2007). These include competence for working sensitively and adaptively with different client groups (different cultures, ethnicities, religions, ages, genders, sexual orientations and social classes); an ability to engage the client by building rapport, engendering trust, adapting one's

personal style to suit the individual client, conveying confidence and avoiding negative interpersonal behaviours; an understanding of the importance of the therapeutic alliance; an understanding of therapist factors impacting the alliance such as warmth, empathy, honesty and openness; understanding the client's 'world view'; recognising and addressing threats to the alliance; an ability to deal with the emotional content of therapy sessions; and an ability to manage endings (Ackerman & Hilsenroth 2001, Ackerman & Hilsenroth 2003, IAPT 2007).

Increasing patients' sense of self-efficacy

According to Bandura (1986, 1997), four key ways to enhance a person's sense of self-efficacy for carrying out a particular task are for them to see others mastering a similar task, to be encouraged by trusted individuals that they can master the task, to reduce anxiety and negative thoughts related to the task, and, most importantly, to experience mastering the task themselves. The DBT skills thus provide an ideal medium for patients to increase their sense of self-efficacy, and therapists can aid this by getting patients to talk to other patients who have mastered the skills, by encouraging patients in their attempts to use the skills, by asking about and addressing anxieties related to skill use, and to draw patients' attention to incidents where they have used the skills successfully.

Implications of the Findings for Further Research

There are four key recommendations that can be made for further research, based on the present findings: improved assessment of skill use, disentangling the process-outcome relationship, assessing the impact of alexithymia, and conducting cross-model research.

Improved assessment of skill use

Future research on the association between skill use and outcome in DBT may benefit from using the diary cards patients complete as part of therapy. As described in the Limitations, this would allow collection of more frequent and detailed data on skill use, since cards are completed weekly, and because daily use of each of the skill types listed by Linehan (1993a) is recorded. Alternatively, the experience sampling method could allow frequent collection of detailed data on skill use, which would not be affected by recall bias. This increase in volume and level of data would be valuable and could be preferable to the method used in the present work, despite having its own limitations as discussed earlier (p. 378-380).

Alternatively , future research on the DBT skills would benefit from using the recently developed DBT Ways of Coping Checklist (Neacsiu et al. 2010). A major strength of this measure is that it assesses the use of the behaviours prescribed and proscribed by the skills teaching, but using neutral language and avoiding all DBT terminology. This not only allows the measure to be used with patients who are receiving treatments other than DBT, but also means that patients' responses are

less reliant on their understanding and interpretation of the DBT skills terminology. In addition, this movement away from DBT terminology may make the measure less subject to reporting bias, since patients could link the use of DBT terminology to the requirements of the therapy and their therapist, possibly triggering them to over-report skill use in order to please their therapists or feel they are doing the therapy 'properly'.

Disentangling the process-outcome relationship

As discussed in the Limitations section, it is not clear whether improved outcomes led to increased skill use, treatment credibility, alliance strength and self-efficacy, or vice versa. Further research could use structural equation modelling to disentangle the direction of these associations – a method allowing the strength and inter-relation of various pathways between variables over time to be modelled and tested (Shipley 2000, Twisk 2003). This may require collection of data from a much larger sample than that of the present research. Whilst relatively simple structural equation models with strong relationships between variables can be fitted with data from 200 participants, more complex models with non-normal data and weaker inter-factor associations may require up to 2000 participants (MacCallum et al. 1996, Nussbeck et al. 2006).

Assessing the impact of alexithymia

A key finding from the qualitative research was the importance of being able to identify emotional distress sufficiently early to allow skill use. This may be particularly important given the association between BPD traits and alexithymia, i.e. difficulty identifying, describing and differentiating between emotions (Gunderson & Sabo 1993, Webb & McMurran 2008). Alexithymia is also particularly problematic in patients with complex PTSD linked to childhood abuse (Berenbaum 1996, Lanius et al. 2011, Shipko et al. 1983, Zeitlin et al. 1993), a condition that is highly conceptually and empirically overlapping with BPD (Driessen et al. 2002). Thus, individuals with comorbid complex PTSD and/or high levels of alexithymia may find it difficult to identify their emotional distress, and may therefore find acquiring the DBT skills particularly difficult. Further research could assess the impact of these factors on the outcome of DBT. These factors may also influence the outcome of other psychotherapies for BPD which focus on identification and labelling of emotional states, such as mentalization based therapy with its focus on 'mentalizing' emotional states (Bateman & Fonagy 2006, Bouchard et al. 2008, Nicolo et al. 2011).

Furthermore, the idea of alexithymia as related to BPD is complicated by findings indicating that alexithymia is highly prevalent also in conditions relating to 'overcontrol' of emotions and behaviour (Lynch & Cheavens 2008), including

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anorexia nervosa (Bourke et al. 1992, Harrison et al. 2009), avoidant personality

disorder (Bach et al. 1994, Nicolo et al. 2011), dependent personality disorder

(Nicolo et al. 2011), schizotypal personality disorder (Bach et al. 1994) and

treatment resistant depression (Nicolo et al. 2011, Vanheule et al. 2007).

Conceptually, it makes more sense that alexithymia should be associated with

'overcontrolled' disorders than with 'undercontrolled disorders'. Thus, the

association between BPD and alexithymia may be driven by comorbidity with

overcontrolled disorders, and/or may reflect an overcontrolled subtype of BPD.

Future research on the impact of alexithymia on treatment for BPD should

therefore consider carefully the comorbidities present in the treatment sample and

should consider subdividing the sample into over-controlled versus under-

controlled subtypes. In addition, the assessment of alexithymia may be confounded

by high levels of dissociation, which is common in BPD (APA 1994) and complex

PTSD (van der Hart et al. 2005) and can create difficulties with self-awareness (Dell

& O'Neill 2011, van der Hart et al. 2005). There is evidence to indicate that the two

are conceptually and empirically distinct (Tutkun et al. 2004, Wise et al. 2000)- but

future research assessing the impact of alexithymia on treatment for BPD should

nonetheless assess dissociation as a potentially confounding factor.

Cross-model research

It was noted in Chapter One and Two that there are many different psychotherapy

models that have been shown to be effective for treating BPD in at least one RCT,

and that a recent meta-analysis found that no one model is superior over any other

(Levy et al. 2012, in preparation). Effective models include CBT, DBT, DDP,ERGT,

MBT, SFT, STEPPS and TFP. The present research suggests that DBT exerts its effect

via a complex interaction of specific and common factors, and the same is likely to

be true of other treatment models. Thus, rather than focusing on 'horse races'

comparing the effectiveness of different models, further research could focus on

identifying the commonalities between models, the relative strengths and

weaknesses of each, and, most importantly, whether particular patient profiles may

benefit more from the specific factors entailed in one model than those in another.

For example, further research could investigate whether some patients would

benefit more than others from the increase in mentalizing capacity hypothesised to

underlie MBT (Bateman & Fonagy 2006), whilst others might benefit more from the

increase in emotional and behavioural control provided by the DBT skills. It is

possible also that one treatment could indirectly enhance the change mechanisms

thought to underlie another model. For instance, it is likely that the DBT skills,

especially those relating to mindfulness, also increase patients' mentalizing

capacity, whilst increasing patients' mentalizing capacity via MBT may indirectly

improve their emotional and behavioural control.

Conclusion

In conclusion, this research found evidence that both the DBT skills and common factors can independently predict the outcome of DBT for BPD, whilst strong evidence for an independent effect of extratherapeutic factors was not found. The effect of skills and common factors seemed also to be inter-dependent to some extent, since they were highly correlated and since adjusting for the effect of common factors on skills factors and vice versa caused some associations to weaken in size or drop below statistical significance. The findings could be interpreted as counter to the contextual model's assertion that common factors are the dominant causes of change in therapy. However, DBT skill use could in fact reflect a common factor such as participation in healthy actions or treatment engagement. The findings imply that DBT clinicians should seek both to enhance patients' use of the skills and to maintain an awareness of the importance of treatment credibility, the therapeutic alliance and self-efficacy. The findings from the qualitative analysis led to several specific recommendations for enhancing the benefit patients gain from the DBT skills, namely encouraging commitment to work towards change, making the skills groups a fun and interactive learning environment, focusing on early identification of distress, and countering negative thinking about the skills. Further research could assess skill use in more detail, could employ techniques such as structural equation modelling to disentangle the direction of process-outcome relationships, could evaluate the impact of

alexithymia and could focus on identifying the strengths, weaknesses, differences

and commonalities of specific factors in different therapeutic approaches for BPD.

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Appendix A - Publications linked to this thesis

Publication A1 - Chapter Three is based on this publication:

Barnicot, K., Katsakou, C., Bhatti, N., Savill, M., Fearns, N. & Priebe, S. (2012). Factors predicting the outcome of psychotherapy for borderline personality disorder: a systematic review. *Clinical Psychology Review 32(1),* 400-412.

Publication A2 - Chapter Four is based on this publication:

Barnicot, K., Katsakou, C., Marougka, C., Priebe, S. (2011). Treatment completion in psychotherapy for borderline personality disorder: a systematic review and meta-analysis. *Acta Psychiatrica Scandinavica* 123(5), 327-338

Factors predicting the outcome of psychotherapy for borderline personality disorder: A systematic review

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ABSTRACT

Background: There is substantial variation between individuals with borderline personality disorder (BPD) in the degree of benefit gained from psychotherapy. Information on factors predicting the outcome of therapy for this group could facilitate identification of those at risk for poor outcome, and could enable helpful therapy processes to be identified.
Method: A systematic search of PsycInfo, EMBASE, CINHAL and Medline identified research on factors predicting symptom change during therapy for patients with a BPD diagnosis. Non-English language papers and dissertations were included.
Results: Two consistent positive predictors of symptom change were identified: pre-treatment symptom severity and patient-rated therapeutic alliance. Contrary to theories predicting increasing immutability with age, there was no evidence that age predicted poorer outcome.
Conclusion: More severely ill patients may have greater potential to achieve change during therapy, and should remain a focus for psychotherapy services. The therapeutic alliance is an important common factor predicting outcome in patients with BPD, even in highly disorder-specific treatments. Outcomes may be improved by further clinical and research focus on forming strong therapeutic alliances. The advancement of the field requires identification and testing of new predictors of outcome, especially those related to specific theories of therapeutic change in BPD.

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Contents

1. Introduction

Borderline personality disorder is defined by DSM-IV as "a pervasive pattern of instability of interpersonal relationships, self-image and emotions, and marked impulsivity" (APA 2000). Patients with BPD can be considered 'stably unstable', experiencing highly reactive rapid fluctuations in mood, intense and inconstant behaviour in interpersonal relationships, extreme anger and impulsive behaviour such as substance abuse and self-harm. They generate high treatment costs through extensive use of emergency and inpatient psychiatric services (Ansell, Sanislow, McGlashan, & Grilo, 2007; NIMH 2001), stemming in part from high rates of self-harm and suicide attempts. Treatment dropout in this group, as in other personality disorders, has sometimes been very high, although recent meta-analyses suggest that dropout rates are less problematic than had previously been thought (Barnicot, Katsakou, Marougka, & Priebe, 2011; McMurran, Huband, & Overton, 2010). Considering the challenge for health services and the level of distress linked with BPD, the development of effective treatments is seen as a priority (NIMHE 2003).

Evidence suggests that psychotherapy can alleviate the behaviours and psychological distress associated with BPD. In particular, the 1990s and 2000s saw the development of various psychotherapy models specifically designed to treat BPD, such as dialectical behaviour therapy, mentalization based therapy, schema focused therapy and STEPPS (Bateman & Fonagy, 2006; Blum, Bartels, St. John, & Pfohl, 2002; Linehan, 1993; Young, 1994). Some of these have been demonstrated more effective than treatment as usual in randomised controlled trials, in terms of improving symptoms of BPD such as self-harm and general psychiatric symptoms — although outcomes vary between trials (Bateman & Fonagy, 1999; Blum et al., 2008; Doering et al., 2010; Giesen-Bloo et al., 2006; Linehan, Armstrong, Suarez, Allmon, & Heard, 1991; Linehan et al., 2006). Some patients receiving these treatments experience markedly better outcomes than others despite receiving the same treatment, and the reasons for this are unclear. For instance, after 18 months of mentalization based therapy, some patients achieve remission from severe self-harm but others do not (Bateman & Fonagy, 2009). After 12 months of schema focused therapy or transference focused psychotherapy, some patients achieve reliable change in BPD symptoms but others do not (Giesen-Bloo et al., 2006). After 12 months of dialectical behaviour therapy, the average score on the Hamilton Rating Scale for Depression was 14, indicating moderate depression. However, there was substantial variance such that some participants could be classified as not depressed, whilst others could be classified as severely depressed (Linehan et al., 2006). The factors driving these inter-individual differences in outcome are largely unknown.

There is as yet no consensus on what factors influence the outcome of psychotherapy for borderline personality disorder. Such information would be valuable, firstly because determining what patient characteristics influence the outcome of therapy could enable earlier identification of patients who may be at risk of poor outcomes and may therefore require altered treatment strategies. Secondly, understanding how therapy characteristics or processes can influence outcomes could enable helpful factors to be identified. Therapies and even routine psychiatric care for borderline personality disorder could then be modified in order to enhance these helpful factors.

Existing attempts to synthesise research on predictors have included those of Lieb et al. (2004), who briefly summarised the results of four relevant studies, and Robins and Chapman (2004), who summarised the results of five relevant studies, both as part of wider reviews on treatment for BPD. Predictive factors identified in these brief reviews included affective instability, self-harm history, previous hospitalisation length, abuse history, maternal psychopathology, patient age, schizotypal symptoms, hostility and therapist adherence to the treatment model. However, whilst a wide range of potential predictors were identified, these reviews demonstrated few consistent findings across studies. Furthermore, some of the cited papers were conference abstracts and thus not amenable to detailed methodological scrutiny, whilst others referred not to the outcome of a course of psychotherapy, but to the outcome of a medication trial, or of a long-term follow up after a hospital admission. Moreover, it was beyond the scope of these brief review sections to include any information or critique of the methodology employed in the cited studies. Thus, clinicians engaged in psychotherapy with borderline patients have no established, critically appraised findings on which to judge the likely prognosis of a particular client, or the likely importance of a particular therapeutic process or technique.

The aim of this study is therefore to systematically and critically review the evidence on patient characteristics and treatment processes prospectively predicting symptom change during psychotherapy for BPD.

2. Methods

Searches of title and abstract content were performed in January 2012 in the PsycInfo, EMBASE, CINHAL and Medline databases. The search terms used were combinations of either "borderline personality" or "Cluster B" with terms used to designate association: "correlate", "associate", or "predict", and terms used to describe relevant outcomes: "outcome", "symptoms", "recovery", "improvement", "depression", "anxiety", "anger", "self harm", "self injury", "parasuicide" or "suicide", or with terms used to designate psychological treatment "therapy" or "psychotherapy". The references of included studies were then screened to identify any further relevant papers, as were the contents of all known randomised controlled trials of psychotherapy for BPD as identified in two recent reviews (Barnicot et al., 2011; Priebe et al., in preparation).

Studies were included if they evaluated the prospective relationship between any pre-treatment patient characteristic or treatment process and symptom change during psychotherapy for borderline personality disorder, and reported on the statistical significance of the association. Pre-treatment patient characteristics could include sociodemographic factors, past or current mental health symptoms, personality traits or previous treatment history. Associations between outcome and patient biological (e.g. amygdala activity) or neuropsychological (e.g. working memory capacity) characteristics were excluded. Treatment processes were broadly defined to include any aspects of therapist or patient behaviours during treatment, or any change in patients' internal experiences. However, correlations between change in one symptom construct and change in another were excluded as these were thought to be too highly confounded. The outcome of interest, symptom change, could include BPD symptoms, Axis I symptoms, and other Axis II symptoms. Studies in

which not all patients had a diagnosis of BPD were excluded. Conference abstracts were excluded whilst dissertations and non-English language papers were not excluded.

The first author screened all titles. The abstracts of potentially relevant studies were then independently screened by two researchers at a time (KB and either MS, NB or NF), and the full texts of any potentially relevant studies were obtained. The references of any full texts were also screened for potential relevance. Data on study characteristics and findings was independently extracted by the first author and either MS or NB. Any discrepancies between researchers were resolved by discussion.

Quality criteria for evaluating the predictor analyses used in included papers were constructed, by reference to existing quality criteria such as those of Gerber et al. (2011) and through wider reading on appropriate conduct of predictor–outcome analyses. The criteria developed were as follows:

1. The sample size for the predictors analysis ($N < 30 = 0$; $30 \leq N > 100 = 1$; $N \geq 100 = 2$).
2. The use of a reliable structured interview to diagnose BPD (not used = 0; used = 1).
3. The use of validated and reliable predictor and outcome measures (not validated and reliable = 0; validated and reliable = 1).
4. For randomised controlled trials only, blinding of the outcome assessor to treatment arm (not blinded = 0; blinded = 1; no control condition = n.a.).
5. Predictor analysis used intent-to-treat data (not used = 0; used = 1).
6. Evidence was obtained that omission of missing data did not bias the results, either by showing that participants with missing outcome data did not differ from those with complete data on any of the predictor variables, or showing that predictor–outcome relationships remained the same after adjusting for data missingness, or showing that a sensitivity analysis using multiple imputation demonstrated the same results (evidence not obtained = 0; evidence obtained = 1; data available for entire sample of interest = n.a.).
7. Maximum likelihood or multiple imputation used in the main (not sensitivity) analysis to minimise bias from missing data (not used or no information on missing data = 0; used = 1; no missing data = n.a.).
8. Outcome distribution checks were performed and appropriate analyses used (distribution not checked or inappropriate model used = 0; distribution checked and appropriate model used = 1).
9. Analysis used continuous rather than dichotomised predictors when appropriate. This method increases statistical power to detect relationships between variables (Brauer, 2002) and does not involve arbitrary division of predictor variables into "high" and "low" categories. (Continuous predictor variable was dichotomised in the predictor analysis = 0; continuous predictor was entered as continuous variable in predictor analysis = 1; predictor was categorical originally = n.a.).
10. Paper published in a peer reviewed journal (not published = 0; published = 1).

Each included study was scored against each criterion and the scores for each study were then averaged to give a quality score for that study between 0 and 1, with higher scores reflecting higher quality. This averaging approach was taken because not all quality criteria were applied to each study. The quality score reflects the quality of the study's analysis of predictor–outcome relationships, rather than the quality of the study as a whole. Where information pertaining to the criteria was ambiguous in the included studies, study authors were contacted for clarification. Where this information could not be obtained, ambiguous information was scored as not meeting the quality criterion. Analysis quality was assessed independently by KB and NB. Inter-rater reliability was "substantial" according to Landis and Koch's criteria (kappa = 0.72, S.E. = 0.06; Landis and Koch

(1977)). The final quality analysis results were decided by discussion between the two authors.

Ideally, synthesis of research findings should be done using effect size procedures such as meta-analysis (Hunter & Schmidt, 2004). However, many of the studies included in this review presented no information from which a standardised effect size could be calculated. Meta-analysis would have required exclusion of these studies — a potential source of bias since studies with non-significant findings were less likely to present effect size data. Furthermore, the number of studies examining the same predictor in relation to the same outcome was often too small for meta-analysis. Therefore, research synthesis was descriptive only. Findings on predictors examined in three or more studies will be presented in detail, since this was deemed a sufficient number of studies to permit cross-study synthesis. Predictors evaluated in fewer studies will be more briefly described.

3. Results

Thirty three papers met review inclusion criteria. See Fig. 1 for a QUOROM diagram detailing the paper retrieval process. The characteristics of these papers are summarised in Table 1. Some of the included papers had overlapping samples. The sample assessed in Linehan et al. (1999) constitutes a sub-sample of the patients assessed by Chapman, Derbridge, Cooney, Hong, and Linehan (2009) and Neacsiua, Rizvi, and Linehan (2010), whilst the patients included in Bohus et al. (2004) constitute a sub-sample of those assessed in Kleindienst et al. (2011), and the patients included in Meehan (2008) constitute a sub-sample of those assessed in Clarkin, Levy, Lenzenweger, and Kernberg (2007). In addition, the analyses of Spinhoven, Giesen-Bloo, van Dyck, Kooiman, and Arntz (2007) and Spinhoven, Giesen-Bloo, van Dyck, and Arntz (2008) use a sub-sample of the patients assessed in Giesen-Bloo et al. (2006), whilst the samples of Brown, Linehan, Comtois, Murray, and Chapman (2009) and Harned, Jackson, Comtois, and Linehan (2010) are both drawn from a larger study (Linehan et al., 2006).

Despite differences in therapy model, measurement instruments, and measurement timepoints, some consistent findings across studies could be identified. The main method for classifying study findings was a consideration of the statistical significance of any relevant associations tested. However, wherever available, the effect size for significant associations was also reported, as standardised r coefficients where possible. Effect sizes converted by the review authors to r coefficients are signified by the superscript [a]. Furthermore, nine authors of included papers that did not give information from which an r coefficient could be calculated were contacted, and the necessary data was received from two. Effect sizes received through correspondence with study authors are signified by the superscript [b]. The size of r coefficients was classified as small ($r < 0.30$), medium ($30 < r < 0.50$) or large ($r \geq 0.50$), according to Cohen's classifications (Cohen, 1988). Risk ratios were classified according to the Cochrane Collaboration categorisation of risk ratio effect size (Schünemann et al., 2008).

4. Quality evaluation

Predictor–outcome analyses in eight studies were given low quality scores (≤ 0.5), fifteen moderate scores (> 0.5 and < 0.70), nine high scores (≥ 0.70 and < 1.0) and one the maximum score of 1, as shown in Table 1. Importantly, these scores pertain specifically to the quality of the analyses of predictor–outcome associations, and not to the quality of the study as a whole. Subsequent references in this review to "analysis quality" are references to these quality ratings, and not to the quality of the studies as a whole. A table explaining the calculation of the quality score for each study is available as online supplementary material. Twenty-five authors were contacted in order to clarify information relating to the quality criteria, of which twelve replied with relevant information. Information gained through contacting
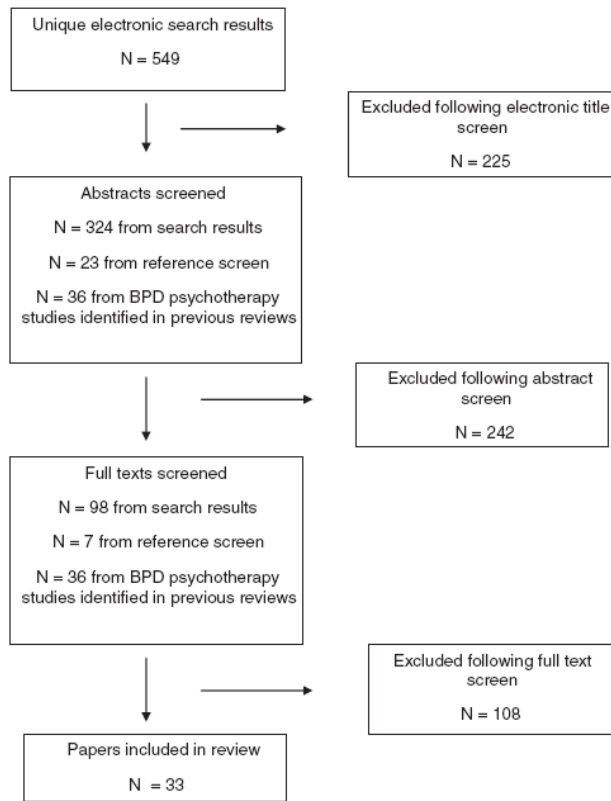
Fig. 1. QUOROM diagram showing paper retrieval process.

study authors is denoted by the superscript [c] in the supplementary table.

5. Patient characteristics at pre-treatment

5.1. Sociodemographics

Almost all studies to examine the influence of patient sociodemographics found no significant association with outcome, including studies examining age (Bateman & Fonagy, 1999; Black et al., 2009; Bohus et al., 2004; Davidson, Tyrer, Norrie, Palmer, & Tyrer, 2010; Laddis, 2010; Ryle & Golynkina, 2000), gender (Bateman & Fonagy, 1999; Laddis, 2010; Ryle & Golynkina, 2000), employment (Bohus et al., 2004; Davidson et al., 2010; Spinhoven et al., 2008), educational level (Bateman & Fonagy, 1999; Black et al., 2009, Davidson et al., 2010; Laddis, 2010; Ryle & Golynkina, 2000; Spinhoven et al., 2008), and marital status (Bateman & Fonagy, 1999; Davidson et al., 2010; Laddis, 2010; Ryle & Golynkina, 2000). Most of these non-significant findings resulted from predictor analyses of moderate or high quality. Exceptions were a significant association between age and change in suicidality (Clarkin et al., 2007, direction and effect size not stated, moderate predictor analysis quality), a positive association between male gender and improvement in general psychiatric symptoms (Black et al., 2009,

$r = 0.18$ small effect size, moderate predictor analysis quality) and a positive association between employment and remission from BPD (Ryle & Golynkina, 2000, $r = 0.60^a$ large effect size, moderate predictor analysis quality).

5.2. BPD symptom severity

The effect of pre-treatment BPD severity was examined in seven studies, all of moderate or high predictor analytic quality with one exception. Their findings are summarised in Table 2. When broken down by outcome, four of five studies examining the association with change in BPD symptoms found evidence of a relationship (Black et al., 2009; Giesen-Bloo et al., 2006; Meares, Stevenson, & Comerford, 1999; Ryle & Golynkina, 2000). The two studies evaluating the effect of initial BPD severity on Axis 1 symptom change found no significant relationships (Black et al., 2009; Bohus et al., 2004), whilst another found no significant association between BPD severity and remission from self-harm (Bateman & Fonagy, 1999).

Three studies found that those with higher pre-treatment BPD severity achieved greater improvement in BPD symptoms during treatment. Effect sizes in these three studies ranged from small ($r = 0.29^a$, Meares et al., 1999) to large ($r = 0.58$, Black et al., 2009). Conversely, Ryle and Golynkina (2000) found that higher pre-treatment BPD

Table 1
Papers included in the review.

Paper	Treatment(s) included in predictor analysis	Sample size for predictor analyses	Study design	Quality score	Predictor variables	Outcome variables
Axelrod et al. (2011)	DBT	24	Obs	0.70	Improvement in emotion regulation ability during tx	Substance use frequency
Bateman and Fonagy (1999)	MBT	19	RCT	0.50	Pre-tx age, anxiety severity, Axis I comorbidities, BPD severity, childhood abuse, depression severity, educational level, gender, general psychiatric symptom severity, living status, marital status, psychiatric medication, self-harm history, social adjustment, treatment history	Self-harm
Berking et al. (2009)	DBT, TBCE	81	RCT	0.82	Pre-tx experiential avoidance, change in experiential avoidance during tx.	Depression
Black et al. (2009)	STEPPS, TAU	164	RCT	0.91	Pre-tx age, Axis I comorbidities, Axis II comorbidities, BPD severity, depression severity, educational level, gender, general psychiatric symptom severity, social adjustment, self-harm history	BPD severity, depression severity, general psychiatric symptom severity
Bohus et al. (2004)	DBT	50	CT	0.64	Pre-tx age, BPD severity, depression severity, anxiety severity, anger severity, dissociation severity, employment, general psychiatric symptom severity, psychosocial functioning, self-harm history	Depression severity, anxiety severity, anger severity, dissociation severity, general psychiatric symptom severity
Braakman et al. (2007)	DBT	30	Obs	0.50	Pre-tx dissociation severity	Depression severity, anxiety severity, dissociation severity, general psychiatric symptom severity
Brown et al. (2009)	DBT, TBCE	73	RCT	0.55	Shame during tx	Self-harm
Chapman et al. (2009)	DBT, CVT, TBCE	55	RCT	0.64	Pre-tx Cloninger's temperament dimensions	Self-harm
Clarkin et al. (2007)	TFP, DBT, ST	62	RCT	0.64	Pre-tx age	Depression severity, anxiety severity, suicidality, impulsivity, aggression
Davidson et al. (2010)	CBT, TAU	76	RCT	0.91	Pre-tx age, age at first self-harm, educational level, forensic history, gender, employment, living status, marital status, self-harm frequency, special educational needs, suicide attempt frequency	Suicide attempt(s)
Doering et al. (2010)	TFP, TBCE	72	RCT	0.73	Pre-tx psychiatric medication usage	BPD severity, general psychiatric symptom severity, self-harm, suicide attempts
Giesen-Bloo et al. (2006)	SFT, TFP	86	RCT	0.73	Pre-tx BPD severity, self-harm history, psychiatric medication	BPD severity
Goldman and Gregory (2010)	DDP	10	Obs	0.63	DDP techniques (association, attribution, ideal other) used during tx, therapeutic alliance during tx.	Alcohol abuse, BPD severity, depression, dissociation, self-harm,
Gunderson et al. (1997)	Mixed	15	Obs	0.60	Therapeutic alliance during tx — patient and therapist-rated	BPD severity, general psychiatric symptoms
Harned et al. (2010)	DBT	51 (22)	Obs	0.60 (0.50)	Pre-tx dissociation severity, drug and alcohol abstinent days, number of Axis 1 diagnoses, PTSD comorbidity, PTSD symptom severity, self harm frequency, social functioning, suicide attempt frequency, timing of index trauma	Dissociative disorder, imminent suicide risk, self harm, substance dependence.
Kleindienst et al. (2011)	DBT	54	Obs	0.70	Pre-tx dissociation severity, general psychiatric symptom severity and interpersonal problem severity	General psychiatric symptom severity
Koons et al. (2001)	DBT, TAU	20	RCT	0.45	Pre-tx anxiety severity	BPD severity, depression severity, anger severity, dissociation severity, self-harm, suicidality
Laddis (2010)	CCM, TAU	58	CT	0.55	Pre-tx age, gender, educational level, general psychiatric symptom severity, marital status.	General psychiatric symptom severity
Leerer (1997)	DBT	12	Obs	0.50	Therapeutic alliance during tx — patient-rated	Anger severity, self-harm
Linehan et al. (1999)	DBT, TAU	7	RCT	0.36	Therapist adherence to DBT protocol during tx	Substance abuse
Marziali et al. (1999)	IGP, IDP	18	RCT	0.36	Therapeutic alliance during tx — patient-rated	Depression severity, general psychiatric symptom severity
Meares et al. (1999)	IPP, TAU	60	CT	0.56	Pre-tx BPD severity	BPD symptom severity
Meehan (2008)	DBT, ST, TFP	37	RCT	0.64	Pre-tx state anger. Affective communication during tx.	Aggression, state anger, suicidality
Neacsiua et al. (2010)	DBT, TAU, CVT, TBCE	108	RCT	1.00	Use of skills taught in DBT during tx	Depression severity, anger severity, suicide attempts
Pasieczny and Connor (2011)	DBT	44	CT	0.40	Therapist level of training	Anxiety severity, depression severity, general psychiatric symptom severity, suicidality, suicide attempt frequency
Ryle and Golynkina (2000)	CAT	27	Obs	0.63	Pre-tx alcohol abuse history, age, BPD severity, childhood abuse severity, depression severity, eating disorder history, educational level, employment, gender, general psychiatric symptom severity, impulsivity severity, interpersonal problem severity, recent major life events, marital status, psychiatric medication, self harm history, sexual orientation, social functioning, substance abuse history, treatment history, violence history	Recovery from BPD
Shearin and Linehan (1992)	DBT	4	Obs	0.50	Balance between therapist use of acceptance versus change-oriented techniques during tx	Self-harm
	SFT, TFP	78	RCT	0.55		BPD severity

Table 1 (continued)

Paper	Treatment(s) included in predictor analysis	Sample size for predictor analyses	Study design	Quality score	Predictor variables	Outcome variables
Spinhoven et al. (2007)					Pre-tx therapist–patient schema dissimilarity, therapeutic alliance during tx – patient and therapist-rated	
Spinhoven et al. (2008)	SFT, TFP	71	RCT	0.73	BPD severity, educational level, employment, number of Axis 1 disorders, number of Axis 2 disorders. Therapist prediction of outcome during tx.	Recovery from BPD, reliable change in BPD symptoms
Strauss et al. (2011)	PT	21	Obs	0.57	Change in attachment status during tx	General psychiatric symptom severity
Turner (2000)	DBT, CCT	24	RCT	0.68	Therapeutic alliance during tx – patient-rated	Depression severity, anxiety severity, general psychiatric symptom severity, anger severity, impulsivity severity, self-harm, suicide attempts, suicidality
Wenzel et al. (2008)	CBT	28	Obs	0.60	Pre-tx attitude towards talking to a therapist, expectations for improvement	Depression severity, suicidality, BPD severity
Yen et al. (2009)	DBT	47	Obs	0.70	Pre-tx BPD criteria fulfilled, depression severity, anger severity, dissociation severity, general psychiatric symptom severity.	Depression severity, anger severity, dissociation severity, general psychiatric symptom severity, self-harm

( ) indicates where sample size or quality score differs for some analyses; CAT, cognitive analytic therapy; CBT, cognitive behavioural therapy; CCM, Cape Cod model; CCT, client centred therapy; CT, controlled trial; CVT, comprehensive validation therapy; DBT, dialectical behaviour therapy; IDP, individual dynamic therapy; IGP, interpersonal group therapy; IPP, interpersonal psychodynamic psychotherapy; MBT, mentalization based therapy; Obs, observational study; PT, psychodynamic therapy; RCT, randomised controlled trial; SFT, schema focused therapy; STEPPS, systems training for emotional predictability and problem solving; ST, supportive therapy; TAU, treatment as usual; TBCE, treatment by community experts; TFP, transference focused psychotherapy; tx, treatment.

severity was associated with a lower chance of achieving recovery from BPD (i.e. no longer meeting diagnostic criteria), with an effect size classified as large ($r = -0.46$ [a]). A fifth study reported a significant association between initial BPD severity and improvement, but did not report the direction of the effect (Spinhoven et al., 2008). A partial explanation of the discrepant result in Ryle and Golynkina's study may be their use of recovery as an outcome criterion, whereas the studies with significant positive results used degree of symptom change as a continuous variable. Thus, it is possible that patients with higher symptom severity achieve greater change overall but that this change is less likely to take them below meeting full criteria for BPD. In order to further explore the discrepant result obtained by Ryle and Golynkina, the review authors generated approximately standardised BPD severity scores for these five studies. BPD severity in Ryle and Golynkina's study was not notably higher or lower than in the four other studies, suggesting that the discrepancy in the direction of association between BPD severity and symptom change could not be explained by differences in severity between studies. One possible explanation for the positive association between symptom severity and symptom change is that, whilst all patients will show regression to the mean over time, such effects may be stronger in patients with higher initial symptoms due to their greater distance from the mean (Bland & Altman, 1994). If this were so, one might expect to find larger positive associations between severity and change in study samples with higher initial severity. No such pattern was evident in the data, although the number of studies was small and the standardisation of severity approximate.

5.3. Dissociation severity

Findings on the effect of dissociation are shown in Table 2. Using predictor analyses of varying quality, three studies found evidence that more severe pre-treatment dissociation was linked to greater improvement in dissociation during treatment (Bohus et al., 2004, $r = 0.43$ [a], medium effect; Braakman et al., 2007, $F(2, 27$ [a]$) = 36.1$; Yen, Johnson, Costello, & Simpson, 2009, $r = 0.57$ [a] with endorsement of BPD emptiness as covariate, large effect). When comparing studies, there was no evidence that studies with higher pre-treatment dissociation severity found a larger positive effect on symptom change,

and thus no evidence that the effect was due to regression to the mean.

Conflicting results have been found on the effect of dissociation on improvement in general psychiatric symptoms. One study, with low quality predictive analysis, found a significant positive association (Braakman et al., 2007 – $F(2, 27$ [b]$) = 6.38$) whilst another with high quality predictive analysis found a significant negative association (Kleindienst et al., 2011, $\beta = -0.02 \pm 0.006$). Although measured on different scales, when calculated as a percentage of the total scale range, mean dissociation severity was approximately 10% higher in Braakman's study. Additionally, Braakman's study assessed dissociation over the past seven days, whereas Kleindienst's study assessed "present" dissociation over an unspecified time frame. It is possible that these differences could be linked to the discrepant results between these two studies.

A fifth study found that pre-treatment dissociation severity did not significantly affect which patients achieved remission from self-harm (Harned et al., 2010, poor predictor analysis quality).

5.4. Anger severity

In predictor analyses of moderate and low quality respectively, both Bohus et al. (2004) and Meehan (2008) found that higher pre-treatment anger predicted greater change in anger (respectively, $r = 0.59$ [b] and $r = 0.49$ [a], medium–large effect sizes). Conversely, Yen et al. (2009), in a predictor analysis of high quality, found no significant association.

5.5. History of self-harm

The duration over which self-harm history was measured ranged from the 10 weeks prior to baseline, to the patient's entire lifetime. All of the predictor analyses in studies assessing this were of moderate or high quality with the exception of one. Four studies found no evidence that patients' self-harm history was associated with treatment outcome (Bateman & Fonagy, 1999; Davidson et al., 2010; Giesen-Bloo et al., 2006; Yen et al., 2009). Harned et al. (2010) found that a higher number of suicide attempts in the four months prior to treatment predicted a lower chance of achieving remission from self-harming behaviour during treatment, whilst Ryle and

Table 2
Association between pre-treatment symptom severity and symptom change.

Predictor	Paper	Sample size for analyses	Outcome	Association	Effect size	Instruments
Total BPD symptom severity at pre-treatment	Bateman and Fonagy (1999)	44	Presence of self-harm	0	/	DIB, SSI
	Black et al. (2009)	164	Improvement in BPD symptoms	+	r = 0.24	BEST, BEST
				0	r = 0.10	BEST, ZAN-BPD
				0	r = 0.11	ZAN-BPD, BEST
				+	r = 0.58	ZAN-BPD, ZAN-BPD
			Improvement in depression	0	r = 0.06	ZAN-BPD, BDI
			Improvement in general psychiatric symptoms	0	r = 0.14 [a]	ZAN-BPD, CGI
	Bohus et al. (2004)	31	Improvement in general psychiatric symptoms	0	/	DIB-R, SCL-90-R
				0	r = 0.14[b]	SCID-II, SCL-90-R
			Improvement in depression	0	r = 0.02[b]	SCID-II, BDI
				0	r = 0.13[b]	SCID-II, HAMD
			Improvement in anxiety	0	r = 0.33[b]	SCID-II, HAMA
				0	r = −0.02	SCID-II, STAI
			Improvement in anger	0	r = 0.03	SCID-II, STAXI
			Improvement in dissociation	0	r = −0.03	SCID-II, DES
	Giesen-Bloo et al. (2006)	88	Improvement in BPD	+	RR = 1.07	BPDSI-IV, BPDSI-IV
			Recovery from BPD	0	/	BPDSI-IV, BPDSI-IV
	Meares et al. (1999)	60	Improvement in BPD	+	r = 0.29[a]	DSM-III, DSM-III
	Ryle and Golynkina (2000)	27	Recovery from BPD	−	r = 0.46 [a]	DSM-IV, DSM-IV
	Spinhoven et al. (2008)	71	Improvement in BPD	+/−	/	BPDSI-IV, BPDSI-IV
			Recovery from BPD	0	/	BPDSI-IV, BPDSI-IV
Dissociation severity at pre-treatment	Bohus et al. (2004)	31	Improvement in dissociation	+	/	DES, DES
	Braakman et al. (2007)	30	Improvement in general psychiatric symptoms	+	F = 6.38	DSS, SCL-90-R
			Improvement in depression	0	F = 0.35	DSS, BDI
			Improvement in anxiety	+	F = 7.25	DSS, BAI
			Improvement in dissociation	+	F = 36.1	DSS, DSS
	Harned et al. (2010)	22	Remission from self-harm	0	r = 0.03[a]	DES, SBQ, SASII
	Kleindienst et al. (2011)	52	Improvement in dissociation	+	r = 0.43[b]	DES, DES
			Improvement in general psychiatric symptoms	−	β = −0.02	DES, SCL-90-R
	Yen et al. (2009)	50	Improvement in dissociation	+	β = 0.28	DES, DES
Depression severity at pre-treatment	Bateman and Fonagy (1999)	44	Remission from self-harm	0	/	BDI, SSI
	Black et al. (2009)	164	Improvement in BPD	0	r = −0.04	BDI, ZAN-BPD
				0	r = 0.06	BDI, BEST
			Improvement in depression	0	r = −0.06	BDI, BDI
			Improvement in general psychiatric symptoms	0	r = 0.03[a]	BDI, CGI
	Bohus et al. (2004)	31	Improvement in depression	+	r = 0.50[b]	HAMD, HAMD
	Ryle and Golynkina (2000)	27	Recovery from BPD	0	r = 0.15[a]	BDI, DSM-IV
	Yen et al. (2009)	50	Improvement in depression	0	/	BDI, BDI
General psychiatric symptom severity at pre-treatment	Bateman and Fonagy (1999)	44	Remission from self-harm	0	/	SCL-90-R, SSI
	Black et al. (2009)	164	Improvement in BPD	+	r = 0.30	CGI, ZAN-BPD
				0	r = 0.06	CGI, BEST
			Improvement in depression	0	r = 0.10	CGI, BDI
			Improvement in general psychiatric symptoms	0	r = 0.06[a]	CGI, CGI
	Bohus et al. (2004)	30	Improvement in general psychiatric symptoms	+	r = 0.32[b]	SCL-90-R, SCL-90-R
	Kleindienst et al. (2011)	54	Improvement in general psychiatric symptoms	+	r = 0.31[b]	SCL-90-R, SCL-90-Rc
	Laddis (2010)	58	Improvement in general psychiatric symptoms	0	r = 0.28[a]	BPRS, BPRS
	Ryle and Golynkina (2000)	27	Recovery from BPD	+	r = 0.14[a]	SCL-90-R, DSM-IV
	Yen et al. (2009)	50	Improvement in general psychiatric symptoms	0	/	BSI, BSI

+, positive association (p ≤ 0.05); 0, no association; −, negative association (p ≤ 0.05); +/−, significant association, direction not reported; /, no effect size given; a, effect size converted to r by review authors; b, effect size provided through correspondence with study author; β, regression coefficient; BAI, Beck Anxiety Inventory; BDI, Beck Depression Inventory; BEST, Borderline Evaluation of Severity over Time; BPDSI-IV, Borderline Personality Disorder Severity Index Version IV; BPRS, Brief Psychiatric Symptom Inventory; BSI, Brief Symptom Inventory; DES, Dissociative Experiences Scale; DIB(-R), Diagnostic Interview for Borderline Personality Disorder (-Revised); DSM-III or IV, Diagnostic and Statistical Manual for Mental Disorders III or IV; DSS, Dissoziations-Spannungs-Skala; F, analysis of variance coefficient; HAMA, Hamilton Anxiety Scale; HAMD, Hamilton Depression Scale; r, correlation coefficient; RR, risk ratio; SASII, Suicide Attempt Self Injury Interview; SBQ, Suicidal Behaviors Questionnaire; SCID-II, Structured Clinical Interview for DSM-IV Axis II; SCL-90-R, Symptom Checklist 90 Revised; SSI, Suicide and Self-harm Inventory; STAI, Spielberger State Trait Anxiety Inventory; STAXI, State Trait Anger Expression Inventory; ZAN-BPD, Zanarini Rating Scale for Borderline Personality Disorder.

Golynkina (2000) found that patients with a recent or lifetime history of self-harm were less likely to achieve remission from BPD. The size of the effect in both studies could be classified as medium, approaching strong (r = 0.48[a], r = 0.49[a] respectively). Conversely, Black et al. (2009) found that patients with a lifetime history of self-harm achieved greater improvement in BPD symptoms during treatment. This was a small effect (r = 0.19). It is possible that a positive effect of self-harm was found in Black's study versus a negative effect in Harned and Ryle's studies due to differences in the outcome used in these studies: symptom improvement in Black' study versus symptom remission in Harned and Ryle's studies. Thus, it is possible that patients with a self-harm history achieve a greater degree of improvement in

symptom severity overall but are less likely to manage to completely stop self-harming or to no longer meet full criteria for BPD.

5.6. Axis I symptoms

Patients' Axis I comorbidities were generally not found significantly associated with outcome, including current major depression (Bateman & Fonagy, 1999; Black et al., 2009), current or lifetime anxiety disorders (Bateman & Fonagy, 1999; Black et al., 2009; Harned et al., 2010), current or lifetime substance use disorders (Bateman & Fonagy, 1999; Ryle & Golynkina, 2000) and total number of current Axis I disorders (Bohus et al., 2004; Harned et al., 2010; Spinhoven et al., 2008). Predictor analyses in all of these studies were of

moderate or high quality. An exception was the finding that patients with a lifetime history of substance use disorder achieved greater improvement in BPD symptoms during treatment (Black et al., 2009, $r = 0.19$ small effect, moderate predictor analysis quality). The proportion of participants with a lifetime history of substance abuse was higher in Black and colleagues' study than in Bateman and Fonagy (1999) or Ryle and Golynkina (2000) (61% versus 45% and 37%). These differences may partially account for the stronger association between substance abuse and outcome in Black and colleagues' study.

Pre-treatment Axis I symptom severity was sometimes found associated with greater symptom improvement. Black et al. (2009) found that higher general psychiatric symptom severity was associated with greater improvement in BPD symptoms ($r = 0.30$, medium effect size), whilst Bohus et al. (2004) and Kleindienst et al. (2011) found the same for improvement in general psychiatric symptoms (respectively, $r = 0.32^b$ and $r = 0.31^b$, medium effect sizes), albeit in somewhat overlapping samples. Bohus et al. (2004) also found that higher initial depression or anxiety severity predicted greater improvement in depression and anxiety respectively ($r = 0.50^b$ and $r = 0.39^b$, moderate–large effect sizes). These three studies all used predictor analyses of moderate or high quality. Conversely, Harned et al. (2010) found that patients with more severe PTSD symptoms were less likely to achieve remission from self-harm ($r = 0.44^a$, medium effect, poor predictor analysis quality). In other studies, general psychiatric, depression or anxiety severity were not found associated with outcome (Bateman & Fonagy, 1999; Koons et al., 2001; Laddis, 2010, Ryle & Golynkina, 2000; Yen et al., 2009). When the severity of general psychiatric and depressive symptoms were compared between studies, there was no indication that symptom severity was higher in studies with significant positive findings, possibly countering the argument that significant results simply represent regression to the mean. However, anxiety severity was notably higher in Bohus and colleague's studies than in others, which could offer a partial explanation for the larger association between anxiety severity and symptom change in this study.

5.6.1. Social adjustment

Social adjustment refers to a person's functioning in terms of employment, leisure activities, family life and interpersonal situations. In six studies, there was no significant effect of this variable on symptom change (Bateman & Fonagy, 1999; Black et al., 2009; Bohus et al., 2004; Harned et al., 2010; Kleindienst et al., 2011; Ryle & Golynkina, 2000). Predictor analyses in all studies were of moderate or high quality, with one exception.

5.6.2. Psychiatric medication use

Most studies assessing this predictor used a binary variable (taking psychiatric medication at pre-treatment versus medication-free), with the exception of Black et al. (2009), who considered the total number of medications taken. No studies gave details of the types of medication taken by their samples. All predictor analyses were of moderate or high quality. In three studies there was no significant association between patients' medication usage and their outcome (Bateman & Fonagy, 1999; Black et al., 2009; Ryle & Golynkina, 2000). However, two studies found that patients initially taking psychiatric medication had a poorer outcome in terms of general psychiatric symptom improvement (Doering et al., 2010) and BPD symptom improvement (Giesen-Bloo et al., 2006). In both studies this was a large effect ($r = 0.55$ and risk ratio $= 0.40$ respectively).

5.6.3. Pre-treatment characteristics evaluated in fewer than three studies

The following characteristics evaluated in fewer than three studies were found associated with symptom change: special educational needs (negatively associated with remission from suicide attempts,

Davidson et al., 2010), endorsement of individual BPD criteria (various positive and negative associations with outcome, Yen et al., 2009), comorbid paranoid personality disorder (positively associated with improvement in BPD symptoms, Black et al., 2009), experiential avoidance (negatively associated with change in depression, Berking, Neacsiu, Comtois, & Linehan, 2009), and personality as rated by Cloninger's temperament dimensions (various positive and negative associations, Chapman et al., 2009), positive attitude towards talking to a therapist (positively associated with improvement in depression and suicidality, Wenzel, Jeglic, Levy-Mack, Beck, & Brown, 2008), and expectations for improvement (positively associated with improvement in BPD symptoms and suicidality, Wenzel et al., 2008). The following were not significantly associated with symptom change: living alone (Bateman & Fonagy, 1999, Davidson et al., 2010), age at first self-harm (Davidson et al., 2010), recent major life events (Ryle & Golynkina, 2000), sexual orientation (Ryle & Golynkina, 2000), timing of index trauma in patients with comorbid PTSD (Harned et al., 2010), history or severity of childhood abuse (Bateman & Fonagy, 1999; Ryle & Golynkina, 2000), history of alcohol abuse (Ryle & Golynkina, 2000), history of eating disorder (Bateman & Fonagy, 1999; Ryle & Golynkina, 2000), total number of Axis II comorbidities (Spinhoven et al., 2008), history of violence (Ryle & Golynkina, 2000), treatment history (Bateman & Fonagy, 1999; Ryle & Golynkina, 2000), and patient–therapist schema dissimilarity (Spinhoven et al., 2007).

5.7. Treatment processes

5.7.1. Therapeutic alliance

The only treatment process evaluated in more than two studies was the therapeutic alliance. The timepoint at which the alliance was evaluated varied from 1 month (Marziali, Munroe-Blum, & McCleary, 1999) to 1 year (Leerer, 1997) into treatment. Four studies evaluating the patient-rated therapeutic alliance found evidence of a relationship with outcome improvement, as shown in Table 3, with some studies finding associations between the alliance and multiple symptom constructs (Leerer, 1997; Marziali et al., 1999; Spinhoven et al., 2007; Turner, 2000). However, predictor analyses in these studies were all of poor (Leerer, 1997; Marziali et al., 1999) or moderate (Spinhoven et al., 2007; Turner et al., 2000) quality. A fifth study, using predictor analyses of moderate quality, found no evidence for association with symptom change (Gunderson, Najavits, Leonhard, Sullivan, & Sabo, 1997). In three studies, the effect sizes for statistically significant associations were large according to Cohen's classification (Cohen, 1988), ranging from $r = 0.40$ to 0.68 (Leerer, 1997; Marziali et al., 1999; Turner, 2000). Another study reported odds ratios (Spinhoven et al., 2007), indicating that for each unit increase in the rating of the therapeutic alliance the odds of achieving reliable improvement or recovery from BPD increased by 1.36 and 1.39 times respectively. Since these odds ratios refer to a continuous predictor, Cohen's classification for odds ratio size does not apply, but they may be considered clinically meaningful effects.

A sixth study measured the observer-rated alliance, and, using analysis of moderate quality, found a positive correlation with reliable change in BPD symptoms (Goldman & Gregory, 2010). Again, this was a large effect ($r = 0.74$).

5.7.2. Treatment processes evaluated in fewer than three studies

Treatment processes evaluated in fewer than three studies and found associated with symptom change were the balance between acceptance and change-oriented techniques used by the therapist in DBT sessions (positive association with reduction in self-harm, Shearin & Linehan, 1992), therapist use of DDP techniques (positively associated with improvement in BPD symptoms, Goldman & Gregory, 2010), therapist adherence to the DBT manual (positively associated with improvement in substance use, Linehan et al.,

Table 3
Association between patient-rated therapeutic alliance and symptom change.

Predictor	Paper	Sample size for analysis	Timepoint of alliance measurement (months)	Timepoint of outcome measurement (months)	Outcome	Association	Effect size	Instruments
Therapeutic alliance — patient-rated	Gunderson et al. (1997)	15	1.5	36	Improvement in BPD symptoms	0	/	HAQ, DIB
					Improvement in general psychiatric symptoms	0	/	HAQ, SCL-90-R
						(+)	$r = 0.55$ [a]	HAQ, OAS-O
	Leerer (1997)	12	6 or 12	6 or 12	Improvement in anger	+	$r = 0.67$ [a]	HAQ, OAS-P
						+	$r = 0.68$ [a]	HAQ, OAS-V
					Improvement in self-harm	0	/	HAQ, LSRAS
	Marziali et al. (1999)	34	1	12	Improvement in general psychiatric symptoms	0	$r = 0.65$ [a]	TAS_e, SCL-90
			2			+	$r = 0.60$ [a]	TAS_l, SCL-90
			1			0	$r = 0.17$ [a]	GTAS_e, SCL-90
			2			+	$r = 0.57$ [a]	GTAS_l, SCL-90
			1		Improvement in depression	+	$r = 0.57$ [a]	TAS_e, BDI
			2			+	$r = 0.57$ [a]	TAS_l, BDI
			1			0	$r = 0.00$ [a]	GTAS_e, BDI
			2			+	$r = 0.41$ [a]	GTAS_l, BDI
	Spinhoven et al. (2007)	78	3	36	Improvement in BPD symptoms	+	$OR = 1.36$	WAI, BPDSI-IV
					Recovery from BPD	+	$OR = 1.39$	WAI, BPDSI-IV
	Turner et al. (2000)	24	6	12	Improvement in clinical outcomes (aggregate)	+	$r = 0.63$	HRQ, HRSD BPRS TBR BDI BAI BSSI

0, no association; +, positive association ($p \leq 0.5$); (+), trend positive association (0.5 $p < 0.10$); /, no effect size given; a, effect size converted to r by review authors; BAI, Beck Anxiety Inventory; BDI, Beck Depression Inventory; BPDSI-IV, Borderline Personality Disorder Severity Index Version IV; BPRS, Brief Psychiatric Rating Scale; BSSI, Beck Scale for Suicidal Ideation; DIB, Diagnostic Interview for Borderline Personality Disorder; F, analysis of variance coefficient; GTAS_e, Group Therapeutic Alliance Scale — early; GTAS_l, Group Therapeutic Alliance Scale — late; HAQ, Helping Alliance Questionnaire; HRQ, Helping Relationship Questionnaire; HRSD, Hamilton Rating Scale for Depression; LSRAS, Lethality of Suicide Attempt Rating Scale; OAS-O, Overt Aggression Scale — Objects; OAS-P, Overt Aggression Scale — People; OAS-V, Overt Aggression Scale — Verbal; OR, Odds ratio; r, correlation coefficient; SCL-90-(R), Symptom Checklist 90 (Revised); TAS_e, Therapeutic Alliance Scale — early; TAS_l, Therapeutic Alliance Scale — late; TBR, target behaviour ratings; WAI, Working Alliance Inventory.

1999), therapist level of training (positively associated with improvement in suicide attempt frequency, Pasieczny & Connor, 2011), affective communication between patient and therapist (positive association with reduction in anger, Meehan, 2008), patient shame after reporting self-harm (negatively associated with self-harm reduction, Brown et al., 2009), patient use of behavioural skills taught in DBT (positively associated with self-harm improvement, Neacsiu et al., 2010), patient improvement in emotion regulation ability (positively associated with reduction in substance use, Axelrod, Perepletchikova, Holtzman, & Sinha, 2011), patient reduction in experiential avoidance (positively associated with improvement in depression, Berking et al., 2009), patient change in attachment status (various associations with change in general psychiatric symptom severity, Strauss, Mestel, & Kirchmann, 2011). The only treatment process found not to be significantly associated with outcome was therapist prediction of patient outcome (Spinhoven et al., 2008).

6. Discussion

6.1. Main findings

This review synthesised research findings on patient characteristics and treatment processes as predictors of symptom change during psychotherapy for BPD. Predictors evaluated in three or more studies were considered sufficiently well-studied to permit research synthesis. Most research on patient characteristics at pre-treatment has focused on the predictive value of sociodemographics, symptom severity or comorbidity. Findings on the predictive value of sociodemographics have mainly been non-significant, although a few studies have found that characteristics such as gender or employment can influence symptom change (Black et al., 2009; Ryle & Golynkina, 2000). The few studies with significant findings on sociodemographics did not markedly differ in the quality of their predictive analyses from those with non-significant findings, although the relatively large sample size of Black et al. (2009) may have increased statistical power. Perhaps most notably, age is consistently not found associated with symptom change. This was true even for analyses of high quality and/or large sample size.

When considering symptom severity, a fairly common finding was that higher pre-treatment BPD or Axis I severity predicted greater symptom change. This was particularly common when the effect of symptom severity on change in the same symptom construct was considered, and was found both in studies with high and those with moderate or poor quality predictor analyses, and those with small or large sample sizes. The effect size, however, varied from small to large from study to study. Countering the argument that the results reported here simply reflect regression to the mean, there was little indication that studies reporting significant severity–change associations had samples with higher initial symptom severity. The only exception was the finding that anxiety severity seemed notably higher in the one study to find a positive association between anxiety severity and symptom improvement, i.e. that of Bohus et al. (2004). It should also be noted that some studies of high quality did not find a significant effect of symptom severity on outcome, whilst a few found an opposite effect, such as higher pre-treatment dissociation predicting less symptom change (Kleindienst et al., 2011).

Findings on the influence of self-harm on outcome were mixed. Two studies found that patients with a recent or lifetime history of self-harm achieved poorer outcomes during therapy (Harned et al., 2010; Ryle & Golynkina, 2000), whilst a third found a positive effect of self-harm (Black et al., 2009), and another four studies found no association with outcome. These discrepant results could be explained by the differences in outcome criteria between studies, such that patients with a self-harm history achieve a greater degree of improvement in symptom severity overall but are less likely to manage to completely stop self-harming or to no longer meet full criteria for BPD.

Pre-treatment comorbidity with Axis I disorders, including depression, anxiety and substance abuse, was often not found significantly associated with outcome. However, there were a few exceptions, such as the finding that patients with a history of substance abuse achieved greater change in BPD symptoms (Black et al., 2009). There was also some indication that patients using psychiatric medication at pre-

treatment achieved less symptom change, although other analyses of equal quality found no such association. There is no evidence to date that patients with poor social adjustment do less well in psychotherapy.

The only treatment process assessed in more than two studies was the therapeutic alliance. The patient-rated alliance was found to consistently and strongly predict greater symptom change, across different studies and treatment models. However, the quality of the predictor analyses assessing this variable was either moderate or poor. Other treatment processes have commonly been assessed in single studies only, nearly always with significant results. This could reflect the potential relevance of these variables to outcome, or could reflect publication bias.

6.2. Comparison with the wider literature

It is perhaps surprising that sociodemographics such as age or gender were rarely or never found associated with symptom change. That older age is not associated with lesser change in BPD traits runs counter to the assumption made by notable personality researchers, such as Costa and McCrae, that personality becomes relatively immutable by mid-late adulthood (McCrae & Costa, 1994). More recent findings have challenged this view, illustrating that personality can change throughout adulthood (Roberts, Walton, & Viechtbauer, 2006). Indeed, in unpublished results shared at the Association for Advancement of Behavior Therapy, Linehan and colleagues reported that older age predicted superior outcome in their trial of DBT versus treatment by community experts (Linehan et al., 2002, referenced in Robins & Chapman, 2004), whilst Robins and colleagues reported the same for patients in the DBT arm of their trial (Robins, Koons, Morse, & Lynch, 1999, referenced in Robins & Chapman, 2004). However, these findings are inconsistent with a ten year epidemiological study of borderline personality disorder, which found that younger patients were more likely to achieve recovery (Zanarini, Frankenburg, Hennen, Reich, & Silk, 2006).

Pre-treatment BPD severity was found a consistent positive predictor of greater improvement in BPD symptoms, with one exception. Axis I symptom severity was also often found to be a positive predictor of change in Axis 1 symptoms. Such effects are apparent in the wider psychiatric literature, including that on antidepressant treatment (Fournier et al., 2010; Kirsch et al., 2008) and psychotherapy for Axis I mental illness (Gjestad, Franck, Hagtvet, & Haver, 2011) although results in the opposite direction are often reported (Hamilton & Dobson, 2002, Keeley, Storch, Merlo, & Geffken, 2008). In a sample with BPD symptoms (not all meeting full diagnostic criteria), superior response to STEPPS psychotherapy over Treatment As Usual was also predicted by higher pre-treatment BPD symptoms (Bos, van Wel, Appelo, & Verbraak, 2011). The present findings could be interpreted either as a statistical artefact, resulting from phenomena such as floor effects in those with low initial symptom severity and regression to the mean in those with high initial symptom severity or could be interpreted as a meaningful indication that more severely ill patients actually have greater potential for change. The former interpretation was not generally supported when initial symptom severity levels were compared across studies, whist the latter interpretation accords well with findings that even some of the most behaviourally severe symptoms of BPD, such as self-harm and affective instability, are more likely than not to remit over a ten year period (Zanarini et al., 2007).

The findings on the use of psychiatric medication are difficult to interpret, since the studies assessing this variable did not detail the types of medication or reasons for prescription. Perhaps those patients on prescribed medication are more ill, or have certain comorbidities disposing them to poorer outcomes. However, this explanation seems contrary to the findings of this review that patients with higher symptom severity or Axis I comorbidities do not achieve less improvement. Alternatively, the negative association may be due to the palliative effect of medication, resulting in lower symptoms pre-therapy and thus a floor effect for symptom reduction. Indeed, perhaps patients on medication tend towards increased reliance on pharmacological amelioration of their symptoms and hence are less motivated to engage with therapeutic work. Another possible explanation is that these results represent an absent or even negative effect of psychiatric medication for patients with BPD, as reflected in the most recent NICE guidelines which state that medication should not be used to treat the symptoms of BPD (NICE 2009).

The findings on the patient-rated alliance accord well with the large body of literature identifying the alliance as a strong predictor of therapy outcome, across diagnosis and therapeutic modality (Horvath & Greenberg, 1994; Orlinsky & Howard, 1986; Priebe, Richardson, Cooney, Adedeji, & McCabe, 2011). Indeed, the therapeutic alliance has been described as one of the core common factors enabling psychotherapy clients to achieve change, regardless of therapeutic modality (Frank, 1971; Wampold, 2001). These findings may suggest that the alliance as a common factor extends to BPD also, and highlight the importance of common factors even in highly specific therapy models. However, it should be noted that most of the included studies did not adjust for potential confounders when assessing the effect of the alliance. Thus, it is not known whether the alliance per se contributes to positive outcome in BPD, or whether its effect is instead due to the confounding influence of patient characteristics such as higher motivation for change or more positive treatment expectations.

6.3. Implications of the findings for clinical work

Based on the findings that seem most consistent across studies, at least three clinical implications can be drawn.

Firstly, there is no evidence that older clients are more difficult to treat, as may often be assumed (Lievesley, Hayes, Jones, Clark, & Crosby, 2009). Thus, services should not impose an upper age limit upon the receipt of therapy. However, it should be noted that most of the included studies had an upper age limit of 65. Thus it is unclear whether these findings can be generalised to those above this age, although the successful adaptation and clinical effectiveness of dialectical behaviour therapy for older adults with personality disorder offer some evidence that they can (Lynch et al., 2007).

Secondly, there is no evidence to date that clients with very severe symptoms benefit less from therapy, as may often be assumed. Indeed, it is these clients that may have the most potential for change. Thus, severely ill patients should be referred to psychotherapy, and psychotherapy services should ensure that these patients are included.

Thirdly, these findings reinforce the importance of the therapeutic alliance in the treatment of BPD — a group with whom establishing a strong alliance is reported to be especially difficult (Linehan, 1989). Therapists should make development and maintenance of the alliance a priority in their therapeutic interactions. Indeed, perhaps the alliance should be explicitly targeted during treatment and be addressed in training and supervision of therapists.

6.4. Implications of the findings for future research

The mixed quality, and methodological and conceptual heterogeneity of the papers included in this review has important implications for future research on predictors of psychotherapy outcome. In too many of the included papers, effect size data for predictor analyses was absent. Effect sizes should be published regardless of significance, as such information is essential for meta-analysis. Furthermore, many of the included papers did not use an intention-to-treat analysis, did not assess the effects of data missingness, and did not use techniques such as maximum likelihood estimation or multiple imputation to minimise bias from missing data. Future studies on this topic should use these strategies to minimise bias and improve the generalisability of their findings. Moreover, a focus on degree of symptom change rather

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than dichotomous outcomes such as 'recovery' is recommended, since improvements need not entail dropping below diagnostic thresholds in order to be meaningful (Tyrer, Gunderson, Lyons, & Tohen, 1997). Recommendations for variables upon which to focus future research are made as follows.

Firstly, existing research has enabled us to reach some consensus on which patient characteristics are likely to influence the outcome of therapy for BPD. However, the conclusions reached by this review need replication in more well-designed and well-powered studies, which can then be subject to meta-analysis. Furthermore, such research will be most useful to clinicians if it can identify characteristics which differentially influence outcome in different treatment models. Such research would enable clinicians to determine which clients are likely to benefit most from which treatment models — something which existing research cannot do.

Secondly, there are two main future directions for research on treatment processes in patients with BPD. The first is to focus on a variable identified consistently by existing research as important — the therapeutic alliance. In the general psychiatric literature, patient-rated measures of alliance are more consistently linked to outcome than therapist-rated (Horvath & Symonds, 1991). Thus, further research in BPD should perhaps continue to focus on patient ratings. Findings on this variable could be solidified by perhaps consistently using only a few, well-validated measures of alliance across studies, such as the Penn Helping Alliance Questionnaire (Luborsky, 1976) or the Working Alliance Inventory (Horvath & Greenberg, 1989), in order to reduce cross-study measurement variance. Measurement of the alliance and outcome at many different time-points, e.g. early, mid and late-therapy, or 1, 3, 6, 9 and 12 months, could enable easier comparison across studies and also better delineation of the direction of the relationship between alliance and outcome. Future research should also test potential mediators between alliance and outcome, such as patient adherence to therapy tasks or improvement in self-esteem, and potential confounders of this association such as patient attitudes to therapy. Further work could include testing and refinement of existing theories about how best to establish and maintain an alliance with BPD clients, such as Linehan's theory on building an alliance through a balance of validation and change techniques (Linehan, 1993). This could also include testing interventions in which clients give regular feedback on their perception of the alliance, since this has been shown to improve outcome in mixed diagnosis groups (Harmon et al., 2007; Whipple et al., 2003).

The second direction for the future is to identify new variables on which to focus research efforts. This review has highlighted that little research has been done on variables relevant to BPD-specific theories of therapeutic change, such as use of the skills taught in DBT, improvement in mentalizing capacity, or change in attachment. For instance, attachment status has been shown to change during transference focused psychotherapy (Levy, Meehan, Kelly, et al., 2006), but this has only been linked to outcome in a single small study (Strauss et al., 2011). More frequent use of the DBT skills has been linked to better outcomes (Neacsiu et al., 2010; Stepp, Epler, Jahng, & Trull, 2008), but the direction of this relationship has not been established and existing work did not adjust for potential confounders such as the therapeutic alliance. Future research considering such variables might lead to a better understanding of what processes are specifically helpful in achieving positive outcomes, which in turn could change the focus of existing specialised interventions or even routine care to improve outcomes. Furthermore, such work could add to the active debate on the relative importance of specific versus common factors in therapy outcome (Oei & Shuttlewood, 1996; Wampold, 2001).

6.5. Strengths and limitations of the findings

Strengths of this review include the wide and systematic search strategy, the use of multiple independent reviewers and the inclusion of both naturalistic and efficacy studies. The inclusion of non-English papers and unpublished dissertations also aimed to mitigate the effect of publication bias. Nonetheless, publication bias is an inevitable caveat, and it is likely that some non-significant findings on predictor–outcome relationships were not published and were hence unrepresented in the present review. In addition, during the screening process it became apparent that several studies had tested associations between predictors and outcomes, most commonly that between baseline severity and symptom change, but had not reported the statistical significance or direction of effect (e.g. Bateman & Fonagy, 2009; Linehan et al., 1991). Thus, several potentially relevant findings exist which were not available for inclusion in the review. Furthermore, the reviewers were aware of publication details during the quality rating of the included analyses and hence could have been biased by the prestige of the authors, their institutional affiliations or the journal of publication. The review authors' ability to synthesise the available data was limited by variable measurement timepoints and instruments across studies. This difficulty was exacerbated by the different treatment lengths in each study, ranging from a 5 day intensive inpatient therapy (33 h total duration, Yen et al., 2009), to a 3 year course of schema or transference focused therapy (Giesen-Bloo et al., 2006). It is possible that inconsistent findings between studies could have resulted from a mismatch between the time course of a predictive effect (i.e. an immediate short-term effect versus a slow-developing effect) and the duration over which symptom change was measured in some studies. Furthermore, studies in which patients achieved little symptom change may have been less able to detect significant predictor–outcome associations, since the variance in the degree of change achieved could have been too small, and findings may have differed depending on whether symptom improvement was considered as a continuous outcome or as a dichotomous recovery criterion. Nonetheless, some consistent findings across studies could be determined despite the heterogeneity of the data. Whilst some effort to take account of sample size and other study quality indicators was made, it should be acknowledged that synthesising results on the basis of 'statistical significance' is inferior to effect size meta-analysis, which offers a more systematic method of accounting for the influence of sample size and other confounding factors (Hunter & Schmidt, 2004). However, a meta-analysis was not possible for reasons detailed in the Methods.

7. Conclusion

There are two consistent findings from research on predictors of therapy outcome for patients with BPD: patients who experience a stronger alliance with their therapist, and patients with more severe initial symptoms, may often achieve greater symptom reduction. This confirms the alliance as an important common factor even in highly disorder-specific treatments, and dispels the myth that more severely ill patients will not benefit from therapy. There is also no evidence as yet to support the view that older patients are more resistant to change. However, interpretation of these findings is complicated by the heterogeneity in research methods and analysis quality, and beyond these two factors, there is still a lack of consensus on what influences the outcome of therapy for these patients.

on effect sizes or study quality criteria: Arnoud Arntz, Seth Axelrod, Donald Black, Martin Bohus, Alexander Chapman, Kate Davidson, Stephan Doering, John G. Gunderson, Girvani Leerer, Russell Meares, Kevin Meehan, Philip Spinhoven, Ralph Turner and Amy Wenzel. Special thanks to Nikolaus Kleindienst for re-running his analyses specifically for this review.

Appendix A. Supplementary data

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Review

Treatment completion in psychotherapy for borderline personality disorder – a systematic review and meta-analysis

Barnicot K, Katsakou C, Marougka S, Priebe S. Treatment completion in psychotherapy for borderline personality disorder – a systematic review and meta-analysis.

Objective: Psychotherapy for borderline personality disorder (BPD) has been associated with problematically low treatment completion rates.
Method: PsycInfo and Medline were systematically searched to identify studies providing information on treatment completion in psychotherapy models that have been shown to be effective for BPD. A meta-analysis of treatment completion rates and a narrative analysis of factors predicting dropout were conducted.
Results: Forty-one studies were included, with completion rates ranging from 36% to 100% – a substantial between-study heterogeneity. Random effects meta-analyses yielded an overall completion rate of 75% (95% CI: 68–82%) for interventions of <12 months duration, and 71% (95% CI: 65–76%) for longer interventions. Egger's test for publication bias was significant for both analyses ($P \leq 0.01$). Study characteristics such as treatment model and treatment setting did not explain between-study heterogeneity. In individual studies, factors predicting dropout status included commitment to change, the therapeutic relationship and impulsivity, whilst sociodemographics were consistently non-predictive.
Conclusion: Borderline personality disorder should no longer be associated with high rates of dropout from treatment. However, the substantial variation in completion rates between studies remains unexplained. Research on the psychological processes involved in dropping out of treatment could further improve dropout rates.

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Key words: psychotherapy; borderline personality disorder; patient dropouts; meta-analysis

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Summations

- This is the first systematic review and meta-analysis of treatment completion rates in borderline personality disorder, focussing on psychotherapy models that have been demonstrated to be effective for this patient group
- The finding that on average 75% of patients complete treatment challenges the association of borderline personality with poor treatment completion rates
- Evidence on predictors of dropout was minimal

Considerations

- The studies included were conceptually and statistically heterogenous, limiting the comparability of completion rates
- Analyses indicated a potential bias towards the publication of studies with higher completion rates

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Introduction

It is estimated that around 1% of the population may have borderline personality disorder (BPD) (1). People with BPD have difficulty managing their emotions (2, 3) and frequently go to extremes to deal with them by self-harming or using drugs, or thinking about and attempting suicide (4, 5). Some generate high costs to healthcare services because of frequent use of Accident and Emergency Departments and in-patient services (6, 7). Many also have substantial difficulties maintaining relationships with relatives and friends, or holding jobs (8, 9), and the experience of stress-linked dissociative or psychotic experiences is relatively common (10, 11). The disorder was in the past considered relatively stable; however, recent epidemiological studies have demonstrated that rates of remission are much higher than previously thought (12, 13), although some difficulties remain (14).

Considering their complex needs and the burden placed on health services by these individuals, and especially given the current climate of hope regarding the possibility of improvement or even remission, development of effective treatment services has become a priority for healthcare (15, 16).

In existing reviews of dropout rates in BPD, which included any psychological treatment rather than focusing on those which have evidence for effectiveness, treatment of BPD has been associated with problematically low treatment completion rates (17–19), with rates as low as 37%, 33% and 8% in individual studies (20–22). A low treatment completion rate may imply that the treatment is not effective in addressing the needs of the target patient group. Indeed, patients who drop out early from psychosocial treatment may not gain any benefit from the treatment (23, 24). Cost-effectiveness may suffer when funding assessment and treatment sessions for those who eventually drop out. Additionally, treatment dropouts may be more likely to drop out of research assessments than treatment completers. Research data may therefore become skewed towards outcomes for treatment completers even when an intention-to-treat analysis is used, thus limiting its generalisability (17, 25). Thus, a consideration of treatment completion rates is crucial when evaluating the effectiveness of treatment.

Several new psychotherapies, such as dialectical behaviour therapy (DBT), mentalisation-based therapy (MBT) and transference-focused psychotherapy, have been developed specifically to treat BPD and have been shown to be effective compared with treatment as usual in reducing self-harm and suicidality, amongst other variables.

Whilst their effectiveness has been thoroughly reviewed (26–28), completion rates in these treatments have not been systematically reviewed. Thus, the association of BPD with low treatment completion rates has not been re-evaluated in the light of the recent evidence on the new, more effective psychotherapeutic treatment that is available. This may be especially important as evaluating dropout rates in a therapy with as yet unproven effectiveness could conflate high dropout with ineffectiveness. It may also be important to determine what factors are associated with completion vs. dropout when these models are used to treat BPD. This could provide an understanding of which individuals these treatments may be less suitable for, which treatment processes may encourage retention and which treatment processes may lead to dropout. This in turn may inform modification of existing interventions or the development of new interventions to improve completion rates.

Aims of the study

This systematic review therefore aims i) to systematically review and conduct a meta-analysis of completion rates in psychotherapy models identified as effective for borderline personality (BPD) and ii) to identify factors associated with treatment completion vs. dropout when these models are used to treat BPD.

Material and methods

The study was designed as a systematic review and meta-analysis. Searches were conducted in October 2009 in the PsycInfo and Medline databases. In a first step, an initial search aimed to identify psychotherapy models that had been demonstrated as effective for treating BPD. 'Effectiveness' was defined as demonstration in at least one randomised controlled trial (RCT) that the treatment was effective in improving one or more of the symptoms of BPD as defined by DSM-IV, compared with treatment as usual or another psychotherapy. In a second step, studies were identified in which one or more of the interventions identified in the first step were evaluated – whether in an RCT, quasi-experimental or observational design, and in which completion rates or factors associated with completion were described.

For the first step, Psycinfo and Medline were searched using the term 'RCT' and 'BPD'. Known reviews of psychotherapeutic treatment for BPD such as the Health Technology Assessment review (26), the Cochrane review (27) and Zanarini's

review (28) were also consulted. This initial search identified the following effective treatments for BPD: cognitive behaviour therapy (CBT) (29); DBT (30–36); dynamic deconstructive psychotherapy (DDP) (37); emotion regulation group therapy (ERGT) (38); MBT (39); schema-focused therapy (40, 41); STEPPS (42, 43); and transference-focused therapy (TFP) (44).

For the second step, a systematic search for papers reporting treatment completion rates or factors associated with treatment completion rates in these psychotherapy models was conducted. Psycinfo and Medline were searched using combinations of the term 'BPD' with the following: 'cognitive behavio(u)r(al) therapy', 'dialectical behavio(u)r (al) therapy', 'DDP', 'ERGT', 'MBT', 'mentalization based therapy', 'schema therapy', 'STEPPS', 'transference focused psychotherapy'. Only studies published between 1980 and 2009 were searched to focus the search on the new treatments that have recently been developed specifically for or adapted for treating BPD. Two researchers screened the search results together and decided which abstracts to screen, which full texts to screen and which studies to include.

Studies were included if they were original research, if they described the application of one of the previously named psychotherapy models to patients with BPD and if they presented information on treatment completion and/or factors associated with treatment completion. Treatment completion was defined as the proportion of patients initiating psychotherapy who completed the full course of treatment. Manualisation was not a necessary precursor for inclusion of an intervention. However, to ensure that only evidence-based interventions were considered, studies were only included if the intervention sufficiently closely followed a format that has been demonstrated to be effective. This meant that, for example, some studies were rejected because they evaluated only part of an intervention- this part having not yet been demonstrated to be effective when offered without the other parts of the intervention. Studies were excluded if they had a sample size of less than ten (as this was considered too small to be representative) or if attendance of treatment was compulsory. Non-English language papers were not excluded.

Data extraction was then completed independently by two researchers for each study using a data extraction sheet developed for the review. Any conflicting answers were discussed and reconsidered until agreement was reached. The authors of 15 studies were contacted to clarify information or to obtain additional information not presented in the published papers, primarily to clarify the treatment completion rate and whether attendance rules were operational. Responses were obtained from eight.

Some criteria were established to assess the quality of the included studies. Studies were assigned a quality score from 0 to 3. The quality criteria were as follows: i) Sample allocated to treatment ≥30 (1 point), as studies with larger sample sizes are likely to be of higher quality than those with smaller sample sizes, ii) Clear information on treatment completion (1 point) and iii) Clear information on the definition of a treatment dropout (1 point) i.e. clear specification of how many treatment sessions a patient had to miss before being considered a treatment dropout.

Meta-analyses of treatment completion rates were then conducted, using Comprehensive Meta-analysis software (45). Separate meta-analyses of treatment completion rates for interventions of <12 months and interventions of twelve months duration or more were conducted, as completion rates were not thought to be comparable across very different intervention lengths. A random effects model was planned as this assumes that intervention and patient characteristics are not identical across studies and that completion rates may vary accordingly. The model assumes therefore that there is a distribution of 'true' effect sizes rather than a single true effect and aims to estimate the mean of this distribution of true effect sizes. The Q-statistic and the I^2 statistic were calculated to assess the level of between-study heterogeneity. Egger's test of the intercept (46) and a funnel plot were computed to evaluate the evidence for publication bias. Psychotherapy model, psychotherapy orientation (behavioural vs. non-behavioural), sample size ($N < 30$ vs. $N \geq 30$), intervention length, patient age range (adult vs. adolescent), trial type (randomised vs. non-randomised), treatment setting (out-patient vs. in-patient vs. forensic), attendance rules (attendance rules vs. no attendance rules) inclusion criteria (excluding schizophrenia and related disorders vs. not excluding schizophrenia and related disorders) and quality score were considered as moderator variables by stratification in the meta-analyses.

Studies that evaluated the relationship between one or more variables and dropout from psychotherapy for BPD were narratively analysed. Any significant association, trend or absence of association between a variable and dropout from psychotherapy was recorded, and any associations found consistently across more than one study were noted.

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Results

Studies included

Forty-four papers based on 41 different studies were identified as eligible for inclusion in this review. See Fig. 1 for a QUOROM diagram detailing the study retrieval process. Some papers provided information on more than one of the psychotherapies under review. Two papers provided information on treatment completion or factors associated with completion in CBT, 28 did so for DBT, one for dynamic deconstructive therapy, one for ERGT, one for MBT, four for schema therapy, four for STEPPS and six for TFP. All studies included only patients with a diagnosis or features of BPD, and some specifically included those with a recent history of self-harm or those with substance or alcohol misuse problems. Most studies (29/41) excluded patients with schizophrenia or related disorders, and many excluded those with bipolar disorder (21/41) or with substance misuse problems (17/41). Four non-English language papers were included (one Dutch, two German and one Spanish). Studies included are fully described in Table 1.

Quality analysis

Study quality ranged from 1 to 3, with 23 studies scoring 1, 15 studies scoring 2 and three studies scoring 3. Quality scores are presented in Table 1.

Between-study heterogeneity

Forty-one studies reported on what percentage of participants completed treatment.

There was significant heterogeneity in the completion rates reported: (interventions shorter than 12 months – Q (18) = 54, $P < 0.01$, $I^2 = 67\%$; interventions 12 months or longer–Q (23) = 57, $P < 0.01$, $I^2 = 60\%$), with the I^2 statistic implying the magnitude to be substantial. The high degree of heterogeneity suggests that a random effects model might be appropriate.

Treatment completion rates

A random effects meta-analysis yielded an overall completion rate of 71% for interventions of 12 months or greater duration (95% confidence interval: 65–76%). A separate analysis yielded a completion rate of 75% for interventions of a shorter duration (95% confidence interval: 68–82%). At the $P = 0.05$ level, there was no significant effect of psychotherapy model, psychotherapy orientation (behavioural vs. non-behavioural), sample size ($N < 30$ vs. $N \geq 30$), intervention length (under 6 months vs. 6 months or longer), patient age range (adult vs. adolescent), trial type (randomised vs. non-randomised), treatment setting (out-patient vs. in-patient vs. forensic), attendance rules (attendance rules vs. no attendance rules), inclusion criteria (excluding schizophrenia and related disorders vs. not excluding schizophrenia and related disorders) or quality criteria on completion rates in either of the meta-analyses. The results of the analyses are shown in Tables 2 and 3.

Publication bias

Egger's test of the intercept suggested the presence of publication bias in both meta-analyses [inter-
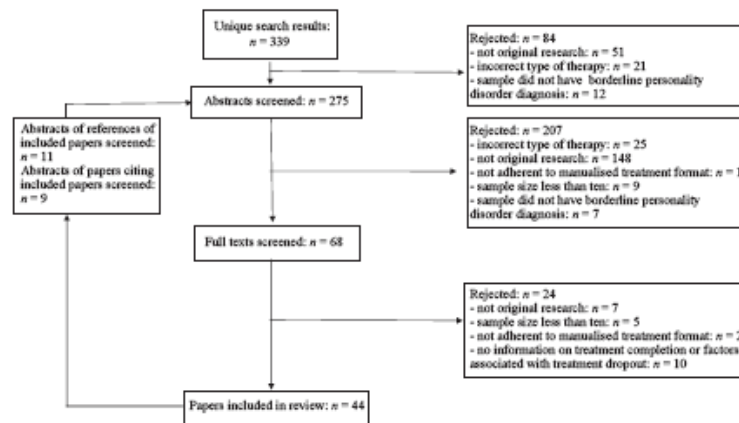
Fig. 1. QUOROM diagram for paper selection.

Table 1. Description of studies included

First author and date	Treatment	Inclusion criteria					Design	Setting	Treatment length (months)	Quality score
		BPD	Self-harm	Substance or alcohol dependence	Gender	Age				
Bateman 1999 (39)	MBT	Yes	No	No	Any	Adults	RCT of DBT vs. MBT	Out-patient	18	1
Black 2008 (47)	STEPPS	Yes	No	No	Female	Adults	Observational study of STEPPS	Forensic	5	1
Blum 2008 (42) [Black 2009] (46)	STEPPS	Yes	No	No	Any	Adults	RCT of STEPPS vs. TAU [Observational study of predictors of outcome in above RCT]	Out-patient	5	2
Bohus 2004 (49)	DBT	Yes	Yes	No	Female	Adults	CT of DBT vs. waiting list	In-patient	3	2
Brassington 2006 (50)	DBT	Yes	No	No	Female	Adults	Observational study of DBT	Out-patient	6	1
Brown 2004 (51)	CBT	Yes	Yes	No	Any	Adults	Observational study of CBT	Out-patient	12	1
Clarkin 2001 (52)	TFP	Yes	Yes	No	Female	Adults	Observational study of TFP	Out-patient	12	1
Clarkin 2007 (44) [Meehan 2006] (53)	DBT & TFP	Yes	No	No	Any	Adults	RCT of DBT vs. TFP vs. ST [Observational study of predictors of outcome in above RCT]	Out-patient	12	1
Comtois 2007 (54)	DBT	96%	Yes	No	Any	Adults	Observational study of DBT	Out-patient	12	3
Cottraux 2009 (55)	CBT	Yes	No	No	Any	Adults	RCT of CBT vs. CCT	Out-patient	12	2
Farrell 2009 (41)	SFT	Yes	No	No	Female	Adults	RCT of SFT with TAU vs. TAU alone	Out-patient	8	1
Fleischhaker 2006 (56)	DBT	Yes	Yes	No	Any	Adolescents	Observational study of DBT	Out-patient	4	1
Giesen-Bloo 2006 (40) [Spinhoven 2007] (57)	SFT & TFP	Yes	No	No	Any	Adults	RCT of SFT vs. TFP [Observational study of predictors of outcome in above RCT]	Out-patient	36	1
Gratz 2006 (38)	ERGT	Yes	Yes	No	Female	Adults	RCT of ERGT with individual therapy vs. individual therapy alone	Out-patient	3	2
Gregory 2008 (37)	DDP	Yes	No	Yes	Any	Adults	RCT of DDP vs. TAU	Out-patient	12	1
Harley 2007 (58)	DBT	Yes	No	No	Any	Adults	RCT of full DBT vs. DBT skills group with non-DBT individual therapy	Out-patient	7	2
James 2008 (59)	DBT	Yes	Yes	No	Any	Adolescents	Observational study of DBT	Out-patient	12	2
Kennedy 2007 (60)	DBT	Yes	Yes	No	Any	Adults	Observational study of DBT	Out-patient	12	1
Koons 2001 (33)	DBT	Yes	No	No	Female	Adults	RCT of DBT vs. TAU	Out-patient	6	1
Kröger 2006 (61)	DBT	Yes	No	No	Any	Adults	Observational study of DBT	In-patient	3	2
Linehan 1991 (30)	DBT	Yes	Yes	No	Female	Adult	RCT of DBT vs. TAU	Out-patient	12	2
Linehan 1999 (31)	DBT	Yes	No	Yes	Female	Adults	RCT of DBT vs. TAU	Out-patient	12	1
Linehan 2002 (34)	DBT	Yes	No	Yes	Female	Adults	RCT of DBT vs. CVT with 12-step	Out-patient	12	2
Linehan 2006 (36)	DBT	Yes	Yes	No	Female	Adults	RCT of DBT vs. TBCE	Out-patient	12	1
Linehan 2008 (62)	DBT	Yes	No	No	Female	Adults	RCT of DBT with olanzapine vs. DBT with placebo	Out-patient	6	2
López 2004 (63)	TFP	Yes	No	No	Female	Adults	Observational study of TFP	Out-patient	12	1
Low 2001 (64)	DBT	Yes	Yes	No	Female	Adults	Observational study of DBT	Forensic	12	1
Nadort 2009 (65)	SFT	Yes	No	No	Any	Adults	RCT of SFT with extra phone support vs. SFT alone	Out-patient	18	2
Nee 2005 (66)	DBT	Yes	Yes	No	Female	Adults	Observational study of DBT - short programme and long programme	Forensic	3 and 12	1
Perseius 2007 (67)	DBT	Yes	No	No	Female	Adults	Observational study of burnout in DBT therapists	Out-patient	12	1
Rüsch 2008 (68)	DBT	Yes	Yes	No	Female	Adults	Observational study of predictors of dropout in DBT	In-patient	3	2
Schorrstein 2008 (69)	DBT	Yes	No	Yes	Any	Adults	Observational study of DBT	In-patient	4	1
Simpson 2004 (70)	DBT	Yes	No	No	Female	Adults	RCT of DBT with fluoxetine vs. DBT with placebo	Out-patient	3	1
Soler 2008 (71)	DBT	Yes	No	No	Any	Adults	Observational study of predictors of dropout in DBT	Out-patient	3	2
Stanley 2007 (72)	DBT	Yes	No	No	Any	Adults	Observational study of DBT	Out-patient	6	1
Turner 2000 (32)	DBT	Yes	No	No	Any	Adults	RCT of DBT vs. CCT	Out-patient	12	1
VanWel 2009 (43)	STEPPS	Yes	No	No	Any	Adults	RCT of STEPPS vs. TAU	Out-patient	5	2
Verheul 2003 (35)	DBT	Yes	No	No	Female	Adults	RCT of DBT vs. TAU	Out-patient	12	2

Table 1. Continued

First author and date	Treatment	Inclusion criteria					Design	Setting	Treatment length (months)	Quality score
		BPD	Self-harm	Substance or alcohol dependence	Gender	Age				
Webb 2009 (73)	DBT	Yes	No	No	Female	Adults	Observational study comparing completers and dropouts from DBT	Out-patient	Variable	1
Woodberry 2008 (74)	DBT	Yes	No	No	Any	Adolescents	Observational study of DBT	Out-patient	4	3
Zinkler 2007 (75)	DBT	Yes	Yes	No	Any	Adults	Observational study of DBT	Out-patient	12	3

BPD, borderline personality disorder; CBT, cognitive behavioural therapy; CCT, client centred therapy; CT, controlled trial; CVT, comprehensive validation therapy; DBT, dialectical behaviour therapy; DDP, dynamic deconstructive psychotherapy; ERGT, emotion regulation group therapy; MBT, mentalisation-based therapy; RCT, randomised controlled trial; SFT, schema-focused therapy; ST, supportive therapy; STEPPS, systems training for emotional predictability and problem solving; TAU, treatment as usual; TBCE, treatment by community experts; TFP, transference-focused psychotherapy.

Table 2. Meta-analyses of completion rates in psychotherapy for borderline personality disorder – intervention length under 12 months

First author and date	Treatment	Sample initiating treatment (N)	Treatment completion (%)	
Black 2008 (47)	STEPPS	12	83	
Blum 2008 (42)	STEPPS	92	48	
Bohus 2004 (48)	DBT	40	78	
Brassington 2006 (50)	DBT	10	100	
Farrell 2009 (41)	SFT	16	100	
Fleischhaker 2006 (56)	DBT	12	75	
Gratz 2006 (38)	ERGT	13	92	
Harley 2007 (58)	DBT	10	60	
Koons 2001 (33)	DBT	14	77	
Kröger 2006 (61)	DBT	50	88	
Linehan 2008 (62)	DBT	24	67	
Nee 2005 (66)	DBT	17	53	
Rösch 2008 (68)	DBT	60	68	
Schornstein 2008 (69)	DBT	10	80	
Simpson 2004 (70)	DBT	25	80	
Soler 2008 (71)	DBT	60	85	
Stanley 2007 (72)	DBT	20	95	
Van Wel 2009 (43)	STEPPS	45	80	
Woodberry 2008 (74)	DBT	46	63	
Overall estimate			75	

% completion

DBT, dialectical behaviour therapy; ERGT, emotion regulation group therapy.

ventions shorter than 12 months: $t(17) = 3.5$, $P < 0.01$; longer interventions: $t(22) = 2.4$, $P = 0.01$]. The funnel plots are presented in Fig. 2 and could be interpreted as suggesting that smaller studies were more likely to be published if they had a high completion rate.

Factors associated with treatment dropout – narrative analysis

Only 11 of the 41 studies examined predictors of treatment dropout. All eight studies that evaluated the association of sociodemographic variables with dropout from psychotherapy for BPD found no significant association. Sociodemographic variables found not to predict dropout have included age (43, 48, 52, 55, 68, 74), gender (43, 48, 61, 71), marital status (43, 52, 71), living alone (43), education level (43, 48, 52, 68, 71), employment status (43, 52, 61, 71), race (52, 74) and religion (52).

With the exception of the finding that dropouts were more likely to have schizoid personality

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Table 3. Meta-analyses of completion rates in psychotherapy for borderline personality disorder – intervention length 12 months or longer

First author and date	Treatment	Sample initiating treatment (N)	Treatment completion (%)	
Bateman 1999 (39)	MBT	25	88	
Brown 2004 (51)	CBT	32	75	
Clarkin 2001 (52)	TFP	23	74	
Clarkin 2007 (44)	TFP	30	77	
Clarkin 2007 (44)	DBT	30	57	
Comtois 2007 (54)	DBT	38	76	
Cottraux 2009 (55)	CBT	33	69	
Giesen-Bloo 2006 (40)	SFT	45	73	
Giesen-Bloo 2006 (40)	TFP	43	49	
Gregory 2008 (37)	DDP	15	67	
James 2008 (59)	DBT	16	88	
Kennedy 2007 (60)	DBT	14	71	
Linehan 1991 (30)	DBT	24	81	
Linehan 1999 (31)	DBT	11	63	
Linehan 2002 (34)	DBT	11	73	
Linehan 2006 (36)	DBT	52	83	
Lopez 2004 (63)	TFP	14	71	
Low 2001 (64)	DBT	13	77	
Nadort 2009 (65)	SFT	62	85	
Nee 2005 (56)	DBT	13	54	
Perseius 2007 (67)	DBT	27	89	
Turner 2000 (32)	DBT	12	75	
Verheul 2003 (35)	DBT	27	63	
Zinkler 2007 (75)	DBT	50	36	
Overall estimate			71	

CBT, cognitive behaviour therapy; DBT, dialectical behaviour therapy; DDP, dynamic deconstructive psychotherapy; MBT, mentalisation-based therapy; TFP, transference-focused therapy.
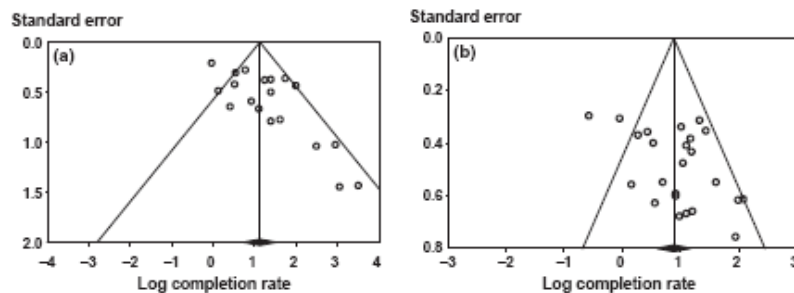
Fig. 2. Funnel plots of standard error by log completion in (a) interventions shorter than 12 months and (b) longer interventions.

disorder (52), treatment completers and dropouts did not differ in terms of comorbid Axis1 or Axis 2 diagnoses (48, 52, 68, 74). Likewise, with the exception of one study that found greater depression symptom severity in dropouts (49), symptom severity at baseline, including BPD symptom

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severity, depression symptom severity and general psychopathology, was not found to differ between dropouts and completers (48, 57, 68, 74). Lengths of illness and hospitalisation history were also not found to be associated with dropout (43, 55, 68, 74).

Factors found to be positively associated with treatment dropout have included high impulsivity (48, 55) and less pretreatment suicidal behaviour (68, 74 – trend), although conflictingly a third study found that past suicidal behaviour did not differ between dropouts and completers (48). Only a few studies focused more on internal psychological processes, and these have suggested that lack of commitment to change (71), less internal and more external motivation for change (73) and higher perceived stigma (68) could be related to dropout. Likewise, only a few studies examined the therapeutic processes occurring during treatment, and these have shown that less affective communication during treatment (53), and a poor patient or therapist-rated therapeutic alliance early in treatment (57) can predict dropout. Other factors associated with dropout have included higher baseline experiential avoidance (68), higher trait anxiety (68) and higher anger (68 – trend). Conflicting findings exist regarding the relevance of number of personality disorders, with one study finding that those with a greater number were more likely to drop out (73), whilst another study found it made no difference (48). Similarly, one study found that patients taking fewer psychotropic medications were more likely to drop out (48), whilst another study found that the number of psychotropic medications taken was unrelated (52).

Discussion

Treatment completion or factors associated with treatment completion were reviewed in psychotherapeutic interventions that have been shown to be effective in treating BPD. These included cognitive behavioural therapy, DBT, DDP, EGRT, MBT, schema-focused therapy, systems training for emotional predictability and problem solving, and transference-focused psychotherapy. A meta-analysis yielded an overall completion rate of 71% for interventions of 12 months or greater duration, and 75% for interventions of a shorter duration. There was a high degree of heterogeneity in completion rates between studies. There was also evidence that there may have been a bias towards publication of studies with higher completion rates, although the test used may be subject to a high false positive rate (76). The variables considered as moderators in the meta-analysis were not associated with differences in completion rates between studies.

When narratively reviewing the relatively few individual studies that evaluated predictors of dropout from effective psychotherapy for BPD, the most consistent finding was that sociodemographic variables were not associated with dropout. Pretreatment symptoms were also usually not associated with dropout. There was some suggestion that less pretreatment suicidal behaviour and higher impulsivity could be associated with dropout. Only a few studies explored the relation of psychological or therapeutic processes to dropout. One study identified commitment to change as a possible process that may be related to treatment dropout from DBT, whilst another found similarly that treatment completers had greater internal motivation for treatment. The therapeutic process itself could also be important, as poor therapeutic alliance early in treatment and lack of affective communication were found to predict dropout.

Strengths of this review include the wide and systematic search strategy, the relatively large number of studies included, the inclusion of non-English language papers and the inclusion of more pragmatic, naturalistic studies as well as efficacy studies, which may render its conclusions more applicable to everyday clinical practice. Further strengths are that many of the authors were contacted to clarify ambiguous information and that two researchers independently extracted the data, thus minimising the possibility of oversight or bias during these processes.

The main limitation of this review is that it included eight different interventions, which moreover were applied in a variety of treatment settings, patient groups and treatment lengths. This may limit the comparability of completion rates and factors predicting dropout across studies. Differences in exclusion criteria between studies could also have affected completion rates, as potentially very extensive exclusion criteria could select out the more 'difficult' patients before treatment begins, thus yielding better completion rates. Moreover, the definition of a 'treatment dropout' likely varied widely across studies, with some studies operating very strict rules whereby patients missing more than three consecutive treatment sessions were considered dropouts (30), whilst others were much more generous in their definition of a dropout. Most studies did not specify exactly how they had defined treatment dropout, rendering interpretation difficult. Treatment setting, length, intervention, exclusion criteria, attendance rules and other study characteristics were not found to be associated with completion rates in the meta-analysis.

However, the meta-analysis may not have had sufficient power to detect the influence of the moderators assessed.

The review is also limited in that assessing treatment take-up rates was not possible owing to the large number of RCTs included, in which it is not possible to calculate a take-up rate for individual interventions. This is an important consideration, as if a low proportion of patients offered the treatment actually take it up, then the patients who would have been more likely to drop out of treatment later on may have self-selected out before even starting treatment. A further consideration is that setting a generous criterion for effectiveness could have affected our results. If, for example, an intervention that was effective in treating one of the symptoms of BPD was relatively ineffective at treating any of the other symptoms, this could have increased dropout. Nonetheless, despite the lenient inclusion criterion, all but one of the included interventions have in fact demonstrated effectiveness for treating multiple symptoms of BPD, although how far these gains are maintained post-treatment is a subject of ongoing debate and research.

The treatment completion rate found here is fairly high and is in fact higher than that found in a meta-analysis of completion rates across 110 psychotherapy studies including patients with a wide variety of both Axis I and Axis II disorders, in which the overall completion rate was 65% (77).

The finding that the therapeutic alliance, patients' motivation for change and impulsivity could be potentially important predictors of dropout in psychotherapy for BPD is consistent with the wider psychotherapy literature. A meta-analysis of 110 psychotherapy studies found that these three factors were consistently strong predictors of dropout (77). The same meta-analysis also found that sociodemographic variables were not strong predictors of dropout, consistent with the findings of the present review (77) – although contrastingly, a study of 10 specialist services for personality disorder found that male gender and younger age did predict dropout (78). Therapeutic alliance has been found to predict dropout in psychotherapy models for BPD which were not included in the present review (79, 80), and readiness for change specifically has been found to predict dropout from psychological treatment for substance abuse, eating disorders and panic disorder (81–84). The finding that patients with less suicidal behaviour are more likely to drop out is consistent with an earlier finding from out-patient psychotherapy for BPD (15). A possible explanation could be the focus of many treatments for BPD on targeting

suicidal behaviour – do individuals with less suicidal behaviour feel that the treatment is not for them, and so drop out? Alternatively, individuals with more suicidal behaviour may experience a very high level of subjective distress – could they therefore be more desperate for change and thus more committed to therapy? Neither of these suggestions offers a full explanation for this yet-to-be substantiated phenomenon.

The results imply that, in interventions for BPD which have been demonstrated to be effective, treatment completion is generally fairly high and is in fact on average higher than that found in the wider psychotherapy literature. Furthermore, the completion rates were similar across interventions that were shorter than 12 months or those which were longer. Thus, it may safely be said that a diagnosis of BPD should no longer be associated with a high probability of dropping out of treatment, even when the treatment course is long. One may speculate that perhaps the earlier low completion rates resulted from a mismatch between people with BPD and the treatments available for them, rather than being a problem with BPD itself. The papers included in earlier reviews all described dropout rates from unstructured, non-specialised treatments. In contrast, the increasing specialisation of the treatments for BPD reviewed here may have led to a better fit for these patients and thus lower dropout rates. In support of this argument, dropout rates from the 'treatment as usual' condition were very high in some of the RCTs included in this review (31, 32) and were significantly higher than in the intervention condition in at least two studies (35, 36). However, this was not the case in all studies (34, 41, 43). Alternatively, perhaps the decrease in the stigma associated with treating BPD in recent years, as most notably demonstrated in the Department of Health publication 'Personality Disorder: No longer a diagnosis of exclusion' (15), has meant that health professionals are now believing more and more that these individuals can be treated effectively without therapist burnout and are thus working with more confidence to keep patients with BPD in treatment. Nonetheless, although the overall completion rate was high, there was considerable variability, with a few studies reporting much lower completion rates. Even when the high overall completion rate is considered, the averaged 25% of patients who drop out of treatment is still not ideal. Furthermore, there was evidence that studies with very low completion rates were less likely to be published, skewing published results towards more positive outcomes.

The current research on factors predicting dropout in individual studies has been minimal

and has perhaps been overfocused on the role of sociodemographic and clinical characteristics, which, with the exception of self-harm and impulsivity, have so far largely not been found to be associated with dropout. Future research could focus more on the psychological processes that may influence whether a patient drops out or stays in treatment. Research on patients' commitment to and motivation for change, together with research on the therapeutic processes occurring during treatment, may offer a promising avenue to be further explored, which could potentially lead to future interventions focused on targeting the psychological processes involved in fostering treatment commitment. Furthermore, there is currently no qualitative research exploring why patients drop out of effective interventions for BPD, although there has been some research with patients who dropped out from an as yet unproved group treatment for BPD (85). Such research could enable interventions for BPD to be improved to achieve consistently high completion rates.

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Appendix B - Details of studies included and quality ratings in systematic reviews

Table B1 - Description of studies included in systematic review of predictors of symptom change during psychotherapy for BPD (Chapter Three)

Table B2 - Quality ratings for studies included in systematic review of predictors of symptom change during psychotherapy for BPD (Chapter Three)

Table B3 - Description of studies included in systematic review of treatment completion during psychotherapy for BPD (Chapter Four)

Table B4 - Quality ratings for studies included in systematic review of treatment completion during psychotherapy for BPD (Chapter Four)

Table B5 - Variables predicting treatment completion in studies of psychotherapy for BPD (Chapter Four)

Table B1. Papers included in the systematic review of predictors of symptom change in psychotherapy for BPD

	Treatment(s) included in predictor analysis	Sample size for predictor analyses	Study design	Predictor variables	Outcome variables
Axelrod et al. 2011	DBT	24	Obs	Improvement in emotion regulation ability during tx	Substance use frequency
Bateman & Fonagy 1999	MBT	19	RCT	Pre-tx age, anxiety severity, Axis I comorbidities, BPD severity, childhood abuse, depression severity, educational level, gender, general psychiatric symptom severity, living status, marital status, psychiatric medication, self-harm history, social adjustment, treatment history	Self-harm
Berking et al. 2009	DBT, TBCE	81	RCT	Pre-tx experiential avoidance, change in experiential avoidance during tx.	Depression
Black et al. 2009	STEPPS, TAU	164	RCT	Pre-tx age, Axis I comorbidities, Axis II comorbidities, BPD severity, depression severity, educational level, gender, general psychiatric symptom severity, social adjustment, self-harm history	BPD severity, Depression severity, General psychiatric symptom severity
Bohus et al. 2004	DBT	50	CT	Pre-tx age, BPD severity, depression severity, anxiety severity, anger severity, dissociation severity, employment, general psychiatric symptom severity, psychosocial functioning, self-harm history	Depression severity, anxiety severity, anger severity, dissociation severity, general psychiatric symptom severity
Braakman et al. 2007	DBT	30	Obs	Pre-tx dissociation severity	Depression severity, anxiety severity, dissociation severity, general psychiatric symptom severity
Brown et al. 2009	DBT, TBCE	73	RCT	Shame during tx	Self-harm
Chapman et al. 2009	DBT, CVT, TBCE	55	RCT	Pre-tx Cloningner temperament dimensions	Self-harm

	Treatment(s) included in predictor analysis	Sample size for predictor analyses	Study design	Predictor variables	Outcome variables
Clarkin et al. 2007	TFP, DBT, ST	62	RCT	Pre-tx Age	Depression severity, anxiety severity, suicidality, impulsivity, aggression
Davidson et al. 2010	CBT, TAU	76	RCT	Pre-tx age, age at first self-harm, educational level, forensic history, gender, employment, living status, marital status, sepaperlf-harm frequency, special educational needs, suicide attempt frequency	Suicide attempt(s)
Doering et al. 2010	TFP, TBCE	72	RCT	Pre-tx psychiatric medication usage	BPD severity, general psychiatric symptom severity, self-harm, suicide attempts
Giesen-Bloo et al. 2006	SFT, TFP	86	RCT	Pre-tx BPD severity, self-harm history, psychiatric medication	BPD severity
Goldman & Gregory 2010	DDP	10	Obs	DDP techniques (association, attribution, ideal other) used during tx, therapeutic alliance during tx.	Alcohol abuse, BPD severity, depression, dissociation, self-harm,
Gunderson et al. 1997	Mixed	15	Obs	Therapeutic alliance during tx- patient and therapist-rated	BPD severity, general psychiatric symptoms
Harned et al. 2010	DBT	51 (22)	Obs	Pre- tx dissociation severity, drug and alcohol abstinent days, number of Axis 1 diagnoses, PTSD comorbidity, PTSD symptom severity, self harm frequency, social functioning, suicide attempt frequency, timimg of index trauma	Dissociative disorder, imminent suicide risk, self harm, substance dependence.
Kleindienst et al. 2011	DBT	54	Obs	Pre-tx dissociation severity, general psychiatric symptom severity and interpersonal problem severity	General psychiatric symptom severity

	Treatment(s) included in predictor analysis	Sample size for predictor analyses	Study design	Predictor variables	Outcome variables
Koons et al. 2001	DBT, TAU	20	RCT	Pre-tx anxiety severity	BPD severity, depression severity, anger severity, dissociation severity, self-harm, suicidality
Laddis 2010	CCM, TAU	58	CT	Pre-tx age, gender, educational level, general psychiatric symptom severity, marital status.	General psychiatric symptom severity
Leerer 1997	DBT	12	Obs	Therapeutic alliance during tx– patient-rated	Anger severity, self-harm
Linehan et al. 1999	DBT, TAU	7	RCT	Therapist adherence to DBT protocol during tx	Substance abuse
Marziali et al. 1999	IGP, IDP	18	RCT	Therapeutic alliance during tx – patient-rated	Depression severity, general psychiatric symptom severity
Meares et al. 1999	IPP, TAU	60	CT	Pre-tx BPD severity	BPD symptom severity
Meehan 2008	DBT, ST, TFP	37	RCT	Pre-tx state anger. Affective communication during tx.	Aggression, state anger, suicidality
Nadort et al. 2011	SFT	62	RCT	Therapeutic alliance during tx - patient-rated	Recovery from BPD, reliable change in BPD symptoms
Neacsiu et al. 2010	DBT, TAU, CVT, TBCE	108	RCT	Use of skills taught in DBT during tx	Depression severity, anger severity, suicide attempts
Pasieczy & Connor 2011	DBT	44	CT	Therapist level of training	Anxiety severity, depression severity, general psycaitric symptom severity, sucidality, suicide attempt frequency
Ryle & Golynkina 2000	CAT	27	Obs	Pre-tx alcohol abuse history, age, BPD severity, childhood abuse severity, depression severity, eating disorder history, educational level, employment, gender, general psychiatric symptom severity, impulsivity severity, interpersonal problem severity, recent major life events, marital status, psychiatric medication, self harm history, sexual orientation, social functioning, substance abuse history, treatment history, violence history	Recovery from BPD

	Treatment(s) included in predictor analysis	Sample size for predictor analyses	Study design	Predictor variables	Outcome variables
Shearin & Linehan 1992	DBT	4	Obs	Balance between therapist use of acceptance versus change-oriented techniques during tx	Self-harm
Spinhoven et al. 2007	SFT, TFP	78	RCT	Pre-tx therapist-patient schema dissimilarity, therapeutic alliance during tx– patient and therapist-rated.	BPD severity
Spinhoven et al. 2008	SFT, TFP	71	RCT	BPD severity, educational level, employment, number of Axis 1 disorders, number of Axis 2 disorders. Therapist prediction of outcome during tx.	Recovery from BPD, reliable change in BPD symptoms
Strauss et al. 2011	PT	21	Obs	Change in attachment status during tx	General psychiatric symptom severity
Turner et al. 2000	DBT, CCT	24	RCT	Therapeutic alliance during tx – patient-rated	Depression severity, anxiety severity, general psychiatric symptom severity, anger severity, impulsivity severity, self-harm, suicide attempts, suicidality
Wenzel et al. 2008	CBT	28	Obs	Pre-tx attitude towards talking to a therapist, expectations for improvement	Depression severity, suicidality, BPD severity
Yen et al. 2009	DBT	47	Obs	Pre-tx BPD criteria fulfilled, depression severity, anger severity, dissociation severity, general psychiatric symptom severity	Depression severity, anger severity, dissociation severity, general psychiatric symptom severity, self-harm

CAT Cognitive analytic therapy; CBT Cognitive Behavioural Therapy; CCM Cape Cod Model; CCT Client centred therapy; CT Controlled trial; CVT Comprehensive validation therapy; DBT Dialectical behaviour therapy; IDP Individual dynamic therapy; IGP Interpersonal group therapy; IPP Interpersonal psychodynamic psychotherapy; MBT Mentalization based therapy; Obs Observational study; PT Psychodynamic therapy; RCT Randomised controlled trial; SFT Schema focused therapy; STEPPS Systems training for emotional predictability and problem solving; ST Supportive therapy; TAU Treatment as usual; TBCE Treatment by community experts; TFP Transference focused psychotherapy; tx treatment.

Table B2 - Quality ratings for studies included in systematic review of predictors of symptom change during psychotherapy for BPD

	Sample size for predictor analyses	Diagnosis of BPD using a reliable structured interview	Reliable and validated predictor and outcome measure(s)	Researchers blind to tx condition	Predictor analysis used intent-to-treat sample	Evidence that results were not biased by omission of missing data	Maximum likelihood or multiple imputation used to minimise bias from missing data	Outcome distribution checks were performed and appropriate analyses used	Continuous predictors retained as continuous variables in predictive model	Paper published in a peer-reviewed journal	Study quality (0-1)
Axelrod et al. 2011	0	1	1	n.a.	1[c]	0[c]	1	1	1	1	0.70
Bateman & Fonagy 1999	0	1	1	0	0	n.a.	0	1	1	1	0.50
Berking et al. 2009	1	1	1	1	1	0	1	1	1	1	0.82
Black et al. 2009	2	1	1	0	1	1[c]	1[c]	1[c]	1	1	0.91
Bohus et al. 2004	1	1	1	0	0	1[c]	0	1	1	1	0.64
Braakman et al. 2007	1	1	1	n.a.	0	0	0	1	0	1	0.50
Brown et al. 2009	1	1	1	1	0	0	0	1	0	1	0.55
Chapman et al. 2009	1	1	1	1	1	0[c]	0	1	0	1	0.64
Clarkin et al. 2007	1	1	1	1	0	1	0	0	1	1	0.64
Davidson et al. 2010	1	1	1	1	1	1[c]	1	1	1	1	0.91
Doering et al. 2010	1	1	1	1	1	0	0	1[c]	1	1	0.73

	Sample size for predictor analyses	Diagnosis of BPD using a reliable structured interview	Reliable and validated predictor and outcome measure(s)	Researchers blind to tx condition	Predictor analysis used intent-to-treat sample	Evidence that results were not biased by omission of missing data	Maximum likelihood or multiple imputation used to minimise bias from missing data	Outcome distribution checks were performed and appropriate analyses used	Continuous predictors retained as continuous variables in predictive model	Paper published in a peer-reviewed journal	Study quality (0-1)
Giesen-Bloo et al. 2006	1	1	1	0	1	1	1[c]	1	1	1	0.73
Goldman & Gregory 2010	0	1	1	n.a.	0	n.a.	n.a.	1	1	1	0.63
Gunderson et al. 1997	0	1	1	n.a.	1	0	0[c]	1[c]	1	1	0.60
Harned et al. 2010	1	1	1	n.a.	1	0	0	0	1	1	0.60
Kleindienst et al. 2011	1	1	1	n.a.	0	1[c]	0	1	1	1	0.70
Koons et al. 2001	0	1	1	0	0	0	0	1	1	1	0.45
Laddis 2010	1	1	1	0	0	0	0	1	1	1	0.55
Leerer 1997	0	1	1	n.a.	1	n.a.	n.a.	0	1	0	0.50
Linehan et al.1999	0	1	1	1	0	0	0	0	0	1	0.36
Marziali et al. 1999	0	1	1	0	0	0	0	0	1	1	0.36
Meares et al. 1999	1	1	1	0	0	n.a.	n.a.	0	1	1	0.56
Meehan 2008	1	1	1	1	0	1[c]	0	1[c]	1	0	0.64
Nadort et al. 2011	1	1	1	0	1	0	0	1	1	1	0.70
Neacsiu et al. 2010	2	1	1	1	1	1	1	1	1	1	1.00

	Sample size for predictor analyses	Diagnosis of BPD using a reliable structured interview	Reliable and validated predictor and outcome measure(s)	Researchers blind to tx condition	Predictor analysis used intent-to-treat sample	Evidence that results were not biased by omission of missing data	Maximum likelihood or multiple imputation used to minimise bias from missing data	Outcome distribution checks were performed and appropriate analyses used	Continuous predictors retained as continuous variables in predictive model	Paper published in a peer-reviewed journal	Study quality (0-1)
Pasieczny & Connor 2011	1	1	1	0	1	0	0	0	n.a.	1	0.40
Ryle & Golynkina 2000	0	1	1	n.a.	0	n.a.	n.a.	1	1	1	0.63
Shearin & Linehan 1992	0	1	1	n.a.	0	0	0	1	1	1	0.50
Spinhoven et al. 2007	1	1	1	0	1	0	0	0	1	1	0.55
Spinhoven et al. 2008	1	1	1	0	1	1	0	1	1	1	0.73
Strauss et al. 2011	0	1	1	n.a.	n.a.	n.a.	n.a.	0	1	1	0.57
Turner 2000	0	1	1	1	1	n.a.	n.a.	0[c]	1	1	0.68
Wenzel et al. 2008	0	1	1	n.a.	1	0	0	1[c]	1	1	0.60
Yen et al. 2009	1	1	1	n.a.	1	0	0	1	1	1	0.70

0 = analysis does not meet quality criterion

1= analysis meets quality criterion

n.a. = quality criterion does not apply to analysis

[c] = information on quality criterion gained by correspondence with study author

Where a study conducted multiple predictor-outcome analyses of differing quality (e.g. different sample sizes in each), the quality score for the highest quality analysis was reported for that study.

Table B3. Description of studies included in systematic review of treatment completion during psychotherapy for BPD

	Treatment	Inclusion criteria					Exclusion criteria		Design	Setting	Treatment length (months)	M	P
		BPD	Self-harm	Substance or alcohol dependence	Gender	Age	Psychotic disorders	Bipolar disorder					
Andion et al. 2012	DBT	Yes	No	No	Any	18-50	No	No	RCT of standard DBT versus group DBT	Outpatient	12	Y	Y
Axelrod et al. 2011	DBT	Yes	No	Yes	Female	18+	Yes	No	Observational	Outpatient	5	Y	Y
Bateman & Fonagy 1999	MBT or TAU	Yes	No	No	Any	18+	Yes	Yes	RCT of MBT versus TAU	Outpatient	18	Y	N
Bateman & Fonagy 2009	MBT or SCM	Yes	Yes	No	Any	18-65	Yes	Yes	RCT of MBT versus SCM	Outpatient	18	Y	N
Ben-Porath et al. 2004	DBT	Yes	No	No	Any	18+	No	No	Observational	Outpatient	6	Y	N

	Treatment	BPD	Self-harm	Substance or alcohol dependence	Gender	Age	Exclude psychotic disorders	Exclude bipolar disorder	Study Design	Setting	Treatment length	M	P
Black et al. 2008	STEPPS	Yes	No	No	Female	18+	No	No	Observational	Forensic	5	Y	N
Black et al. 2009	STEPPS or TAU	Yes	No	No	Any	18+	Yes	No	Predictors of outcome in Blum et al. 2008 RCT	Outpatient	5	N	Y
Blum et al. 2008	STEPPS or TAU	Yes	No	No	Any	18+	Yes	No	RCT of STEPPS versus TAU	Outpatient	5	Y	Y
Bohus et al. 2004	DBT	Yes	Yes	No	Female	18+	Yes	Yes	CT of DBT versus waiting list	Inpatient	3	Y	N
Bos et al. 2010	STEPPS or TAU	Yes	Yes	No	Any	18+	No	No	RCT of STEPPS versus TAU	Outpatient	5	Y	Y
Brassington et al. 2006	DBT	Yes	Yes	No	Female	18+	No	No	Observational	Outpatient	6	Y	N
Brown et al. 2004	CBT	Yes	Yes	No	Any	18+	Yes	No	Observational	Outpatient	12	Y	N
Carter et al. 2010	DBT or TAU	Yes	Yes	No	Female	18-65	Yes	Yes	RCT of DBT versus TAU	Outpatient	6	Y	N

	Treatment	BPD	Self-harm	Substance or alcohol dependence	Gender	Age	Exclude psychotic disorders	Exclude bipolar disorder	Study Design	Setting	Treatment length	M	P
Clarkin et al. 2001	TFP	Yes	Yes	No	Female	18-50	Yes	Yes	Observational study	Outpatient	12	Y	Y
Clarkin et al.2007	DBT or TFP or ST	Yes	No	No	Any	18-50	Yes	Yes	RCT of DBT versus TFP versus ST	Outpatient	12	Y	N
Cottraux et al. 2009	CBT or RST	Yes	No	No	Any	18-60	Yes	No	RCT of CBT versus RST	Outpatient	12	Y	Y
Cuevas et al. 2000	PT	Yes	No	No	Any	18+	Yes	Yes	Observational	Outpatient	24	N	Y
Doering et al. 2010	TFP or TBCE	Yes	No	No	Female	18-45	Yes	Yes	RCT of TFP versus TBCE	Outpatient	12	Y	N
Farrell et al. 2009	SFT or TAU	Yes	No	No	Female	18-65	Yes	No	RCT of SFT with TAU versus TAU	Outpatient	8	Y	N
Frederici 2010	DBT group	Yes	Yes	No	Any	18+	Yes	Yes	Observational study	Outpatient	5	N	Y
Fleischhaker et al. 2006	DBT	Yes	Yes	No	Any	13-19	Yes	Yes	Observational study	Outpatient	4	Y	N

Study	Treatment	BPD	Self-harm	Substance or alcohol dependence	Gender	Age	Exclude psychotic disorders	Exclude bipolar disorder	Study Design	Setting	Treatment length (months)	M	P
Giesen-Bloo et al. 2006	SFT or TFP	Yes	No	No	Any	18-60	Yes	Yes	RCT of SFT versus TFP	Outpatient	36	Y	N
Gratz & Gunderson 2006	ERGT	Yes	Yes	No	Female	18-60	Yes	Yes	RCT of ERGT with IT versus IT alone	Outpatient	3	Y	N
Gregory et al. 2008	DDP	Yes	No	Yes	Any	18-45	Yes	No	RCT of DDP versus TAU	Outpatient	12	Y	N
Gunderson et al. 1989	Mixed	Yes	No	No	Any	17-35	Yes	Yes	Observational	Outpatient	6	N	Y
Gunderson et al. 1997	Mixed	Yes	No	No	Female	17-35	Yes	Yes	Observational	Outpatient	6	N	Y
Harley et al. 2007	DBT	Yes	No	No	Any	18+	Yes	No	RCT of standard DBT versus DBT skills group with non-DBT IT	Outpatient	7	Y	N
Harned et al. 2012	DBT + PE	Yes	Yes	No	Female	18-60	Yes	Yes	Observational	Outpatient	12	Y	N
Heij & Barelds 2011	DBT	Yes	No	No	Any	18+	No	No	Observational study	Outpatient	12	Y	N

	Treatment	BPD	Self-harm	Substance or alcohol dependence	Gender	Age	Exclude psychotic disorders	Exclude bipolar disorder	Study Design	Setting	Treatment length	M	P
James et al. 2008	DBT	Yes	Yes	No	Any	15-18	Yes	Yes	Observational	Outpatient	12	Y	N
Kelly et al. 1992	Mixed	Yes	No	No	Any	18+	Yes	Yes	Observational	Outpatient	5	N	Y
Kennedy & Thomas 2007	DBT	Yes	No	No	Any	18+	No	No	Observational	Outpatient	12	Y	N
Kleindienst et al. 2011	DBT	Yes	Yes	No	Female	18-45	Yes	Yes	Predictors of outcome in Bohus et al. 2004	Inpatient	3	N	Y
Koons et al. 2001	DBT or TAU	Yes	No	No	Female	18+	Yes	Yes	RCT of DBT versus TAU	Outpatient	6	Y	N
Kroger et al. 2006	DBT	Yes	No	No	Female	18+	Yes	Yes	Observational study	Inpatient	3	Y	N
Leerer 1997	DBT group	Yes	No	No	Female	18+	No	No	Observational study	Inpatient	12	N	Y
Lindenboim 2010	DBT	Yes	Yes	Yes	Female	18-45	Yes	Yes	Predictors in Linehan et al. 2002 and 2006 RCTs	Outpatient	12	N	Y

	Treatment	BPD	Self-harm	Substance or alcohol dependence	Gender	Age	Exclude psychotic disorders	Exclude bipolar disorder	Study Design	Setting	Treatment length	M	P
Linehan et al. 1991	DBT or TAU	Yes	Yes	No	Female	18-45	Yes	Yes	RCT of DBT versus TAU	Outpatient	12	Y	N
Linehan et al. 1999	DBT or TAU	Yes	No	Yes	Female	18-45	Yes	Yes	RCT of DBT versus TAU	Outpatient	12	Y	N
Linehan et al. 2002	DBT or CVT	Yes	No	Yes	Female	18-45	Yes	Yes	RCT of DBT versus CVT	Outpatient	12	Y	N
Linehan et al. 2006	DBT or TBCE	Yes	Yes	No	Female	18-45	Yes	Yes	RCT of DBT versus TBCE	Outpatient	12	Y	N
Linehan et al. 2008	DBT	Yes	No	No	Female	18-45	Yes	Yes	RCT of DBT versus DBT with olanzapine	Outpatient	6	Y	N
Lopez et al. 2004	TFP	Yes	No	No	Female	18-40	Yes	Yes	Observational study	Outpatient	12	Y	N
Low et al. 2001	DBT	Yes	Yes	No	Female	18+	No	No	Observational study	Forensic	12	Y	N
McMain et al. 2009	DBT or GPM	Yes	Yes	No	Any	18-60	Yes	Yes	RCT of DBT versus GPM	Outpatient	12	Y	N

Study	Treatment	BPD	Self-harm	Substance or alcohol dependence	Gender	Age	Exclude psychotic disorders	Exclude bipolar disorder	Study Design	Setting	Treatment length	M	P
Meehan 2008	TFP or DBT or ST	Yes	No	No	Any	18-50	Yes	Yes	Predictors of outcome in Clarkin et al. 2007 RCT	Outpatient	18	N	Y
Meehan et al. 2012	TFP or DBT or ST	Yes	No	No	Any	18-50	Yes	Yes	Predictors of outcome in Clarkin et al. 2007 RCT	Outpatient	18	N	Y
Munroe-Blum & Marziali 1995	PT or GPT	Yes	No	No	Any	18 - 65	No	No	RCT of PT versus GPT	Outpatient	8	N	Y
Nadort et al. 2009	SFT	Yes	No	No	Any	18-60	Yes	Yes	RCT of SFT versus SFT with additional phone support	Outpatient	18	Y	N
Nee & Farman 2005	DBT	Yes	Yes	No	Female	18+	No	No	Observational	Outpatient	3 or 12	Y	N
Nysaeter et al. 2010	Mixed	Yes	No	No	Any	18+	No	No	Observational study	Outpatient	Variable	N	Y

	Treatment	BPD	Self-harm	Substance or alcohol	Gender	Age	Exclude psychotic	Exclude bipolar	Study Design	Setting	Treatment length	M	P
Pascienzy & Connor 2011	DBT	Yes	Yes	No	Any	18	No	No	Observational	Outpatient	6	Y	N
Perseius et al. 2007	DBT	Yes	No	No	Female	15+	Yes	No	Observational	Outpatient	12	Y	N
Ragsdale 2006	CMHT	Yes	No	No	Any	18 +	No	No	Observational	Outpatient	Varied	N	Y
Rusch et al. 2008	DBT	Yes	No	No	Female	18 +	Yes	Yes	Observational	Outpatient	3	Y	Y
Schornstein et al. 2008	DBT	Yes	No	Yes	Any	18+	No	No	Observational	Inpatient	4	Y	N
Simpson et al. 2004	DBT	Yes	No	Yes	Female	18+	Yes	Yes	RCT of DBT versus DBT with fluoxetine	Outpatient	3	Y	N
Smith et al. 1995	PT	Yes	No	No	Female	20-40	Yes	Yes	Observational	Outpatient	6	N	Y
Soler et al.2008	DBT group	Yes	No	No	Any	18-45	Yes	Yes	Observational study	Outpatient	3	N	Y

	Treatment	BPD	Self-harm	Substance or alcohol dependence	Gender	Age	Exclude psychotic disorders	Exclude bipolar disorder	Study Design	Setting	Treatment length	M	P
Spinhoven et al. 2007	SFT or TFP	Yes	No	No	Any	18-60	Yes	Yes	Predictors of outcome in Giesen-Bloo et al. 2006 RCT	Outpatient	36	N	Y
Spinhoven et al. 2008	SFT or TFP	Yes	No	No	Any	18-60	Yes	Yes	Predictors of outcome in Giesen-Bloo et al. 2006 RCT	Outpatient	36	N	Y
Stanley et al. 2007	DBT	Yes	No	No	Any	18+	Yes	No	Observational	Outpatient	6	Y	N
Turner 2000	DBT or CCT	Yes	No	No	Any	18+	Yes	Yes	RCT of DBT versus CCT	Outpatient	12	Y	N
Van den Bosch et al. 2012	DBT	Yes	No	No	Any	18+	Yes	Yes	Observational	Forensic	12	Y	Y
VanWel et al. 2009	STEPPS or TAU	Yes	No	No	Any	18 +	Yes	Yes	RCT of STEPPS versus TAU	Outpatient	5	Y	Y
Verheul et al. 2003	DBT or TAU	Yes	No	No	Female	18-70	Yes	Yes	RCT of DBT versus TAU	Outpatient	12	Y	N
Webb & McMurran 2009	DBT	Yes	No	No	Female	18 +	Yes	No	Observational study	Outpatient	variable	Y	Y

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	Treatment	BPD	Self-harm	Substance or alcohol dependence	Gender	Age	Exclude psychotic disorders	Exclude bipolar disorder	Study Design	Setting	Treatment length	M	P
Williams et al. 2010	DBT	Yes	No	No	Any	18+	Yes	Yes	CT of standard DBT versus DBT group with TAU IT	Outpatient	5	Y	N
Woodberry & Popenoe 2008	DBT	Yes	No	No	Any	13-18	No	No	Observational study	Outpatient	4	Y	N
Yeomans et al. 1994	PT	Yes	No	No	Female	18-45	Yes	Yes	Observational study	Outpatient	6	N	Y
Zinkler et al. 2007	DBT	Yes	Yes	No	Any	18-65	No	No	Observational study	Outpatient	12	Y	N

Studies coded "Y" in column M were included in the meta-analysis; Studies coded "Y" in column P were included in the predictors review.

CBT= cognitive behavioural therapy, CCT = client centred therapy, CMHT = community mental health treatment, CT = controlled trial, CVT = comprehensive validation therapy, DBT = dialectical behaviour therapy, DDP = dynamic deconstructive psychotherapy, ERGT = emotion regulation group therapy, GPM = general psychiatric management, GPT = group psychodynamic therapy, IT = individual therapy, MBT = mentalisation based therapy, PE = prolonged exposure, PT = psychodynamic therapy, RCT = randomised controlled trial, RST = Rogerian supportive therapy, SCm = structured clinical management, SFT = schema focused therapy, ST= supportive therapy, STEPPS = systems training for emotional predictability and problem solving, TAU = treatment as usual, TBCE = treatment by community experts, TFP = transference focused psychotherapy

Table B4. Quality ratings for studies included in systematic review of treatment completion during psychotherapy for BPD

	Sample size ≥ 30	Clear description of numbers screened, included and excluded	Clear description of numbers dropping out of treatment	Intention to treat analysis	Randomised controlled trial	Blind assessment of outcome	Outcome distribution checks and appropriate analyses	Missing data adequately addressed	Quality Score
Andion et al. 2012	1	0	1	0	1	1	1	0	5
Axelrod et al. 2011	0	0	1	1	0	0	1	1	4
Bateman & Fonagy 1999	1	0	1	0	1	0	1	0	4
Bateman & Fonagy 2009	1	1	1	1	1	1	1	1	8
Ben-Porath et al. 2004	0	0	1	0	0	0	0	0	1
Black et al. 2008	0	0	1	1	0	0	0	1	3
Black et al. 2009	1	1	1	1	1	0	1	1	7
Blum et al. 2008	1	1	1	1	1	0	1	1	7
Bohus et al. 2004	1	1	1	0	0	0	1	0	4
Bos et al. 2010	1	1	1	1	1	0	1	1	7
Brassington et al. 2006	0	0	1	1	0	0	0	0	2
Brown et al. 2004	1	1	1	1	0	0	1	0	5
Carter et al. 2010	1	1	1	1	1	1	1	1	8
Clarkin et al. 2001	0	0	1	1	0	0	0	0	2
Clarkin et al. 2007	1	1	1	0	1	1	0	1	6
Cottraux et al. 2009	1	1	1	1	1	1	1	1	8
Cuevas et al. 2000	0	1	1	1	0	0	0	0	3
Doering et al. 2010	1	1	1	1	1	1	0	0	6
Farrell et al. 2009	1	1	1	0	1	0	0	0	4

	Sample size ≥ 30	Clear description of numbers screened, included and excluded	Clear description of numbers dropping out of treatment	Intention to treat analysis	Randomised controlled trial	Blind assessment of outcome	Outcome distribution checks and appropriate analyses	Missing data adequately addressed	Quality Score
Fleischaker et al. 2006	0	0	1	0	0	0	0	0	1
Frederici 2010	1	1	1	1	0	0	1	0	5
Giesen-Bloo et al. 2006	1	1	1	1	1	0	1	1	7
Gratz & Gunderson 2006	0	0	1	0	1	0	1	0	3
Gregory et al. 2008	1	1	1	1	1	1	0	0	6
Gunderson et al. 1989	1	0	1	1	0	0	0	0	3
Gunderson et al. 1997	1	0	1	1	0	0	0	0	3
Harley et al. 1997	1	1	1	0	0	0	0	0	3
Harned et al. 2012	0	1	1	1	0	0	0	1	4
Heij & Barelds 2011	1	0	1	0	0	0	1	0	3
James et al. 2008	0	1	1	1	0	0	0	0	3
Kelly et al. 1992	1	0	1	1	0	0	0	0	3
Kennedy & Thomas 2007	0	0	1	0	0	0	0	0	1
Koons et al. 2001	0	1	1	0	1	0	1	0	4
Kleindienst et al. 2011	1	0	1	0	0	0	1	0	3
Kroger et al. 2006	1	1	1	1	0	0	0	0	4
Leerer 1997	0	0	1	1	0	0	0	0	2
Lindenboim 2010	1	1	1	1	1	1	1	1	8
Linehan et al. 1991	1	0	1	0	1	1	1	0	5
Linehan et al. 1999	0	0	1	1	1	1	0	0	4
Linehan et al. 2002	0	1	1	1	1	1	0	1	6
Linehan et al. 2006	1	1	1	1	1	1	1	1	8
Linehan et al. 2008	0	1	1	1	1	1	1	1	7

	Sample size ≥ 30	Clear description of numbers screened, included and excluded	Clear description of numbers dropping out of treatment	Intention to treat analysis	Randomised controlled trial	Blind assessment of outcome	Outcome distribution checks and appropriate analyses	Missing data adequately addressed	Quality Score
Lopez et al. 2004	0	0	1	0	0	0	0	0	1
Low et al. 2001	0	1	1	0	0	0	1	0	3
McMain et al. 2009	1	1	1	1	1	1	1	1	8
Meehan 2008	1	1	1	1	1	1	1	0	7
Meehan et al. 2012	1	1	1	1	1	1	0	0	6
Munroe-Blum & Marziali 1995	1	0	1	1	1	0	0	0	4
Nadort et al. 2009	1	1	1	1	1	0	1	0	6
Nysaeter et al. 2010	1	1	1	1	0	0	0	0	4
Nee & Farman 2005	1	0	1	0	0	0	0	0	2
Pascienzy & Connor 2011	1	0	1	1	0	0	0	0	3
Perseius et al. 2007	0	0	1	0	0	0	0	0	1
Ragsdale 2006	1	0	1	1	0	0	1	0	4
Rusch et al. 2008	1	0	1	1	0	0	1	0	4
Schornstein et al. 2008	0	0	1	0	0	0	0	0	1
Simpson et al. 2004	0	0	1	0	1	1	0	0	3
Smith et al. 1995	1	0	1	1	0	0	1	0	4
Soler et al. 2008	1	1	1	1	0	0	0	0	4
Spinhoven et al. 2007	1	1	1	1	1	0	0	0	5
Spinhoven et al. 2008	1	1	1	1	1	0	0	0	5
Stanley et al. 2007	0	0	1	0	0	0	0	0	1
Turner 2000	0	1	0	1	1	1	0	1	5

	Sample size ≥ 30	Clear description of numbers screened, included and excluded	Clear description of numbers dropping out of treatment	Intention to treat analysis	Randomised controlled trial	Blind assessment of outcome	Outcome distribution checks and appropriate analyses	Missing data adequately addressed	Quality Score
van den Bosch et al. 2012	0	0	1	1	0	0	0	0	2
van Wel et al. 2009	1	1	1	0	1	1	0	1	6
Verheul et al. 2003	1	1	1	1	1	0	1	1	7
Webb & McMurran 2009	0	1	1	1	0	0	1	0	4
Williams et al. 2010	1	0	1	1	0	0	0	0	3
Woodberry & Popenoe 2008	1	0	1	0	0	0	0	0	2
Yeomans et al. 1994	1	0	1	1	0	0	0	0	3
Zinkler et al. 2007	1	1	1	0	0	0	0	0	3

Table B5 Variables predicting treatment completion in studies of psychotherapy for BPD

Predictor	Studies	N (participants)	Effect size	95% confidence interval	p value
SOCIODEMOGRAPHICS					
Age	Black et al.2009	164	r = 0.10	/	> 0.05
	Blum et al. 2008	124	/	/	> 0.05
	Bos et al.2010	79	/	/	> 0.05
	Clarkin et al. 2001	23	/	/	> 0.05
	Cottraux et al. 2009	65	d = 0.37[a]	-1.85 to 2.59[a]	0.13
	Gunderson et al. 1989	50	/	/	> 0.05
	Harley et al. 1997	49	d = 0.03[a]	-2.82 to 2.88[a]	> 0.05
	Kelly et al. 1992	97	/	/	> 0.05
	Kleindienst et al. 2010	74	/	/	> 0.05
	Leerer 1997	14	d = 0.61	- 2.55 to 3.76	0.38
	Lindenboim 2010	**132**	**r = 0.26[a]**	**/**	**< 0.05**
	Munroe-Blum & Marziali 1995	110	/	/	> 0.05
	Rusch et al. 2008	60	/	/	> 0.05
	Smith et al. 1995	**36**	**d = 0.61[a]**	**/**	**0.08**
	van Wel et al. 2009	79	/	/	> 0.05
	Webb & McMurran 2008	14	U = 1.06	/	> 0.05
	Woodberry & Popenoe 2008	46	/	/	> 0.05

Key: d = Cohen's d, r = correlation coefficient, RR = risk ratio, U = Mann Whitney U, / = Information not available and could not be calculated; + positive effect but no effect size data; a = statistic calculated by candidate based on published information and using ESC (De Fife 2009), b = direction of effect unclear from publication

Predictor	Studies	N (participants)	Effect size	95% confidence interval	p value
Educational level	Black et al. 2009	164	r = 0.05	/	> 0.05
	Bos et al. 2010	79	/	/	> 0.05
	Clarkin et al. 2001	23	/	/	> 0.05
	Frederici 2010	33	/	/	>0.05
	Gunderson et al. 1989	50	/	/	> 0.05
	Harley et al. 1997	49	d = - 0.04[a]	-0.77 to 0.69[a]	> 0.05
	Leerer 1997	14	d = 1.26	0.41 to 2.21	0.10
	Lindenboim 2010	**132**	**r = 0.26[a]**	**/**	**< 0.01**
	Nysaeter et al. 2010	32	/	/	> 0.05
	Ragsdale 2006	546	/	/	> 0.05
	Rusch et al. 2008	60	/	/	> 0.05
	Smith et al. 1995	36	/	/	> 0.05
	Soler et al. 2008	60	/	/	> 0.05
	Spinhoven et al. 2008	54	RR = 1.17	0.93 to 1.48	> 0.05
	van Wel et al. 2009	79	/	/	> 0.05
Employment	Bos et al. 2010	79	/	/	> 0.05
	Clarkin et al. 2001	23	/	/	> 0.05
	Frederici 2010	33	/	/	> 0.05
	Gunderson et al. 1989	50	/	/	> 0.05
	Kroger et al. 2006	50	/	/	> 0.05
	Nysaeter et al. 2010	**32**	**d = 0.90[a]**	**/**	**0.02[a]**
	Ragsdale 2006	546	/	/	> 0.05

Key: d = Cohen's d, r = correlation coefficient, RR = risk ratio, U = Mann Whitney U, / = Information not available and could not be calculated; + positive effect but no effect size data; a = statistic calculated by candidate based on published information and using ESC (De Fife 2009), b = direction of effect unclear from publication

Predictor	Studies	N (participants)	Effect (size)	95% confidence interval	p value
Employment	Soler et al. 2008	60	/	/	> 0.05
	Spinhoven et al. 2008	54	RR = 0.78	0.93 to 1.48	> 0.05
	van Wel et al. 2009	79	/	/	> 0.05
Ethnicity	Clarkin et al. 2001	23	/	/	> 0.05
	Kelly et al. 1992	97	/	/	> 0.05
	Lindenboim 2010	132	/	/	> 0.05
	Ragsdale 2006	546	/	/	> 0.05
	Woodberry & Popenoe 2008	46	/	/	> 0.05
Gender (Male)	Black et al. 2009	164	r = 0.02	/	> 0.05
	Blum et al. 2008	165	/	/	> 0.05
	Bos et al. 2010	79	/	/	> 0.05
	Gunderson et al. 1989	50	/	/	> 0.05
	Kelly et al. 1992	97	/	/	> 0.05
	Lindenboim 2010	132	/	/	> 0.05
	Munroe-Blum & Marziali 1995	110	/	/	> 0.05
	Nysaeter et al. 2010	32	/	/	> 0.05
	Kroger et al. 2006	50	/	/	> 0.05
	Ragsdale 2006	546	/	/	> 0.05
	Soler et al. 2008	60	/	/	> 0.05
	van den Bosch et al. 2010	29	d = - 0.70	/	0.09
	van Wel et al. 2009	79	/	/	> 0.05
	Woodberry & Popenoe 2008	46	/	/	> 0.05
Key: d = Cohen's d, r = correlation coefficient, RR = risk ratio, U = Mann Whitney U, / = Information not available and could not be calculated; + positive effect but no effect size data; a = statistic calculated by candidate based on published information and using ESC (De Fife 2009), b = direction of effect unclear from publication					

Predictor	Studies	N (participants)	Effect (size)	95% confidence interval	p value
Living alone	Federici 2010	33	/	/	> 0.05
	Munroe-Blum & Marziali 1995	110	/	/	> 0.05
	Van Wel et al. 2009	79	/	/	> 0.05
Marital status	Bos et al. 2010	79	/	/	> 0.05
	Clarkin et al. 2001	23	/	/	> 0.05
	Federici 2010	33	/	/	> 0.05
	Gunderson et al. 1989	50	/	/	> 0.05
	Kelly et al. 1992	97	/	/	> 0.05
	Lindenboim 2010	132	/	/	> 0.05
	Munroe-Blum & Marziali 1995	110	/	/	> 0.05
	Nysaeter et al. 2010	32	/	/	> 0.05
	Smith et al. 1995	36	/	/	> 0.05
	Soler et al. 2008	60	/	/	> 0.05
	van Wel et al. 2009	79	/	/	> 0.05
	Woodberry & Popenoe 2008	46	/	/	> 0.05
BPD CRITERIA **Overall BPD severity**	Black et al. 2009	164	r = - 0.10	/	> 0.05
	Blum et al. 2008	165	/	/	> 0.05
	Bos et al. 2010	79	/	/	> 0.05
	Federici 2010	33	/	/	> 0.05
	Gunderson et al. 1989	50	r = 0.15[a]	/	> 0.10
	Harley et al. 1997	49	d = 0.18[a]	-2.62 to 2.97[a]	> 0.05
	Leerer 1997	13	d = 0.52[a]	- 0.19 to 0.22[a]	0.45
	Munroe-Blum & Marziali 1995	110	/	/	> 0.05

Key: d = Cohen's d, r = correlation coefficient, RR = risk ratio, U = Mann Whitney U, / = Information not available and could not be calculated; + positive effect but no effect size data; a = statistic calculated by candidate based on published information and using ESC (De Fife 2009), b = direction of effect unclear from publication

Predictor	Studies	N (participants)	Effect (size)	95% confidence interval	p value
Overall BPD severity	Nysaeter et al. 2010	32	/	/	> 0.05
	Soler et al. 2008	60	/	/	> 0.05
	Spinhoven et al. 2008	54	RR = 1.04	0.97 to 1.11	> 0.05
	van Wel et al. 2009	79	/	/	> 0.05
	Yeomans et al. 1994	36	r = 0.11	/	> 0.05
Anger	**Frederici 2010**	**33**	**r = 0.41[a]**	**/**	**0.012**
	Kelly et al. 1992	**97**	**d = - 0.47[a]**	**- 0.60 to - 0.34**	**< 0.025**
	Rusch et al. 2008	**90**	**d = - 0.54[a]**	**- 0.77 to - 0.31[a]**	**0.081**
	Smith et al. 1995	**36**	**d = - 0.61[a]**	**/**	**0.08**
Impulsivity	**Black et al. 2009**	**164**	**r = - 0.18**	**/**	**< 0.05**
	Cottraux et al. 2009	**65**	**d = - 0.83[a]**	**-1.78 to 0.11[a]**	**0.007**
	Frederici 2010	33	/	/	> 0.05
	Gunderson et al. 1989	50	r = 0.18[a]	/	> 0.10
	Kelly et al. 1992	**97**	**d = - 0.49[a]**	**- 1.67 to 0.67[a]**	**< 0.025**
	Yeomans et al. 1994	**36**	**r = - 0.51**	**/**	**< 0.05**
Self-harm/suicide attempts	Andion et al. 2012	51	d = 0.70[b]	-2.07 to 0.70	0.29
	Black et al. 2009	164	r = - 0.06	/	> 0.05
	Bos et al. 2010	79	/	/	> 0.05
	Cottraux et al. 2008	65	d = - 0.29[a]	-0.79 to 0.21	0.30
	Frederici 2010	33	d = 0.48[a]	-6.87 to 7.83	0.22
Self-harm/suicide behaviour	**Gunderson et al. 1989**	**50**	**d = 0.58[a]**	**/**	**< 0.10**
	Leerer 1997	14	d = 0.10[a]	/	0.85
	Rusch et al. 2008	**90**	**d = 0.72[a]**	**- 0.34 to 1.78[a]**	**0.012**
	Smith et al. 1995	36	/	/	> 0.05

Key: d = Cohen's d, r = correlation coefficient, RR = risk ratio, U = Mann Whitney U, / = Information not available and could not be calculated; + positive effect but no effect size data; a = statistic calculated by candidate based on published information and using ESC (De Fife 2009), b = direction of effect unclear from publication

Predictor	Studies	N (participants)	Effect (size)	95% confidence interval	p value
Self-harm/suicide behaviour	van Wel et al. 2009	79	/	/	> 0.05
AXIS I SYMPTOMS **Anxiety severity**	Frederici 2010	33	/	/	> 0.05
	Gunderson et al. 1989	50	r = 0.13[a]	/	> 0.10
	Rusch et al. 2008	**90**	**d = -0.71[a]**	**- 3.20 to 1.78[a]**	**0.014**
	Webb & McMurran 2009	14	U = -1.58	/	> 0.05
Depression severity	Black et al. 2009	164	r = - 0.07	/	> 0.05
	Blum et al. 2008	165	/	/	> 0.05
	Cottraux et al. 2009	**65**	**d = - 0.68[a]**	**-2.89 to 1.52[a]**	**0.003**
	Frederici 2010	33	/	/	> 0.05
	Gunderson et al. 1989	50	r = 0.34[a]	/	< 0.05
	Harley et al. 1997	49	d = -0.03[a]	-2.77 to 2.71[a]	> 0.05
	Kelly et al. 1992	97	d = 0.41[a]	- 1.48 to 2.31[a]	> 0.05
	Kleindienst et al. 2011	74	/	/	> 0.05
	Kroger et al. 2006	50	/	/	> 0.05
	Munroe-Blum & Marziali 1995	110	/	/	> 0.05
	Smith et al. 1995	36	/	/	> 0.05
	Webb & McMurran 2009	14	U = - 0.21	/	> 0.05
General psychiatric symptom severity	Black et al. 2009	164	r = 0.07	/	> 0.05
	Bohus et al. 2004	40	r = 0.205[b]	/	> 0.05
	Bos et al. 2010	79	/	/	> 0.05
	Kleindienst et al. 2011	74	/	/	> 0.05
	Kroger et al. 2006	50	/	/	> 0.05

Key: d = Cohen's d, r = correlation coefficient, RR = risk ratio, U = Mann Whitney U, / = Information not available and could not be calculated; + positive effect but no effect size data; a = statistic calculated by candidate based on published information and using ESC (De Fife 2009), b = direction of effect unclear from publication

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Predictor	Studies	N (participants)	Effect (size)	95% confidence interval	p value
General psychiatric symptom severity	Nysaeter et al. 2010	32	/	/	> 0.05
	Rusch et al. 2008	90	d = - 0.15[a]	- 0.32 to 0.03	0.54
	Smith et al. 1995	36	/	/	> 0.05
	Soler et al. 2008	60	/	/	> 0.05
	Van Wel et al. 2009	79	/	/	> 0.05
	Black et al. 2009	164	r = - 0.11	/	> 0.05
	Lindeboim 2010	132	/	/	> 0.05
Comorbid eating disorder	Black et al. 2009	164	r = 0.04	/	> 0.05
	Frederici 2010	33	/	/	> 0.05
	Clarkin et al. 2001	23	/	/	> 0.05
	Lindenboim 2010	132	/	/	> 0.05
Comorbid major depression	Black et al. 2009	164	r = 0.04	/	> 0.05
	Clarkin et al. 2001	23	/	/	> 0.05
	Kelly et al. 1993	97	/	/	> 0.05
	Lindenboim 2010	132	/	/	> 0.05
Comorbid post-traumatic stress disorder	**Nysaeter et al. 2010**	**32**	**d = -0.98[a]**	**/**	**0.01[a]**
Comorbid substance use disorder	Black et al. 2009	164	r = - 0.13	/	> 0.05
	Kelly et al. 1992	**97**	**d = 0.42[a]**	**/**	**< 0.05**
	Leerer 1997	14	d = 0.75[a]	/	0.19
	Lindenboim 2010	132	/	/	> 0.05

Key: d = Cohen's d, r = correlation coefficient, RR = risk ratio, U = Mann Whitney U, / = Information not available and could not be calculated; + positive effect but no effect size data; a = statistic calculated by candidate based on published information and using ESC (De Fife 2009), b = direction of effect unclear from publication

Predictor	Studies	N (participants)	Effect (size)	95% confidence interval	p value
Frequency of Axis I disorders other than PTSD (unspecified)	Nysaeter et al. 2010	32	/	/	> 0.05
Frequency of Axis I disorders (unspecified)	Rusch et al. 2008	90	/	/	> 0.05
Number of Axis I diagnoses	Ragsdale 2006	546	/	/	> 0.05
OTHER AXIS II DISORDERS **Antisocial Personality Disorder**	Black et al. 2009 **Kelly et al. 1992**	164 **97**	r = -0.04 **r = - 0.22**	/ **/**	> 0.05 **0.07**
Avoidant Personality Disorder	Black et al. 2009 Clarkin et al. 2001	164 23	r = 0.10 /	/ /	> 0.05 > 0.05
Dependent Personality Disorder	Black et al. 2009	164	r = -0.09	/	> 0.05
Narcissistic Personality Disorder	Black et al. 2009 Clarkin et al. 2001	164 23	r = -0.01 /	/ /	> 0.05 > 0.05
Obsessive-compulsive Personality Disorder	Black et al. 2009 Clarkin et al. 2001	164 23	r = -0.03 /	/ /	> 0.05 > 0.05
Paranoid Personality Disorder	Black et al. 2009 Clarkin et al. 2001	164 23	r = 0.03 /	/ /	> 0.05 > 0.05
Schizoid Personality Disorder	Clarkin et al. 2001	23	+	/	**< 0.01**
Key: d = Cohen's d, r = correlation coefficient, RR = risk ratio, U = Mann Whitney U, / = Information not available and could not be calculated; + positive effect but no effect size data; a = statistic calculated by candidate based on published information and using ESC (De Fife 2009), b = direction of effect unclear from publication					

Predictor	Studies	N (participants)	Effect (size)	95% confidence interval	p value
Frequency of Axis II disorders (unspecified)	Kroger et al. 2006	50	/	/	> 0.05
	Nysaeter et al. 2010	32	/	/	> 0.05
Complex Personality Disorder (> 1 cluster)	**Webb & McMurran 2009**	**14**	**/**	**/**	**0.02**
SOCIAL FUNCTIONING **Global functioning**	Black et al. 2009	164	r = 0.03	/	> 0.05
	Harley et al. 1997	47	d = -0.01[a]	- 2.10 to 2.08	> 0.05
	Kelly et al. 1992	97	d = - 0.10[a]	- 0.82 to 0.62	> 0.05
	Kleindienst et al. 2011	74	/	/	> 0.05
	Kroger et al. 2006	50	/	/	> 0.05
	Leerer 1997	14	d = -1.85	/	0.59
	Lindenboim 2010	132	/	/	> 0.05
	Nysaeter et al. 2010	32	/	/	> 0.05
Interpersonal problem severity	Nysaeter et al. 2010	32	/	/	> 0.05
Social functioning	Cuevas et al. 2000	19	r = 0.48	/	**0.037**
	Munroe-Blum & Marziali 1995	110	/	/	> 0.05
	Smith et al. 1995	36	/	/	> 0.05
Social problem solving ability	Webb & McMurran 2009	14	/	/	> 0.05

Key: d = Cohen's d, r = correlation coefficient, RR = risk ratio, U = Mann Whitney U, / = Information not available and could not be calculated; + positive effect but no effect size data; a = statistic calculated by candidate based on published information and using ESC (De Fife 2009), b = direction of effect unclear from publication

Predictor	Studies	N (participants)	Effect (size)	95% confidence interval	p value
PSYCHIATRIC MEDICATION	Black et al. 2009 Bos et al. 2010 Clarkin et al. 2001	164	r = 0.17	/	**< 0.05**
	Doering et al. 2010	104	/	/	> 0.05
	Gunderson et al. 1989	50	r = 0.47	/	**< 0.05**
PRIOR TREATMENT **Amount of prior psychotherapy**	Gunderson et al. 1989	50	r = 0.44	/	**< 0.005**
	Smith et al. 1995	36	/	/	> 0.05
Prior inpatient hospitalisations	Harley et al. 1997	24	d = - 0.27	- 0.69 to 0.16	> 0.05
	Kelly et al. 1992	**97**	**d = - 0.47**	**/**	**< 0.05**
	Leerer 1997	14	d = - 0.30	- 0.38 to 3.22	0.65
	Smith et al. 1995	36	/	/	> 0.05
	Woodberry & Popenoe 2008	46	/	/	> 0.05
Prior A&E visits	Andion et al. 2012	51	d = 0.13	-1.14 to 1.39	0.85
MOTIVATION TO CHANGE **Motivation to change**	**Frederici 2010**	**33**	**r = 0.47[a]**	**/**	**0.01**
External motivation to change	**Webb & McMurran 2009**	**14**	**U = -2.65**	**/**	**< 0.01**
Internal motivation to change	**Webb & McMurran 2009**	**14**	**U = 2.65**	**/**	**< 0.01**
No current intention to change	**Soler et al. 2008**	**60**	**d = - 0.73**	**/**	**0.02**
Key: d = Cohen's d, r = correlation coefficient, RR = risk ratio, U = Mann Whitney U, / = Information not available and could not be calculated; + positive effect but no effect size data; a = statistic calculated by candidate based on published information and using ESC (De Fife 2009), b = direction of effect unclear from publication					

Predictor	Studies	N (participants)	Effect (size)	95% confidence interval	p value
THERAPEUTIC ALLIANCE					
Patient-rated alliance	**Gunderson et al. 1997**	**34**	**r = 0.29[a]**	**/**	**0.07**
	Nysaeter et al. 2010	32	/	/	> 0.05
	Spinhoven et al. 2007	**86**	**RR = 0.78**	**0.61 to 0.98**	**< 0.05**
Therapist-rated alliance	**Gunderson et al. 1997**	**34**	**r = 0.37[a]**	**/**	**0.05**
	Spinhoven et al. 2007	**86**	**RR = 0.55**	**0.37 to 0.83**	**< 0.01**
Observer-rated alliance	**Yeomans et al. 1994**	**20**	**r = 0.48**	**/**	**< 0.01**
Key: d = Cohen's d, r = correlation coefficient, RR = risk ratio, U = Mann Whitney U, / = Information not available and could not be calculated; + positive effect but no effect size data; a = statistic calculated by candidate based on published information and using ESC (De Fife 2009), b = direction of effect unclear from publication					

Appendix C - Ethics Approval

Document C1 - Ethical approval for substantial amendment to the DIALECT randomised controlled trial incorporating the quantitative and qualitative work presented in Chapters Five, Six and Seven

NHS

National Research Ethics Service
Camden & Islington Community Research Ethics Committee

REC Offices
South House, Royal Free Hospital
Pond Street, London
NW3 2QG

Tel: 020 7794 0500 extn 36906
Fax: 020 7794 1004

18 February 2009

Professor Stefan Priebe
East London and the City University Mental Health NHS Trust
Newham Centre for Mental Health Academic Unit
Cherry Tree Way
Glen Road
London, E13 OSP

Dear Professor Priebe

Study title:	**Dialectical Behaviour Therapy for Patients with Borderline Personality Disorder and Self-Harm-a pragmatic exploratory trial**
REC reference:	07/H0722/98
Amendment number:	1
Amendment date:	23 January 2009

The above amendment was reviewed at the meeting of the Sub-Committee of the REC held on 13 February 2009.

Ethical opinion

The members of the Committee present gave a favourable ethical opinion of the amendment on the basis described in the notice of amendment form and supporting documentation.

Approved documents

The documents reviewed and approved at the meeting were:

Document	Version	Date
Questionnaire	Social network schedule - revised	
Questionnaire	Treatment Credibility Scale	
Questionnaire	Multidimensional Scale	
Questionnaire	General Self-Efficacy Scale	
Participant Information Sheet	Version 3	22 January 2009
Participant Consent Form	Version 2	23 January 2009

This Research Ethics Committee is an advisory committee to London Strategic Health Authority
The National Research Ethics Service (NRES) ___

Document listing changes to research protocol/RfPB Application Form PB-PG-0906-10540		22 January 2009
Notice of Substantial Amendment (non-CTIMPs)	1	23 January 2009
Interview Schedules/Topic Guides	Skills Interview Topic Guide	
Questionnaire	DBT Skills Questionnaire	

Membership of the Committee

The members of the Committee who were present at the meeting are listed on the attached sheet.

R&D approval
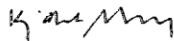
All investigators and research collaborators in the NHS should notify the R&D office for the relevant NHS care organisation of this amendment and check whether it affects R&D approval of the research.

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees (July 2001) and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

07/H0722/98:	Please quote this number on all correspondence

Yours sincerely

Katherine Ouseley
Katherine Ouseley
Committee Co-ordinator

E-mail: katherine.ouseley@royalfree.nhs.uk

Enclosures	*List of names and professions of members who were present at the meeting and those who submitted written comments*
Copy to:	*Sponsor and Research Governance contact:*
	Ms Neeta Patel, R&D manager
	East London & The City Mental Health Trust
	Academic Unit, Newham Centre for Mental Health
	London E13 8SP
	Investigator; Kirsten Barnicot

Appendix D - Patient Information, Consent Forms and Measures for Quantitative Work

Document D1a- Patient information sheet during RCT recruitment

Document D1b - Patient information sheet for post-RCT recruitment

Document D2 - Patient consent form

Document D3 - DBT Skills Questionnaire

Document D4 - Treatment Credibility Scale

Document D5 - Scale to Assess Therapeutic Relationships in Community Mental Helath Care

Document D6 - General Self-Efficacy Scale

Document D7 - Multidimensional Scale for Assessment of Perceived Social Support

Document D8 - Social Network Interview

Document D9 - Clinical outcome sheet for recording self-harm

Document D10 - Zanarini Rating Scale for Borderline Personality Disorder

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Participant Information Sheet—Part One

Study Title: Dialectical Behaviour Therapy for Patients with Borderline Personality Disorder and Self Harm: A pragmatic exploratory trial

DIALECT

We would like to invite you to participate in a research study. Your psychiatrist, care coordinator, or psychotherapist referred you to Dialectical Behaviour Therapy and after meeting with _____ we believe that you might benefit from Dialectical Behaviour Therapy. Before you decide to take part in this study you need to understand why the research is being done and what it would involve for you. Please take time to read the following information carefully and ask questions about the research. Talk to others about the study if you wish. We can also arrange for you to speak with someone who has been through the treatment if you wish.

We are conducting this research to find out more about useful treatments for people who engage in self harm or who have Emotional Instability or Borderline Personality Disorder. There are a few treatments that scientists think are useful for people who self harm or who have Emotional Instability or Borderline Personality Disorder. The treatment that we are offering, Dialectical Behaviour Therapy, is considered a useful treatment for self harm from other research carried out in the United States, Germany and the Netherlands, but no one

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has studied whether it is a useful treatment for patients in the United Kingdom who receive care in the National Health Service. We hope to answer this question by offering the treatment to everyone who is referred to us who self harms.

The treatment we are offering is called Dialectical Behaviour Therapy. It consists of a two hour skills training group. This group which is similar to a class will teach you skills in mindfulness, emotion regulation, interpersonal effectiveness, and distress tolerance. You will also participate in one hour per week of individual therapy where you will work with your own therapist in one to one sessions on applying these news skills to your life to end self harm, decrease behaviours that cause problems for receiving treatment, decrease behaviours that lead to crisis in your life and increase behaviours that help with the day to day management of your life. While receiving the treatment you will also have the opportunity to contact your therapist 7 days a week for help with using the new skills in your life.

You will also receive advice on medication from our consultant psychiatrist who will be responsible for overseeing your psychiatric medical care while you participate in this study. You will also receive care coordination. Your individual therapist will also be your care coordinator and can help you with things like accessing housing, finding a job or volunteer work, finding a course to enrol on etc.

Because we cannot be sure that our treatment is better than what is being offered now to people who self harm we need to compare two groups of people who engage in self harm. One group will be receiving Dialectical Behaviour Therapy and the other group will not. We will look at the differences in self harming in these two groups. In order to do this we plan to randomly assign research participants into two groups. One group will begin treatment right away and information will be collected in their individual therapy sessions about how their lives and behaviours are changing while receiving the treatment. We would also like to conduct a brief interview with you (half an hour) once you have completed six months of Dialectical Behaviour Therapy, in order to ask you about your experiences of learning the skills that are taught in Dialectical Behaviour Therapy. This interview will be audio recorded.

The second group will also receive the treatment we are offering after waiting for one year. In the year of waiting people may receive other mental health services like seeing a psychiatrist in an outpatients clinic or having a care coordinator at the Community Mental Health Team, or seeing a counsellor or psychotherapist. Our assessment will allow a detailed discussion and information on other treatments if you have to wait for DBT or if you decide not to participate in the study. Our researchers will meet with the people waiting for DBT every two months for a brief interview that will last about 10 minutes to see how people's lives and self harming behaviours are changing while they are waiting for the treatment. You will be reimbursed for the cost of travelling to these interviews.

You may leave the study at any point if you no longer wish to participate and you will be eligible for any of the other services offered to people with borderline personality disorder or people who self harm. In this case we will assist you in finding alternative treatment. We will discuss your options for services and refer to you these services. We will continue to be in contact with you until you are offered an appointment for the service that we have both agree may be useful to you. These services may include seeing a psychiatrist in an outpatient clinic, being referred to a Community Mental Health Team or being referred for another type of psychotherapy that is available in Newham. We will also provide you information about how to contact other agencies both statutory and in the voluntary sector that may be of help to you. For example we will give you contact information for the Samaritans, SANE Line, Mind and NHS Direct.

If you are randomly assigned to receive other treatments and, after a year of receiving other treatments, you decide that you would like to have DBT, our researchers would like to meet with you during your "delayed" DBT , again every two months, in order to see how your life and self-harming behaviour is changing. If you decide you do not want to keep seeing the researchers when you receive your "delayed DBT" treatment, then you will of course have the option not to see them and this will not affect your receiving the delayed DBT treatment.

Whichever group you are allocated to, if you begin a 12 month course of DBT (whether "delayed" or "immediate"),the researchers may ask to interview you at 6 months, 12 months and 36 months after the 12 month course of DBT has finished, (whether or not you drop out of treatment during this time) in order to assess to what extent any effects of DBT are maintained. Again, if you decide you do not want to keep seeing the researchers once you finish DBT, you do not have to.

We cannot promise that the study will help you but the information we get from this study will help people who self harm or who have Emotional Instability or Borderline Personality Disorder. Possible benefits of participating in this study are that you will receive a comprehensive clinical assessment and information on the range of treatments available. We will be able to keep you informed about any developments in research on the treatment for people who self harm or who have Borderline Personality Disorder. Eventually you will receive a treatment that has been proven to be useful at helping people stop self harming. A possible drawback is that you might have to wait for one year before you receive this treatment. Another possible drawback is that in order to continue to receive Dialectical Behaviour Therapy you must attend 75% of the offered treatment.

When you are finished participating in the research you may receive additional psychological treatment depending on your need, you may be referred to a psychiatric outpatient's clinic or to a Community Mental Health Team or you may be referred back to the primary care of your General Practitioner.

Any complaints about the way you have been dealt with or any possible harm you might suffer will be addressed.

Any information that we obtain through the course of this study will be kept confidential.

If the information in Part 1 has interested you and you are considering participation, please read the additional information in Part 2 before making any decision.

Part 2

Sometimes we get new information about the treatment being studied. If this happens your therapist or psychiatrist will tell you about the new findings and discuss whether you should continue in this study. If you decide not to carry on, your therapist will make arrangements for your care to continue. Based on our assessment we will inform you about the range of treatments available and assist you in finding alternative treatment. If you decide to continue on, you may be asked to sign an updated consent form. If this study is stopped for any other reason we will tell you and arrange for your continuing care.

If you withdraw from the study we will use any data collected before your withdrawal.

If you have any concerns about this study you should speak to Professor Stefan Priebe who can be reached at 0207-540-4210. If you remain unhappy and wish to complain formally you can do that through the NHS Complaints Procedure. Details can be obtained through the Newham Centre for Mental Health.

In the event that something goes wrong and you are harmed due to someone's negligence then you may have grounds for a legal action for compensation against the East London and City Mental Health Trust but you may have to pay for your legal costs. The normal NHS complaints mechanisms will be available to you.

Data collected as part of this study will be confidential and available only to clinicians providing your therapy or to researchers. Data will kept in locked cabinets with keys that are only available to relevant researchers and clinicians all of whom have a duty of confidentiality. If you complete an interview about your experience of learning the skills that are taught in dialectical behaviour therapy, the recordings will be stored anonymously on NHS computers only. You can at any time withdraw your consent for this part of the research and request that the recording be destroyed. Data that is used for the research

will not have your name on it. It will be stored by number and only the person in charge of the research will have a list of numbers matched to names. Once the research is completed the list of names will be destroyed and research data will be kept by number only.

Once you complete treatment and participation in the study your clinical notes will be archived and not passed on. A summary of the treatment may be made available if agreeable to you to any future mental health providers. Periodic reports on your progress in treatment and this research will be made to your General Practitioner and you will receive a copy of all of these reports. You will also be entitled to have access to your clinical notes in accordance with the Data Protection Act of 1998.

All material discussed with your therapist as well as any recorded material either written or electronically will be held as confidential to the Dialectical Behaviour Therapy Team. It may be necessary to break this confidentiality agreement in the event that you become a danger to yourself or someone else. If it is necessary for you to go to hospital for any reason some information otherwise held as confidential may be passed on to the psychiatrist and nurses treating you on the ward.

Once the research is completed a newsletter will be sent to you that will describe the results of the research. The data from the research will also be presented in scientific journals and made available to the Department of Health and other government agencies responsible for deciding which treatments to recommend for self harm, Emotional Instability and Borderline Personality Disorder. The results from the research may also be presented at conferences.

The National Institute of Health Research is paying for the researchers who collect the data on this study. The Dialectical Behaviour Therapy that you will receive as well as the other mental health services you receive are paid for by the East London and City Mental Health Trust through money from Newham Primary Care Trust.

All research in the NHS is looked at by an independent group of people, called a Research Ethics Committee to protect your safety, rights, well-being and dignity. This study has been reviewed and given a favourable opinion by the East London and City Mental Health Research Ethics Committee.

Should you need assistance from mental health services at any time during the study, whether you are in the waiting list group or in the group that receives DBT, there is a mental health liaison service around the clock based at the A&E Department of Newham University Hospital, Glen Road, London E13, 02074764000.

For additional information about Dialectical Behaviour Therapy please see www.behaviortech.com or www.dbtselfhelp.com. For additional information about participation in research please see www.invo.org.uk.

The Newham Centre for Mental Health

Academic Unit, Glen Road, Plaistow, London E13 8SP

Tel 020 7540 6755

Participant Information Sheet

Study Title: Dialectical Behaviour Therapy for Patients with Borderline Personality Disorder and Self Harm: A pragmatic exploratory trial

DIALECT

We would like to invite you to participate in a research study. We are doing some research on the treatment that you may soon be starting- dialectical behaviour therapy. The purpose of the research is to try to find out how dialectical behaviour therapy works. We are planning to do this by asking people to fill in some questionnaires for us every two months while they are having dialectical behaviour therapy.

Why is this research important?

This research is important because, from other research, we know that dialectical behaviour therapy does work for some people who have borderline personality disorder or who self-harm. But there hasn't been a lot of research on *how* it works. It's important to try to find out how it works because we can use this information to improve dialectical behaviour therapy so that it can help even more people in the future. We cannot promise that the study will help you but the information we get from this study will help people who self harm or who have borderline personality disorder.

What would participating in this research involve?

If you take part in this research, we would like you to meet up with a researcher every two months to answer some questions and to fill in a few questionnaires, during the year that you are receiving dialectical behaviour therapy. These meetings should last about forty-five minutes, and can be conducted in the research office, at your home, or over the phone. We would also like to conduct an interview with you towards the end of your therapy, in order to ask you about your experiences of learning the skills that are taught in Dialectical Behaviour Therapy. This interview will be audio recorded. We will pay you a small amount (£10) every time you meet with a researcher, to thank you for your time.

Do I have to take part in this research?

You do not have to take part in this research. Taking part will not affect the treatment you receive. If you do decide to take part, you can change your mind at any point and withdraw from the research. Withdrawal will not affect the treatment you receive in any way. If you withdraw from the study we will use any data collected before your withdrawal.

What happens to the information I give the researchers?

Any information that we obtain through the course of this study will be kept confidential. Data will kept in locked cabinets with keys that are only available to relevant researchers, all of whom have a duty of confidentiality. It may be necessary to break this confidentiality agreement in the event that you become a danger to yourself or someone else. If you complete an interview about your experience of learning the skills that are taught in dialectical behaviour therapy, the recordings will be stored anonymously on NHS computers only. You can at any time withdraw your consent for this part of the research and request that the recording be destroyed. Data that is used for the research will not have your name on it. It will be stored by number and only the person in charge of the research will have a list of numbers matched to names. Once the research is completed the list of names will be destroyed and research data will be kept by number only.

Is this study ethical?

The Camden & Islington Community Research Ethics Committee is an independent body whose job it is to review any planned research and make sure it doesn't infringe patients' rights. They have reviewed this study and have approved it.

What if I have any questions or complaints?

If you have any questions about this research, please ring 020 7540 6755 and ask to speak to Professor Stefan Priebe, Kirsten Barnicot, Naomi Fearns or Christina Katsakou. If you want to complain you can speak to one of us, or if you remain unhappy, you can complain formally through the NHS Complaints Procedure.

Can I find out about the results of the research?

If you take part in this research, the results will be sent to you in a newsletter once the research is over.

What happens next?

If you would be happy to consider taking part, and are happy for a researcher to contact you to talk with you about the research, then please let a therapist on the DBT team know. Alternatively, please ring 020 7540 6755 and ask to speak to Kirsten Barnicot or Christina Katsakou.

East London and The City **NHS**

Mental Health NHS Trust

**Dialectical Behaviour Therapy
Psychological Therapies Services**
Second Floor
Francis House
760-762 Barking Road
Plaistow
E13 9PJ

Telephone: 020 8271 1329/1406
Fax: 020 8271 1330

Centre Number:

Study Number:

Patient Identification Number for This Study:

Consent Form:

Title of the Project: Dialectical Behaviour Therapy for Patients with Borderline Personality Disorder and Self Harm: A pragmatic exploratory trial

Name of Researcher: Professor Stefan Priebe, Chief Investigator

Kirsten Barnicot, Research Assistant

1. I confirm that I have read and understood the information sheet dated 16/09/2009 (version 4) for the above study. I have had an opportunity to consider the information and ask questions and have had these questions answered satisfactorily.

2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my medical care or legal rights being affected.

3. I understand that relevant sections of my medical notes and data collected during the study may be looked at by individuals from regulatory authorities and by individuals from the East London and City Mental Health Trust most likely, but not definitely, limited to researchers working on this project and therapists providing Dialectical Behaviour Therapy to me. I give permission for these individuals to have access to my records.

4. I understand that when I am receiving Dialectical Behaviour Therapy my sessions may be audio or video taped for the use of supervision. These recordings will remain the property of Dialectical Behaviour Therapy Team and you may have access to them. You may request that they be destroyed or withdraw your permission for recording at any time. Withdrawal for permission for recording will not affect you receiving treatment. I give permission for my Dialectical Behaviour Therapy sessions to be recorded and reviewed by the treatment team.

5. I agree to take part in an interview about my experience of learning the skills taught in Dialectical Behaviour Therapy, if I complete 6 months of therapy. I give permission for my interview to be recorded and reviewed by the DIALECT research team. These recordings will remain the property of the DIALECT research team and you may have access to them. You may request that they be destroyed or withdraw your permission for recording at any time. Withdrawal for permission for recording will not affect you receiving treatment.

6. If I begin a 12 month course of dialectical behaviour therapy, I agree to be interviewed by researchers at 6 months, 12 months and 36 months after the 12 month course of dialectical behaviour therapy is finished (whether or not I dropped out of treatment early during this time). I understand that I can withdraw permission for these interviews at any time and that this will not affect the treatment I receive.

7. I agree to my GP being informed that I am participating in this study.

8. I understand that my confidentiality with the research team or the Dialectical Behaviour Therapy Team may be broken if there is an belief that I may be a danger to myself or someone else. I agree to this condition.

9. I agree to take part in the above study.

_____   _____   _____

Name of Patient   Date   Signature

_____   _____   _____

Name of Person   Date   Signature

Taking Consent

Document D3 - DBT Skills Questionnaire

THE DBT SKILLS QUESTIONNAIRE – DEVELOPED BY NEWHAM CENTRE FOR MENTAL HEALTH NOVEMBER 2008

REMINDER:

The Mindfulness Skills are:

Observe, Describe & Participate,

Non-judgementally, One Mindfully, & Effectively

The Interpersonal Effectiveness Skills are:

Attending to relationships,

Balancing priorities & Balancing wants to shoulds,

Building mastery & self-respect,

Cheerleading statements,

Intensity of asking or saying no,

Asking or saying no using DEARMAN,

Maintaining the relationship using GIVE,

Maintaining self-respect using FAST

The Emotion Regulation Skills are:

Identifying and labelling emotions,

Identifying obstacles to changing emotions,

Reducing vulnerability to emotion mind using PLEASE MASTER,

Increasing positive emotional events,

Taking opposite action

The Distress Tolerance Skills are:

Distracting using ACCEPTS,

Self-soothing,

Improving the moment through IMPROVE,

Radical acceptance

How far do you <u>understand how</u> to use the skills? *Please tick*

	Haven't been taught yet	Not at all	A little	Somewhat	Mostly	Completely
MINDFULNESS						
	Explain your answer …					
INTERPERSONAL	Haven't been taught yet	Not at all	A little	Somewhat	Mostly	Completely
	Explain your answer…					
EMOTION REGULATION	Haven't been taught yet	Not at all	A little	Somewhat	Mostly	Completely
	Explain your answer…					
DISTRESS TOLERANCE	Haven't been taught yet	Not at all	A little	Somewhat	Mostly	Completely
	Explain your answer…					

How often did you <u>use the skills</u> this week? *Please tick*

	Haven't been taught yet	Mon	Tues	Wed	Thurs	Fri	Sat	Sun
MINDFULNESS								
	Explain your answer …							
INTERPERSONAL	Haven't been taught yet	Mon	Tues	Wed	Thurs	Fri	Sat	Sun
	Explain your answer…							
EMOTION REGULATION	Haven't been taught yet	Mon	Tues	Wed	Thurs	Fri	Sat	Sun
	Explain your answer…							
DISTRESS TOLERANCE	Haven't been taught yet	Mon	Tues	Wed	Thurs	Fri	Sat	Sun
	Explain your answer…							

How <u>helpful</u> are the skills in your opinion? *Please tick*

	Haven't been taught yet	Not at all	A little	Somewhat	Quite	Very
MINDFULNESS						
	Explain your answer …					
INTERPERSONAL	Haven't been taught yet	Not at all	A little	Somewhat	Quite	Very
	Explain your answer…					
EMOTION REGULATION	Haven't been taught yet	Not at all	A little	Somewhat	Quite	Very
	Explain your answer…					
DISTRESS TOLERANCE	Haven't been taught yet	Not at all	A little	Somewhat	Quite	Very
	Explain your answer…					

Document D4 - Treatment Credibility Scale

<u>Treatment Credibility Scale</u>

1	2	3	4	5
Strongly disagree	Quite disagree	Neither agree nor disagree	Quite agree	Strongly agree

1) I am confident that this treatment can help me with my self-harming/ suicidality/ emotional instability/ borderline personality disorder

2) I would be confident to recommend this treatment to a friend who suffered from similar problems

3) This treatment seems logical to me

4) I am confident that this treatment can help me with any other mental health problems I have

STAR SCALE

Scale To Assess Therapeutic Relationships in Community Mental Health Care Patient

Version

	Never	Rarely	Sometimes	Often	Always
My care coordinator speaks with me about my personal goals and thoughts about treatment.	0	1	2	3	4
My care co-ordinator and I are open with one another.	0	1	2	3	4
My care co-ordinator and I share a trusting relationship.	0	1	2	3	4
I believe my care co-ordinator withholds the truth from me.	0	1	2	3	4
My care co-ordinator and I are honest with one another.	0	1	2	3	4
My care co-ordinator and I work towards mutually agreed upon goals.	0	1	2	3	4
My care co-ordinator is stern with me when I speak about things that are important to me and my situation.	0	1	2	3	4
My care co-ordinator and I have established an understanding of the kind of changes that would be good for me.	0	1	2	3	4
My care co-ordinator is impatient with me.	0	1	2	3	4
My care co-ordinator seems to like me regardless of what I do or say.	0	1	2	3	4
We agree on what is important for me to work on.	0	1	2	3	4
I believe my care co-ordinator has an understanding of what my experiences have meant to me.	0	1	2	3	4

The General Self-Efficacy Scale

1 = Not at all true   2 = Hardly true   3 = Moderately true   4 = Exactly true

	I can always manage to solve difficult problems if I try hard enough.
	If someone opposes me, I can find the means and ways to get what I want.
	It is easy for me to stick to my aims and accomplish my goals.
	I am confident that I could deal efficiently with unexpected events.
	Thanks to my resourcefulness, I know how to handle unforeseen situations.
	I can solve most problems if I invest the necessary effort.
	I can remain calm when facing difficulties because I can rely on my coping abilities.
	When I am confronted with a problem, I can usually find several solutions.
	If I am in trouble, I can usually think of a solution.
	I can usually handle whatever comes my way.

Document D7 - Multidimensionsional Scale of Perceived Social Support

Multidimensional Scale of Perceived Social Support

Very strongly disagree	Quite strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Quite strongly agree	Very strongly agree
1	2	3	4	5	6	7

1. There is a special person who is around when I am in need ☐

2. There is a special person with whom I can share my joys and sorrows ☐

3. My family really tries to help me ☐

4. I get the emotional help and support I need from my family ☐

5. I have a special person who is a real source of comfort for me ☐

6. My friends really try to help me ☐

7. I can count on my friends when things go wrong ☐

8. I can talk about my problems with my family ☐

9. I have friends with whom I can share my joys and sorrows ☐

10. There is a special person in my life who cares about my feelings ☐

11. My family is willing to help me make decisions ☐

12. I can talk about my problems with my friends ☐

Social Network Schedule - REVISED

WHO DID YOU SEE OR SPEAK TO (PHONE/EMAIL ETC) IN THE LAST MONTH?

For each contact record:

1. If you were no longer able to see them would you miss them?

2. Do you confide in them i.e. tell them when you're feeling worried/down/stressed etc/

Document D9 - Clinical outcome sheet for recording self-harm

	In the course of the previous 2 months:	
1A	Number of Inpatient Mental Health Ward Hospital Admissions	
1B	Number of Mental Health Day Hospital Admissions	
2A	Number of Days as an Inpatient in a Mental Health Hospital	
2B	Number of Days in a Mental Health Day Hospital	
3	Number of A & E Visits	
	Frequency of Self Harm:	
4	Cutting	
5	Burning	
6	Overdoses	
7	Others (give details):	
8		
9	Total self-harm days	
10	Number of Suicide Attempts (clear intention to die, life threatening act)	
11A	How many hours of therapy, counselling or contact with a mental health professional has the client had?	
11B	How many hours of self-treatment with NO contact with an MHP has the client had e.g computer CBT, user run support groups?	
	Has the client taken any of the following classes of psychiatric medicines: **1=Y, 0=N**	
12	Antipsychotics	
13	Antidepressants	
14	Mood stabilisers	
15	Benzodiazepines	

September, 2001

Zanarini Rating Scale for Borderline Personality Disorder (ZAN-BPD)

Mary C. Zanarini, Ed.D.
Frances R. Frankenburg, M.D.

McLean Hospital
Harvard Medical School

INAPPROPRIATE, INTENSE ANGER OR DIFFICULTY CONTROLLING ANGER

During the past week (two weeks), have you ...

... felt very angry?

How about felt really angry inside but managed to hide it so that other people didn't know about it?

Behaved in an angry manner (e.g., been sarcastic, yelled at people, broken things)?

How about become enraged and gotten into physical fights with someone you're close to?

IF YES TO ANY QUESTION PERTAINING TO ANGER, ASK ABOUT INTENSITY AND FREQUENCY OF SYMPTOMS. ALSO ASK FOR EXAMPLES. THEN CIRCLE THE NUMBER THAT BEST REPRESENTS THE DESCRIBED AND/OR OBSERVED SYMPTOM SEVERITY.

0	**No Symptoms**	No inappropriate anger reported or observed during interview.
1	**Mild Symptoms**	Frequent feelings of frustration or irritation. Occasional mild angry acts (e.g., snapping at people, sarcasm).
2	**Moderate Symptoms**	Daily feelings of frustration or irritation. Frequent mild angry acts. Occasional intense angry acts of verbal nature (e.g., prolonged verbal outbursts, threats of violence).
3	**Serious Symptoms**	Frequent feelings of intense anger or rage. Daily mild angry acts. Frequent intense angry acts of verbal nature. Occasional intense angry acts of physical nature (e.g., property destruction, physical assaults, fistfights).
4	**Severe Symptoms**	Daily feelings of intense anger or rage. Daily intense angry acts of verbal nature. Frequent intense angry acts of physical nature.

AFFECTIVE INSTABILITY DUE TO A MARKED REACTIVITY OF MOOD

During the past week (two weeks), have you …

… found that your mood has changed suddenly (e.g., from feeling OK to feeling really sad or very irritable or extremely anxious)?

How about from feeling OK to feeling enraged, panicked, or totally despairing?

Had any mood changes?

Been told that you're a moody person?

(IF YES TO ANY OF ABOVE) Do these mood changes typically last only a few hours to a few days?

IF YES TO ANY QUESTION PERTAINING TO AFFECTIVE INSTABILITY, ASK ABOUT INTENSITY AND FREQUENCY OF SYMPTOMS. ALSO ASK FOR EXAMPLES. THEN CIRCLE THE NUMBER THAT BEST REPRESENTS THE DESCRIBED AND/OR OBSERVED SYMPTOM SEVERITY.

0	**No Symptoms**	No affective instability reported or observed during interview.
1	**Mild Symptoms**	Occasional mood shifts that are somewhat out of proportion to severity of surrounding life circumstances (e.g., becomes very annoyed when friend says the "wrong" thing).
2	**Moderate Symptoms**	Frequent mood shifts that are somewhat out of proportion to severity of surrounding life circumstances.
3	**Serious Symptoms**	Frequent mood shifts that are substantially out of proportion to severity of surrounding life circumstances (e.g., becomes completely overwhelmed when "little" things go wrong). May describe feeling "all over the place" emotionally.
4	**Severe Symptoms**	Daily mood shifts that are substantially out of proportion to severity of surrounding life circumstances. May describe feeling "out of control" emotionally.

CHRONIC FEELINGS OF EMPTINESS

During the past week (two weeks), have you …

... felt empty?

How about that you had no feelings inside?

That there was nothing inside?

IF YES TO ANY QUESTION PERTAINING TO EMPTINESS, ASK ABOUT INTENSITY AND FREQUENCY OF SYMPTOMS. ALSO ASK FOR EXAMPLES. THEN CIRCLE THE NUMBER THAT BEST REPRESENTS THE DESCRIBED AND/OR OBSERVED SYMPTOM SEVERITY.

0	No Symptoms	No feelings of emptiness reported or observed during interview.
1	Mild Symptoms	Frequent transient feelings of emptiness (e.g., feels empty for 20-30 minutes 3-4 times per week). May also describe feelings of aloneness or boredom.
2	Moderate Symptoms	Daily transient feelings of emptiness. May also describe feeling hollow inside.
3	Serious Symptoms	Frequent sustained feelings of emptiness (e.g., feels empty 2-3 hours 4-5 times per week). May also report that there is void where feelings should be.
4	Severe Symptoms	Daily sustained feelings of emptiness. May also report that there is nothing inside.

IDENTITY DISTURBANCE: MARKEDLY AND PERSISTENTLY UNSTABLE SELF-IMAGE OR SENSE OF SELF

During the past week (two weeks), have you …

… been unsure of who you are or what you're really like?

Gone from feeling sort of OK about yourself to feeling that you're bad or even evil?

Felt that you had no identity?

How about that you had no idea of who you are or what you believe in?

That you don't even exist?

IF YES TO ANY QUESTION PERTAINING TO IDENTITY DISTURBANCE, ASK ABOUT INTENSITY AND FREQUENCY OF SYMPTOMS. ALSO ASK FOR EXAMPLES. THEN CIRCLE THE NUMBER THAT BEST REPRESENTS THE DESCRIBED AND/OR OBSERVED SYMPTOM SEVERITY.

0	No Symptoms	No identity disturbance reported or observed during interview.
1	Mild Symptoms	Occasional signs and symptoms of mild identity disturbance (e.g., occasionally unsure of who self is or what self is really like).
2	Moderate Symptoms	Frequent signs and symptoms of mild identity disturbance.
3	Serious Symptoms	Frequent signs and symptoms of serious identity disturbance (e.g., frequent feelings of having no identity, frequent feelings of being bad or even evil).
4	Severe Symptoms	Daily signs and symptoms of serious identity disturbance. May also describe not even existing.

TRANSIENT STRESS-RELATED PARANOID IDEATION OR SEVERE DISSOCIATIVE SYMPTOMS

During the past week (two weeks), have you …

… felt that people were picking on you?

How about deliberately were being mean to you?

Felt that people around you were unreal?

How about that things around you were unreal?

Had episodes where you felt spaced out or numb?

How about emotionally dead?

(IF YES TO ANY OF ABOVE) Did these feelings come and go or were they almost always there?

Did they only occur when you were under stress?

How about get worse when you were under a lot of stress?

IF YES TO ANY QUESTION PERTAINING TO PARANOID IDEATION OR DISSOCIATION, ASK ABOUT INTENSITY AND FREQUENCY OF SYMPTOMS. ALSO ASK FOR EXAMPLES. THEN CIRCLE THE NUMBER THAT BEST REPRESENTS THE DESCRIBED AND/OR OBSERVED SYMPTOM SEVERITY.

0	**No Symptoms**	No paranoid ideation or dissociation reported or observed during interview.
1	**Mild Symptoms**	Occasional mild feelings of distrust/ suspiciousness (e.g., wonders if boyfriend is deliberately trying to upset her). Occasional mild feelings of unreality (e.g., feeling spaced out or numb).
2	**Moderate Symptoms**	Frequent mild feelings of distrust/ suspiciousness. Frequent mild feelings of unreality.

3	Serious Symptoms	Frequent intense feelings of distrust/ suspiciousness (e.g., convinced that therapist "hates" her now that she is thinking of stopping treatment). Frequent intense feelings of unreality (e.g. complains of feeling emotionally dead, having episodes of losing time).
4	Severe Symptoms	Daily intense feelings of distrust/ suspiciousness. Daily intense feelings of unreality.

FRANTIC EFFORTS TO AVOID REAL OR IMAGINED ABANDONMENT

During the past week (two weeks), have you …

… felt as though you were being abandoned when you really weren't?

Made any efforts to avoid feeling abandoned (e.g., called someone you're close to try to reassure yourself that he or she still cared about you)?

How about made efforts to avoid being abandoned (e.g., refused to leave someone's home or office, pleaded with people not to leave you, clung to them physically)?

IF YES TO ANY QUESTION PERTAINING TO FRANTIC EFFORTS TO AVOID FEELING OR BEING ABANDONED, ASK ABOUT INTENSITY AND FREQUENCY OF SYMPTOMS. ALSO ASK FOR EXAMPLES. THEN CIRCLE THE NUMBER THAT BEST REPRESENTS THE DESCRIBED AND/OR OBSERVED SYMPTOM SEVERITY.

0	No Symptoms	No frantic efforts to avoid abandonment reported or observed during interview.
1	Mild Symptoms	Frequent fears of abandonment. May engage in occasional covert efforts to avoid feeling abandoned (e.g., listens to therapist's voice mail message 2-3 times without leaving message).
2	Moderate Symptoms	Frequent covert efforts to avoid feeling abandoned (e.g., may "spy" on partner to reassure self that he or she is OK).
3	Serious Symptoms	Frequent overt efforts to avoid feeling abandoned (e.g., may repeatedly call friends late at night to reassure self that they still care).
4	Severe Symptoms	Daily overt efforts to avoid feeling abandoned (e.g., may refuse to leave someone's home or office; may cling to someone physically; may beg not to be left alone).

RECURRENT SUICIDAL BEHAVIOR, GESTURES, OR THREATS, OR SELF-
MUTILATING BEHAVIOR

During the past week (two weeks), have you ...

... deliberately hurt yourself without meaning to kill yourself (e.g., cut yourself, burned
yourself, punched yourself, put your hand through windows, punched walls, banged
your head)?

Threatened to kill yourself? (IF NO) How about told someone that you're going to kill
yourself to let them know you're in pain? To see if they care?

Made any suicide gestures or attempts?

IF YES TO ANY QUESTION PERTAINING TO SELF-MUTILATION OR SUICIDAL
EFFORTS, ASK ABOUT INTENSITY AND FREQUENCY OF SYMPTOMS. ALSO
ASK FOR EXAMPLES. THEN CIRCLE THE NUMBER THAT BEST REPRESENTS
THE DESCRIBED AND/OR OBSERVED SYMPTOM SEVERITY.

0	No Symptoms	No self-mutilation or suicidal efforts reported or observed during interview.
1	Mild Symptoms	One vague suicide threat. One instance of scratching or punching self.
2	Moderate Symptoms	One clear-cut suicide threat. 2-3 instances of scratching or punching self.
3	Serious Symptoms	Multiple suicide threats. One instance of cutting or burning self. One suicide gesture.
4	Severe Symptoms	2-3 instances of cutting or burning self. One suicide attempt.

<u>IMPULSIVITY IN AT LEAST OTHER TWO AREAS THAT ARE POTENTIALLY SELF-DAMAGING</u>

During the past week (two weeks), have you …

… gotten really drunk? (IF YES) How many times?

High on prescription or street drugs? (IF YES) How many times?

Impulsively gotten sexually involved with anyone or had any brief affairs? (IF YES) How many times?

Had any episodes where you ate so much food that you were in a lot of pain or had to force yourself to throw up? (IF YES) How many times?

Gone on any spending sprees where you spent a lot of money on things that you didn't need or couldn't afford? (IF YES) How many times?

Lost your temper and really shouted, yelled, or screamed at anyone? (IF YES) How many times?

Threatened to physically harm anyone (e.g., told someone that you would punch him, stab him, or kill him)? (IF YES) How many times?

Physically assaulted or abused anyone (e.g., slapped, punched, or kicked someone)? (IF YES) How many times?

Been in any fistfights? (IF YES) How many?

Deliberately damaged property (e.g., smashed dishes, broken furniture, wrecked someone's car)? (IF YES) How many times?

Driven far too fast or while you were under the influence of alcohol or drugs? (IF YES) How many times?

Done anything that's against the law (e.g., shoplifted, sold drugs, fenced stolen property)? (IF YES) How many times?

IF YES TO ANY QUESTION PERTAINING TO IMPULSIVITY, ASK ABOUT INTENSITY AND FREQUENCY OF SYMPTOMS. ALSO ASK FOR EXAMPLES. THEN CIRCLE THE NUMBER THAT BEST REPRESENTS THE DESCRIBED AND/OR OBSERVED SYMPTOM SEVERITY.

0	**No Symptoms**	No impulsivity reported or observed during interview.
1	**Mild Symptoms**	1-2 impulsive acts (e.g., one eating binge and one episode of excessive drinking).
2	**Moderate Symptoms**	One clear-cut pattern of impulsivity (i.e., 3-4 episodes of one type of impulsivity).
3	**Serious Symptoms**	Two clear-cut patterns of impulsivity (i.e., 3-4 episodes of two separate types of impulsivity)
4	**Severe Symptoms**	Three or more clear-cut patterns of impulsivity (i.e., 3-4 episodes of three or more separate types of impulsivity)

PATTERN OF UNSTABLE AND INTENSE INTERPERSONAL RELATIONSHIPS CHARACTERIZED BY ALTERNATING BETWEEN EXTREMES OF IDEALIZATION AND DEVALUATION

During the past week (two weeks), have you …

... felt hatred toward someone you care about and need (e.g., a relative, friend, romantic partner, or treater)?

How about felt really disappointed in someone you feel close to?

(IF YES TO EITHER) Was this because he or she didn't seem to care about you in the way you felt you needed? Because he or she wasn't available enough?

Gone from feeling really dependent on someone to needing to get a lot of distance from him or her?

(IF YES) Was this because you feared being smothered or losing what little sense of yourself that you have?

(IF NO) Been told that you cling to people you're dependent on and then try to flee from them?

Had any stormy relationships?

(IF NO) Any relationships marked by a lot of arguments?

Threatened breakups?

How about actual breakups?

IF YES TO ANY QUESTION PERTAINING TO UNSTABLE RELATIONSHIPS, ASK ABOUT INTENSITY AND FREQUENCY OF SYMPTOMS. ALSO ASK FOR EXAMPLES. THEN CIRCLE THE NUMBER THAT BEST REPRESENTS THE DESCRIBED AND/OR OBSERVED SYMPTOM SEVERITY.

0	No Symptoms	No instability in close relationships reported or observed during interview.
1	Mild Symptoms	Occasional signs and symptoms of mild instability in one or more close relationships (e.g., bickering, threat to end relationship).
2	Moderate Symptoms	Frequent signs and symptoms of mild instability in one or more close relationships.

3	Serious Symptoms	Frequent signs and symptoms of serious instability in one or more close relationships (e.g., intense arguments, actual breakup). May report that personal life seems chaotic.
4	Severe Symptoms	Daily signs and symptoms of serious instability in one or more close relationships. May report that personal life seems out of control.

SUMMARY SCORING SHEET

1. TOTAL ZAN-BPD SCORE (0-36):
    (add up all nine criteria scores)   _____ _____

2. TOTAL AFFECTIVE DISTURBANCE SCORE (0-12):
    (add up anger, moodiness, and emptiness scores)   _____ _____

3. TOTAL COGNTIVE DISTURBANCE SCORE (0-8):
    (add up identity disturbance and distrust/
    suspiciousness/dissociation scores)   _____ _____

4. TOTAL IMPULSIVITY SCORE (0-8):
    (add up self-mutilation/suicidality and
    other forms of impulsivity scores)   _____ _____

5. TOTAL DISTURBED RELATIONSHIP SCORE (0-8):
    (add up efforts to avoid abandonment and
    unstable relationships scores)   _____ _____

Appendix E - Analyses in multipley imputed dataset

Table E1 Unifactorial association between number of days with self-harm and baseline characteristics, skills, common and extratherapeutic factors in multipley imputed dataset

Variable	N in analysis at Level 2	N in analysis at Level 1	Incident rate ratio	95% confidence interval	Standard error	P value
TIME VARYING FACTORS						
Perceived understanding of the DBT skills	**89**	**623**	**0.75**	**0.57 - 0.99**	**0.11**	**0.05**
Frequency of use of the DBT skills	**89**	**623**	**0.95**	**0.93 - 0.97**	**0.01**	**<0.01**
Perceived helpfulness of the DBT skills	89	623	0.95	0.74 - 1.20	0.12	0.65
Self-efficacy	**89**	**623**	**0.93**	**0.89 - 0.97**	**0.02**	**<0.01**
Therapeutic alliance	**89**	**623**	**0.98**	**0.96 - 1.00**	**0.01**	**0.09**
Treatment credibility	**89**	**623**	**0.92**	**0.86 - 0.98**	**0.03**	**<0.01**
Perceived social support	89	623	0.99	0.97 - 1.01	0.01	0.40
Number of social contacts	**89**	**623**	**0.98**	**0.96 - 1.00**	**0.01**	**0.02**
Number of social confidantes	**89**	**623**	**0.96**	**0.92- 1.00**	**0.02**	**0.07**
BASELINE CHARACTERISTICS						
Age	89	623	0.98	0.95 - 1.02	0.02	0.34
Gender	89	623	1.27	0.50 - 3.21	0.60	0.62
Employment	89	623	1.24	0.51 - 3.01	0.56	0.64
BPD symptom severity	**89**	**623**	**1.12**	**1.06 - 1.18**	**0.03**	**<0.01**
Number of days with self-harm in previous 12 months	**89**	**623**	**1.01**	**1.01- 1.01**	**0.01**	**<0.01**
General psychiatric symptom severity	**89**	**623**	**4.38**	**1.36 - 14.2**	**2.62**	**0.01**
Depression severity	89	623	1.02	0.68-1.53	0.21	0.93
Anxiety severity	89	623	0.98	0.75 - 1.27	0.13	0.87
Anger severity	89	623	1.36	0.94 - 1.97	0.26	0.10
Comorbid substance dependence	89	623	1.91	0.81 - 4.53	0.84	0.14
Taking psychiatric medication	89	623	1.24	0.41 - 3.73	0.70	0.70

Table E2 Multifactorial association between number of days with self-harm and baseline characteristics, skills, common and extratherapeutic factors in multipley imputed dataset

Variable	N in analysis (Level 2)	N in analysis (Level 1)	Incident rate ratio	95% confidence interval	Standard error	P value
	89	623				
Perceived understanding of skills			0.91	0.72 - 1.16	0.11	0.45
Frequency of skill use			**0.97**	**0.95 - 0.99**	**0.01**	**< 0.01**
Self-efficacy			0.95	0.91 - 0.99	0.02	0.04
Therapeutic alliance			1.00	0.97 - 1.02	0.01	0.91
Treatment credibility			0.96	0.90 - 1.03	0.03	0.23
Number of social contacts			0.99	0.98 - 1.01	0.01	0.48
Number of social confidantes			0.99	0.94 - 1.04	0.02	0.67
Baseline BPD symptom severity			**1.04**	**0.99 - 1.09**	**0.02**	**0.11**
Number of days with self-harm in previous 12 months			**1.01**	**1.01 - 1.01**	**0.01**	**< 0.01**
Baseline general psychiatric symptom severity			**2.09**	**0.90 - 4.84**	**0.89**	**0.08**

Table E3 Unifactorial association between BPD symptom severity and baseline characteristics, skills, common and extratherapeutic factors in multipley imputed dataset

Variable	N in analysis at Level 2	N in analysis at Level 1	β	95% confidence interval	Standard error	P value
TIME-VARYING FACTORS						
Perceived understanding of the DBT skills	89	267	-0.48	-1.60 - 0.63	0.57	0.40
Frequency of use of the DBT skills	**89**	**267**	**-0.19**	**-0.30 - -0.08**	**0.06**	**<0.01**
Perceived helpfulness of the DBT skills	89	267	-0.40	-1.20 - 0.40	0.41	0.33
Self-efficacy	**89**	**267**	**-0.34**	**-0.49 - -0.20**	**0.08**	**<0.001**
Therapeutic alliance	89	267	0.07	-0.05 - 0.19	0.06	0.26
Treatment credibility	**89**	**267**	**-0.31**	**-0.56 - -0.07**	**0.13**	**0.01**
Perceived social support	**89**	**267**	**-0.08**	**-0.14 - -0.01**	**0.03**	**0.02**
Number of social contacts	**89**	**267**	**-0.05**	**-0.10 - 0.00**	**0.03**	**0.06**
Number of social confidantes	**89**	**267**	**-0.18**	**-0.33 - 0.02**	**0.08**	**0.02**
BASELINE CHARACTERISTICS						
Age	89	267	-0.07	-0.18 - 0.05	0.06	0.26
Gender	89	267	1.72	-1.29- 4.72	1.54	0.26
Employment at baseline	89	267	-1.92	-4.34 - 0.50	1.23	0.12
BPD symptom severity	**89**	**267**	**0.52**	**0.32- 0.72**	**0.10**	**< 0.01**
Number of days with self-harm in previous 12 months	**89**	**267**	**0.01**	**0.00- 0.02**	**0.01**	**0.02**
General psychiatric symptom severity	**89**	**267**	**6.20**	**2.92 - 9.50**	**1.68**	**<0.01**
Depression severity	**89**	**267**	**1.72**	**0.55 -2.89**	**0.60**	**<0.01**
Anxiety severity	89	267	0.50	-0.24 - 1.24	0.38	0.18
Anger severity	**89**	**267**	**2.20**	**1.22- 3.18**	**0.50**	**< 0.01**
Substance dependence	89	267	1.43	-1.36 - 4.23	1.43	0.32
Taking psychiatric medication	**89**	**267**	**2.51**	**0.24 - 4.78**	**1.16**	**0.03**

Table E4 Multifactorial association between BPD symptom severity and baseline characteristics, skills, common and extratherapeutic factors in multipley imputed dataset

Variable	N in analysis (Level 2)	N in analysis (Level 1)	β	95% confidence interval	Standard error	P value
	89	267				
Frequency of use of the DBT skills			**-0.12**	**-0.24 - -0.01**	**0.06**	**0.03**
Self-efficacy			**-0.24**	**-0.39- -0.09**	**0.08**	**< 0.01**
Treatment credibility			0.01	-0.24 - 0.06	0.13	0.97
Perceived social support			-0.02	-0.07 - 0.04	0.03	0.61
Number of social contacts			-0.00	-0.04 - 0.04	0.02	0.99
Number of social confidantes			-0.06	-0.20 - 0.07	0.07	0.36
Number of days with self-harm in prior12 mths			0.00	- 0.00 - 0.01	0.01	0.46
BPD symptom severity at baseline			**0.43**	**0.17 -0.69**	**0.14**	**<0.01**
General psychiatric symptoms at baseline			0.15	-2.36 - 2.65	1.28	0.91
Depression severity at baseline			0.44	-0.43 - 1.31	0.44	0.32
Anger severity at baseline			0.49	-0.98 - 1.97	0.75	0.51
Taking medication at baseline			0.68	-1.24 - 2.60	0.98	0.49

Table E5 Association between baseline characteristics and number of treatment months completed, in multipley imputed dataset (N = 89)

Baseline characteristics	Incident rate ratio	95% confidence interval	Standard error	p value
Age	0.99	0.98 - 1.00	< 0.01	0.20
Female gender	1.34	0.94 - 1.91	0.24	0.10
Employed	**1.28**	**1.06-1.55**	**0.13**	**0.01**
Number of days with self-harm in past 12 months	1.00	1.00 – 1.00	<0.01	0.35
BPD symptom severity	1.01	0.99-1.03	0.01	0.46
Impulsivity severity	1.01	0.97 – 1.06	0.02	0.59
Anger severity	1.03	0.94 – 1.14	0.05	0.49
Anxiety severity	0.99	0.93 - 1.05	0.03	0.74
Depression severity	1.04	0.96 - 1.13	0.04	0.38
Comorbid PTSD	0.94	0.76 - 1.16	0.10	0.56
Comorbid schizoid PD	1.27	0.93 - 1.74	0.20	0.14
Complex PD	0.99	0.77 - 1.29	0.13	0.95
Taking psychiatric medication	**0.82**	**0.66 – 1.02**	**0.09**	**0.07**
Number of inpatient days in past 12 months	1.00	0.99 – 1.00	< 0.01	0.26
Self-efficacy	**1.02**	**1.00 – 1.04**	**< 0.01**	**0.02**
Treatment credibility	1.00	0.97 – 1.04	0.02	0.82
Perceived social support	1.00	1.00 – 1.01	< 0.01	0.66
Number of social contacts	1.00	1.00 – 1.01	< 0.01	0.48
Number of social confidantes	1.01	0.98 – 1.03	0.01	0.61

Table E6 Association between specific, common and extratherapeutic factors at month 2 and number of treatment months completed, in those completing at least 3 months, in multipley imputed dataset (N = 82)

Variable	Incident rate ratio	95% confidence interval	Standard error	p value
SPECIFIC				
Perceived understanding of DBT skills at m2	**1.12**	**1.02 – 1.03**	**0.05**	**0.02**
Frequency of DBT skills use at m2	**1.02**	**1.01 - 1.03**	**< 0.01**	**< 0.01**
Perceived helpfulness of DBT skills at m2	**1.06**	**0.99 – 1.13**	**0.04**	**0.09**
COMMON				
Therapeutic alliance at m2	**1.01**	**1.00 – 1.02**	**< 0.01**	**0.06**
Treatment credibility at m2	**1.02**	**1.00 – 1.05**	**0.01**	**0.07**
Self-efficacy at m2	1.00	0.99 – 1.02	< 0.01	0.66
EXTRATHERAPEUTIC				
Perceived social support at m2	1.00	0.99– 1.00	< 0.01	0.75

Table E7 Multifactorial prediction of treatment months completed, in participants completing at least 3 months of DBT, in multipley imputed dataset (N = 82)

Predictor	Incident rate ratio	95% confidence interval	Standard error	p value
Perceived understanding of skills at month 2	**1.11**	**1.00 - 1.23**	**0.06**	**0.05**
Frequency of skills use at month 2	**1.02**	**1.01-1.03**	**0.01**	**< 0.01**
Perceived helpfulness of skills at month 2	0.94	0.86 - 1.03	0.04	0.17
Treatment credibility at month 2	1.01	0.98 - 1.04	0.01	0.41
Therapeutic alliance at month 2	1.01	0.99 - 1.02	< 0.01	0.34
Self-efficacy at baseline	1.01	1.00 - 1.03	0.01	0.16
Employment at baseline	1.12	0.97 - 1.29	0.01	0.16

Appendix F - Patient information and topic guide for qualitative work

Document F1 - Patient information for qualitative interviews

Document F2- Topic guide for qualitative interviews

East London and The City **NHS**

Mental Health NHS Trust

The Newham Centre for Mental Health

Glen Road Plaistow London E13 8SP

Main Switchboard: Tel: 020 7540 4380

Direct Line: 020 7540 6755

Direct Fax: 020 7540 2976

Participant Information Sheet – DIALECT skills interviews

Dear DBT client,

In addition to the research you are already taking part in, we would like to invite you to participate in a short research interview about your experiences of the skills training element of DBT.

In the interview you would be asked to talk about your experiences of learning the skills taught in DBT. The interview will last about half an hour to an hour and will be tape recorded so that we have an accurate record of the interview. This recordings and any material based on the recording will be totally confidential to the research team- no-one else will know what you have said.

What will happen to the recording of my interview?

The recording will be stored on an NHS computer accessible only to the research team. Written copies will be made by the researchers- these will be stored anonymously by participant number, and will not be linked to your name. As part of the research, it is possible that we might publish an extract from your interview in a peer-reviewed journal or present it at a conference- however, in no circumstance would any published extract from your interview be linked to your name, or contain any information that could possibly link it to you. The recordings and their written copies will be destroyed after a maximum of 30 years. You can request access to your recording at any point before they are destroyed.

Why is this research important?

We need to know if learning the skills which are taught in DBT is helpful to people with borderline personality disorder or who self-harm. These interviews will help to establish the answer to this question.

Do I have to take part? How will taking part affect me?

You are under no obligation whatsoever to take part. If you decide not to take part, your clinical care will not be affected. If you decide to take part, your clinical care will not be affected. If you decide to take part but later change your mind, you can withdraw from this research at any time without giving a reason. If you change your mind but we have already completed some of the interview with you, we may still use the part of the interview we have already recorded.

Are there any disadvantages to taking part?

It is possible that you may find it distressing or uncomfortable talking about your personal experiences of therapy. If this happens during the interview, you can decide to stop the interview at any time.

Are there any advantages to taking part?

This will be a chance to reflect on your experiences of therapy so far- both positive and negative. Potentially your contribution to the research will help us to improve treatment for people with similar problems to yourself.

Will I be able to learn about the results of the research?

We will send a summary of the research findings to everyone that takes part. The findings may also be published in peer-reviewed journals and presented at conferences.

What if I have any questions or concerns?

If you have any questions or would like to discuss anything, please contact Professor Priebe or Kirsten Barnicot on 020 7540 6755.

SKILLS INTERVIEW TOPIC GUIDE

Interviewer Instructions:

Questions in CAPITALS are key questions to be asked of all participants.

All other questions/ statements are suggested prompts only – use them only if the interviewee does not bring them up spontaneously, and phrase them in your own words and appropriately to the context of what the interviewee has been saying.

Interview Suggested Content

1) HOW LONG HAVE YOU BEEN DOING DBT? Group and individual?

2) HAS YOUR MENTAL HEALTH CHANGED AT ALL SINCE YOU STARTED DBT? In what way? What hasn't changed?

(probe self-harm, suicidality, and emotional instability especially)

3) WHAT SKILLS HAVE YOU BEEN TAUGHT? WHAT DO YOU THINK OF THEM? HAVE THE SKILLS HELPED YOU? HOW?

Can you explain some more? What do you mean? Give me an example?

If they say the skills helped them:

4) DID YOU HAVE TO GO THROUGH A JOURNEY IN ORDER FOR THE SKILLS TO HELP YOU? Describe that journey to me?

Did you understand them from the start? When did you start to use them? How was it when you first used them? Did they help you when you first used them? Did you use them more as you went along? Did they get any more helpful as you went along?

If they say the skills haven't helped them:

DID YOU HAVE TO GO THROUGH A JOURNEY IN ORDER TO REALISE THAT THE SKILLS WEREN'T HELPING YOU? Describe that journey to me?

Did you understand them at the start? Did you start to use them? How was it when you first used them? Did they help you when you first used them? Did you use them more as you went along? Did they get any more helpful as you went along?

5) HOW EASY HAVE YOU FOUND IT TO UNDERSTAND THE SKILLS YOU'VE BEEN TAUGHT?

Has that changed since starting therapy?

Has anything helped you to understand the skills better?

Has anything been a barrier to understanding the skills?

 Can you explain some more? What do you mean? Give me an example?

6) DO YOU USE THE SKILLS?

Which skills do you use the most? Why? Has that changed since starting therapy? *Can you explain some more? What do you mean? Give me an example?*

When do you use the skills? *Can you explain some more? What do you mean? Give me an example?*

How easy do you find it to remember to use the skills when you're in the middle of a problem situation? Has that changed since starting therapy? *Can you explain some more? What do you mean? Give me an example?*

How easy is it to choose a skill that's appropriate for the situation? Has that changed since starting therapy? *Can you explain some more? What do you mean? Give me an example?*

Is there anything that helps you to use the skills? Has that changed since starting therapy? *Can you explain some more? What do you mean? Give me an example?*

Is there anything that stops you from using the skills more often? Has that changed since starting therapy? *Can you explain some more? What do you mean? Give me an example?*

7) DO THE SKILLS HELP YOU? HOW?

Have they helped you…

…. if you feel the urge to self-harm? *Can you explain some more? What do you mean? Give me an example?* Has that changed since starting therapy?

… if you are feeling suicidal? *Can you explain some more? What do you mean? Give me an example?* Has that changed since starting therapy?

….. if you are feeling very emotional? *Can you explain some more? What do you mean? Give me an example?* Has that changed since starting therapy?

… if your mood suddenly changes? *Can you explain some more? What do you mean? Give me an example?* Has that changed since starting therapy?

…. with your relationships? *Can you explain some more? What do you mean? Give me an example?* Has that changed since starting therapy?

…..if you feel very angry? *Can you explain some more? What do you mean? Give me an example?* Has that changed since starting therapy?

…. if you want to drink a lot or take drugs or binge or purge? *Can you explain some more? What do you mean? Give me an example?* Has that changed since starting therapy?

Is there anything that has stopped the skills from being more helpful to you? *Can you explain some more? What do you mean? Give me an example?* Has that changed since starting therapy?

Is there anything that has made the skills more helpful? *Can you explain some more? What do you mean? Give me an example?* Has that changed since starting therapy?

8) IS THERE ANYTHING ELSE YOU'D LIKE TO SAY ABOUT YOUR EXPERIENCE OF LEARNING AND USING THE SKILLS?

Can you explain some more? What do you mean? Give me an example?

9) IS THERE ANYTHING ELSE THAT HAS HELPED YOU ACHIEVE CHANGES IN YOUR MENTAL HEALTH?

Can you explain some more? What do you mean? Give me an example?

10) IS THERE ANYTHING ELSE THAT HAS BEEN A BARRIER TO MAKING CHANGES IN YOUR MENTAL HEATLH?

Can you explain some more? What do you mean? Give me an example?

11) ANYTHING ELSE YOU WANT TO ADD?