Borderline Personality Disorder in adolescence: exploring gender differences and effectiveness of Dialectical Behaviour Therapy

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Abstract

This thesis considers Borderline Personality Disorder (BPD), its diagnosis in adolescence and apparent gender differences in diagnosis and treatment. Although often considered within a clinical mental health context, the gap between clinical and forensic practice is rarely closer than when considering BPD and its close association with an increased risk of criminal behaviour and the forensic population. This coupled with Dialectical Behaviour Therapy (DBT) as a treatment of choice for BPD and its development in a variety of settings including the forensic population means that BPD, adolescence and DBT research is at an interesting juncture.

The second chapter presents a systematic review on the effectiveness of Dialectical Behaviour Therapy (DBT) with adolescents demonstrating Borderline Personality Disorder (BPD) symptoms. As one of the recommended psychological interventions by National Institute Clinical Effectiveness (NICE, 2009) a robust treatment is required and although evidence of this has started to emerge, studies are infiltrated with difficulties which makes comparisons more difficult. These difficulties cluster primarily around problematic research designs and the use of validated measures. However, it is also argued that the studies to date have provided a useful foundation from which to develop future studies.

Chapter three presents an empirical study exploring diagnosis of BPD by clinicians working within Child and Adolescent Mental Health Services (CAMHS) and explores gender differences in this diagnosis and the use of Dialectical Behaviour Therapy (DBT) as a treatment pathway. Results show a gender difference was found, in terms of diagnosis, with females being more likely to be diagnosed with BPD, but that gender was not clearly a factor in terms of referral for DBT.

Chapter four considers one of the few validated measures for use with adolescents, the Millon Adolescent Clinical Inventory (MACI). This measure assigns a scale to borderline traits which reflect the emotional instability of this group. However the challenges in identifying and separating ‘normal’ problematic behaviours in adolescence and issues of MACI scale item overlap are discussed.

In this controversial area fraught with complications from diagnosis to treatment, it is argued that this thesis could provide a useful collaboration between the available research to date and an exploration of future research developments, which are desperately needed.

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Chapter 1

Thesis Introduction

Personality, from its healthy presentation in people with no contact with mental health services through to its dysfunctional presentation where psychiatric input is more likely, has an extensive and captivating history. However, arguments over psychologically defining personality types, has continued for hundreds of years with no clear consensus obtained (Moran, 2003).

The wealth of personality definitions is beyond the scope of this research, however most contemporary psychologists agree that personality is essentially a complex set of traits defined by how an individual thinks, feels and behaves and which remain relatively stable regardless of context or time (Phares & Chaplin, 1997). These traits influence reactions to situations, expression of emotions and how people perceive themselves and interact with others around them. Lucas and Baird (2004) argue that these characteristics are generally stable over time and not influenced by the environment. However, others argue that the environment and interactions collectively shape personality and the type of person one becomes. For example, an individual constantly rejected by those around them could easily struggle to manage their emotions and self worry, resulting in neuroticism, yet, without this environmental influence their personality traits may never become problematic and instead provide individuality (Whitbourne, 2013). For the majority of people personality traits offer them an identity, shaping the person they are and generally causing few problems. However, sometimes these traits become problematic; resulting in the diagnosis of a personality disorder which might impact on an individual's life to such a degree that professional help may be required. This is further complicated by the debate as to whether personality disorder develops in adolescence and issues regarding diagnosis under the age of eighteen years (Miller, Muehlenkamp, & Jacobson, 2008).

The primary aim of this introduction is to introduce key themes, which will be explored in more detail throughout the thesis. Personality disorder will be considered first, including theories of its development and prevalence. Following this the focus will narrow to explore adolescence and personality disorder, examining the controversies specifically regarding borderline personality disorder and adolescence.

Definitions of Personality Disorders

Personality disorders are defined by the American Psychiatric Association (2000) as "an enduring pattern of inner experience and behaviour that deviates markedly from the expectations of the individual's culture, is pervasive and inflexible, has onset in adolescence or early adulthood, is stable over time, and leads to distress or impairment" (p. 685).

With regards to diagnosing personality disorder, two main diagnostic references currently co-exist; the International Classification of Diseases (ICD 10; WHO, 1992) and The *Diagnostic and Statistical Manual of Mental Disorders* (DSM; APA, 2000). The ICD 10 is produced by the World Health Organization (WHO). By collating data on health and conducting research, they provide a categorical classification for diagnosis of personality disorders. ICD 10 is widely recognised across a number of countries as it is multilingual and multi-disciplinary. Alternatively, the DSM is largely designed for psychiatrists in the United States, where it claims to be compatible with ICD 10 with regards to codes and descriptions of disorders. Initially these two diagnosis references were significantly different; however overtime with collaborative working and reviewing of research, they are now similar and used in conjunction with one another (APA, 2000).

The DSM is published by the American Psychiatric Association (APA) and over the years there have been several versions produced. A new version DSM 5 has recently been released (APA, 2013), however due to the limited time since release, the fourth edition text revision (DSM-IV TR; APA, 2000) remains widely used. DSM 5 has been highly anticipated. Proponents of the revision argue that this new version is clearer as it has removed the 'axis' system used in previous versions, which focuses on rating diagnostic criteria rather than the primary presentation of difficulties and it offers a more accurate representation of disorders (Whitbourne, 2013). It was also expected to thoroughly revise a number of sections, including separating the personality disorder section and 'mental retardation' (intellectual disability), essentially revamping its use (Whitbourne, 2013). However, despite a working group developed to explore ideas and consider recommendations including personality disorders as a hybrid dimensional model rather than purely a categorical dimension, critics argue that the format looks largely the same and these recommendations appear in a

subsection of the manual to assist future research (Whitbourne, 2013), essentially resulting in little change to the previous edition. This critics argue, supports the notion that change was unnecessary as the current diagnostic process already has a dimensional approach and for personality disorders including borderline personality disorder (BPD), once the threshold of symptoms has been met (i.e., five), then any additional features make little difference to diagnosis (Black & Zimmerman, 2011). Initial expectations that the age of diagnosis of personality disorder would also be reduced from eighteen years (APA, 2011), similarly have not transpired.

However, one major transformation is that DSM 5 now lists personality disorders together with mental disorders, rather than as a separate 'axis' (Stetka & Correll, 2013). This allows a more cohesive overview of characteristics, temperament and mental illness, without the need to separate them into axes. However, some have argued that having a diagnosis of personality disorder continues to stigmatise the individual, alongside which treatment pathways remain ill defined (Stetka & Correll, 2013).

DSM 5 (APA, 2013) continues to cluster ten personality disorders into three groups:

- Cluster A – 'odd, eccentric disorders', which includes schizoid, paranoid, and schizotypal personality disorders.
- Cluster B – 'emotional, erratic and dramatic disorders', which include, borderline, antisocial, histrionic and narcissistic personality disorders.
- Cluster C – 'anxious or fearful disorders', which include dependent, avoidant and obsessive compulsive personality disorders.

The cluster B group, in particular Borderline Personality Disorder (BPD) has historically attracted most interest (de Girolamo & Dotto, 2000; Fowler & White, 2013). Borderline Personality Disorder (BPD) is described as "a pervasive pattern of instability of interpersonal relationships, self image and affects, and marked impulsivity that begins by early adulthood and is present in a variety of contexts" (DSM 5: APA, 2013 p. 663).

Individuals suffering with BPD struggle to manage their emotions, they fear abandonment, whether real or anticipated, and will go to great lengths to try and prevent this happening.

They often have difficulties managing their relationships and experience overwhelming emotions such as anger, anxiety, and worthlessness, resulting in them being prone to adopting destructive behaviours such as self-harm and suicide, as a means of maladaptive coping. Primarily, due to their over representation in adult psychiatric services (Moran, 2003), but also the financial burden they inflict on services such as mental health services, the criminal justice system and the social welfare system (Pickard, 2011), the impact on the individual and the surrounding system is substantial.

Aetiology of personality disorders

The cause of any personality disorder is complicated and unlikely to be limited to one factor alone. Any personality disorder is likely to be influenced by the individual, their environment and their experiences (Alwin et al., 2006). Abuse is a factor frequently thought to be associated with personality disorder development. Verbal abuse (American Psychological Association, 2010), neglect and physical abuse (Cohen, Brown, & Smailes, 2001) and sexual abuse (Johnson et al., 1999) have all been recognised as significant risk factors thought to be involved with its onset. However, although there is considerable confirmation to support this relationship, it does not account for individuals who experience similar difficulties but do not develop a personality disorder. This supports the theory that biological factors might predispose an individual to a personality disorder, which is then influenced by events experienced (Paris, 1996).

As with other personality disorders, BPD is unlikely to have only one cause; trauma has been linked as a contributory factor (Kluft, 1990), whilst other research has explored the link between child abuse (e.g., Kluft, 1990; Quadrio, 2005) and childhood attachment difficulties as precursors to the development of BPD (Dozier, Stovall-McClough, & Albus, 1999). Additional research has also explored brain images to explore abnormalities, finding that for those diagnosed with BPD, the hippocampus and amygdala are reduced in size (Chapman & Gratz, 2007). However, recent research by Ruocco (2013) using brain imaging, has found that for adults diagnosed with BPD they have increased activity in the frontal area of the brain. This area is considered to control negative emotional responses and help manage them. Ruocco (2013) found two significant implications for the emotional dysregulation seen in those diagnosed with BPD. Firstly, they demonstrated a heightened activity in brain activity which is implicated in the occurrence of negative emotions and secondly, for those with BPD

they demonstrated a reduction in brain activity which would normally help manage negative emotions. Essentially, not only does the BPD individual experience negative emotions more frequently and at a heightened level, they have a reduced ability to effectively manage these emotions. However, it is the case that research into the aetiology of BPD is still in the early stages and further research is needed, but these studies do offer an interesting perspective on the difficulties perceived within the BPD group.

Marsha Linehan proposed a biosocial theory to help explain how BPD might develop (Linehan, 1993a). Within this theory, it is proposed that BPD occurs due to a transactional process between the individual and their environment (Miller, Rathus, & Linehan, 2007). Essentially, it is argued that BPD occurs due to an individual's biological predisposition, which makes them emotionally sensitive and when coupled with negative life events (e.g., bullying, abuse) and an invalidating environment, where the individual stops believing in themselves and how they are feeling is appropriate to the situation, BPD can develop (Linehan, 1993a). This theory provides an interesting overview of the relationship between biological and environmental factors, which have independently been suggested by other research, but rarely brought together, but also provided the basis for the development of DBT, one of the key treatments for BPD which will be discussed later.

Prevalence of personality disorders

With regards to the prevalence of PD in the adult population, information is dated and often based on estimates rather than a considered exploration of available data (Lenzenweger, 2008). However, studies which have explored epidemiological data have reported consistent percentages of the prevalence of personality disorder in the adult population. Lenzenweger (2008) explored data from six studies from United States of America, Norway and Great Britain, which utilised DSM IV TR (APA, 2000) for diagnosis and used structured clinical interviews to aid the assessment. Lenzenweger (2008) reported that from these studies, the estimate for diagnosis of PD was similar at 11.4%, that is on average one in ten individuals have a diagnosable personality disorder (Lenzenweger, 2008). However, more recent exploration of epidemiological data have found that although often not meeting diagnostic criteria, the majority of adults at some time in their lives can develop some degree of personality disorder, therefore suggesting that dependent upon the situation, the development

of some degree of personality disorder could be considered normal (Yang, Coid & Tyrer, 2010).

DSM 5 (APA, 2013) reports prevalence of specific personality disorders. When using 2001 to 2002 National Epidemiological survey prevalence data in the Cluster A group range from 3.1% (schizoid), 3.9% (schizotypal) and 4.4% (paranoid). In the Cluster C group they range from 0.49% (dependent) to 2.4 % (avoidant) using the National Epidemiological survey data, however in the general population obsessive compulsive disorder ranges from 2.1% to 7.9%. Within the Cluster B group using DSM criteria the prevalence varies from 0.2% to 3.3% for antisocial and 0% to 6.2% for narcissistic personality disorder. When the National Epidemiological survey data is used for histrionic, prevalence is rated at 1.84%.

BPD is one of the most frequently diagnosed disorders with a prevalence percentage of between 1.6% to 5.9% in the adult general population, rising to 10% for community mental health clinics and 20% in psychiatric units (APA, 2013). Within this, the ratio of BPD diagnosis has estimated that females are three times more likely to be diagnosed with BPD than males (Korzekwa, Dell, Links, Thabane, & Webb, 2008; Skodol & Bender, 2003). However, other studies have found no significant gender difference in the diagnosis of BPD between males and females (e.g., Grant et al., 2008).

Personality Disorder in adolescents

In addition to difficulties defining personality, there is also controversy regarding when personality develops. It has been argued that personality characteristics are apparent prior to starting school (Kernberg, Weiner, & Bardenstein, 2000), whilst a number of theorists argue that personalities are not fully apparent until adolescence (e.g., Pine, 1985). Both these time frames support the concept that if personalities are developing during this time, then disruptions could occur that impact on normal personality functioning. Indeed both DSM IV TR and DSM 5 (APA, 2000, 2013) highlight that personality disorders can occur during adolescence. However, there remains a lack of research in this area (Fowler & White, 2013).

With regards more specifically to BPD, despite general agreement that onset often occurs during adolescence, there remains a reluctance to diagnose a personality disorder for those aged less than eighteen years (Miller, et al., 2008). Despite DSM IV TR (APA, 2000) and DSM 5 (APA, 2013) allowing for diagnosis under eighteen years; they offer a cautionary

note about changing personality from adolescence to adulthood. Additional concern regarding the use of such a pejorative label (Miller et al., 2008) and the potential for BPD behaviours to be an extreme version of 'normal' adolescence (Nice, 2009), all add to the controversy.

BPD and the forensic population

The high frequency of BPD diagnosis is not only prevalent in the mental health arena it can also be seen within the forensic population. Traditionally within the cluster B personality disorder group, antisocial personality disorder has most frequently been associated with criminal behaviour (Fazel & Danesh, 2002). However, it has been argued that adults diagnosed with any of the cluster b personality disorder, including BPD, are at an elevated risk of receiving a criminal conviction and also more likely to spend time in prison (Coid, Yang, Roberts et al., 2006).

A literature review conducted by Sansone and Sansone (2009) found that when compared to the community population, BPD was also over represented in the adult prison population. They found that in the female prison population, prevalence rates were between 25 and 50 percent, whilst Davison, Leese and Taylor (2001) found a prevalence rate of 45 percent within an adult male prison. This prevalence rate is significantly higher than in the general population and, although BPD is often considered within the context of mental health settings, there is considerable overlap with the forensic population.

Although, the author is unaware of research specifically looking at BPD and adolescence in a forensic setting, given the prevalence rates in the adult forensic population it is reasonable to assume that BPD might also be over represented in the juvenile estate. This is important when considering the overlap between mental health and criminal justice, as research using adults diagnosed with BPD have found a strong association between BPD diagnosis and violence (Sansone & Sansone, 2009), with adult females convicted of murder four times more likely to meet BPD criteria than those who had committed low level violent crime (Ullrich & Marneros, 2004). Other research has also found that incarcerated adult males convicted of murder were 49% more likely to have BPD traits (Dixon, Hamilton-Giachritis & Browne, 2008). Therefore in the context of adolescence, early detection and treatment of BPD could help ameliorate future risk. However, the difficulty remains that whilst there remain a lack of clarity about diagnosis in adolescence, but also whether factors such as

gender influence this, potential research remains hampered by the lack of answers to these basic but fundamental questions.

Conclusion

The aim of this introduction was to briefly introduce personality disorder and its prevalence both in the general population, psychiatric arena and forensic population. A number of risk factors have been indicated as precursors of personality disorder development and in particular the interaction between biological and environmental factors seen within BPD development. However, research with adolescents remains controversial and often research with adult BPD individuals are generalised to adolescence.

Aim of thesis:

This thesis aims to explore gender differences regarding emerging BPD and also DBT. It endeavours to contribute to the available literature by focusing specifically on adolescence, with the rationale being that early detection and treatment could decrease the potential for adolescents to end up not only in NHS settings, but also the criminal justice arena through an increase in risky and criminal behaviour associated with BPD. By highlighting to professionals working in this area about the potential influence of gender on diagnosis and treatment, it is also hoped that future research can avoid issues such as gender bias and clinical practice within both mental health and criminal justice arenas will be more conscious of this implication and ensure it does not interfere with clinical practice and access to treatment across all arenas.

This thesis consists of five chapters. Chapter one has introduced personality disorder including the prevalence of personality disorder in adults before moving more specifically to include borderline personality disorder and exploring this in the context of adolescence. In addition to this, the association between BPD and the criminal justice system is discussed, as not only is BPD over represented in mental health services but also the criminal justice arena.

Chapter two provides a systematic review exploring the literature to determine the effectiveness of DBT with adolescents demonstrating symptoms of BPD. This chapter confirms the paucity of research in this area, concluding with recommendations for clinical

practice and more robust research to take place, with a consistency of what BPD criteria and fidelity of DBT treatment discussed. Chapter three presents an empirical research study, using clinicians working in Child and Adolescent Mental Health Service (CAMHS) with adolescents to explore how gender differences might impact diagnosis of BPD and DBT treatment. Despite controversy with regards to diagnosis of BPD under the age of 18 years, recent research has supported this (Chanen & Kaess, 2012) and with the recent publication of the DSM 5 (AP, 2013), the need to explore this area is essential. In addition, through understanding gender issues in relation to BPD and adolescence and also exploring treatment pathways, improved strategies can be used in clinical practice to ensure adolescents presenting at CAMHS receive appropriate care and also with the increased risk of this presentation with criminal behaviour early diagnosis and treatment might ameliorate risk. A quantitative study was chosen primarily due to the time available and the available participant pool. In addition, research involving adolescents in this area is in its infancy, therefore a quantitative approach allowed an explorative examination of the area, to help increase understanding and assist with future research which could include qualitative approaches, once an underpinning has been established.

Chapter four critically evaluates one of the few measures of borderline personality traits with adolescents. The Millon Adolescent Clinical Inventory (MACI; Millon, Millon & Davis, 1993, 2006) utilises theory of personality and psychopathology whilst incorporating DSM IV-TR (APA, 1984) to explore difficulties expressed by adolescents including BPD traits. Although it is not used as a diagnostic measure, in light of a lack of available measures it can provide a useful aid in helping formulate the difficulties presenting within this client group and assist treatment planning.

This thesis concludes with chapter five which pulls together the preceding chapters including an overview of the general findings and the implications for clinical and forensic practice and future research.

Chapter 2

Systematic review

A systematic review exploring the effectiveness of Dialectical Behaviour Therapy (DBT) with adolescents demonstrating symptoms of Borderline Personality Disorder (BPD)

Abstract

Aim

To undertake a systematic review of the available literature considering the effectiveness of Dialectical Behaviour Therapy (DBT) with adolescents demonstrating symptoms of borderline personality disorder (BPD), specifically in order to explore whether a) DBT can demonstrate effectiveness with adolescents displaying BPD traits and b) whether gender influences the effectiveness of DBT with adolescents with BPD traits.

Method

An initial 'scoping exercise' was undertaken exploring the available literature in this area. Subsequently an initial literature review was undertaken utilising inclusion and exclusion criteria and following this quality was assessed using quality control measures. From the studies available, those that involved adolescents and where BPD symptoms were assessed were included in the review.

Results

Initial electronic and manual searches produced 168 studies. From this nine were duplicate papers and were removed and a further three could not be sourced due to language and translation issues so were also excluded. A further 138 studies were removed based on their title and abstract using inclusion/exclusion criteria, 11 were excluded after reading the full article. Following this exercise, seven studies remained which met criteria and these were systematically reviewed and assessed for quality.

Conclusion

From the studies assessed within this review, DBT did demonstrate effectiveness with adolescents with BPD symptoms that would meet diagnostic criteria using DSM IV TR (APA, 2000). However, this review also highlighted a lack of robust research and the need for Random Controlled Trials (RCTs) to further explore effectiveness of DBT with adolescents with BPD symptoms. Methodological issues and problematic research design, such as a lack of clear identification as to whether BPD as a condition is being explored or individual symptoms. Also differing levels of DBT programme delivery and degree of DBT training, coupled with low participant sample size, and significant drop out rates, makes

comparison difficult between studies. Thus conclusions must be considered with caution. However, in the context of such a limited field of research, initial findings are positive and support the need for further robust research.

Background

Borderline Personality Disorder (BPD) in adults is well recognised (Torgersen, Kringlen, & Cramer, 2001). However, although there now appears to be acceptance that the onset of BPD is likely to occur during adolescence (Miller, et al., 2008), controversy still occurs regarding diagnosis under the age of eighteen years (Paris, 2003). The Diagnostic and Statistical Manual of Mental Disorders (DSM IV TR, 2000) does, with caveats, allow for diagnosis of BPD under eighteen years of age. Similarly, despite caution remaining due to potential stigmatisation that a pejorative label such as BPD can have (Miller et al., 2008), research continues to grow in this area to support diagnosis for those under the age of eighteen (Chanen & Kaess, 2011).

As outlined in chapter one of this thesis, individuals with BPD often present with an array of symptoms. In particular they struggle to manage relationships and many, but not all, deliberately self-harm often in an attempt to manage their intense emotions. However, BPD is a heterogeneous diagnosis, with high rates of co-morbidity with other conditions such as depression, dissociation, impulsivity and psychotic states (National Institute for Health and Clinical Excellence [NICE], 2009). BPD is a crippling disorder, often resulting in a high cost to society (Miller et al., 2008) and through the debilitating impact of their difficulties, these individuals often stretch mental health provision (Bender et al., 2001) and have increased rates of early mortality (Pompili, Girardi, Ruberto, & Taterelli, 2005). Therefore, given the difficulties presented with this group and since DBT is recommended within the adult treatment pathway for BPD (NICE, 2009), evaluation of the effectiveness of this treatment for adolescents is essential.

Diagnosis of BPD occurs using one of two main diagnostic references: the International Classification of Diseases (ICD 10), and The *Diagnostic and Statistical Manual of Mental Disorders* (DSM). Despite the recent publication of DSM 5 (APA, 2013), many clinicians continue to use the fourth edition, known as DSM-IV TR (APA, 2000) as a reference for diagnosis. The criteria for diagnosis as recorded in DSM IV TR (APA, 2000) can be found in Appendix 7.

Treatment of BPD

NICE provide guidance on the clinical care provided by the National Health Service (NHS). Within their guidelines they provide recommendations for specific treatments and interventions, based on empirical data of effectiveness and economic differences of treatment provision (NICE, 2009). The current recommendation for treatment for adults diagnosed with BPD includes psychological and pharmacological medication (NICE, 2009) and due to a lack of empirical evidence for suitable alternatives, this recommended treatment pathway is also adopted for adolescents (Department of Health, 2004).

Dialectical Behaviour Therapy (DBT) is one recommended psychological intervention (NICE, 2009). Originally designed by Marsha Linehan (1993a,b) to treat suicidal adults, it was found that alongside those suicidal adults, many were also diagnosed with BPD and subsequently DBT has become associated as a treatment of choice for BPD (NICE, 2009).

DBT is a multifaceted intervention. Based on Zen practice, it employs a dialectical structure which utilises behavioural techniques to encourage change. By incorporating skills to accept and change behaviour, the fundamental aim of DBT is to stop destructive behaviours through teaching and reinforcing adaptive skilful behaviours, to help promote long term change, and a better quality of life (Linehan, 1993a,b). It is the structure of DBT and the interplay of techniques employed between therapist and patient that allows for collaborative working with this difficult client group (Koerner & Dimeff, 2007).

DBT has four modes inherent in its design. These are: individual weekly psychotherapy sessions; skills training in a group on a weekly basis; telephone coaching and consultation, and therapist supervision/consultation (Robins & Rosenthal, 2011). Specifically these include:

- Individual psychotherapy – the main function of this modality is to increase the patient's motivation to change their behaviour and in doing so increase their capability by targeting their problematic behaviours and skill use. Through behavioural chain analysis, the problematic behaviour is discussed and suggestions made as to adaptive behaviours for future use (Feigenbaum, 2007). As old behaviours are often easier to fall back into, this input allows the patient to be challenged regarding their commitment and need to change. This

session is also fundamental in the therapist and patient being able to build a relationship, which can help ameliorate difficulties and prevent break down of therapy, which is a common concern with BPD patients (Linehan, 1993a,b).

- Group skills training – the main function of this is to increase the patient's capabilities by teaching and reinforcing adaptive skill use. Through adhering to the DBT programme (Linehan, 1993a,b), the group focus on four modules – i) emotion regulation where emotions are recognised and named, ii) distress tolerance which focuses on the teaching of skills to help manage distress and not engage in maladaptive behaviours, iii) interpersonal effectiveness which focuses on relationships with others and iv) mindfulness which is a core skill within DBT that works to keep the patient 'in the moment' using grounding techniques.

- Telephone consultation – the main function of this is to assist with generalising skills into the patient's own environment. This function helps support and problem solve with the patient, the day to day problems that arise as they arise (Linehan, 1993b). It not only provides support, but as it focuses on problem solving it is also a useful preventative measure for pending crisis. The presentation of this can vary between telephone contact, email etc, however the function remains the same.

- Therapist consultation/supervision – the main function is to help therapists to keep to the original model and also enhance their skills in delivering the therapy. Due to the nature of the difficulties experienced by those diagnosed with BPD, therapists can easily feel overwhelmed. During therapist consultation meetings, the therapists can explore the original model and ensure compliance and also use the whole team to problem solve ways of managing this client group (Feigenbaum, 2007).

Evidence of effectiveness of DBT

Adults

Adult effectiveness of DBT with BPD is promising. A number of randomised controlled trials (RCT) have been undertaken in an assortment of environments. For example, a number of studies have compared treatment as usual (TAU) against standard DBT, using the four modes previously discussed. All found evidence of DBT efficacy (e.g. Carter, Willcox, Lewin, Conrad, & Bendit, 2010; Linehan et al., 2006; Verheul et al., 2003). Similarly, other additional studies have found efficacy of DBT when compared with other treatments including therapy utilising a transference focused approach (Clarkin, Levy, Lenzenweger, & Kernberg, 2007), psychodynamic approaches plus medication (McMain, Guimond, Streiner, Cardish, & Links, 2009), community treatment delivered by specialist mental health professionals (Linehan et al., 2006) and a 12 step treatment based on validation (Linehan et al., 2002). Kliem, Kröger and Kosfelder (2010) recently completed a meta analysis exploring the effectiveness of DBT with adults, using a selection of both RCTs and non RCTs. They found evidence for the effectiveness of DBT, with good retention rates for treatment. However, they also found that overall when DBT is compared with specific treatments designed for BPD the effect size was not as large between the groups which were not specifically designed to treat BPD (Kliem et al., 2010).

In addition to research demonstrating DBT effectiveness for the treatment of adults with BPD, extensive non RCT studies have explored DBT effectiveness in a number of other arenas, with encouraging results. An example of these include: DBT with adult hospital inpatient facilities (Kroger et al., 2010), forensic environments (Berzins & Trestman, 2004) and mental health facilities based in the community (Pasieczny & Connor, 2011). Other studies have included; an RCT study exploring the efficacy of DBT when compared with Treatment as Usual (TAU) with a diagnosis of the cluster B personality disorders, including antisocial, histrionic, narcissist and BPD (Feigenbaum et al., 2012). Adapted DBT programmes have also demonstrated some efficacy using variations of the DBT model, including: individual and skills group DBT format with depression (Lynch, Morse, Mendelson, & Robins. 2003), DBT skills group training with adult Attention Deficit

Hyperactivity Disorder (Hirvikoski et al., 2011) and individual DBT therapy including skills review with eating disorders (Hill, Craighead, & Safer, 2011), to name but a few. For a comprehensive review of the extensive DBT research with adults, please see MacPherson, Cheavens and Fristad (2013). However, the evidence from the adult population with DBT is promising regarding the effectiveness of DBT with a number of disorders and in a variety of settings.

Adolescents

In light of the extensive evidence available demonstrating effectiveness of DBT with adults, it is not surprising that research has examined its use with adolescents demonstrating BPD symptoms and related conditions (MacPherson et al., 2013). As previously discussed diagnosis of BPD with adolescents is controversial. However, a number of studies have explored the effectiveness of DBT both with a diversity of difficulties and in a variety of settings, such as, forensic facilities (Shelton, Kesten, Zhang, & Trestman, 2010), psychiatric units (e.g. Sunseri, 2004) and day patient units (Charlton & Dykstra, 2011). Additional studies have also explored DBT with a variety of diagnoses (Goldstein, Axelson, Birmaher, & Brent, 2007), Anorexia Nervosa or Bulimia (Salbache-Andrae, Bohnekamp, Pfeiffer, Lehmkuhl, & Miller, 2008), Trichotillomania (Welch & Kim, 2012) and Oppositional Defiant Disorder (Nelson-Gray et al., 2006). All of these studies demonstrated effectiveness of DBT with the differing client groups, arguably as they all have a common theme of emotional instability, underpinning the condition, with which DBT has demonstrated effectiveness (MacPhearson et al., 2013). However, no RCT has currently been completed with the adolescent age group, therefore the robustness of the research to date remains questionable. Therefore the aim of this review was to collate the available literature on Dialectical Behaviour Therapy (DBT) and explore its effectiveness with adolescents presenting with symptoms of BPD.

Current Review justifications

In order to establish the need for this review, a scoping exercise was undertaken on the 10th February 2014 using the following databases: Cochrane Database of Systematic Reviews

(CDSR), Campbell Collaboration, Centre for Reviews and Dissemination (DARE) and PsychInfo.

A number of reviews were identified on DBT with *adults* with BPD and there have been a small number of literature reviews (e.g., Bloom, Woodward, Susmaras & Pantalone, 2012). However, no reviews were found which specifically explored the effectiveness of DBT with *adolescents* demonstrating BPD symptoms. Completed literature reviews have focused on psychological therapies for adolescents more generally, sometimes including DBT, and in relation to specific problematic behaviours such as self-harming behaviour. Whilst these could be attributed to BPD symptoms they are also standalone difficulties experienced by individuals who would not meet diagnostic criteria for BPD, or more generally areas of concern such as suicide prevention (Mujoomdar, Cimon, & Nkansah, 2009; Quinn, 2009).

Groves, Backer, van den Bosch and Miller (2012) completed a recent literature review of DBT with adolescents, looking at the diversity of the application of DBT to problematic areas in adolescents. With regards to DBT they found that although research so far has demonstrated promising results about the benefits of DBT with this target population, the lack of RCTs makes the evidence less robust. However, although Groves, Backer, van den Bosch and Miller (2012) looked at DBT efficacy with BPD adolescents, amongst other issues, there was no indication of how the literature was sourced or the scope of their review. In addition there is no indication that the studies were quality assessed. Therefore, due to this lack of systematic review specifically exploring DBT in adolescents demonstrating symptoms of BPD, and, in addition the recent revisions of DSM 5 (APA, 2013) as well as the publication of new research in this area, the need to collate this knowledge and quality assess that which is available is essential.

Aims and objective of this review

The objective of this review was to collate the available literature on Dialectical Behaviour Therapy (DBT) with adolescents presenting with symptoms of Borderline Personality Disorder (BPD), and to determine what factors might impact on treatment effectiveness.

This review aims to address the following question:

a) Can DBT demonstrate effectiveness in adolescents with BPD traits?
b) Does gender influence DBT effectiveness with adolescents with BPD traits?

Method

Sources of literature

Studies concerned with the intervention of DBT for treatment of adolescents with BPD symptoms, were identified through extensive searches using online databases, hand searching of journals and reference lists from previous research.

Within the review a number of databases were utilised including:

Web of Science (1980 to 2014, completed on 10th February 2014)

Ovid PsycInfo (1987 to February Week 2 2014, completed 10th February 2014)

Sage (Jan1985 to February 2014, completed 10th February 2014)

Cochrane (completed 10th February 2014)

Pubmed (completed 10th February 2014)

In addition to the above searches, bibliographies of retrieved papers were searched for studies relevant to the inclusion criteria. The internet search engine Google was also searched using terms such as "effectiveness of dialectical behaviour therapy with adolescents with borderline personality disorder". An expert in this area and involved extensively in DBT was also contacted to explore any known unpublished work in this area (Dr Michaela Swales contacted by email on 10th February 2014).

Search terms/syntax

From the initial searches where search terms were identified and alternative spellings relevant to different countries were identified, the term 'juvenile' was not included in the syntax as during the scoping stage it identified a significant amount of false research and none relevant to this study. Therefore the previously mentioned electronic databases were searched using the following search terms (Appendix 8 provides specific details of search terms and database outputs):

"Borderline Personality Disorder*" OR "BPD" OR "borderline personality" OR "Borderline trait*" OR "emerging borderline personality disorder" OR "borderline personality disorder symptoms"

AND

"Adolescent*" OR "adolescence*" OR "youth" OR "young people"

AND

"Dialectical Behaviour Therapy" OR "Dialectical Behavior Therapy" OR "DBT"

Inclusion Criteria

In order that relevant studies could be identified the PICO inclusion/exclusion criteria outlined below was applied.

- **Population:**

Adolescents under 19 years old. The World Health Organisation defines adolescence as 10 to 19 years (WHO, 2005) and adolescents aged 19 years are often still receiving treatment in CAMHS teams, especially if undergoing therapy.

- **Intervention:**

Studies had to examine DBT as a primary intervention.

- **Comparator:**

Studies using a comparator of Treatment As Usual (TAU) as provided through Child and Adolescent Mental Health (CAMHS), or pre and post intervention were also considered.

- **Outcome:**

Studies needed to initially identify BPD symptoms as part of their inclusion to the study and explore whether a reduction in BPD symptoms occurred following intervention.

Study design

Due to the paucity of research in this area, any study involving a comparison group was considered. Although RCT is considered the gold standard (Draper, 2006), due to the lack of these in this area, controlled trials and observational studies and those which involve pre and post intervention assessment, were also included.

Exclusion criteria

Case studies were excluded as they provide a more subjective overview. Editorial and non-English language papers were also excluded due to time restraints and lack of resources available for translation into English. Studies that did not explore BPD symptoms as part of their inclusion criteria were also excluded. This was in order that the review could focus on this area, rather than confounding research which looks at other difficulties and could result in the review being unwieldy and unfocused.

Study selection

Initial screening of the identified papers by title and abstract was manually undertaken in order to eliminate those studies which were obviously irrelevant. During this process duplicate studies were also removed as were those not available in English (although the abstract may have been in English). Following this process the remaining studies were scrutinised using the inclusion/exclusion criteria, those not meeting these criteria were again removed. Full text was obtained for the remaining studies and once again the inclusion/exclusion criteria implemented, any not meeting these criteria were removed.

Figure 1 highlights the process of selecting studies during this process and a list and reason for those studies excluded at the final stage can be found in Appendix 9.

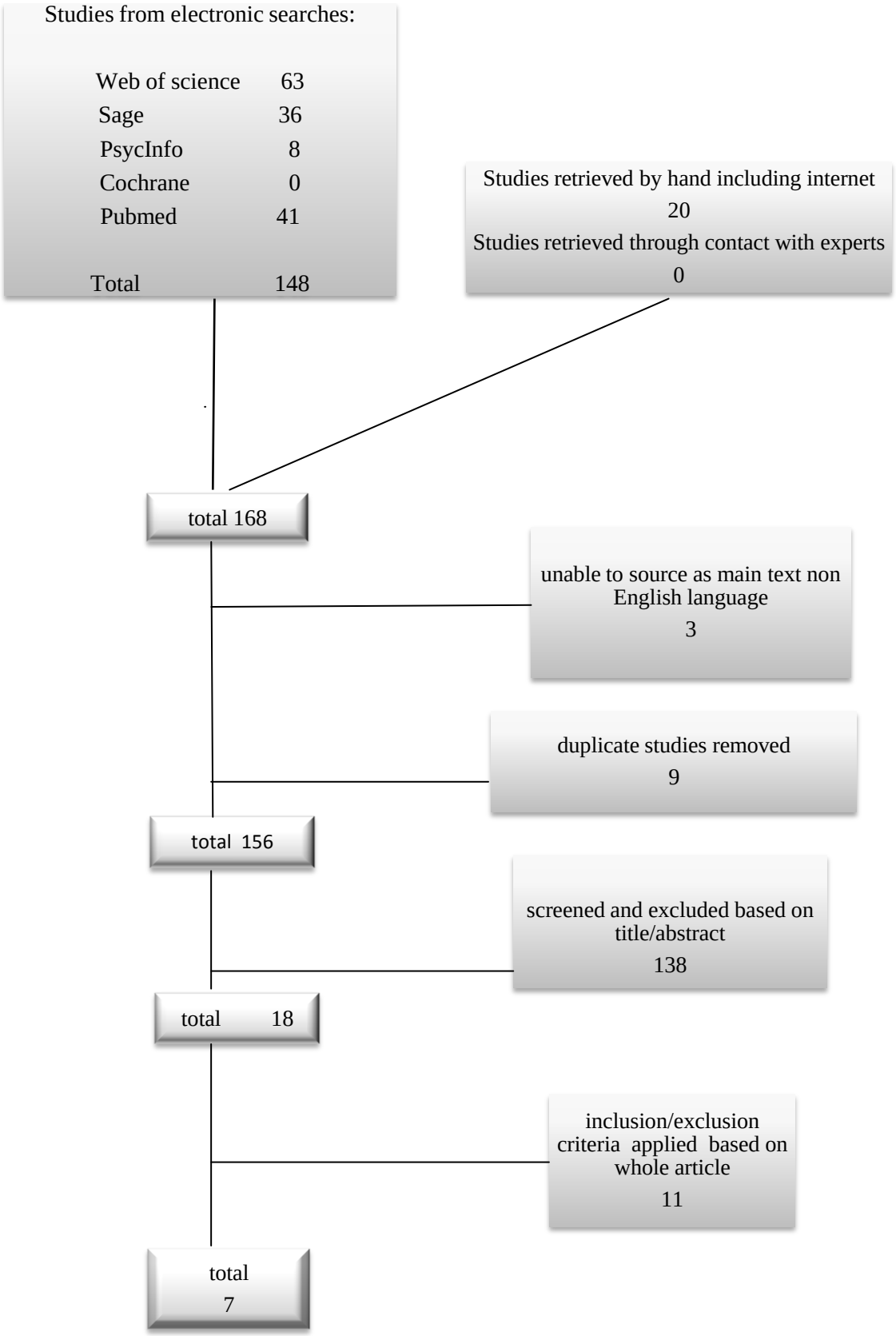

Figure 1: Flow chart of selection process

The studies which remained in the final stage were quality assessed using a pre defined checklist designed for this review. As quality assessment tools are less readily accessible for non RCT studies, many authors resort to creating their own (Egger, 2001). The quality assessment tools created here incorporated many of the principles identified by Mallen, Peat and Croft (2006) such as study design, blinding, drop outs and overall findings. In addition, many of the key issues identified using existing measures for assessing quality (National Critical Appraisal Skills Programme [CASP], 2004) were also used. An additional appraisal tool was created for use with the observational studies with no comparison group. This tool was again broadly adopted from CASP for cohort studies and case control studies (CASP, 2004, 2006) and many of the principles identified by Mallen et al., (2006). Both quality assessment measures can be found in Appendix 10.

In order to determine quality, a scoring system was considered. Despite their only being one quasi experimental study a scoring system was used of 0 (no), 1 (don't know) and 2 (yes). The total score was then calculated and for any 'don't know' items further information was sought where possible. A total of 40 points were available, although due to the paucity of research in this area no cut off point was chosen. The quality assessment measure for the other observational studies consisted of 9 questions and 2 initial screening questions; a total of 18 points were achievable. The initial cut off for these studies involved an answer of 'no' to the initial screening questions, indicating it was not appropriate to continue with the quality assessment. In order to compare the studies a conversion to 'weak', 'moderate' and 'strong' was completed. Again a scoring system was used of yes (2), unsure (1), no (0) and the total score was split into three ranges and converted into a label of 'weak' one to six points, 'moderate' seven to 12 points and 'strong' 13 to 18 points. Consideration was given to having just two categories 'strong' and 'weak' however on initial exploration of the data it was felt that either dichotomy over emphasised the rating system and provided little clarity as to the quality of the research.

To ensure consistency, this approach was monitored, by a second psychologist reviewing a random selection of the research papers, using the same pre-defined checklist. From the four randomly selected papers, no significant discrepancies were found and overall ratings were consistent. Discrepancies were discussed and an agreement formed on the most appropriate result. The nature of these discrepancies was minor and involved needing more information to make a judgement such as validity of measures of tests and the assessor's knowledge of the

test. On this occasion a search of the test and utility was undertaken to determine appropriateness. No discrepancies were found for overall scores and assessors agreed on all four research papers (100%).

Results

Following initial data exploration, seven studies met the inclusion criteria and underwent assessment of quality. Data extraction information can be found in Appendix 11 and quality assessment of studies can be found in Appendix 12. Table 10 provides a summary of the characteristics of each study and their strength and limitations.

Table 1: Characteristics of included Dialectical Behaviour Therapy (DBT) studies

Author (s), date and County	**Population and Design of study including inclusion criteria**	**Age range and % female participants Mean (SD)**	**Measurements used** (NB for brief description and validation were known see Appendix 13)	**DBT format adopted**	**Strengths**	**Limitations**	**Main findings regarding BPD (see Table 13 for specific data) and overall rating (weak, moderate, strong)**
Rathus and Miller (2002) USA	Quasi experimental 111 total DBT=29 TAU = 82 Completed DBT= 18 (62%) TAU= 33 (40%) Current suicidal ideation or suicide attempt <16 weeks BPD diagnosis or 3+ BPD symptoms	DBT Mean = 16.1 years (SD= 1.2) TAU Mean = 15 years (SD= 1.7) DBT= 93% female TAU =73% female	Beck Depression Inventory Harkavy-Asnis Suicide Survey (HASS) Life Problems Inventory Scale for Suicidal Ideation Symptom Checklist 90-Revisted Structured Clinical Interview for DSM IIIR Personality Disorders, Borderline Personality Disorder Module (SCID II) Schedule for Affective Disorders and Schizophrenia child version Treatment completion rating Number of psychiatric hospital admissions during treatment Number of suicide attempts during treatment	12 week programme TAU = twice weekly sessions including; individual weekly psychodynamic/supportive and family therapy sessions 12 week programme DBT= telephone coaching, family skills group, weekly individual therapy and therapist consultation	Assessment measures all well established and demonstrate reliability Assessment specifically exploring BPD symptoms using SCID II and those that met most criteria allocated to DBT Reduction in BPD symptoms post treatment although not measured or compared with TAU group	No random assignment to groups, query treatment effectiveness However, significant consideration at pre assessment to explore differences No post treatment assessment completed on TAU Pre and post measures for DBT group confined to self report Baseline assessment reported extremely	Significant reduction for DBT group on depression, hopelessness, self harm psychiatric symptoms and symptoms of borderline personality disorder Results found a substantial increase in global functioning (see table 13) Findings continued after intention to treat analysis **Moderate (26/40)**

Table 1: Characteristics of included Dialectical Behaviour Therapy (DBT) studies

						significant difference in number of participants in DBT treatment with BPD symptoms, therefore potential difficult to compare groups	
Trupin, Stewart, Beach and Boesky (2002) USA	Pre/post treatment plus control group All female participants incarcerated and placed in one of three treatment cottages: General and Mental Health Cottages employed DBT and General Population Cottage employed TAU. Unclear how 'cottage' choice is decided. General population Cottage (GPCD)=23 Mental Health Cottage (MHC)= 22	General population Cottage (GPCD)= 15.5 Mental Health Cottage (MHC)= 14.8 General Population Comparison Cottage (GPCC) TAU = 15.2 100% female No Mean	Behaviour logs (para suicidal attempts, aggressive behaviour, classroom disruptions, room confinements, school suspension. Child and Adolescent Functional Assessment Community Risk assessment Scores (CRA) Diagnostic Interview Schedule for children (DISC) Functional impairment rating using interviews with staff and reviews of charts Massachusetts Youth Screening Instrument (MAYSI) Scale (CAFAS) Structured interview assessing DSM IV	10 months DBT intervention TAU = educational, vocational and recreational activities. Group meetings to discuss rules and behaviour modification to reward compliance with rules. DBT and TAU = as above plus 1-2 weekly skills group	Validates measures used	No random assignment to groups Implementation of DBT was not consistent across units (80hours training in MHC vs 16 hours for GPCD) Range of difficulties within cottages, GPCC at baseline had significantly less problems	MHC showed significant reduction in problem areas (NSSI, aggressive behaviour, disruption in classroom) Staff on MHC also used less punitive approaches compared to the year previous **Weak (1/18)**

Table 1: Characteristics of included Dialectical Behaviour Therapy (DBT) studies

	General Population Comparison Cottage (GPCC) TAU 15 Completed: All (100%)	or SD provided					
James, Winmill, Anderson and Alfoadari (2011) UK	Pre and post assessment LAC/forensic 25 total 22 female 3 male Completed: 18(72%) completed 7 (28%) dropped out >6 months engaging in DSH	13 – 17 years (Mean = 15.5 years; SD = 1.5) 89% female	Attachment Style Questionnaire (ASQ) Beck Depression Inventory Beck Hopelessness Scale Children's Automatic Thoughts Scale (CATS) Clinical interview to examine number of incidents of self harm weekly Comprehensive Quality of Life Scale Global Assessment of Functioning (CGAS) Structured Clinical Interview for DSM IV (SCID II)	CAMHS DBT treatment package: Pre treatment Weekly skills group (2 hours) Weekly individual sessions (1 hour) Telephone coaching Carers training Additional motivational techniques employed from an CAMHS outreach model such as meeting in the community, providing meals and transport	The complex needs of participant group targeted through range of validated assessment measures. Post treatment analysis reported reduction in hopelessness and depression scores and reduced frequency of DSH. In addition found enhanced Global functioning. Findings maintained using intention to treat (ITT) analysis	No control group or random assignment Small number of participants overall (25) and high dropout (7) leaving total participant number significantly reduced (18), therefore raises caution to research findings	Reduction depression, hopelessness and self harm Results found an increase in global functioning Findings continued after intention to treat analysis **Moderate (12/18)**
Geddes, Dziurawiec and Lee (2013)	Pre and post test 6 participants 100% female	14-16 years (Mean 15.1 years;	Clinical Interview using DSM IV (SCID II) Neale Analysis of Reading Ability	Weekly multifamily skills training 1-2 weekly individual therapy	Completed 3 month follow up and continued to observe reduction	No randomised control group, therefore unable to state specific effectiveness of	Reduction in trauma as measured by TSCC, DSH, suicidal thoughts Maintained after 3 months

Table 1: Characteristics of included Dialectical Behaviour Therapy (DBT) studies

Australia	Completed: 4 (62%) 13 to 18 years Average cognitive ability and reading level established using Neale Analysis of Reading Ability DSH and suicidal ideation <12 months Minimum 3 BPD features identified by clinical interview using DSM IV	no SD provided)	Self Harm/Suicidal thoughts self report questionnaire designed for this research Modified Affective Control Scale for Adolescents (MACS-A). Trauma Symptom Checklist for Children (TSCC)	Phone coaching during working day Therapist consultation/supervision	Community based so less confounding variables found in inpatient settings Measures used were age appropriate and standardized were possible Attained to DBT adherence through random monitoring of taped sessions, in an attempt to ensure treatment fidelity Independent research collected pre and post data to help manage bias	DBT or whether more effective than treatment as usual Low participant numbers Used self report measures therefore query bias on demand characteristics	Improved emotion regulation post treatment **Weak (6/18)**
James, Taylor, Winmill and Alfoadari (2008) UK	Pre and post plus follow up 16 participants 100% female Completed: 14 (87.5%)	15- 18 years (Mean =16.4 years; SD = 1.2)	SCID II BDI BHS Global Assessment of Functioning (GAF) Clinical interview to monitor DSH	1 year programme (reviewed at 6 months) -weekly individual sessions and skills group Telephone coaching Casework to link with other agencies and family	Validated measures	Small sample size No control group Limited methodology description and blinding not	Reduction depression, hopelessness and DSH. . Improved general functioning **Moderate (8/18)**

Table 1: Characteristics of included Dialectical Behaviour Therapy (DBT) studies

	>6months severe and persistent DSH At least 5 symptoms bpd as measured by SCID II					clear within explanation	
Fleischhaker, Böhme, Sixt, Brück, Schneider, Schulz (2011) Germany	Pre and post plus follow up 12 100% female Completed: 9 (75%) In past 16 weeks NSSI or suicide attempt BPD diagnosis or a minimum of three of BPD symptoms	13 – 19 years (No Mean or SD provided)	Child Behaviour Checklist (CBCL) Clinical Global Impression Depression Inventory for Children and Adolescents (DIKJ) Global Assessment of Functioning (GAF) Inventory of Life Quality in Children and Adolescents Kiddie-SADS PL Lifetime parasuicide count (LPC) SCID-I SCID-II SCL90R Treatment History Interview (THI) Youth Self Report	16 – 24 weeks; individual therapy, multi family skills group therapy, telephone coaching, consult/supervision	Wide use of validated measures used DBT fidelity to the model	Design issues – no control group, potential bias by therapist completing assessment, Small number with drop rate 25% (3)	Improvement BPD symptoms: Pre-treatment: M=5.8 Post treatment: M= 2.75 Other reductions in NSSI and suicidal behaviour Reduction in number meeting BPD criteria (83% pre-treatment, 17% post treatment) **Moderate (12/18)**
Miller, Wyman, Huppert, Glassman and Rathus (2000) USA	Pre and post 33 total Completed: 27 completed data for analysis (82%) 23 (85%) female	14-19 (Mean = 16.7 years; no SD provided)	SCID II Life Problems Inventory DBT Skills Rating Scale for Adolescents	12 week programme; multifamily skills training, weekly individual, telephone coaching, consultation/supervision	Use of appropriate measures Low drop out DBT fidelity	Small sample size Use of self report	BPD symptoms showed most reduction post treatment in 4 areas – self confusion, impulsiveness, emotional instability and interpersonal problems **Moderate (12/18)**

Table 1: Characteristics of included Dialectical Behaviour Therapy (DBT) studies

						4 (15%) male self injury during previous 16 weeks or current suicidal ideation BPD diagnosis or minimum 3 BPD symptoms			

Data Synthesis

Overall quality of studies included in review

Five of the studies within this systematic review were rated as of 'moderate' quality (Fleischhaker et al., 2011; James et al., 2008; James et al., 2011; Miller et al., 2000; Rathus & Miller, 2002) and the other two studies were rated 'weak' (Geddes et al., 2013; Trupin et al., 2002). The scoring system was based on reviewing all of the information, including research design, any bias and other confounding issues which would impact the robustness of the study, whilst also considering the limited amount of research in this area. The difference between studies rated 'weak' and 'moderate' was primarily due to confounding variables not being adequately considered and accounted for and the credibility and ability to generalise the results, when considering the study as a whole.

Research design and descriptive analysis of included studies

Although three of the studies were carried out in the USA, other studies were conducted in the United Kingdom, Germany and Australia. This healthy mix of countries is useful in that it allows BPD and DBT in other cultures to be explored and offers additional information on the ability to generalise.

Sample size of participants through all of the studies was generally low, ranging from the six participants in Geddes et al. (2013) up to 111 participants in the Rathus and Miller (2002) study(the only study within this group with a control group). However, 82 of those were in the comparison treatment as usual group and 29 in the DBT group. Miller et al. (2000) had 33 participants for DBT and the other studies ranged from 12 to 45 participants engaged in DBT (Flieshhaker et al., 2011 n=12, James et al., 2011 n=25; James et al., 2008 n=16; Trupin et al., 2012 n=45). The number of participants who completed also varied between studies which impacted on the overall quality of the studies. Geddes et al. (2013) had four (62%) participants complete and Flieshhaker et al. (2011) had nine (75%) complete. James et al. (2011) had 18 (72%) complete, whilst Miller et al. (2000) had 27 (81%) complete and Rathus and Miller (2002) whilst starting with the largest participant size had 50 (62% DBT; 40% TAU) complete. Interestingly, James et al. (2008) had 14 (87.5%) complete, although they also included the data from the two participants that dropped out within their analysis. Trupin et al. (2012) was the only study in this review that finished with the same number of

participants. However, Trupin et al. (2012) was quality assessed within this review as weak, primarily due to significant factors which compromised the study overall such as over reliance on behavioural logs and self report. It should also be noted that within this study all participants were incarcerated and therefore this might have impacted compliance and completion of treatment.

The included studies predominately featured female participants. Some of this can be attributed to research design, for example Trupin et al. (2002) used incarcerated females and so male participants were not available, however this and the specific nature of their client group compromised the overall quality of their study. Miller et al. (2000) and James et al. (2011) were the only two studies within this review which included male participants. Unfortunately, both studies report little about the male participants, no comparisons are made with female counterparts, and little information is provided regarding their experience or the effectiveness of DBT. This may be because of the limited participant numbers and problems inherent with comparisons groups, but for whatever reason it occurred, it means that through this restricted study design, an opportunity has been missed to try and clarify the controversy of whether BPD diagnosis is gender biased or establish the effectiveness of DBT with this client group. However, the quality of both of these studies was adequate, which provides a useful foundation when considering further research in this area. Both studies also reported significant reductions in their target behaviours including BPD traits (Miller et al., 2000) and DSH, depression and hopelessness (James et al., 2011).

One of the most significant flaws of the research in this area is the lack of RCT and quasi experimental studies. The one quasi experimental study identified (Rathus & Miller, 2002) lacks design rigour. All of the other studies within this review used a pre and post treatment design (Fleischhaker et al., 2011; Geddes et al., 2013; James et al., 2008; James et al., 2011; Miller et al., 2000; Trupin et al., 2002). However, interestingly when considering effectiveness of DBT all of the studies showed reduction in behaviours symptoms at some level. The difficulty remains that, due to a lack of information provided by the studies, it is difficult to determine independently the level of change, and make comparisons between studies. For example Miller et al. (2000) report a reduction in BPD traits, but they do not provide within their paper the initial data pre-treatment to more thoroughly explore the change. This lack of information, coupled with the lack of comparison groups, presents

difficulties in deciding whether DBT influenced the change or whether other factors might be involved such as natural change over time and maturation.

Assessment measures

Although the included studies utilised a wide variety of assessment tools to assess BPD, only Trupin et al. (2002) used a structured interview based on DSM IV TR (APA, 2000) that is designed for use with children, the Diagnostic Interview Schedule for Children (DISC; Shaffer, Schwab, & Fisher, 1993). However, despite this the overall quality of their research was considered weak. The other six studies assessed BPD symptoms by using measures designed for adults or through the use of structured interviews based on DSM IV TR (APA, 2000) such as the SCID I or SCID II (Fleischhaker et al., 2011; Geddes et al., 2013; James et al., 2008; James et al., 2011; Miller et al., 2000; Rathus & Miller, 2002). All of the studies recognised the limitations of this in light of a lack of validated measures for adolescents, whilst reflecting on the controversy of diagnosis of BPD under 18 years and they complemented their assessment with a variety of other measures. However, unfortunately only a handful of measures were used across a number of studies which makes comparisons difficult; Table 2 presents these measures and the studies within this review which used them. It is noteworthy that from the measures used across the studies, during the quality assessment phase of this review, most of them were considered to be of moderate quality; only the study by Geddes et al. (2013) was compromised by other factors which impacted their overall study quality, despite using a range of measures they were of limited use considering BPD traits and were more specific to other issues such as trauma.

Table 2: measures used to assess adolescents difficulties

Behaviour/traits being assessed	Measure used	Author(s) who used measure in their study
Depression	The Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961)	James et al. (2008) James et al. (2011) Rathus and Miller, (2002)
	Depression Inventory for Children and Adolescents (DIKJ, 2000).	Fleischhaker et al. (2011)
Hopelessness	Beck Hopelessness Scale (BHS; Beck, Weissman, Lester & Texler, 1974	James et al. (2008) James et al. (2011)
Psychological and psychopathology symptoms	Symptom Checklist 90-Revised (SCL90R; Derogatis, 1977),	Fleischhaker et al. (2011) Rathus and Miller, (2002).

Exploring symptoms of BPD	The Life Problem Inventory (LPI: Rathus & Miller, 1995	Rathus and Miller, (2002) Miller et al., (2000).
Global Assessment to measure functioning	Global Assessment of Functioning (GAF, DSM IV TR, 2000)	Fleischhaker et al. (2011) and Geddes et al. (2013).

The other measures utilised reflect the aims of the individual studies. For example, Geddes et al. (2013) also used the Trauma Checklist (TSCC; Briere 1996) as they were exploring reduction of trauma through DBT treatment. Five of the studies reviewed used other measures to explore relevant aspects such as suicide attempts during treatment (Geddes et al., 2013; Rathus & Miller, 2002), monitoring of self-harm either through clinical interview (James et al., 2008; James et al., 2011), self-report measures (Geddes et al., 2013) or behaviour logs to monitor destructive behaviours such as aggression, para-suicidal behaviour, disruption in classroom (Trupin et al., 2002). From these studies which used other measures to explore other behaviours such as behaviour logs, clinical interview, two of the studies were rated as weak regarding overall quality (Geddes et al., 2013; Trupin et al., 2002). Therefore less objective measures appear to influence confidence with the design of a study, although it should be noted that all the studies used a combination of self-report and subjective measures alongside other measures.

DBT training and programme delivery

All of the seven studies used an adaptation of the DBT programme previously used and designed for adults. Adaptations varied across the studies, but most were modelled on Miller's proposals for adaptations (Miller et al., 1997, 2007). DBT with this client group continues to use many aspects of the standard DBT programme, including: weekly individual appointments; telephone coaching, and consultation/supervision for therapists involved in delivery. In addition group skills training was employed as per standard DBT. From these seven studies, four adopted a multi-family group skills approach rather than group skills training just for participants (Fleischhaker et al., 2011; Geddes et al., 2013; Miller et al., 2000; Rathus & Miller, 2002). Although a useful forum and technique, this structural difference between DBT programmes makes comparison difficult. A family approach to understanding and managing BPD symptoms using DBT skills is likely to reflect the ability to generalise into the everyday life of participants and their family. A participant who attends group skills training alone is expected to implement the skills within their family (with

support often by telephone coaching), but the family ethos and commitment is lacking. This lack of ability to compare does ultimately raise questions about the effectiveness of DBT and which components facilitate effectiveness overall.

An additional complication highlighted from this review is the lack of information in respect of the professional identity and variety in the amount of DBT training received by clinicians between the studies. It is assumed that all of the studies involved CAMHS clinicians given the age range of participants and although Geddes et al. (2013) clearly states this and James et al. (2011) allude to CAMHS involvement without offering specific details, none of the studies actively explore the professional identity of the therapists delivering DBT or explore any other therapeutic skills. Only three of the studies indicate the extent of DBT training for clinicians involved in their study and this lacks consistency. Geddes et al. (2013) describes the clinicians in their study having received one full day DBT training. In addition one of the clinicians had received five day intensive DBT training, whilst another clinician was also a lead for an adult DBT programme. In the Rathus and Miller (2002) study, clinicians had all received two day DBT training and in the Trupin et al. (2002) study, there is a significant disparity in DBT training for staff between comparison groups (80 hours compared to 16 hours). With such a wide discrepancy regarding training of clinicians within the studies, it is difficult to determine if this might have impacted on the effectiveness of DBT with BPD symptoms and produces potential for bias. It might be assumed that clinicians with more training might offer a more extensive DBT programme, utilising their knowledge and experience, than those who have received a minimal amount of training. This was identified by Trupin et al. (2002) within their study which demonstrated that the group which demonstrated the most effectiveness of DBT occurred in the unit that had the most DBT training of staff.

How BPD symptoms were measured

Regarding BPD symptoms, all of the studies assessed BPD symptoms prior to treatment. Five of the studies used a minimum of BPD assessed symptoms as inclusion criteria for their research. Four of these set the baseline at a minimum of three or more BPD symptoms (Fleischhaker et al., 2011; Geddes et al., 2013; Miller et al., 2000; Rathus & Miller, 2002) and one study set the minimum at five or more symptoms (James et al., 2011) in line with DSM IV TR (APA, 2000) diagnostic criteria for BPD. Interestingly the remaining two

studies, although screened for BPD symptoms at assessment, did not include them within their inclusion criteria (James et al., 2008; Trupin et al., 2002). None of the studies explained the rationale for their minimum BPD symptom rate, which is interesting considering the DSM IV TR (APA, 2000) diagnostic criteria being five from eight symptoms.

Only two studies explicitly explored BPD symptoms post treatment reporting a significant reduction in the four areas identified under the BPD umbrella – dysregulated emotions, interpersonal issues, self-confusion and impulsiveness (Miller et al., 2000; Rathus & Miller, 2002) and one study implied that it explored BPD symptoms through reporting improvement in emotional regulation, however it does not clearly define this as overall BPD symptoms (Geddes et al., 2013). However, within the Geddes et al. (2013) research, although all four areas (depression, emotions, anxiety, anger) covered did demonstrate a reduction, only one (anger) demonstrated a significant reduction and therefore improvement. However, all of the studies explored elements that would constitute BPD symptoms. Six of the studies reported a post treatment reduction in DSH or non-suicidal self-injury (Fleischhaker et al., 2011; Geddes et al., 2013; James et al., 2008; James et al., 2011; Rathus & Miller, 2002; Trupin et al., 2002). Comparisons between these studies are compromised by the measurement of DSH or suicidal behaviour. Rathus and Miller (2002) and James et al. (2008) both report a reduction in mean scores of DSH, but they do not provide specific numbers. Whilst Trupin et al. (2002) reported a reduction in self harm (NSSI) but do not separate this data from other target behaviours such as classroom disruption and aggression. Fleischacker et al. (2011), Geddes et al. (2013), James et al. (2011) all report reduction in DSH measured by a percentage as seen in Table 3.

Table 3: number of participants engaging in DSH pre and post DBT treatment

Author (s)	**Total number participants started study**	**Total number participants completed study**	**Pre treatment N (%) engaging in DSH based on number starting treatment**	**Post treatment N (%) engaging DSH based on total participants starting treatment***
Fleischhaker et al., (2011)	12	9 (75%)	9 (75%)	4 (33%)
Geddes et al., (2013)	6	4 (67%)	6 (100%)	5 (83%) stopped completely 1 (16%) engaged DSH monthly
James et al., (2011)	25	18 (72%)	18 (72%)	4 (16%)

*This includes participants who dropped out of therapy but not separately evaluated

Only three studies report figures for reduction in suicidal ideation or behaviour; Fleischhaker et al. (2011) reported that prior to treatment eight (67%) of participants engaged in suicidal behaviour and this reduced to no suicidal behaviour post treatment. Geddes et al. (2013) reported that pre treatment all six participants engaged in suicidal ideation and one attempted suicide, post treatment only one participant reported suicidal thoughts weekly and another patient reported monthly suicidal thoughts. Rathus and Miller (2002) evidenced a statistically significant reduction in group mean scores for suicidal ideation.

Three of the studies reported a reduction in depression and hopelessness (James et al., 2008; James et al., 2011; Rathus & Miller, 2002), whilst other specific symptoms only measured by individual studies demonstrated a reduction in aggression (Trupin et al., 2002), trauma (Geddes et al., 2013) and psychosocial adjustment (Fleischhaker et al., 2011). Miller et al. (2000) did not break down the elements of BPD and report them individually. All of the seven studies employed statistical analysis to support their findings; however due to the extensive ranges of participant sizes, it is questionable as to whether sample sizes would allow for robust analysis to take place. Table 4 provides information regarding the relevant findings in relation to BPD traits for the studies assessed for quality within this review.

Table 4: Information from relevant studies exploring effectiveness of DBT at reducing prominence of BPD traits

Author(s) and date	BPD traits	DBT pre treatment		DBT post treatment		Follow up (where appropriate)		Additional findings from study (where relevant)
		M	SD	M	SD	M	SD	
Rathus and Miller (2002) USA	Suicidal ideation	9.80	5.3	3.80[2]	4.6	Not applicable		
	BPD traits:							
	Life Problem Inventory (LPI) total	170.6	58.2	108.[1]	63.5			
	Self confusion	45.9	18.6	25.6[1]	18.1			
	Dysregulated emotions	45.5	16.3	27.2[1]	17.8			
	Interpersonal issues	41.8	18.7	29.0[1]	18.8			
	Impulsiveness	37.4	10.9	25.9[1]	12.3			
	Global functioning indicated by SCL90:							

Author(s) and date	BPD traits	DBT pre treatment M	DBT pre treatment SD	DBT post treatment M	DBT post treatment SD	Follow up (where appropriate) M	Follow up (where appropriate) SD	Additional findings from study (where relevant)
	Global severity Index	49.2	12.1	36.7[2]	16.9			
	Positive symptom distress index	53.5	12.7	40.8[6]	16.1			
Trupin, Stewart, Beach & Boesky (2002) USA	MHC group Behaviour problems (NSSI, aggression and disruption)	7	DNA	4[6]	DNA	Not applicable		
James, Winmill, Anderson & Alfoadari (2011) UK	DSH	DNA		2.4	2.2[4]	Not applicable		18 completed treatment, 14 stopped self harming altogether, one DSH monthly
	Depression	DNA		8.7	9.5[3]			
	Hopelessness	DNA		5.8	6.8[3]			
	Global functioning	DNA		21.7	19.1[4]			
Geddes, Dziurawiec & Lee (2013) Australia	TSCC:					3 months post treatment		
	Anxiety	58	9.01	48.5[2]	6.25	49[2]	9.06	
	Anger	68	11.63	58.17[2]	8.66	48	6.44	
	Depression	64	9.21	58.33[2]	9.70	51.4[2]	11.78	
	Dissociation	63	16.9	61.17	18.43	54.6	9.5	
	PTS	60	10.71	53.83[2]	10.61	49.6[2]	12.34	
	MACS-A (emotion regulation) Fear of :							
	anger	3.86	0.69	3.73[2]	0.45			
	depression	4.07	1.24	3.33	0.91			
	anxiety	4.57	1.27	3.32	1.22			
	emotion	4.00	0.83	3.40	0.55			
	DSH							All participants (6) regular engaged in DSH pre treatment, five of six stopped DSH during treatment and other participant reduced DSH by 50%
	Suicidal thoughts							Prior to treatment 6 participants daily suicidal

Author(s) and date	BPD traits	DBT pre treatment M SD	DBT post treatment M SD	Follow up (where appropriate) M SD	Additional findings from study (where relevant)
					thoughts and one participant attempted suicide Post treatment one reported continued suicidal thoughts weekly, one participant monthly suicidal thoughts
James, Taylor, Winmill & Alfoadari (2008) UK	DSH Hopelessness (BHS) Depression (BDI) Global functioning (GAF)	3.0 2.0 15.3 4.6 42.0 9.6 53.8 14.8	1.0 1.5 8.6 4.6 29.5 19.3 74.5 9.5	Time frame follow up not specified 0.53[4] 0.89 6.4[4] 8.7 20.4[4] 17.3 80.3[4] 10.6	
Fleischhaker, Böhme, Sixt, Brück, Schneider, Schulz (2011) Germany	BPD symptoms BPD criteria Suicidal behaviour NSSI	5.8 1.3 10 DNA patients (83%)	DNA DNA	1 year after treatment 2.75 1.9[5] 2 DNA patients (17%)	Pre-treatment 8 (67%) engaged in suicidal behaviour compared to 0 (100%) post treatment Pre-treatment 9 (75%) engaged NSSI post therapy 4 (33%) continued NSSI behaviour
Miller, Wyman, Huppert, Glassman & Rathus (2000)	LPI overall score Confusion of self Impulsiveness Emotional dysregulation Interpersonal difficulties	DNA DNA DNA DNA DNA	54.86[4] 51.36 15.07[4] 16.67 11.61[4] 12.12 7.21[4] 13.32 10.96[7] 15.09	Not applicable	

[1]P<0.01 [2] P<0.05 [3]p=0.002 [4] p<0.001 [5] p=0.003 [6] p=0.01 [7] p=0.001 DNA = data not available from research paper

Other bias issues

The issue of bias is inherent through all of the studies within this systematic review. Only one study had an independent researcher/assessor (Geddes et al., 2013), all of the other studies used therapists or individuals involved in the treatment. In addition, a lack of randomisation in the only quasi experimental study by Rathus and Miller (2002) and no control group for the other studies (Fleischhaker et al., 2011; Geddes et al., 2013; James et al., 2008; James et al., 2011; Miller et al., 2000; Trupin et al., 2002) compromises the potential effectiveness of DBT as it does not account for other variables such as natural passage of time and spontaneous improvement, potentially not related to DBT.

With all of the seven studies, it is also not clear whether bias was a contributing factor as there is no evidence presented that participants were blind to the research study treatment. Within four of the studies participants consented and committed prior to treatment (Fleishhaker et al., 2011; Geddes et al., 2013; James et al., 2008; James et al., 2010), for the other studies it is not clear but is assumed from the description within the research paper that participants were aware of DBT, especially considering the length of treatment (Miller et al., 2000; Rathus & Miller, 2002; Trupin et al., 2002). Therefore there is potential that participant bias may have influenced the findings as they would have been aware they were in treatment and being assessed especially when considering the wealth of assessment measures used during their treatment. Without consideration for this bias, it is possible that any improvement might be due to the placebo of being in treatment as opposed to DBT itself.

Discussion

The aim of this review was to explore the effectiveness of DBT and adolescents demonstrating BPD traits. However, this review has highlighted that although DBT has demonstrated effectiveness with adolescents with BPD traits, there remains a paucity of robust research in this area, in particular when considering gender differences in effectiveness.

Following a search of the available literature and inclusion of relevant research with regards to the aim of this systematic review, seven studies were assessed for quality. None were rated ‘good’, five were rated as ‘moderate’ and two rated as ‘weak’. One of the main differences

between those rated weak and moderate concerned the extent of confounding variables impacting on the study. It should be noted that the difference for all the studies between ratings was marginal and sample size or poor design methodology would have influenced overall score. Adherence to DBT was a strong factor as was using a variety of appropriate measures to explore difficulties and these were found primarily within those demonstrating the most quality.

This systematic review aimed to answer the following questions:

a) Can DBT demonstrate effectiveness with adolescents with BPD traits?

With regards to exploring the effectiveness of DBT with adolescents demonstrating BPD traits, the studies reviewed would suggest that DBT was effective. All of the studies demonstrated some effectiveness whether that is based on the reduction of target behaviours such as self-harm or other areas identified difficulties such as anger. However, the results are somewhat confusing, as not all studies explored BPD traits as a cluster of difficulties instead exploring the difficulties as stand-alone problems.

Only two studies explicitly explored BPD symptoms post treatment (Miller et al., 2000; Rathus & Miller, 2002). Both of these studies used twelve week DBT treatment models including individual sessions, group sessions, telephone coaching and family sessions. Both studies explored BPD traits using the Life Problems Inventory (LPI), which explores areas such as self-confusion, impulsiveness and dysregulated emotions, and both reported a significant reduction in BPD symptoms, therefore suggesting effectiveness of DBT. One study implied that it explored BPD symptoms (Geddes et al., 2013), but did not use the LPI instead using measures to explore specific emotions such as anxiety, anger. However, they also adopted a similar model to those previously discussed and demonstrated some significant reduction in BPD symptoms including anxiety and anger.

Fleischhaker et al. (2011) re-assessed BPD symptoms one year after treatment, but did not provide any information from their study about what they included within these symptoms and they did not provide data immediately post DBT treatment for comparison; therefore their findings compromise the validity of the DBT effectiveness. The remaining studies explored individual symptoms which could contribute to a diagnosis of BPD; in isolation

they would not meet diagnostic criteria. However, all of the seven studies reported effectiveness of DBT with the identified difficulties, such as DSH. This lack of directly comparable results means that conclusions from this review need to be considered with caution. It is promising that from the three studies which did compare post treatment BPD symptoms they all reported a positive effect of DBT. However, low participant numbers is a significant factor for at least two of the studies (Fleischhaker et al., 2011; Geddes et al., 2013) and needs consideration.

Common themes relating to effectiveness is limited due to the heterogeneity of the studies involved, although, all of the studies did apply a core DBT package including individual sessions, group work, telephone coaching, some of the studies also included family work (Fleischhaker, et al., 2011; Geddes, et al., 2013; Miller et al., 2000 Rathus & Miller, 2002). However, when compared to those studies that did not include family work (James et al., 2008; James et al., 2011), the reduction in problematic behaviours is not significantly greater, suggesting that the family work component does not impact on effectiveness. The length of treatment also varied between all of the studies, ranging from twelve weeks (e.g. Miller et al., 2000) to one year (e.g. James et al., 2008), with some studies not indicating length of treatment (Geddes et al., 2013). However, three studies (James et al., 2008; James et al., 2011; Miller et al., 2000) shared the largest significance in reduction of behaviours, despite programme length between these studies being significantly different. In addition the Miller et al. (2000) study was the only one from these three involving family work.

The range of participants within the studies was also quite different; ranging from the lowest at six participants (Geddes, et al., 2013) to the largest including 111 participants (Rathus & Miller, 2002). However, it is also noteworthy that these studies which demonstrated the largest significant reduction in BPD behaviours (James et al., 2008 N=16; James et al., 2011 N=25; Miller et al., 2000 N=33) also had a relatively similar number of participants which fell mid-range when comparing participants numbers across all of the studies.

Although this review has demonstrated DBT is effective with adolescents demonstrating BPD traits, due to the heterogeneity of the studies included and the lack of consistency regarding whether BPD as a whole is being explored or individual difficulties, it is difficult to ascertain from this review what the salient factors might be that impact upon this effectiveness.

b) Does gender influence DBT effectiveness with adolescents with BPD traits?

With regards to the identified aim of whether gender influences effectiveness of DBT with adolescents demonstrating BPD traits, the difficulty with drawing robust conclusions from the seven quality assessed studies is the lack of comparative studies. As only two studies included male participants (James et al., 2011; Miller et al., 2000) and as both report very little or no information regarding gender or effectiveness of DBT, comparisons cannot be made within this review. Although common themes cannot be explored due to a lack of information, within the context of all of their participants both studies reported a significant reduction in BPD traits (Miller et al., 2000) and DSH, depression and hopelessness (James et al., 2011) highlighting the importance for future research to more explicitly explore and record the impact of gender regarding this area.

There is extensive recognition of the need for RCTs and as a result two such studies are currently underway, but the results from these are not expected for some time. Quasi experimental studies have attempted to demonstrate the usefulness of DBT with this age group, but with small sample sizes and questionable methodology used, it is impossible to say with confidence that any reduction in BPD symptoms is due solely, or primarily to DBT.

Despite this there continues to be some evidence that individual symptoms of BPD or clusters of symptoms meeting diagnostic criteria can be positively influenced following intervention, although there appears to be a tendency for research to exaggerate the benefits and not adequately highlight the limitations in research design. Small sample size, predominantly female participants and significant drop out rates are inherent through the studies which add to the limitations of the available research to date. In addition, other variations designed to encourage compliance and retention such as an outreach model being adopted (James et al., 2011) complicate the validity of the studies and reliability of the findings. The lack of comparison groups also compromises the findings and it is difficult to ascertain whether positive effects seen within studies were due to DBT or occurred naturally due to the passage of time, or might be unrelated to DBT altogether. In addition in the one study which did adopt a quasi experimental design with a comparison group, no random assignment was employed thereby undermining the credibility of the study. Rathus and Miller (2002)

highlighted this discrepancy in their study and also the differing presentation of difficulties, with the DBT group demonstrating more severe difficulties than the treat as usual group.

The majority of the studies eligible for this review did not include any follow up, so any long term effects of DBT cannot be fully explored. However Geddes et al., (2013) reviewed at three months and found the positive effects of DBT had been maintained. Fleischhaker et al. (2011) reviewed after one year and reported continued reduction in behaviours, which they attributed to DBT. James et al. (2008) also reviewed but did not state within what time frame, however again they reported continued positive effect. Two studies also completed intention to treat analysis (James et al., 2011; Rathus & Miller, 2002) and found that the therapeutic benefits sustained with time. However, due to the lack of comparison groups within these studies, it is impossible to confidently state that positive change was as a result of DBT or some other factor e.g. natural reduction of symptoms.

Limitations and future considerations

A comprehensive search was completed in this area but this process was not without its own bias. As this area lacks a significant amount of literature, it is hoped that all relevant literature was analysed. However, due to time restraints and available resources this review only included research in English. Three papers were not located due to them being in German with no translated versions being readily available. From the abstract it was possible that they might have been included in the inclusion for quality assessment if they had been available for translation. It is also likely that there might be other literature in this area not within the public or academic domain that was not revealed during the course of this research. An expert in this area was contacted and whilst they had knowledge of several RCT studies currently being undertaken, they were not aware of any other un-published research which might be relevant. However, with the growing interest in this area, in particular with the recognition that BPD can occur under 18 years, it is quite likely that there are other studies completed not accessed here. However, it is likely that given this is such a small area of investigation that any studies completed are likely to be limited in number and the methodological design remains problematic.

Further bias is also evident in the selection of studies within this review. Pre-defined inclusion criteria were used to establish relevant studies; within this review studies which used BPD symptoms as their inclusion criteria were targeted. There are however a number of

other studies, some of which would have been included under the BPD umbrella such as self-harm, but which were excluded as they focussed on standalone difficulties and did not explicitly reference BPD. BPD symptoms were specifically targeted due to the need to differentiate the research types and, as DBT is commonly being investigated with a number of complaints, the need for clarity is essential. However, it is possible that researchers when exploring effectiveness of DBT with stand alone problems such as self-harm had considered this under the BPD umbrella but not explicitly stated as such. A further difficulty with the studies within this review is that no validated measure exists which specifically explores and identifies borderline personality disorder for patients under the age of eighteen. As such adult measures continue to be used, with recognition that they are not designed for adolescents. Future research alongside DBT effectiveness would also benefit from producing a validated measure for BPD under the age of eighteen. However, with regards to the seven studies examined, there are a wealth of methodological flaws which make comparison difficult. Although all of the studies used the SCID as a baseline measure for BPD symptoms, which is useful considering it is guided by DSM. Only a handful of measures were used across a limited number of studies. The heterogeneous presentation of BPD confounds this already problematic area, and through a lack of consistency amongst research of the use of appropriate measures, in addition to the lack of age appropriate measures, further highlights the difficulties in this review. Therefore this means that comparisons between studies can only hesitantly be made. In addition, the measures employed were largely self-report and so inevitably raises question on reliability and potential for bias, especially as participants were all involved in mental health services at some level.

It is also difficult to generalise the results from this study to the wider population or even the DBT population. Although controversial, research does suggest that BPD diagnosis in adolescents is comparable to adults (Miller et al., 2008) with similarity also in regard to the symptoms they present with (e.g. Chanen et al., 2007). However, reliability of the diagnosis continuing into adulthood is more questionable. Miller et al. (2008) argued that in some adolescents with less severe BPD symptoms, diagnosis is less stable over time and this has been supported more recently by arguments that stability of diagnosis in adults is not stable (Zanarini et al., 2010). However, adult DBT research has demonstrated more sophistication in research design and therefore more rigour and confidence in the findings. Possibly through the wealth of research available in comparison, there is greater confidence in the

effectiveness of DBT with adult BPD suffers. However, there appears to be an assumption that DBT will also work with adolescents BPD sufferers, which although the research to date does tentatively support, it lacks the rigour and robustness to confidently argue this.

Conclusion and recommendations

Although this review has a number of limitations, it is clear that the area of DBT and adolescents sorely needs an injection of robust research. A confounding issue may be the controversy about BPD in adolescents, which could impact on the agreement as to how DBT effectiveness is being measured. However, despite this, the results from this systematic review indicate that DBT can demonstrate some effectiveness with adolescents with BPD traits and stand-alone problems such as depression and self-harm. This is important when considering clinical practice and availability of services for this challenging and chaotic group, which can easily exhaust resources. With adolescents in mind, access to suitable treatment at an early stage could help prevent the need for additional services or risk of accessing the criminal justice arena due to the nature of the behaviours inherent in BPD. This coupled with an increase in the utility of DBT to a number of settings in particular forensic environments, makes DBT a versatile therapeutic treatment option that could be utilised in a number of settings.

In addition to the clinical implications, this review highlights the need for future research exploring effectiveness of DBT with adolescents with BPD traits generally and also more specifically as to whether a gender difference occurs. Future research would benefit from reviewing the difficulties of previous research and providing good quality studies which help provide confidence in the findings and the potential to generalise the findings, which will also help clinical practice to develop with a sound theoretical underpinning. From this review it is apparent that although participant numbers are important, the quality of the study can be maintained through appropriate assessment measures and a clear rationale of what is being assessed within a robust research design. A number of studies have explored DBT in specific areas such as eating disorders, suicide prevention or in specific locations such as forensic population, which again is promising. However, until issues regarding the measurement of BPD symptoms, consistency in programme delivery (full DBT with all components or variations on the programme), and other potential confounding issues such as level of DBT training are resolved, this area of research remains limited. With this in mind, research

regarding effectiveness of DBT in reducing BPD traits is showing some promise for the future and is at an exciting juncture in its development.

This chapter has explored the effectiveness of DBT with adolescents demonstrating BPD traits and also whether gender differences occur regarding DBT effectiveness with adolescents. Chapter 3 aims to explore more explicitly whether gender influences diagnosis of BPD in adolescents and DBT as a treatment pathway.

Chapter 3

Research

The impact of gender on the assessment and treatment of adolescents displaying emerging borderline personality disorder traits

Abstract

The aim of this study was to gain a better understanding and insight into gender bias and diagnosis of borderline personality disorder (BPD) and referral pathways by clinicians who work with an adolescent client group within Child and Adolescent Mental Health Services (CAMHS). The sample comprised of 193 clinicians actively working with this client group, covering the main representation of disciplines found within CAMHS teams (psychiatry, psychology, nurse, therapists).

Clinicians were presented with a case vignette of a young person displaying sufficient symptoms to warrant a diagnosis of BPD. However, although otherwise identical, the gender of the client in the vignette was manipulated (i.e. male, female, not stated) by vignettes randomly assigned using Survey Monkey. 71 (36.8%) participants received the female vignette, 63 (32.6%) received the male vignette and 59 (30.6%) received the vignette where gender was not stated.

The female vignette was significantly more likely to lead to the clinician giving a diagnosis of BPD. In addition, treatment pathways were explored to determine if gender within the diagnosis of BPD would result in a referral to Dialectical Behaviour Therapy (DBT), the treatment of choice for BPD as recommended by National Institute for Health and Clinical Excellence (NICE, 2009), or whether other treatments would be suggested. This hypothesis was not supported with gender not being shown to influence referral to DBT. However, it was found that a diagnosis of BPD did influence referral to DBT.

These findings are discussed in light of other limited research in this area, but also the most recent edition of DSM 5, which although it did not reduce the age of diagnosis of BPD as was anticipated, does provide potential for further research in this area.

Introduction

Borderline Personality Disorder (BPD) is one of the most commonly diagnosed personality disorders (APA, 2000). Originally proposed in the USA by Adolph Stern in 1938 as a description for a group of individuals who did not fit into one single group and instead appeared to 'border' on other groups (National Collaborating Centre for Mental Health, 2009), in 1975, Kernberg presented 'borderline personality organization' representing a cluster of behaviours which oscillated from apparent control and management to complete despair and emotional instability. Subsequently in 1978 Gunderson and Kolb identified behaviours they attributed to borderline personality disorder, which essentially shaped diagnostic criteria (National Collaborating Centre for Mental Health, 2009). However, despite years of debate on the characteristics of BPD, a formal diagnostic classification did not exist until 1980 and the publication of DSM III (American Psychiatric Association, 1980).

BPD is one of the personality disorders recently reviewed for inclusion in DSM 5 (www.dsm5.org); although keeping the same diagnostic criteria as DSM IV TR (APA, 2000) similarly the National Institute for Clinical Excellence (NICE) describes this personality disorder as relating to individuals who have significant difficulty managing how they view themselves and their relationships with others. Through the instability of their self-image and rapid cycling mood coupled with impulsive behaviour (such as self-harming), they are at higher risk of completed suicide (NICE, 2009; Paris, 2009). Often due to large number of impairments associated with BPD, and the high levels of co morbidity with other disorders (Pompili, Girardi, Ruberto, & Taterelli, 2005), this personality disorder is considered a serious mental illness, with significant implications for both the individual (Miller, 2008), available services (Bender, 2001) and financial burden on society (Pickard, 2011).

Evaluating the prevalence of BPD has also attracted limited research (NICE, 2009). Research completed has estimated ranges from one to two percent in the general population (Oldham, 2004), whilst other research by Gross and colleagues (Gross et al., 2002) predicted that in the general adult population the rate of occurrence was estimated to be between four and six percent. Similar estimates were also suggested by Grant et al. (2008) who reported prevelance rates of 5.8%. This rate increases within mental health services; in the United

States community mental health services it is estimated at approximately ten percent and in inpatient services, it is approximately twenty percent (DSM IV TR; APA, 2000).

Diagnosis of Personality Disorder in adolescence

As discussed earlier in this thesis, despite general agreement that BPD onset often occurs during adolescence, there remains a reluctance to diagnose personality disorder for those aged less than eighteen years (Miller et al., 2008). DSM IV TR (APA, 2000) does provide caveats for diagnosis under eighteen years; however, this is accompanied by caution about personality changes which can occur between adolescence and adulthood. Additional arguments for why diagnosis of BPD should not be made under eighteen years of age include the risk of stigmatisation by using such a pejorative label (Miller et al., 2008), and the similarities often perceived between 'normal' adolescent problematic behaviour that are also seen in BPD (NICE, 2009). However, despite a recognition that there is questionable validity in diagnosing BPD in adolescence (Bleiberg, 1994), Miller and colleagues argue that BPD is in fact perceivable in adolescents and has similar characteristics to those observed in the adult population (Miller et al., 2008).

Although research exploring this group is limited, dated and hampered by methodological issues such as low participant numbers (Miller et al., 2008). Bornovalova, Hicks, Iacono and McGue (2009) found that some adolescents effectively grow out of the diagnosis, therefore supporting the argument that BPD symptoms can decline as adulthood is embraced. However, other studies have also found that there are a core group of BPD characteristics which appear to remain stable over time. Chabrol and colleagues (Chabrol et al., 2004) used factor analysis to explore clusters of individual items which resulted in core groups of BPD characteristics. They reported that although there are some overarching group features of BPD that demonstrated stability for adolescents, such as a group for interpersonal instability; the individual items that make up these groups can change with time. For example within the interpersonal instability group, individual items which might change independently from one another include feeling suffocated in relationships and the desire to break close relationships (Chabrol, et al., 2004). Similar findings were also reported by previous research completed by Garnet et al. (1994) who found that within an inpatient BPD population, at follow up two years later thirty-three percent of the sample continued to meet BPD criteria, although again individual symptoms within the overarching diagnosis had changed, the core factors

remained consistent. The author is unaware of any research which has looked into the difference between the group that essentially grew out of BPD and those that remain stable over time. However, by acknowledging the existence of BPD in adolescents, this will facilitate more appropriate research and treatment opportunities which might fill these research gaps (Miller et al., 2008).

Gender bias and BPD

Both with regard to BPD and personality disorders more generally, the topic of gender bias in the diagnosis of patients has continued to create controversy (Pilkonis, Hallquist, Morse, & Stepp, 2011). Since the 1980s and the standardisation of personality disorder criteria within DSM, researchers have debated whether gender bias exists and factors which might influence this (Sansone & Sansone, 2011). Despite the continued debate over the years, actual research in this area remains limited and much of this is over three decades old. Whilst there continues to be interest in this area, to date this new interest has added little to resolve the controversy, instead merely adding to contradictory research accumulated over the years.

Epidemiological studies have also provided contradictory results regarding different prevalence rates of BPD between males and females (Banzhaf et al., 2012). Using epidemiological data from around the world, they reported that evidence supporting differences between males and females in terms of the prevalence of BPD have been limited and inconsistent. In the United States, Grant et al. (2008) in their Wave 2 National Epidemiological Survey on Alcohol and Related Conditions reported very similar BPD prevalence rates for males (5.6%) and females (5.2%). Similarly, in the United Kingdom, Coid and colleagues also found a greater prevalence for BPD with males (1%) than females (0.4%; Coid, Yang, Tyrer, Roberts, & Ullrich, 2006). However, in Norway, Torgersen, Kringlen and Cramer (2001) reported greater prevalence of BPD in women with a rate of 0.9% in women compared to 0.4% in males, whilst Widiger and Trull (1993) identified seventy-five unbiased studies exploring BPD diagnosis rates in females and reported that on average 76% females were diagnosed with BPD. However, others have argued that any suggestion that females have a greater prevalence of BPD is due to sampling bias as opposed to any pure gender differences (Skodol & Bender, 2003).

In addition to the exploration of gender differences within epidemiological studies, there have also been a number of pieces of other research that have similarly found contradictory results. Some have found a subtle, but not significant bias towards females being diagnosed more frequently with BPD (e.g. Adler, Drake, & Teague, 1990; Giacalone, 1997; Henry & Cohen, 1983). Although a significant difference was not found in this research, other researchers have used these results as a means of supporting their hypothesis of gender bias in BPD diagnosis. Justification for using research to support their hypotheses has primarily focused around arguments about methodological issues and the DSM case vignettes used were of a training standard of diagnosis and therefore this unequivocally met diagnosis criteria. Additionally the study explored a number of personality disorders within one context, therefore potentially confusing the participant and influencing their decision making (Becker & Lamb, 1995).

Becker and Lamb (1994) produced the first research that argued a significant difference between gender and diagnosis. Through using case vignettes they asked participants to rate on a scale the degree they felt the vignette met diagnostic criteria for BPD. They explored gender bias, reporting a significant difference with females diagnosed with BPD more than males. This research is also the only one which specifically explored whether diagnosis varied between particular profession groups, recruiting 360 randomly selected psychologists, psychiatrists and social workers for their study. Information within the research is limited as this was not the primary focus of their research; however Becker and Lamb (1994) reported that although no significant difference was found between the professional groups overall, psychologists and psychiatrists aged less than 48 years old diagnosed BPD more frequently than their social worker counterparts. In addition, they also reported that therapists, who engaged mostly in direct clinical practice, also diagnosed BPD more frequently in the case studies used. Becker and Lamb (1994) suggest that this is because these clinicians are more familiar with BPD and therefore recognise the symptoms more easily. However, they also suggest that as participants less than 48 years old were prone to providing higher rates of diagnosis, that this might reflect a trend of popularity for diagnosis compared to their older counterparts. As this is the only research available that explores professional groups and diagnosis, comparisons are not possible with other studies. However, this research provides some interesting observations which would benefit from greater exploration to determine

whether differences do occur regarding professional identity, in addition to whether gender has any influence.

Although this study by Becker and Lamb (1995) was criticised for using a scale rather than a yes or no diagnosis dichotomy (Garb, 1995), Becker and Lamb (1995) justified their methodology by arguing that using a diagnostic scale resembles more closely clinical practice and decision making prior to diagnosis, rather than a simple yes or no dichotomy and others have supported the use of scales, on the basis that a dichotomous approach allows little consideration for scores just above or below the threshold, therefore arguing that a scaled approach is more sensitive when measuring BPD characteristics (Clark, 2009). In addition, Becker and Lamb (1995) argue that other research which did not find a gender bias in diagnosis was due to a number of other methodological issues; including the research not being designed to explore gender bias in BPD (e.g., Ford & Widigier, 1989) or using case studies directly from DSM and therefore met all criteria for diagnosis, which would then influence the decision making of the participant, especially when asked to diagnose in a yes or no format (e.g., Henry & Cohen, 1983).

More recent research has continued to argue that there is little evidence that adult females are diagnosed more frequently with BPD. Woodward, Taft, Gordon and Meis (2009) used case vignettes to explore responses of 119 psychologists to determine gender bias by either patient or clinician and the diagnosis of BPD. They reported that no gender bias was found either by patients or clinicians when diagnosing BPD. Davis (2010) also argued that no consistent difference in diagnosis was found in their study. However, just as the field of personality disorder and gender bias was swaying towards a lack of substantial evidence to confirm its existence, recent research by Liebman and Burnette (2013) exploring counter transference and BPD through vignettes, again reported a gender bias similar to that reported by Becker and Lamb (1994). From their sample they reported that a statistical significance gender difference occurred in diagnosis of BPD, with 80% of female vignettes receiving a BPD diagnosis compared to 73% of males. Essentially despite over thirty years of research, the clinical and anecdotal evidence remains fascinating but inconclusive.

Despite the lack of consensus regarding gender differences and diagnosis, a number of factors have been explored to explain any gender bias. Kaplan (1983) hypothesises that bias might occur due to the diagnostic criteria used being DSM III, a manual she argued was created by

males and may therefore present 'masculine based assumptions' of healthy and unhealthy behaviours as diagnostic criteria, which may then bias diagnosis. Essentially, Kaplan (1983) argues that females are culturally encouraged to adopt certain behaviours, such as submissiveness and are then penalised by the diagnostic criteria for having them. However, this argument remains controversial and others (e.g., Kass, Spitzer, & Williams, 1983) argue that this fails to explain why the prevalence of other personality disorders is higher amongst males. However, as the main diagnostic manual used by clinicians, the DSM is hugely relevant when considering this area. Although the DSM IV TR (APA, 2000) makes no direct link between personality disorder and gender, it does state that six disorders (narcissistic, antisocial, obsessive-compulsive, schizotypal, paranoid and schizoid) are more likely to be seen in males, whereas the other three (dependent, histrionic and borderline) are more likely to be seen in females. Indeed, it is suggested that BPD is 75% more common in females (APA, 2000). However, this is obviously contradictory to other research that has found no gender difference in diagnosis of BPD (e.g., Davis, 2010; Woodward et al., 2009).

In clinical practice a diagnosis of BPD is more readily seen in females presenting to CAMHS services than males. In the author's experience, males diagnosed with BPD tend to appear more feminine in their behaviour, often mirroring that seen in their female BPD counterparts. This concept of stereotypical behaviours, although restricted to clinical observations in this case, has been explored by others in addition to sampling bias. Bjorklund (2006) argued that the apparent gender bias might be as a result of bias in sampling, where females are both more likely to attract mental health services through their behaviour or to actively seek support. The argument being that if more females present at a clinic, then it is likely that more females will receive a diagnosis. Tomko, Trull, Wood and Sher (2013), support this argument, reporting a rate of 74.9% of those diagnosed who received mental health intervention through outpatient facilities, which is similar to previous research of 73% (Hörz, Zanarini, Frankenburg, Riech, & Fitzmaurice, 2010). Tomko et al., (2013) reported that the interesting aspect of this was not so much that such a high percentage sought treatment via outpatients and mental health clinicians, but that when compared to crisis interventions or inpatient facilities the rate was much lower at 15%. These findings support the suggestion that bias could occur due to greater prevalence in a particular setting. However, others have argued that if this were the case, then regardless of the type of diagnosis, females would be

more frequently represented in most areas due to their greater prevalence, which has not been found (Widiger & Weissman, 1991).

An additional explanation has involved naturally occurring differences between males and females which are defined by culture and cultural underpinnings (Bjorklund, 2006), or naturally occurring gender differences in behaviour (Barnow et al., 2007). Maddux and Winstead (2005) argued that depending on the presentation of behaviours that are considered to be gender specific, this is likely to influence which personality disorder diagnosis is made. Similarily, Wirth and Bodenhausen (2009) suggested that when behaviour is considered gender typical, then societal reactions are likely to be more detrimental and a less sympathetic response may be anticipated (e.g., alcohol abuse is considered to be a more male typical behaviour, whilst depression is seen as a female typical behaviour). In their study they reported that behaviours deemed typical of that gender, were viewed more negatively and less sympathetically, then if occurring in the opposite sex (Wirth & Bodenhausen, 2009). In addition, others have argued that clinicians naturally perceive female specific behaviours as more debilitating than male appropriate behaviours and therefore they have a tendency to be rated more detrimentally (Lopez, 1989).

In an attempt to consolidate the conflicting arguments regarding gender bias and BPD diagnosis, Sansone and Sansone (2011) concluded, after reviewing the previous research, that although BPD is relatively equally distributed between adult males and females, there are subtly different behaviours and these cumulate into more gendered presentations, which could influence diagnosis (Sansone & Sansone, 2011). However, with regards to adolescents with BPD research is somewhat limited but has found that although female adolescents present with more internalising behaviours similar to adult females diagnosed with BPD, adolescent males who met diagnostic criteria for BPD, demonstrated more externalised symptoms such as anti social and aggressive behaviours (Bradley, Conklin, & Westen, 2005). Although the research with adolescents and their behaviours is limited and largely dated, this coupled with the recent review involving adults adds a whole new perspective to the argument, as it suggests it is the behaviour exhibited rather than any diagnosis, which marks the difference between genders. Whilst this is a possible explanation, it does not explain why research such as Liebman and Burnette (2013), using case vignettes that have only altered gender in their methodology, with all behaviours remaining the same, have found a difference in diagnosis. If this were the case, the behaviour within the vignette would in essence need to

be all female typical behaviours, which would then lead to more female diagnosis. Although a number of attempts have been made to explain the complexities of personality disorder, in essence the controversy remains fundamental and firm conclusions elusive.

Treatment of Borderline Personality Disorder

The National Institute for Health and Clinical Excellence (NICE) provides guidelines on the clinical practice for care and treatment for specific conditions within the NHS, including appropriate treatments, therapies and medicines. NICE currently recommend the treatment pathway for BPD to include psychological and pharmacological medication (NICE, 2009). Due to a lack of sophisticated empirical evidence regarding treatment of adolescents with BPD, this adult pathway of treatment is also adopted for young people and adolescents by Child and Adolescent Mental Health Services (CAMHS) who oversee their care (Department of Health, 2004).

Dialectical Behaviour Therapy (DBT) is one such psychological treatment, designed to work with those diagnosed with BPD (Linehan, 1993a,b). DBT works on a 'skills deficit model', arguing that if individuals had the skills to manage their emotions and interactions with others, they would be less likely to engage in destructive behaviours such as self-harm and suicide (Linehan, 1993b). DBT has grown in popularity with evidence of effectiveness being demonstrated (Leichsenring, Leibling, Kruse, New, & Leweke, 2011) and adapted for the adolescent BPD population (Miller, Rathus, & Linehan, 2007).

However, although many would agree that DBT is a viable treatment choice for BPD (e.g. Leichsenring et al., 2011) other factors might also influence treatment options. Goodman and colleagues (2010) in their study reported that males diagnosed with BPD are less likely to utilise psychotherapy services including DBT, than females. However they also found that males are more likely to access rehabilitation services for drugs and alcohol. This is one possible explanation as to why females undertake treatment such as DBT more readily than males. However, there remains a lack of certainty about whether this bias is client driven or might occur due to the referring clinician and their judgments regarding gender and appropriate treatment options.

To date, research regarding personality disorders has primarily focused on the adult population, largely due to guidance regarding the diagnosis of personality disorder being preferable post 18 years of age, when personality is considered more likely to have developed (NICE, 2009). However, with growing recognition that personality disorder characteristics are often present during adolescence (Bradley, Conklin, & Western, 2005) and the implementation with adolescents of psychological treatments for treating BPD (such as DBT), the need for further exploration into potential gender bias is paramount; in particular as similarly to adults, young people presenting with borderline personality disorder traits often present to a variety of services and have poor long term prognosis rates (Chanen, McCutcheon, Jovev, Jackson, & McGorry, 2007).

Research aims and Hypotheses

Therefore, the aim of this study is to explore how professionals working with adolescents might be affected by gender in their assessment and judgement about BPD and appropriate treatment pathways. Recent research has supported the application of this diagnosis to adolescents (Chanen & Kaess, 2012) and with the production of DSM 5 (APA, 2013), the need for more research into the controversial area of personality disorder, in particular diagnosis of BPD in adolescents, has also been recognised. Through understanding gender issues in relation to BPD and adolescence and also exploring treatment pathways, improved strategies can be used to ensure adolescents presenting at CAMHS receive appropriate care.

Specific hypotheses are:

1. Professional diagnosis of emerging BPD in adolescents will score higher if the individual is female, than if they are male or gender unknown.

2. Professionals will be more likely to refer females with borderline personality traits to dialectical behaviour therapy services than males.

Methodology

Participants:

Participants were recruited from a multi-disciplinary group of clinicians from one large Foundation Trust, which covered a number of counties. Within this Trust there is a strong academic and clinical interest in emerging BPD in adolescents and Dialectical Behaviour Therapy (DBT) as an appropriate treatment. Training and workshops regarding DBT are available which all professional groups attend, this also includes the recognition of BPD using DSM IV TR (2000) for unqualified staff or those less confident in personality disorder and also DBT treatment pathways available within the trust. From the 478 staff asked to participate, 193 (40%) completed the questionnaire.

Of the completed questionnaires, 143 were female participants (74%) and 50 male participants (26%). The participants of this study represented the multi-disciplinary group of clinicians who actively work with adolescents with moderate to severe behavioural and mental health difficulties, within Child and Adolescent Mental Health Services (CAMHS; Table 5). It also captured those clinicians that have experience with this client group and whom are likely to be involved in identification of borderline personality traits or the diagnosis of such problems.

Table 5: Descriptive statistics for professional identity of participants and also collapsed groups

Professional Identity	Frequency N	Percent %	Collapsed group Name and total in group N (%)
Psychology	24	12.4	Psychology/ Psychiatry Total 50 (25.9%)
Psychiatry	26	13.5	
Psychotherapist	5	2.6	Therapists Total 45 (23.3%)
Social worker	18	9.3	
Occupational Therapist	14	7.3	
Family therapist	8	4.1	
Nurse	77	39.9	Nurse Total 77 (39.9%)
Other (e.g., health care assistant, Support worker)	21	10.9	Other Total 21 (10.9%)
Total	**193**	**100**	**100**

Procedure

A global email with a link to Survey Monkey was sent from the researcher's email address to groups of professionals provided by the human resources department of the NHS Foundation Trust i.e. all child and adolescent clinicians. This email explained the research and invited participation. Participants were informed that it was not compulsory that they participate and that there would be no impact on them if they chose not to. They were also informed that all responses would be anonymous (Appendix 1). All participants were given a brief explanation of the research, but in order to prevent bias to the information provided prior to the study did not specify the exact nature of the study. For this same reason, participants were asked not to discuss their answers with other clinicians (Appendix 2).

Following giving consent to take part via Survey Monkey (Appendix 3), participants were provided with further information about the study including; an information sheet asking for demographic details such as age, gender, ethnicity, professional identity, how long they have worked with this group, area of work (Appendix 4). This information was not evaluated as this was outside of the remit of this study and was intended to be more of an introduction prior to the vignette. Participants were then asked to read a vignette (Appendix 5) and indicate:

a) If they thought the young person has borderline personality disorder and would warrant a diagnosis as such using DSM IV TR
b) How confident they were in that decision of BPD for that vignette
c) What treatment pathway they would be likely to recommend

Following completion of the survey, participants were thanked and informed of where they could access information about the research or contact the researcher or their supervisor (Appendix 6). Any completed surveys by professionals who were not current clinicians were removed. This was to help in case any surveys were inadvertently received by non-clinical staff.

Measures

Case vignettes were used within this research. Previous research has also used vignettes both when exploring BPD and other types of personality disorder and a similar style was adopted. Although, Crosby and Sprock (2004) have criticised the use of vignettes, stating that they are less useful then direct clinical observations as they restrict the amount of information available and essentially force the participant to make a decision. They also recognised that despite these limitations, using vignettes does allow the ability to manipulate factors for research purposes. Therefore, vignettes were used within this study as the primary aim was to ensure that all participants received the same information, which would then allow for gender to be manipulated.

The vignette was designed using DSM IV TR (2000) criteria and clinical experience. Self-harm and suicidality were not included within the vignette. This decision was based on observations by the author in clinical practice that professionals can be biased in mis-diagnosing these behaviours as evidence of BPD, even when criteria would not be met for a BPD diagnosis. Through using clinical experiences to help design the vignette, the aim was that this would be as realistic as possible and a scenario that clinicians would be familiar with.

Vignettes

The case vignette had three versions (Appendix 5): with only gender altered in each (one female, one male, one gender not specified). Each vignette contained enough information to meet diagnostic levels within the DSM IV TR; however, reference to areas which would be particularly obvious to BPD, such as suicidal behaviour, were omitted. A group of three clinicians working within the adult estate of the same trust and with experience of working with borderline personality disorder were asked to form a working party to assist with reviewing the vignettes to ensure that the content was valid, without being overtly obvious. These clinicians covered the professions being targeted for the research (psychiatry, psychology and nursing) and the vignettes were felt to be valid and suitable for this purpose. A pilot study was not used at this time as it was felt that this focus group could provide sufficient feedback on the usefulness of the vignettes without reducing the potential number of participants and reducing power.

Assignment of case vignettes was random, facilitated by Survey Monkey redirecting the participant to one of three vignettes. Participants were asked to rate on a 7 point Likert scale, the presence of BPD (1 disorder not present to 7, disorder present) and how confident they felt in their diagnosis of the presence of BPD (1 not confident to 7, very confident). In addition, they were asked to identify to which treatment pathway they would refer the patient.

This methodology was chosen for a number of reasons; primarily the aim was to link in with previous research, which was felt to be dated but had yielded some interesting results worthy of further consideration. However, although consideration was given to utilising qualitative methods, within the time frame available and access to an available pool of participants, a more thorough representation of a multi-disciplinary team could be obtained through the approach adopted. In addition, due to the limited research in this area, it is intended that this study acts as a starting point for future research to more thoroughly explore aspects of whether gender influences diagnosis of BPD in adolescents and treatment choices.

Ethical Considerations

This study was undertaken according to the ethical principles of conducting research by the University of Birmingham and in accordance with the NHS Foundation Trust permission to conduct research with NHS staff. The British Psychological Society (BPS) and Health Care Professions Council (HCPC) codes of conduct were also utilised within this research study. Approval for this research was obtained on 14th May 2013 by the University's ethics committee (Ref: ERN_13-0339) and by Oxford Health NHS foundation Trust on 20th May 2013.

The fundamental ethical considerations within this study involved ensuring anonymity of the participants and ensuring voluntary participation. On accessing the survey monkey site, all participants were asked to consent to taking part in this research and asked to provide a unique ID number should they wish to withdraw their answers before an allocated date. They were informed that it was not compulsory that they participate and that there would be no impact on them if they chose not to. They were also informed that all responses would be anonymous. All participants were given a brief explanation of the research, but in order to prevent bias the information provided prior to the study did not specify the exact nature of the study. No psychological or physical harm to participants as a consequence of completing this

survey was anticipated, in particular as the information used within the vignettes was that widely available to clinicians.

Data Analysis

Based on a between-subjects 3 X 2 factorial ANOVA, Power analysis using G*Power indicated a minimum sample size of 159 for an effect size of .25 and power of .80.

Two hypotheses were explored during this research study, each being one tailed. Descriptive statistics were obtained and additional analysis completed to explore further areas of interest.

Due to the low number of participants in some of the groups (e.g., profession), additional analysis utilised collapsing groups to ensure cell counts could be suitably appropriate for statistical analysis (Field, 2000). Additional analysis using the collapsed groups was only undertaken when sample size was suitably appropriate to allow for analysis.

The primary statistical analysis utilised was a 3 x 2 factorial ANOVA to explore differences between gender of a patient in the vignette and diagnosis of BPD. In addition, logistic regression was used to explore the likelihood that a positive diagnosis of BPD for females would result in a referral to DBT.

Additional analysis used ANOVA and Chi square to explore other areas of interest such as whether professional identity made a difference to diagnosis of BPD and confidence within that diagnosis.

Results

From the 193 vignettes, 56 (29%) of the responses said the vignette met diagnostic criteria for borderline personality disorder (BPD). Within this, 34 (61%) of the vignettes were female, 10 (18%) were male and 12 (21%) were neutral. From these vignettes which met diagnostic criteria, 30 (65%) of the female vignettes would have been referred to DBT, 7 (15%) of the male vignettes and 9 (20%) of the neutral vignettes would have been referred onto DBT (Table 6).

Table 6: Descriptive statistics for the total number of vignettes (N=193) and the breakdown of those vignettes diagnosed with BPD and those referred onto DBT

Gender of vignette	Total number of vignettes		Number diagnosed with BPD		Number referred onto DBT	
	N	(%)	N	(%)	N	(%)
Female	71	(37%)	34	(61%)	30	(65%)
Male	63	(33%)	10	(18%)	7	(15%)
Neutral	59	(30%)	12	(21%)	9	(20%)
Total	193	(100%)	56	(100%)	46	(100%)

Accuracy of scoring on vignettes

As all the vignettes met the criteria for diagnosis of BPD, further analysis was used to explore whether the results were biased in that all participants essentially reported BPD diagnosis as present.

Hypothesis 1: Professional diagnosis of emerging BPD in adolescents will be higher if the individual is female, than if they are male or gender unknown.

A one way analysis of variance (ANOVA) showed that when comparing diagnosis of BPD across the three gender vignettes, there was a significant main effect $F(2,190) = 12.89$, $p<0.01$. A Bonferroni post hoc analysis revealed that when the female vignette was used, participants statistically significantly diagnosed them more often with BPD (M=3.89, SD=1.87), compared to when the male vignette was used (M=2.52, SD=1.58) or neutral vignette (M=3.00, SD=1.44).

To allow for analysis following violation of linear assumption, the predictor variable of BPD diagnosis was collapsed into 'no diagnosis' or 'yes diagnosis', rather than the original 7 point scale. This erred on the side of caution, with those providing a neutral response (4) classified as no diagnosis. Therefore, scores of 1 to 4 on the scale were collapsed into a 'no diagnosis' and scores 5 to 7 scored into a 'yes diagnosis'. Logistic regression was used to determine the effect of gender on BPD diagnosis.

The logistic regression was statistically significant $\chi2\ (1) = 13.097$, $p < .0005$. The model explained 9% (Nagelkerke R^2) of the variance in the BPD diagnosis and correctly classified 70.5% of cases. The predictor variable, gender of the patient in the vignette was statistically

significant (Table 7). For each unit reduction in the independent variable, gender within vignette, the odds of meeting diagnostic criteria for BPD increased by 2.01 times.

Table 7: Logistic regression of predictor variable and BPD diagnosis

						95% C.I. For EXP (B)	
	B	**S.E.**	**Wald**	**Sig.**	**Exp (B)**	**Lower**	**Upper**
Gender within vignette	-*.731*	.211	12.021	.000	.481	.318	.728
Constant	*.474*	.401	1.397	.176	1.607		

R^2= .03 (Hosmer & Lemeshow), .07 (Cox & Snell), .09 (Nagelkerke)

Hypothesis 2: Professionals will be more likely to refer females with borderline personality traits to dialectical behaviour therapy services than males.

Logistic regression was used to determine the effect of BPD diagnosis, confidence of the diagnosis and gender of the vignette used, on the likelihood of participants being referred down the treatment pathway of DBT.

A Chi square test for association was conducted between gender and BPD diagnosis and a statistically significant association was found between gender and BPD diagnosis, $\chi 2$ (2) = 18.302, $p < .0005$. There was a moderately strong association between gender and BPD diagnosis, φ=.308, p<.0005. Figure 2 presents this variation across gender.

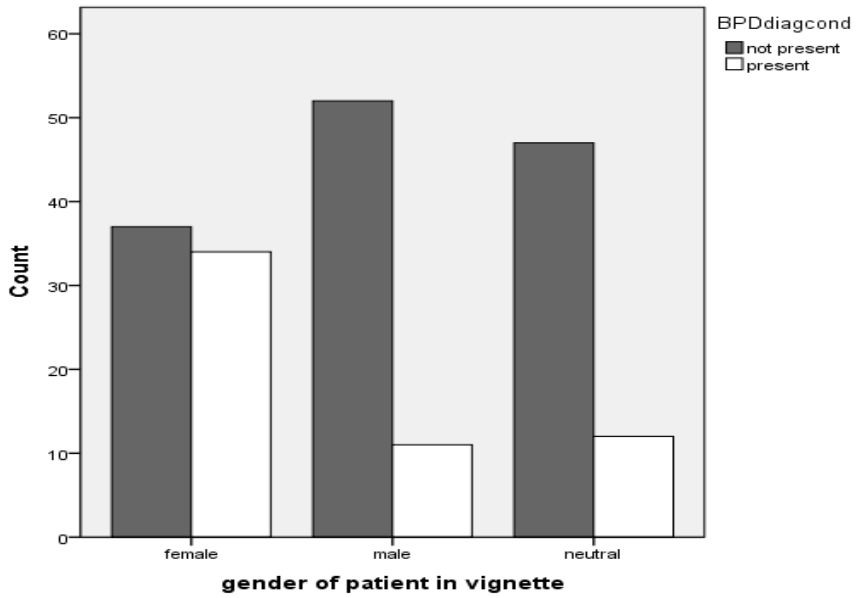

Figure 2: Variance across the three gender vignettes and BPD diagnosis

The logistic regression was statistically significant $\chi 2$ (2) = 97.896, $p < .0005$. The model explained 57% (Nagelkerke R^2) of the variance in the DBT treatment and correctly classified 88.1% of cases. Of the predictor variables only one (BPD diagnosis) was statistically significant (Table 8). BPD diagnosis was 39.4 times more likely to result in DBT treatment being selected. Gender of the patient in the vignette was not associated with referral to DBT treatment.

Table 8: Logistic regression of predictor variables and DBT treatment

						95% C.I.	For EXP (B)
	B	**S.E.**	**Wald**	**Sig.**	**Exp (B)**	**Lower**	**Upper**
Gender within vignette	*-.197*	.280	.497	.481	.821	.474	1.421
BPD diagnosis condensed	*3.673*	.461	63.362	.000	39.357	15.933	97.220
Constant	*-5.615*	.945	35.326	.000	.004		

R^2= .41 (Hosmer & Lemeshow), .39 (Cox & Snell), .57 (Nagelkerke)

Additional findings:

The impact of professional identity

ANOVA showed that when comparing professional identity of the participants across the BPD diagnosis, a significant main effect was discovered ($F(7,185)=2.74$, $p=0.01$). A Bonferroni post hoc analysis revealed that the professional identify group labelled 'other' which included support workers and health care assistants, statistically significantly diagnosed more participants with BPD than the psychology group ($M=-1.64$, $SD=.50$).

For additional exploration of the data, professional identies were callapsed into relevant groups (as outlined in Table 1). The groups are self-explanatory, however within the group labelled 'therapists' this included all participants who indicated their professional identity as psychotherapist, family therapist, social worker, occupational therapist. The group labelled 'other' was predominantly unqualified members of staff working in clinical roles, such as support worker.

Using data from the collapsed groups, association was explored using Cramérs V, no association was found between professional identity and vignette type (male, female or neutral; $V=.103$, $p=.666$).

The Likert scales used to rate presence of BPD diagnosis and confidence were also collapsed to allow further analysis. The scores that fell into the '4' category were explored, to determine which group they should fall into. This was primarily based on the participants decision regarding treatment pathway; assuming that a score of 4 would be considered ambivalent, if they chose a treatment pathway other than DBT (as the majority did) then this would allocate them to the 'no diagnosis' or 'not at all confident' group. Table 9 provides the breakdown of these groups and relevant descriptive statistics.

Table 9: Descriptive statistics relating to the collapsing of scores on the Likert scale for BPD diagnosis and confidence

Scale	Mean	Median	SD	N
BPD diagnosis				
'No diagnosis' (Likert score 1-4)	*2.25*	2	.95	137
'Yes diagnosis' (Likert score 5-7)	*5.43*	5	.57	56
Confidence of score				
'Not at all confident' (Likert 1-4)	*2.61*	3	1.06	130
'very confident' (Likert 5-7)	*5.30*	5	.56	63

Confidence of the participants based on professional identity

When exploring participants confidence in the identification of BPD, using a one way analysis of variance (ANOVA), no significant effect was revealed ($F(2,187)=.77$, $p=.46$).

Additional analysis also found a number of associations between the collapsed groups of professional identity and diagnosis of BPD ($V=.250$, $p=.007$). Specifically Table 6 highlights that the groups 'psychology/psychiatry' and 'therapists' had a tendency to under diagnose the vignette. 'Nurses' overall were more balanced in their diagnoses, although they did also under diagnose. However, the group labelled 'other', which comprised of unqualified support workers, had a greater tendency to over diagnose BPD. Table 10 breaks down each professional identity and their diagnostic scores of BPD relevant for their vignette received.

Table 10: Professional identity by diagnosis of BPD

	Professional Identity				
BPD diagnosis	**Psychology/Psychiatry**	**Therapists**	**Nurse**	**Other**	**Total**
'No diagnosis' (Likert score 1-4)	40 (21%)	32 (16%)	56 (29%)	9 (5%)	137 (71%)
'Yes diagnosis' (Likert score 5-7)	10 (5%)	13 (7%)	21 (11%)	12 (6%)	56 (29%)
Total	50 (26%)	45 (23%)	77 (40%)	21 (11%)	193 (100%)

BPD diagnosis and confidence of rating

Using Cramérs V an association was found between BPD diagnosis and confidence of the participant (V= .384, p=.000). Table 7 highlights this association.

Table 11: BPD diagnosis by confidence

	Confidence Scale		
BPD diagnosis	'Not at all confident' (Likert 1-4)	'very confident' (Likert 5-7)	Total
'No diagnosis' (Likert score 1-4)	111 (58%)	26 (13%)	137 (71%)
'Yes diagnosis' (Likert score 5-7)	19 (10%)	37 (19%)	56 (29%)
Total	130 (68%)	63 (32%)	193 (100%)

Table 11 shows that participants were very confident when making diagnosis of BPD from the vignettes. When stating no diagnosis they reported not being confident of their decision regarding diagnosis (or lack of it).

Additional analysis was also used to explore this further. Due to the number of calculations employed, Bonferroni correction meant that a significance rate of 0.01 was used. In addition, the data was collapsed into qualified and unqualified staff, to allow for additional analysis.

Confidence of the rating by participants

Further analysis explored the collapsed groups of professionals by identity and their confidence in their diagnosis of BPD found no significant association. When considering the gender of the patient in the vignette and confidence of the diagnosis given by the participant, again no significant association was found.

Discussion

This study aimed to explore gender bias in the recognition and potential for diagnosis of Borderline Personality Disorder (BPD) in adolescents and in addition to explore whether clinicians would refer to a recommended treatment pathway if they felt diagnostic criteria were met or whether other factors such as gender might influence this decision.

Gender bias in diagnosis of BPD

The results from this study continue to add to the controversy of gender bias and diagnosis. Consistent with previous research (e.g. Becker & Lamb, 1994; Liebman & Burnette, 2013) this research does suggest that gender bias did occur during diagnosis. Despite the same presentation, clinicians within this study indicated that females demonstrated enough symptoms to warrant a diagnosis of borderline personality disorder, however, for the male group and the neutral gender group, they under estimated BPD. The neutral gender group was the next most likely to be diagnosed with BPD after the female group. The male vignette received significantly less diagnosis than the other groups. This supports the argument of the existence of gender bias, as ultimately were gender to make no difference then this disparity would be unlikely to be seen. However, it is also interesting to note that the gender of the patient is likely to bear some influence on diagnosis; as if this were not the case then it would be assumed that the neutral group would be least likely to be diagnosed.

It is arguable that as all vignettes met DSM IV TR BPD diagnostic criteria, participants might have indicated yes for all the vignettes and so creating a ceiling effect, where responses are biased by all participants answering positively to diagnosis. If this were the case, then it is arguable that the value of the independent variable would be compromised (Cramer & Howitt, 2005) However, although this was not the case in this study, as not all vignettes were diagnosed with BPD, it also does not explain the variation observed between the vignettes across the diagnosis. Clustering around female diagnosis and males not being diagnosed can clearly be seen, however the scores overall appear relatively distributed evenly. If it were the case that all participants had in essence said 'yes' to diagnosis, no distribution would be observed. This is also the same for male participants, the clustering around the lack of symptoms to warrant a BPD diagnosis, does not suggest that the reverse happened and participants just indicated no presence of BPD. Some participants did in fact report they felt a diagnosis was warranted, thus allowing for the variation to occur.

Findings such as these are not unique and explanations have been offered to try and explain why this might be the case. Sansone and Sansone (2011) argued if participants received instructions which advised them to refer to DSM IV TR (2000) this might have influenced their decision making. Especially if as others have suggested, that DSM is biased then arguably their decisions would be biased. This is indeed possible; however as the main reference guide used by many clinicians it is difficult to determine how this might be effectively managed and within this study the participants were advised they could use any appropriate material as necessary (e.g. DSM IV TR, SCID etc), therefore it remains unlikely that DSM bias alone explains these findings.

Others have argued that bias might occur due to sampling and greater attendance of females at mental health services (Tomko et al, 2013). However, this should not have impacted on this research as it was not relevant to presentation at mental health services, but based on the vignettes. It is possible that an assumption was made by clinicians based on clinical experience of more females seeking mental health services. However, Widiger and Weissman (1991) previously found that even in mental health environments, females were no more represented than males. Therefore, this would not support the concept that greater attendance would impact diagnostic rates.

Another possible explanation provided by Wirth and Bodenhausen (2009) concerns gender typical behaviour. They reported that when behaviour is considered gender typical, then reactions are likely to be more detrimental (e.g., alcohol abuse considered more male typical, depression female typical). More recently research has considered all of the previous research and proposed that although BPD is relatively equally distributed between males and females, different behaviours adopted by males and females influences any bias in results regarding diagnosis (Sanson & Sansone, 2011). This is an interesting concept, but the vignettes in this research also use what could be considered 'male' behaviours (e.g., aggression, alcohol abuse). Therefore, if this were true one might expect less of a divide between sexes as the vignettes used included both male and female stereotypical behaviours.

Although all of these explanations hold some potential, none of them adequately explain the findings from this study. From a clinical perspective, more females diagnosed with BPD is common practice, the reasons for this are complex and it would be too simplistic to assume one explanation could provide an adequate rationale.

Treatment pathway following diagnosis

With regards to the second hypothesis regarding whether participants would be more likely to refer females with BPD on to DBT, the results indicate that referral to DBT was only influenced by diagnosis, not gender. It is interesting that the gender of the patient in the vignette did not influence this treatment pathway or indeed the confidence of the participant in this study. Ultimately, this offers evidence that diagnosis is a predictor of treatment pathway, which is useful when considering treatment pathways and is also positive when gender bias is considered, as it would suggest that regardless of the gender of the patient this will not influence referrals, i.e. if a male is diagnosed with BPD they would still be referred to DBT. However, one difficulty with this remains that should the diagnosis of BPD be flawed by gender, then ultimately the bias will continue with regards to treatment pathways. Therefore, this hypothesis is determined to some respect, by what happens at the initial stage of diagnosis. In clinical practice it remains evident that more females are referred to DBT service for treatment than males. However, if this is due to more females being diagnosed then in essence this finding is irrelevant. What it does highlight is that following diagnosis, clinicians are more likely to follow a clear treatment pathway. This is important for organisations that need to be confident that clinicians follow appropriate treatment pathways

and does not indicate a training need. However, clearly this will need to be monitored and reinforced to ensure clinicians continue to follow the appropriate route.

Additional relevant findings

Other interesting aspects of this study include the professional identity of the participants. It is noteworthy that professional identity had little influence on confidence of the participants in their rating of presence of BPD. However, it did have an impact on their likelihood to actually diagnose BPD. In particular when comparing the groups of professionals who participated including; psychology/psychiatry, therapists, nurses and other (including unqualified staff, such as support workers), the psychology/psychiatry and therapist groups both under diagnosed, whilst the 'other' group over diagnosed. This creates an interesting dilemma, as all vignettes met BPD diagnostic criteria, one could argue that the 'other' group therefore correctly diagnosed. However, it is also plausible that the psychology/psychiatry group and therapists were more cautious based on the information provided and therefore under diagnosed, erring on the side of caution. It is possible that the qualified staff were more familiar with using DSM IV TR (2000) and more cautious about diagnosis as DSM cautions against diagnosis in adolescents. Therefore, by taking this recommendation regarding adolescents literally they might have dismissed the BPD diagnosis for under 18 year olds and essentially under diagnosed BPD in this study. Although direct comparisons are difficult, Becker and Lamb (1994) in their study also explored professional groups and although significant differences were not found between groups, psychologists and psychiatrists did diagnose BPD more frequently than social workers. However, in their study it is unclear whether the social workers had mental health training or experience of BPD.

The nurse group, although more rounded in their diagnosis, similarly under diagnosed when the whole number of nurse participants is taken into consideration. Again this is possibly because of the explanation previously provided. It is unlikely that this is due to an effect of everyone either diagnosing or not, due to variation in scoring. If it were the case that everyone diagnosed, then no variation would be observed.

An additional interesting observation from this research was that an association was seen between BPD diagnosis and the confidence of the participant in making their judgement. This

is somewhat unsurprising as one might expect greater confidence if diagnosing a patient with BPD. However, on closer inspection there is an interesting parallel with lack of confidence in stating no diagnosis of BPD. Higher scores can be seen for no diagnosis and the lower range on the Likert scale included in the 'not at all [confident]' category. In particular overall for this group, participants reported not feeling confident. However, on reflection this might be due to a terminology and understanding bias. It is difficult to ascertain whether participants were reporting that they did not feel confident in their not diagnosing BPD or whether their score was based on the confidence that BPD was not present. The wording of the question is such that 'How confident are you in the diagnosis of the presence of BPD from this vignette?' This question is quite ambiguous as it does not specify whether they feel there is a diagnosis to be made, or their confidence in their decision.

Limitations

This research it is not without its limitations, which would also provide potential for future research opportunities.

One of the major limitations of this research study is the lack of a control group or comparison to young people who do not meet diagnosis of BPD. Although the variety of responses would not suggest that everyone stated that a diagnosis was present, future research would benefit from providing an additional vignette of non BPD so that this could be accounted for and considered. This might also allow for further exploration of behaviours which might be more pertinent when considering a diagnosis. For example, if participants observe the presence of self-harm as more suggestive of BPD than other symptoms such as identity disturbance.

The use of vignettes within research has also received some criticism in terms of external validity. Crosby and Sprock (2004) argue that, by restricting the information within a vignette with the aim of making it research friendly, this essentially forces a clinician to make a judgement based on preconceived ideas or stereotypical behaviours. They further state that the limited information provided within a vignette cannot be as useful as direct clinical assessment and observation which offer a wealth of additional information, assist assessment and potential diagnosis. Despite these criticisms, they do recognise that vignettes can be useful in allowing factors to be manipulated, particularly for research purposes. It still limits

the research qualities of the results and significant findings (Crosby & Sprock, 2004). In addition to this Becker and Lamb (1995) criticised the collapsing of scores for analysis, reflecting that a dichotomy of 'yes or no' did not reflect clinical judgments. Although this was considered within this research, some analysis required these amendments to be made and so collapsed and non-collapsed groups were used where appropriate. Although in clinical practice, clinicians are often required to make a judgement which is not dichotomous, for much of recording within the NHS a dichotomous decision is often required, i.e., a diagnosis is warranted or no it is not.

Additional limitations of this research specifically involve the vignettes. The vignettes were designed using clinical experience and DSM IV TR (2000) as a diagnostic guide. Symptoms felt to be overtly obvious to BPD diagnosis (such as self-harm and suicidal behaviour) were removed. Using DSM IV TR (APA, 2000) it is possible to receive a diagnosis of BPD without these symptoms being present as five from a list of nine are required. The decision to remove those felt to be overtly obvious was also based on clinical practice, where often these symptoms become a basis for BPD diagnosis, as opposed to considering all of the symptoms and possible explanations. This decision was also made following consultation with colleagues within the relevant adult clinical fields that a BPD diagnosis would still be likely when considering the symptoms available in the vignette. No pilot study was completed using the vignettes as it was felt that the explorative exercise with clinical professionals in the adult estate would suffice. However, on reflection this may have been more beneficial than the explorative exercise adopted. The adult estate was utilised so as not to remove any potential participants available within CAMHS, but also it was hoped that as BPD is generally more recognised in the adult estate, they would be more able to accurately reflect on whether the symptoms available would still meet BPD diagnosis. However, this approach failed to account for potential bias by using clinicians very familiar with BPD and on closer examination of the vignettes meeting five out of nine of the diagnostic criteria required assumptions to be made by the participant, rather than using only the information available.

With regard to specific areas within the vignette where assumptions would be needed or the information is ambiguous statements such as; '... but they worry the teacher will leave and they will be left with no one with whom they can talk to'. This statement was meant to reflect in the diagnostic criteria 'frantic effort to avoid real or imagined abandonment' (DSM IV TR;

2000). More appropriate examples based on those described in DSM which should be considered in future research, might include; the adolescent demonstrating extreme despair at the thought that the teacher might leave, or internalising the teacher leaving as the adolescent being bad or evil. This more accurately reflect the level of intensity of BPD where abandonment is perceived and does not require the participant to assume this is the case.

Another ambiguous statement in the vignette involves chronic feelings of emptiness. Within the vignette this was supposed to be captured by '[name] states that he has not true friends and he often feels lonely, he reports no one understands him'. Again this is open to interpretation as to whether this would qualify as feelings of emptiness and future research would benefit from highlighting the emotional element attached to feelings of emptiness, such as feeling hollow inside or never feeling anything of significance, often described within clinical practice by those diagnosed with BPD. By assuming this is the case based on this information again allows potential for bias to impact the findings.

An additional issue with regards to the vignette was that feedback from participants highlighted that for some of the diagnostic criteria, they required more information to make a judgement. Informal discussions regarding this highlighted that essentially without the presence of self-harm or suicidal behaviour, they felt less confident in making a diagnosis. This becomes an interesting dilemma as many clinicians will make a judgement based on presenting information at the time of assessment and the use of unstructured clinical assessment is common outside of specialist units. However, when using unstructured clinical assessment, some have reported that consistency amongst clinicians diagnosing personality disorders has been poor (Mellsop, Varhese, Joshua, & Hicks, 1982). Additional factors might negatively influence any decision, especially if they mimic some of the behaviours observed within the personality disorder. For example, anxiety and substance misuse have similarities with some of the symptoms of BPD. Therefore, unless other factors are ruled out, then it can be difficult for a clinician to obtain a true sense of the presence of BPD (National Collaborating Centre for Mental Health, 2009). These arguments provide some rationale for the proposal for DSM 5 (APA, 2013) of a hybrid model of diagnosis, allowing for clinicians to move away from a categorical model and the restrictions this provides (Whitborne, 2013).

The difficulties highlighted with regard to the vignettes pose a significant issue which should be considered in light of the results. Future vignettes of this type would be more fruitful if they kept all symptoms of BPD in line with DSM IV TR such as the examples given here and also complete a pilot study, using professionals not familiar with BPD so that participant bias can be managed within the study.

An additional area of concern with the vignette was the use of the confidence scale. On reflection this scale is somewhat ambiguous as it requires the participant to indicate '*how confident are you in the diagnosis of the presence of BPD in this vignette?'* where 1 represents '*not confident'* and 7 represent *'very confident'*. On reflection the ambiguity lies in whether the participant is confident there is a BPD diagnosis warranted or their confidence in their given diagnosis. Again when consulting with the adult clinical participants, this was not highlighted as a difficulty, but future research would benefit from being explicit about what is being measured, one possible alternative might be '*how confident are you in the diagnosis that you have given'.* However, again this should be thoroughly explored through a pilot study to ensure clarity.

This research also does not explore gender differences in attendance at CAMHS and whether more females present at CAMHS service and so would be expected to present with a higher rate of BPD due simply to higher attendance figures, or whether females have a higher rate generally of BPD. It would be reasonable to assume that should more females present to services, then they are likely to receive a higher rate of diagnosis. However, if this were the case it would be expected that they might receive higher rate of occurrence in all diagnosis not just BPD. Although this research should bear no relevance on this, clearly if clinicians are more familiar with seeing females with BPD characteristics than males, it is possible that they will be biased in their clinical perception. This is in line with previous research that argued that clinician bias is more relevant than the rate of diagnosis based on presentation at services alone. Clearly if one is presented more with female BPD than males, then rating a vignette might also bear significance and result in a clinician bias.

A further limitation of this study involves a possible sampling bias due to participants self-selecting whether to participate. For example those choosing to participate might have held strong views about BPD in adolescents or felt knowledgeable of the area, compared to those that did not respond and therefore the overall results could be over-estimated. Therefore it is

unclear whether the participants were representative of the sample or other confounding issues might have influenced the results and the nature of this study does not allow for this.

It is also possible that, with the intention of transparency, stating where the researcher works (i.e., DBT team), might also have biased the results. However, from the results obtained this does not appear to have been the case. Had this influenced the participants then it would be expected that everyone would have been diagnosed with BPD regardless of gender and no variation within scores would have been observed. Therefore, although important to consider this implication, with this research it is possible to rule this out.

An additional possible concern from this research is the use of multiple analyses resulting in Type 1 errors. However, in order to overcome this within this study, the significance value was kept at 0.01.

Future Research

Future research would benefit from using the limitations highlighted within this study to enhance future studies and help manage potential bias. Once these issues have been rectified, future research would also benefit from exploring the number of referrals received within a community CAMHS team and compare these with diagnosis rates. This would allow further useful comparison with rates of BPD in society generally. Without exploring this potential, any research is constrained by sample bias. If research found for example that males and females were equally represented at CAMHS, then this might allow confidence in the diagnosis rates for different presentations. Unfortunately without this basic information, then further analysis has the potential to be flawed.

Additional research would also benefit from comparison groups and with adults diagnosed with BPD. Advancements in the literature have generally accepted that adolescents demonstrate similar symptoms of BPD to adults (Chanen & Kaess, 2012). However, diagnosis of BPD in adolescents is likely to create controversy for some time. This is primarily due to the difficulties with consensus of when personality forms and arguments about the stigmatising effects of being diagnosed with a personality disorders. However, it would be interesting to compare diagnosis in personality disorder with adults and whether there are similarities with the adolescent population.

Future research would also benefit from moving away from the dichotomy of whether gender bias does or does not exist in diagnosis of BPD. This argument has been continuing for decades with little conclusive evidence. It is possible that an explanation as to this occurrence is too complex for the simplicity of the explanations offered so far. Research would be fruitful in educating the symptoms of BPD, away from any gender reference. In a changing society when more females are using violence and substances, the stereotypical gender behaviours also have to be examined. A greater awareness by clinicians into personality disorders generally and how to treat them most effectively will undoubtedly help with this transformation and provide clinicians with the confidence and experience to treat the symptoms rather than focus solely on diagnosis.

Conclusion

Findings from this current research suggest that a gender bias does occur in the diagnosis of BPD, in adolescents. Although these findings contribute to the controversy on this topic, they also support further exploration in the area. Although it is unlikely that one conclusive answer will ever be provided, this and previous research have provided the underpinnings to explore constructs important within the larger picture of personality disorder. Future research would benefit from explanations of additional areas such as whether particular symptoms of personality disorder are more pertinent to informing the diagnosis. Findings from this research also suggest that clinicians when presented with BPD symptoms and considering treatment pathways are unlikely to be influenced by gender of the patient and focus appropriately on symptoms and treatment recommendations. This is reassuring for organisations such as NHS, who need to focus training appropriately. Although difficult to generalise across all organisations, the NHS may take some comfort that their staff are using the recommended treatment pathway for this client group. For any organisation this can be a comfort in an era where evidence is often required to justify decision making and can often form the basis for funding decisions.

This chapter has shown that when CAMHS clinicians were presented with an identical case vignette displaying enough symptoms to warrant a diagnosis of BPD, with only gender manipulated (female, male, not stated), the female vignette was most likely to receive a BPD diagnosis. In addition, this chapter has also shown that when considering treatment

pathways, gender did not influence a referral to Dialectical Behaviour Therapy, but diagnosis of BPD did.

However, diagnosis of BPD in adolescents is controversial and complicated by similarities often perceived between 'normal' adolescent problematic behaviour and those that are also seen in BPD (NICE, 2009). Chapter 4 addresses some of these concerns in the context of a critique of the Millon Adolescent Clinical Inventory (MACI: Millon, 1993, 2006) an adolescent measure available which explores borderline traits in addition to other adolescent behaviours and concerns.

Chapter 4

Critique

Critique of a psychometric measure:

Millon Adolescent Clinical Inventory

(MACI: Millon, 1993, 2006)

Introduction

Adolescence is a distinct period of human development, the combination of physical maturation, social influences and an individual's progression towards adulthood. In essence, adolescence forms the junction between leaving childhood and not yet reaching adulthood.

DSM IV TR and ICD 10 have historically been used during assessment to assist diagnosis. However, some have argued that a problematic area with using these manuals alone is that they do not necessarily consider other relevant factors (such as social and cultural), and therefore a psychological formulation is more beneficial (Rousseau, Measham, & Bathiche-Suidan, 2008).

A psychological formulation gathers information both from a clinical assessment and sometimes other sources such as assessment measures, to provide a theoretically based hypothesis of what might have caused the difficulties or be maintaining them (Bond & Bruch, 1998). The psychological formulation is a fluid document that can be amended as changes occur and due to the collating of the information it can be used as part of treatment planning. Psychological formulations are used in a variety of contexts including both clinical and forensic settings, with minimal differences regarding what is covered (Hall & Llewelyn, 2006). The use of formulation is common practice amongst psychologists (Mace & Binyon, 2005) and other mental health professionals (Crowe & Carlyle, 2008).

Assessment measures are a useful method to inform any psychological formulation (Hall & Llewelyn, 2006). However, with regards to adolescents due to a significant period of adolescent adjustment and development, assessment measures need to be suitable to encompass these accompanying personality adjustments, in particular when formulating the difficulties of a young person. Adolescence is not simply a smaller version of adulthood and therefore they need an appropriate measure which not only identifies the prevailing difficulties both clinically and personality based, but also informs any intended intervention (McCann, 2008). In an attempt to understand these characteristics and provide appropriate interventions, attempts have been made to develop suitable measures which explore adolescent's personality characteristics and psychological difficulties. The Millon Adolescent Clinical Inventory (MACI: Millon, Millon, & Davis, 1993) is one such measure, which

utilises a self-report process to identify personality traits and clinical syndromes in adolescents (McCann, 1997) and which can prove useful within psychological formulation and is becoming increasingly popular within the adolescent criminal justice arena (Baum, Archer, Forbery, & Handel, 2009).

The development of the MACI was preceded by years of Theodore Millon developing his influential theory of personality and psychopathology, through classic texts such as Modern Psychopathology (Millon, 1969), Disorders of Personality (Millon, 1981) and Toward a New Personology (Millon, 1990). Millon originally proposed a biosocial learning theory, which explored the interactions between an individual's biological make-up and everyday experiences, to help explain how they influence personality and interpersonal relationships (Choca, 1999). Millon hypothesized that personality developed through an amalgamation of three dichotomies (a) pleasure-pain, (b) active-passive and (c) self-other (Strack 1999a). In addition, he suggested that there were five forms of engagement with others; detached, independent, ambivalent or discordant and for each style the individual would manage them either actively or passively (Davis, Woodward, Goncalves, Meagher, & Millon, 1999), with the passive being more likely to accept their environment and adjust themselves, whereas the active manage their environment to have their needs met (Millon, 1993). Millon projected that the personality prototypes reflected difficulties regarding interpersonal relationships; however, they were not considered at this stage to be at the level of a diagnosable personality disorder and represented personality traits (Choca, 1999). Figure 3 describes this process and proposed personality prototypes as suggested by Millon (1969).

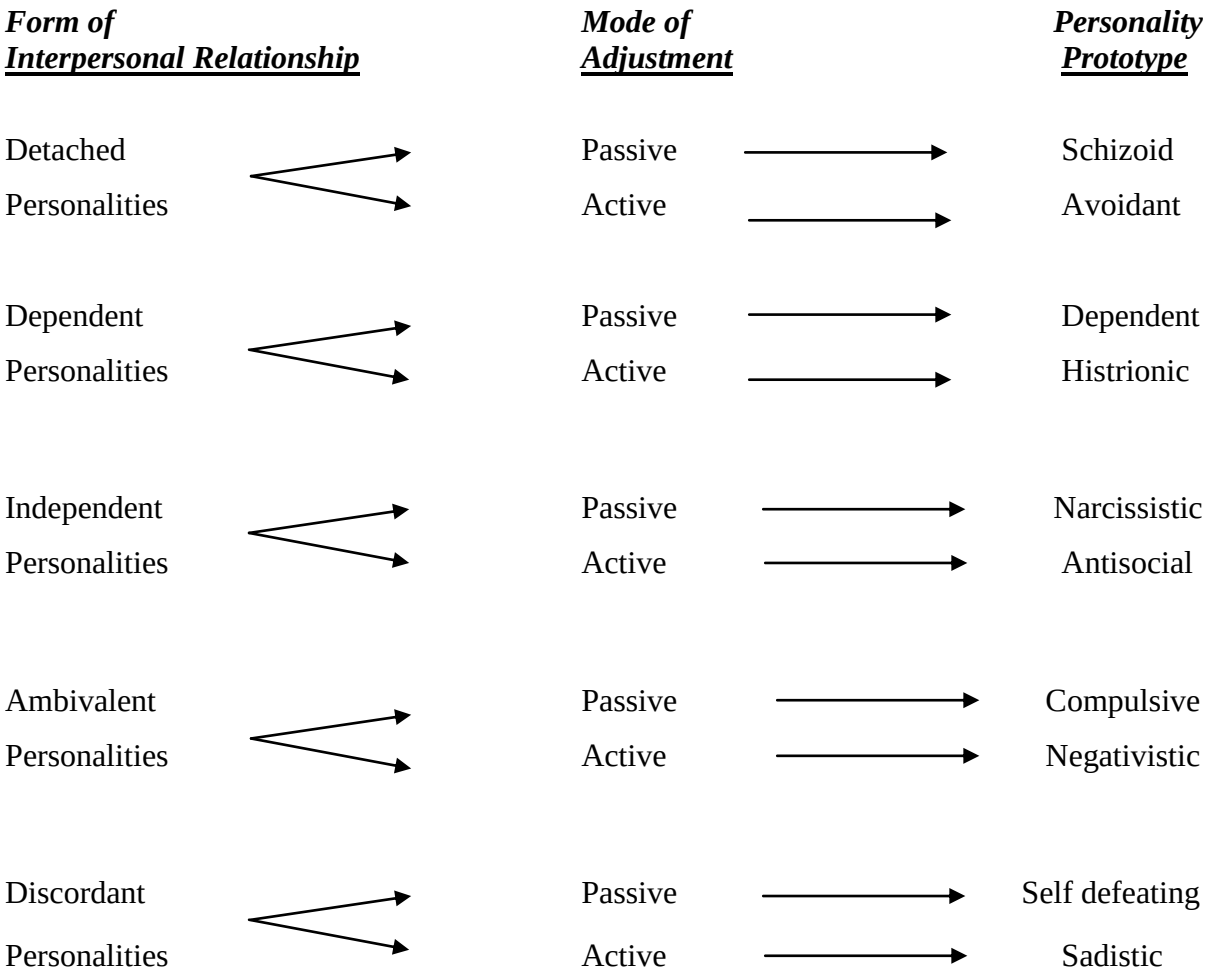

Figure 3: Prototypes of personality originally proposed by Millon (1969) and adapted by Choca (1999) exploring psychopathology

Within this theory of personality and psychopathology, Millon also explored two further areas; expressed concern and clinical syndrome. The expressed concern scales explores the individual's perception of themselves and concerns that they might have (Salekin, 2002) and the clinical syndrome scale explores difficulties of a clinical nature, frequently observed within the adolescent population (Millon, Millon, Davis, & Grossman, 2006).

This theory of personality and psychopathology were applied to both adolescents and adults and a number of tests were developed, all incorporating the Diagnostic and Statistical Manual IV (DSM: American Psychiatric Association, 1994), measuring both Axis 1 clinical syndromes and Axis 2 personality traits. However specifically for adolescents, Millon originally devised the Millon Adolescent Inventory (MAI: Millon & Millon, 1974) which

was proceeded by the Millon Adolescent Personality Inventory (MAPI: Millon, Green, & Meagher, 1982). Although both tests used the same items, the design varied with the MAPI consisting of two forms; one for guidance (MAPI-G) and one for clinical use (MAPI-C). In addition, they also used different normative sample groups (Strack, 2008). However, following criticism regarding the clinical utility of the MAPI, the Millon Adolescent Clinical Inventory (MACI) was developed, which utilised only a clinical sample group and provided additional scales (Strack, 2008).

Literature specifically regarding the use of the MACI within psychological formulation could not be found. However, as with all assessment measures the benefit is in the additional information measures can provide to a formulation (Hall & Llewelyn, 2006) and with this in mind the MACI is no different. This critique will examine the development of the MACI, including its psychometric properties and offer conclusions regarding its clinical usefulness in assessing adolescents with psychological problems.

Development of the MACI

The MACI was designed to be used within the context of mental health and clinical settings (McCann, 2008). The scope of the MACI is such that the content aims to explore psychological disturbances and concerns indicated by adolescents aged 13 to 19 years old. However, there is overlap with the Millon Clinical Multiaxial Inventory (MCMI) which is administered with those aged 18 and above. This age overlap presents some difficulties with the applicability of the MACI for the older age range and no literature could be found to explain this further and clarify the confusion. However, through personal communication with the Dr Meina (Consultant Clinical and Forensic Psychologist) from the consultation team at Oxford Health Forensic Services (personal communication, August 21' 2014), they have discussed this issue and unanimously agreed that using the MACI makes more clinical sense and is eminently defensible for older adolescents who developmentally have been challenged through situations such as being incarcerated or institutionalised and which adult measures such as the MCMI are less likely to capture their needs.

Within the MACI the problems evaluated include those that are individual specific (such as, depression, feelings of failure and those relevant to relationships) and personality difficulties

(such as, peer insecurity or being introverted). Despite criticism about not exploring non problem areas such as positive self-esteem, the focus of the MACI is to explore concerning behaviour, therefore it does not claim to explore non problem issues (McCann, 2008).

The MACI is a self-report, true-false measure, comprising of 160 items over thirty-one scales, within three domains. Personality Pattern includes twelve personality scales, Expressed Concerns include eight scales and Clinical Syndromes include seven scales. In addition, the MACI has three modifying scales; disclosure, desirability and debasement, which explore adolescent responses and allows for scoring adjustments to be made or for a test to be considered invalid, due to response style. Finally, there is a validity scale (two items). This scale was included to ensure adolescents are focused on the task and enables the test to be invalidated should these items be endorsed.

Grossman Facet Scales

More recently, the MACI has undergone further development, and the most recent manual includes Grossman Facet Scales (Millon et al., 2006). The development of these scales originated using earlier research by Davis (1994) who explored the personality scales using factorial analysis and identified a number of domains for each scale. Millon et al. (2006) using this original concept, employed a 'theoretical-rationale approach', where each personality scale was broken into one of eight 'structural functional domains'. These structural domains identified how the personality pattern is expressed; functional domains which explore regulatory behaviours include - expressive behaviour, interpersonal conduct, cognitive style/content and regulatory mechanisms. The other four domains labelled structural, include; self-image, object representations, morphologic organization and mood/temperament. The four latter domains typically require clinical involvement (Millon et al., 2006). Within the Grossman facet scores the three most salient domains are identified for each personality pattern, this helps assist interpretation as it offers clarity on processes regarding specific personality patterns. McCann (1999) argues that this adaptation provide more elaborate interpretation of the personality scales and scale validity.

Table 12: Description of MACI and Grossman Facet scales

Scale	Construct being assessed
Scale X: Disclosure (160 items)	Explores the openness of the adolescent during the test
Scale Y: Desirability (17 items)	Explores whether answers given are desirable
Scale Z: Debasement (16 items)	Explores if the focus is on negative characteristics
Scale VV (2 items)	Monitors for random responses as an indication of not paying attention to the task
Scale 1. Introversive (44 items) *DSM IV Scale - Schizoid Personality* **Facet scales:** 1.1 expressively impassive 1.2 temperamentally apathetic 1.3 interpersonally unengaged	Measures the ability to experience pleasure or pain and emotional detachment and the avoidance of interactions with others, through feeling apathetic about social interactions. Explores pleasure or pain experiences Measures the ability to form peer relationship Measures adolescent's self-perception and level of maturity
Scale 2A. Inhibited (37 items) *DSM IV Scale - Avoidant Personality* **Facet Scales:** 2.1a expressively fretful 2.2a Interpersonally aversive 2.3a alienated self-image	Measures how uncomfortable the adolescent feels around others, despite their desire for relationships. Measures expression of distress or concern Explores relationships with others and degree of isolation Assesses perception of self
Scale 2B. Doleful (24 items) *DSM IV Scale – Depressive Personality* **Facet Scales:** 2.1b Temperamentally Woeful 2.2b Cognitively Pessimistic 2.3bExpressively Disconsolate	Measures the adolescent's pessimistic view of life and their future outlook. Often following a loss the adolescent has lost hope about happiness in the future. Explores level of pessimistic attitude Measures feelings of hopelessness and negativity Measures lack of positive outlook and hopelessness about life
Scale 3. Submissive (48 items) *DSM IV Scale - Dependent Personality* **Facet Scales:** *3.1* Interpersonally Docile	Measures attachment and their degree of dependency on others to manage their anxiety. Explores perception that others need to provide nurturance and security.

3.2 Expressively Incompetent 3.3 Temperamentally Pacific	Explores level of self-esteem and self management Features associated with submissiveness e.g. shyness.
Scale 4. Dramatizing (41 items) *DSM IV Scale - Histrionic Personality* **Facet Scales**	Assesses engagement with others and expression of themselves to others
4.1 interpersonal attention-seeking	Measures adolescents attention seeking from others
4.2 gregarious self-image	Explores the egotistically element of the adolescents personality.
4.3 cognitively flighty	Explores lack of learning from experiences to help deal with future situations,
Scale 5. Egotistic (39 items) DSM IV Scale – Narcissistic Personality **Facet Scales:**	Measures self-validation of abilities and through focus on self-worth others as narcissistic and self-confident. This adolescent can appear self-assured and arrogant, seeking only for their own needs to be met.
5.1 admirable self-image	Examines self perception of appearance and abilities.
5.2 cognitively expansive	Explores their self confidence about future
5.3 Interpersonally exploitive	Measures degree of exploitation of others to meet own needs.
Scale 6A. Unruly (39 items) *DSM IV Scale - Antisocial Personality* **Facet Scales:**	Measures level of distrust of others and self autonomy, with little regard for the impact of their behaviour on others or rules of society.
6.1a expressively impulsive	Measures the rebellious element of the adolescent's behaviour.
6.2a acting out mechanism	Measures expressed behaviours through inability to tolerate boundaries and rules
6.3a interpersonally irresponsible	Assesses manipulation of others to meet their own needs.
Scale 6B. Forceful (22 items) *DSM IV Scale - Sadistic Personality* **Facet Scales:**	Hostility and attempts to control a situation, by whatever means. Relationships are marked by their control over others and lack of remorse or empathy.
6.1b interpersonally abrasive	Measures degree of their controlling temperament used on those around them.
6.2b expressively precipitate	Explores the adolescent's inability to conform to expectations and extent of impulsive behaviour.
6.3b isolation mechanism	Measures acting in isolation, with a lack of sensitivity or empathy for their actions.
Scale 7. Conforming (39 items)	Measures the adolescent's feelings of consciousness about rules and their respectfulness towards others

DSM IV Scale – Obsessive Compulsive Personality **Facet Scales:** 7.1 expressively disciplined 7.2 interpersonally respectful scale 7.3 conscientious self-image	 Measures degree of thought and care regarding their actions respectfulness of those around them Explores self-perception regarding their maturity compared to other adolescents Measures adolescent's opinion of own level of maturity and take responsibility for actions
Scale 8A. Oppositional (43 items) *DSM IV Scale - Negativistic Personality* **Facet Scales:** 8.1a discontented self-image 8.2b expressively resentful 8.3c interpersonally contrary	Measures feelings of being hard done by and associated emotions towards others such as irritability. Measures adolescent's discontentment with their life Explores expression of discontent towards themselves Using items from other scales to explore dislike of others and resentfulness of their achievements
Scale 8B. Self Demeaning (44 items) *DSM III R Scale – Self Defeating Personality (but removed from DSM IV)* **Facet Scales:** 8.1b undeserving self-image 8.2b cognitively diffident 8.3btemperamentally dysphoric	Measures the degree that they allow others to manipulate and exploit them or engagement in sabotaging behaviours to prevent positive events Measures opinions associated with not experiencing pleasure. A measure of adolescent's self-esteem and negativity about their achievements. Measures sense of hopelessness and associated feelings of being alone
Scale 9. Borderline Tendency (21 items) *DSM IV Scale - Borderline Personality* **Facet Scales:** 9.1 uncertain self-image 9.2 cognitively capricious 9.3 uncertain self-image	Measures erratic thoughts and behaviours and the adolescent's difficulties in managing their emotions Measure the adolescent's struggle with their identity Measures difficulties with racing thoughts and relationships Measures unstable self identity
Scale A. Identity Diffusion (32 items)	Measures confusion about their identity and how they negatively compare themselves with their peers
Scale B. Self Devaluation (38 items)	Measures their level of contentment with their image and self-esteem issues.

Scale C. Body Disapproval (17 items)	Measures contentment with their appearance as they physically mature and develop
Scale D. Sexual Discomfort (39 items)	Measures confusion regarding thinking about sexual acts or interactions
Scale E. Peer Insecurity (19 items)	Measures their perceptions of differences with peers and struggles with peer friendships.
Scale F. Social Insensitivity (39 items)	Measures their lack consideration and understanding for others
Scale G. Family Discord (28 items)	Measures the degree of stress and disagreement within families, including rejection or condemnation from parents
Scale H. Childhood Abuse (24 items)	Highlights those that have been victims of abuse (verbal, sexual or physical) and their sense of shame of this
Scale AA. Eating Dysfunctions (20 items)	Measures attitudes and behaviours suggestive of an eating disorder
Scale BB. Substance Abuse Proneness (35 items)	Measures attitudes condoning substance abuse and likely use of substances
Scale CC. Delinquent Predisposition (34 items)	Measures delinquent behaviour and involvement with criminal justice system.
Scale DD. Impulsive Propensity (24 items)	Measures difficulties managing their impulsivity and consequences of their behaviour.
Scale EE. Anxious Feelings (42 items)	Explores shyness and introverted characteristics. Also assesses presence of an anxiety disorder.
Scale FF. Depressive Affect (33 items)	Measures propensity of a depressive disorder
Scale GG. Suicidal Tendency (25 items)	Measures expression of suicidal ideation and evidence of planning.

Design and utility of the MACI

The MACI was created for use within the mental health arena; an easy to administer assessment tool, less intrusive for difficult to engage adolescents who struggle with direct questioning and prefer a paper method, it has demonstrated utility with a number of client groups, in a number of settings (McCann, 1997). Mental health facilities such as inpatient and outpatient clinics, criminal justice establishments and treatment facilities are an example of environments where evaluation of an adolescents psychological presentation using the MACI

have been deemed beneficial when establishing management and treatment plans (Salekin, Lestico, & Mullins, 2005). The MACI has also been utilised with specific groups of adolescents such as those with eating disorders (Hopwood, Ansell, Fehon, & Grilo, 2010) and adolescent sex offenders (Richardson, Kelly, Graham, & Bhate, 2004), demonstrating its versatility with different client groups.

The MACI manual provides a comprehensive explanation of how normative data from over a thousand adolescents was obtained to help explore both the validity and reliability of the test, which provided the data for four normative data groups; 13 to 15 year-old, male/female and 16 to 19 year-old, male/female (Millon et al., 1993, 2006). The normative data collected utilised predominately White Americans (79%) with a significantly less representation from black (7%), Hispanic (6%), American Indian (3%) and other (3%) adolescents. Despite the original validation including a number of ethnic groups, others have criticised the lack of research with other ethnic groups and have successfully demonstrated the usefulness of the MACI with other ethnic groups (e.g., Mexican American adolescents; Blumentritt & Van Voorhis, 2004). However, additional research remains limited given the popularity of the MACI.

The design of the MACI is such that each item except the reliability items are weighted (0,1,2,3) and aligned to an individual scale. These items were established during the validation phase looking at the components of the MACI, where depending on the answer an item on an individual scale will score up to 3 points. If the item is aligned with other scales the accompanying points will reflect this and be scored and weighted appropriately. Scoring on one scale can also add points to another scale, if the items cross load. Total raw scores are subsequently obtained for each scale, which are then converted into a Base Rate (BR) score. This BR score is then compared to scores appropriate to that population (age and gender). For each group the required score differs, with younger groups requiring more points for the scale to be prominent and females requiring more points than males (Strack, 2008). This is significant when scoring the MACI as without such consideration, younger adolescents might appear to demonstrate more of the characteristics being measured than older adolescents; therefore they need more points to reach a level of significance. This is similar for differences between males and females, where some characteristics have been attributed to one of the sexes and so more points are required to reach a significant level. (Stack, 2008).

In order to obtain the prevalence rates, Millon (1993) originally used clinical judgement. This involved exploring individual adolescent cases and identifying prominent characteristics which were then grouped into relevant target population groups to allow a comparison rate. In addition, clinical judgement was further used to obtain characteristics which were present, but not prominent. These scores were then adjusted to take into consideration epidemiological results researching occurrence of characteristics within specific populations (Millon, 1993).

Psychometric characteristics of the MACI

The psychometric characteristics of the MACI will now be reviewed in relation to validity and reliability

Validity

In order that a test can be accurately administered and scored, it needs to have validity. Validity is measured in a number of different ways including, predictive, construct, concurrent and content validity. Each will be discussed in turn.

Construct validity

Construct validity explores the extent that the test measures what it is intended to be measuring and incorporates theoretical understanding to help explain how the test is expected to behave (DeVellis, 1991). One method by which they can be assessed is by factor analysis.

Davis (1994) contributed extensively to the exploration of the MACI personality scales in an attempt to demonstrate construct validity. Through factor analysis, Davis (1994) identified between four and six domains for each of the personality scales and based on the identification of these domains which appeared theoretically sound, he argued the existence of construct validity. Table 13 presents each of the personality scales with the domains identified by Davis (1994).

Table 13: Description of MACI scale domains identified through factor analysis

Scale	Domains identified through factor analysis	Description of domains
Scale 1: introversive	Existential aimlessness	individual having a lack of future plans or who they are
	anhedonic affect	a lack of pleasure attached to life and an ambivalence about engaging in activities which might enhance pleasure
	Social isolation	little need for interactions with peers or friends
	Sexual indifference	little desire for intimate or sexual relationships
Scale 2a:inhibited	existential sadness	these involved the negative feelings of the individual about their life and who they are
	preferred detachment	not wanting to engage with others, preferring activities in isolation
	self-conscious restraint	not acting impulsively instead being reserved regarding activities
	sexual aversion	A lack of interest in sexual activities
	rejection feelings	avoiding social situations through fear of derision
	unattractive self image	self-perceived ideas regarding self-esteem issues such as physical attractiveness and opinions of others
Scale 2b: doleful	brooding melancholia	Focusing on negative aspects of life and ruminating about perceived injustices
	social joylessness	individuals who feel indifferent about pleasure or engaging in positive interactions with others
	self-destructive ideation	those preoccupied with self destructive thoughts regarding self-harming behaviours
	abandonment fears	attachment difficulties exposed through the doleful scale and includes items such as feeling alone and not being wanted
Scale 3: submissive	deficient assertiveness	those who oppose the idea of acting against others or in an impulsive manner
	authority respect	those who comply with rules set by authoritative figures
	pacific disposition	those who are more unassuming and happy to go with the flow
	attachment anxiety	or those for whom fear of being left alone and having to manage is significant
	social correctness	individuals who have a compulsion to do the right thing
	guidance seeking	or have others make decisions for them

Scale 4:dramatizing	convivial sociability	An ability to fit in with peers
	attention seeking	expression of dramatic characteristics
	attractive self-image	self-perception of attractiveness and likeability by others
	(optimistic outlook	positive future outlooks
	behavioural disinhibition	those with a need for creating excitement
Scale 5: egotistic	admirable self-image	Items involving positive self esteem and happiness with appearances
	social conceit	items regarding being significant to an interaction
	confident purposefulness	feelings associated with being content with future aspirations
	self-assured independence	not demonstrating evidence of being needy or overly reliant on others
	empathetic indifference	a lack of empathy towards others
	superiority feelings	grandiose feelings
Scale 6a: unruly	impulsive disobedience	The first domain explores items associated with individuals who engage in behaviours with little consideration of the impact on others or consequences
	socialised substance abuse	who primarily in social interactions encourage the use of alcohol and substances
	authority rejection	refuse to accept authoritative figures
	unlawful activity	engagement in criminal activity
	callous manipulation	items which represent attitudes condoning measures to have needs meet, regardless of the impact on others
	sexual absorption	items associated with being at ease regarding sexual relationships and activities
Scale 6b: forceful	intimidating abrasiveness	items associated with the need for an individual to behave unkindly towards others
	precipitous anger	additional domains explore the reactive use of anger against others with no consideration of consequences
	empathic deficiency	items exploring sadistic tendencies towards others with little empathetic consideration
Scale 7: conforming	interpersonal restraint	These include items associated with not acting impulsively instead engaging in planning and thinking through options
	emotional rigidity	items associated with feeling self-confident
	rule adherence	the desire to follow rules and routines
	social conformity	Adopting non criminal behaviour
	responsible	Engaging in activities expected of others

	conscientiousness	
scale 8a: oppositional	self punitiveness	items regarding feelings of worthlessness and thoughts of suicide
	angry dominance	items associated with the need to threaten others to behave in a certain manner
	resentful discontent	negative self-esteem and social interactions
	social inconsiderateness	a lack of consideration to the impact on others
	contrary conduct	behaving inappropriately towards others
Scale 8b: self demeaning	self ruination	items associated with hopelessness about the future
	low self-valuation	items associated with negative self esteem
	undeserving self-image	a sense of being worthless and deserving of negativity in life
	hopeless outlook	pessimistic views about the future
Scale 9: borderline tendency	empty loneliness	Comprising of items associated with feelings of loneliness
	Capricious	behaviours considered impulsive
	uncertain self-image	identify confusion and difficulties considering the future adherent to this personality type
	suicidal impulsivity	The final domain explores items associated with emotional dysregulation and acts of suicide

Additional research exploring the construct validity of the MACI is limited. McCann (1999) publicly supported the construct validity of the MACI personality scales, stating that these identified domains are empirically validated. However, McCann (1999) fails to discuss this in any significant depth, with no evidence to substantiate his support, other than observations that the dimensions identified represent many of the observed features of that personality trait (McCann, 1999).

Romm, Brokian and Harvey (1999) explored content validity of the MACI, using a principal components factor analysis with varimax (orthogonal) rotation, explored the structure of the MACI clinical scales. They identified five factors; intrapunitive ambivalent, reactive abused, inadequate avoidant, defiant externalising and self deprecating depressed. Romm et al. (1999) argued that the correlations between these factors were positive and therefore supported the construct validity of the MACI, especially since the results produced were in the theoretical directions expected. This continued even when they varied their sample group and used

adolescents within a residential unit and they continued to find well fitting dimensions reflective of the sample group and supported by clinical presentation and experience. Salekin's (2002) also explored the MACI scales using factor analysis and maximised the variances by using a varimax (orthogonal) rotation, with a sample group of juveniles involved in criminal justice and found two factors in each scale. For personality scales, Salekin (2002) labelled factor one introversive, inhibited and doleful and the second factor forceful, unruly and dominance. Two factors were identified in the expressed concern scale; factor one labelled identity confusion and the second factor labelled social sensitivity. Within the clinical scales, factor one was labelled 'depressed mood' and consisted of three scales; Depressive affect, Suicidal Tendency and eating dysfunctions. Factor two was labelled psychopathic precursors and contained three scales; Delinquent Predisposition, Substance Abuse Proneness and Impulsive Propensity. Although a positive contribution in support of construct validity, Salekin (2002) also identified evidence of cross loading of items for some factors, including substance abuse and raises the implication that overlapping items might influence the construct validity of the MACI.

A major criticism of the Salekin (2002) and Romm et al. (1999) studies involved the use of factor analysis using varimax (orthogonal) rotation. This technique is popular when there is no correlation between factors, however, recent research by Adkisson, Burdsal, Dorr, and Don Morgan (2012) criticised these studies' methodologies, specifically regarding this issue and highlighted that Millon used a polythetic structure within his model (Millon & Millon, 2008), which allowed for the overlap to occur between appropriate theoretical scales. In addition, Adkisson et al. (2012) argue that traditional approaches to factor analysis would support the use of oblique rotation, when it is likely or known that the items are correlated. However, although Adkisson et al. (2012) stated that this previous analysis used was methodologically flawed, focusing on helping decision making by reducing item numbers, but failing to adequately explore issues of item overlap, they hypothesised that although they would find similar results to that found by Salekin (2002) and Romm et al. (1999), their research would be scientifically sound and therefore explore concurrent validity with more credibility.

Adkisson et al. (2012) examined the structure of the MACI with psychiatric patients exploring the factor analysis of clinical and personality scales. They found three main factors;

factor one, labelled 'demoralization', including items such as borderline, doleful, oppositional, impulsive propensity and factor two, labelled 'acting out', including items from delinquent predisposition, unruly, forceful, oppositional, impulsive propensity. Factor three – detached, included introversion and inhibited scales. Adkisson et al. (2012) argue that based on these findings and the more stringent methodology employed to provide clarity, their research provides support for the theoretical underpinnings of the MACI.

Concurrent validity and predictive validity

Concurrent validity of a measure is explored using other validated measures at the same time as the current measure. In contrast, predictive validity is used when using the measure at one time should predict for the future (Kine, 1986).

The MACI manual provides a comprehensive table of the correlations between each of the scales and associated tests. When exploring the concurrent validity, Millon used clinical judgement and a number of self-report tests, picked for their ability to measure similar characteristics to the MACI scales (Millon, 1993). These tests, as reported in the manual are; the Problem Orientated Screening Inventory for Teenagers (POSIT: National Institute on Drug Abuse, 1991), a battery of Becks' tests, including the Beck Hopelessness Scale (BHS; Beck & Steer, 1988), Beck Anxiety Inventory (BAI; Beck & Steer, 1990) and Beck Depression Inventory (BDI; Beck & Steer, 1987) and the Eating Disorder Inventory-2 (EDI-2: Garner, 1991). Within psychometric measures, Cohen (1988) suggests that strong correlation co-efficients range from -1.0 to -0.5 (negative correlation) and 0.5 to 1.0 (positive correlation) and medium range from – 0.5 to – 0.3 (negative).

Through comparing the MACI to the measures described above, correlations of above were found between the BDI and BHS a number of the scales including scores of 0.42 and above for the Self Demeaning, Borderline Tendency and Body Disapproval scales. The Doleful, Oppositional, Self Devaluation and Depressive Affect all had correlations above 0.50 and the Identity Diffusion and Suicidal Tendency scored 0.60 and above. The majority of these correlations would be expected, given the observable characteristics for example, in the Borderline and Doleful personality types. Other research using the Children's Depression Inventory (CDI: Kovacs, 1992), by Hiatt and Cornell (1999) also demonstrated a correlation between this measure and the Doleful MACI scale, therefore supporting the construct validity of this scale. An interesting observation is the presence of a relationship between the BDI and

BHS and the Oppositional personality type. However, Davis (1994) found through his research on the construct analysis of the scales that a sense of hopelessness and worthlessness and negative self-esteem, were evident within this group.

Although surprisingly the MACI Anxious Feeling scale did not have a significant correlation with the BAI, a number of the other scales did have a significant correlation of above .40 including, Eating Dysfunctions, Suicidal Tendency, Identity Diffusion, Depressive Affect and Self Devaluation, therefore suggesting the presence of concurrent validity.

With regards to MACI scales demonstrating significant correlations with an eating disorder scale (EDI-2), concurrent validity has been demonstrated with a number of scales. These include, as might be expected, the Eating Dysfunction Scale which showed a correlation above .40 with 8 out of eleven of the EDI-2 subscales. However, interestingly all of the personality pattern scales also correlated with the EDI-2 scale. Many of these were positive correlations, which would be expected if concurrent validity were evident. These include; Introversive (0.54), Inhibited (0.41) and Doleful (0.52) MACI scales, all correlating with the EDI-2 subscale Ineffectiveness. The Submissive (0.52) MACI scale correlating with the maturity fears EDI-2 subscale. Whilst the Oppositional and Self Demeaning MACI scales correlating with similar EDI-2 subscales including ineffectiveness (0.64; 0.69), impulsive regulation (0.63; 0.62) and for the Self Demeaning scale the expected correlation with the EDI-2 subscale body dissatisfaction (0.74).

Given the nature of the MACI scales, these correlations would be assumed, which is positive for evidence of construct validity. However, other MACI scales construct validity is also evident when negative correlations are explored. For example the Dramatizing MACI scale negatively correlated with the ineffectiveness (-0.54), interpersonal distrust (-0.41) and social insecurity (-0.47) subscales of the EDI-2. Also, the Egotistic MACI scale also negatively correlated with subscales of the EDI-2 which focused on body dissatisfaction (-0.78), social insencurity (-0.54) and ineffectiveness (-0.75). Other interesting relationships include a negative relationship between the EDI-2 subscale maturity fears and the MACI scale Unruly (-0.48). Similarly the Conforming MACI scale negatively correlated with the EDI-2 impulsive regulation (-0.41) and ineffectiveness scales (-0.47). Both of these might be expected considering the scale explore egotistical characteristics (Davis, 1994) and also impulsive regulation is not a characteristics associated with a conforming personality style.

Again when considering the intentions of the MACI scale, it is reassuring to see these negative correlations and if the construct of the scales are considered then there is a comfortable link between validity types.

Additional concurrent validity can also be seen when the MACI scales are compared to a scale exploring substance abuse or use (POSIT). Not unsurprisingly the MACI Substance-Abuse proneness scale had a strong correlation (0.64) with this scale. However, the MACI Delinquent predisposition scale also correlated with this measure and in particular as might be hoped, the aggressive behaviour/delinquency subscale. The Borderline Tendency MACI scale also positively correlated with the POSIT social skills subscale (0.63). These correlations could be considered appropriate considering the difficulties regulating emotions observed within this group (McCann, 1999); supporting the construct validity of this scale. However, given the difficulties regulating emotions, it is surprising that no significant correlations were observed between Borderline Tendency Scale, the BDI or BHS as might be expected, given the emotion dysregulation of this group and associated hopelessness.

With regards to correlations with clinical judgement, the majority of the scales showed some weak to moderate correlation; however, the strongest of these were within the clinical syndromes group. Within the personality patterns group these included; Doleful (0.22), Inhibited (0.27), Egotistic (0.20), Forceful (0.28), Unruly (0.27), Conforming (0.25), Self-Demeaning (0.20), Introversive (0.11) and Dramatizing (0.15) scales. Seven of the eight expressed concern scales including Sexual Discomfort (0.21), Peer Insecurity (0.20), Identity Diffusion (0.17), Social Insensitivity (0.39), Self Devaluation (0.25), Childhood Abuse (0.43) and Family Discord (0.25) and six of the seven clinical syndromes scales, including Delinquent Predisposition (0.34), Impulsive Propensity (0.25), Anxious Feelings (0.30), Depressive Affect (0.31) and Suicidal Tendency (0.24). Substance Abuse Proneness was the only scale to show a strong correlation with clinical judgement (0.52). It is noteworthy that five of the scales showed trivial correlation and these included; Submissive (0.03), Oppositional (0.02), Body Disapproval (0.09) and Eating Dysfunctions (0.09). Although no additional explanation has been offered for this, it is possible that as the majority of correlations are likely to be behaviours easily observed by clinicians such as anxious feelings or delinquent predisposition. However it is noteworthy that oppositional showed no relationship with clinical judgement, which might be expected if this were the case as these behaviours would include being negative and passive aggressive. Millon (1993) himself

identified this problem, explaining that during test construction, clinician's time with participants was limited and therefore influenced ratings especially regarding complex presentations. Millon (1993) justifies this approach through arguing that clinical judgment scores are not expected to be separately considered, especially when considering personality characteristics (Millon et al., 2006). This continues to question the method employed to evaluate the MACI and no other research has been found which has focused on clinical judgement. However, in the author's experience clinical judgement and the MACI are closely linked, although it is likely that the most obvious profiles observable within the assessment influence judgements made and arguably this is where the MACI does demonstrate its usefulness for highlighting less observable difficulties.

In addition to the measures presented within the MACI manual as a means of supporting concurrent validity, findings have been mixed. Blumentritt and VanVoorhis (2004) during their review of the MACI scales using a group of adolescent Mexican American males, concluded that (due to methodological issues with the construct of the MACI) limited support was found for concurrent validity. However, Pinto and Grilo, (2004) supported the Self Devaluation MACI scale, through its negative correlation with a scale which measures opposing characteristics e.g. self-devaluation and self-esteem Rosenburg's Self Esteem scale (Rosenburg, 1979). The Self Devaluation Scale is one of the MACI scales that have demonstrated concurrent validity with a number of other scales (BDI, BHS, BAI, EDI-2) which is positive when considering the validity of this scale and its utility within the MACI. However, in their research on other MACI scales, Pinto and Grilo (2004) also further supported the concurrent validity of the MACI Substance Abuse Proneness scale, as it correlated with collateral measures used to explore substance misuse (Adolescent Alcohol Involvement Survey: Mayer & Filstead, 1979; Drug Abuse Screening Test for Adolescents: Martino, Grilo, & Fehon 2000).

The Suicidal Tendency MACI scale demonstrated significant correlations with a number of other measures. Within the EDI-2 test, it correlated with Ineffectiveness Scale (0.77), body dissatisfaction (0.69) and Social Insecurity (0.74) and it also correlated with the BHS (0.65) and BDI (0.67). Pinto and Grilo (2004) argued that the concurrent validity for this scale is supported when compared to other measures which explore suicidal behaviour such as Suicide Risk Scale (SRS: Plutchik, van Praag & Conte, 1989). It is noteworthy that although the Childhood Abuse scale has not been explored using other measures to test validity,

McCann (1999) argues that as this item involves abuse, it remains a static item and regardless of time since the abuse it is still validated by adolescents on the scale. Despite these limitations with this scale, the concurrent validity for these scales is still supported.

Predictive validity is limited regarding the MACI. Penney, Moretti and Da Silva (2008) explored psychopathy characteristics using three scales, one of which was the egotistic scale of the MACI. This scale was characterized by three factors; self confidence, exhibitionism and social conceitedness. Penney et al. (2008) argued that future aggression in adolescents could be predicted using the exhibitionism and conceitedness factors of the egotistic MACI scale. However, clearly future research is needed in this area for any firm conclusions to be drawn.

Overall, the MACI does demonstrate concurrent validity, with only one personality scale (Inhibited), demonstrating no relationships with the associated measures used and three expressed concern scales (Sexual Discomfort, Peer Insecurity and Social Insensitivity), demonstrating limited positive correlations with the collateral measures used. For these scales construct validity is questionable, however it is possible that this might be a reflection of measures used not measuring similar features to the MACI scales, as opposed to an absence of concurrent validity (McCann, 1999) and they did demonstrate some relationship with clinical judgement. When considered in the wider context of the MACI these scales form part of the formulation as opposed to singularly guide any intervention or treatment. In addition, a systematic review by Paalman, Terwee, Jansma and Jansen (2013) of eighteen measures including the MACI, explored externalising behaviour in ethnic minority adolescents and although they found no evidence of reliability, internal consistency, content validity or criterion validity due to limited information, they did find limited evidence of concurrent validity. Therefore, although a clinician should be aware of these difficulties, other measures alongside the MACI might be appropriate if these characteristics were explicitly being explored.

Content Validity

The MACI addresses content validity through exploring the overlap of items within scales. Due to the nature of the scales it is expected that some overlap will occur between related scales, however, when a significant number of the items overlap it is possible that the scales measure the same characteristics and not have content validity.

Independent research regarding content validity of the MACI is limited, Appendix 14 presents correlations for MACI scales and shared item for MACI personality scales and will not be repeated here, however, some scales are worthy of further discussion. Within the Personality Patterns Scales (nine in total) a number of scales provided expected correlations, for example, Introversive, Inhibited, Unruly, Forceful and Oppositional scales. However, there was also a number of scales were content validity is questionable due to the large overlap between items, for example, the Dramatizing and Egotistic scales and the Doleful, Oppositional, Self Demeaning and Borderline scales. However, the Borderline scale is an anomaly, as it is made up from items of all the other scales and so content validity is expected to be low. The Egotistic scale negatively correlates with other scales, highlighting good content validity. From the expressed concern scales (eight in total), six of the scales have questionable content validity, with only Sexual Discomfort scale and the Family Discord scale demonstrating expected correlations and little overlap, therefore good content validity. Within the clinical syndrome Scales (seven in total) expected correlations occurred such as the Eating Dysfunctions and Body Disapproval scale. However, the Depressive Affect scale and Suicidal Tendency scale have questionable content validity as they are associated with a significant number of other scales, suggesting that these are not the only scales to measure depressive affect and suicidal tendency.

Overall the validity of the MACI appears variable, but promising. Despite clear difficulties regarding item overlap, when compared to other measures the MACI has demonstrated some concurrent and predictive validity in a number of forensic and clinical settings (e.g. McCann, 1999; Penney et al., 2008).

Reliability

Reliability examines a measurement's overall consistency and whether this measure produces similar results each time the test is used with comparable situations and participants.

Internal reliability or consistency

Millon used Chronbach alpha coefficients to explore the internal consistency of the MACI (Millon, 1993). Cronbach's alpha explores the relationship between test items and the more that these items measure the same construct, the higher the internal consistency is considered to be. Using this scale a score on or above 0.9 would be perceived as 'excellent', 0.8 to 0.9

‘good’ and 0.7 to 0.8 ‘acceptable’. Below these scores the internal consistency becomes less credible (Kline, 1999).

Appendix 15 presents the reported alpha coefficient reliability for each of the scales and facet scales provided by the MACI manual (Millon et al., 2006). The values for internal consistency vary across the scales, from excellent for ‘Self Demeaning’ (0.90) and ‘Self devaluation’ (0.91) to acceptable for the ‘Sexual Discomfort’ scale (0.73). A further fifteen of the twenty-six scales explored suggest good internal consistency and the remaining nine scales suggest an acceptable range, supporting the internal consistency of the MACI. McCann (1997) argues that this is further demonstrated as scores between the separate groups in test construction and independent group should have resulted in a reduction in internal consistency, which it did not.

The Grossman facet scores show an acceptable range of scores; four scored in the good range (over 0.80) and twenty scored within the acceptable range (over 0.70). From the remaining alpha coefficient scores, eleven of the scales scored within the poor range and the Interpersonally docile facet of the Submissive scale, fell into the unacceptable range (0.44). However, the MACI manual states that those under 0.60 were kept within the test as they described significant sections of the ‘parent scale’ (Millon et al., 2006).

A search of the literature has found no additional research exploring the internal consistency of the MACI Grossman facet scores. However, concern has been expressed regarding these scales and the adult version of the Millon Clinical Multiaxial Inventory (MCMI III; Millon, Millon, Davis & Grossman, 2006). The concern focuses primarily on no test re-test data being provided for the Grossman facet scales (Weiner & Craighead, 2010) and more recently the design of the Grossman facet scales and their psychometric validity and reliability have been questioned, due to the facet scales being produced from items within the existing scales and little research completed on these additional scales (Harwood, Beutler & Groth-Marnat, 2013). Although these concerns relate to the MCMI, they are relevant to the MACI as although the Grossman facet scales in the MACI were influenced by the work of Davis (1993), the rationale for the scales was the same as the MCMI III as was the process of exploring the items within scales and highlighting relevant domains (Grossman, 2008).

Test retest reliability

Following the initial phase of test development, a smaller section of adolescents obtained from the initial test development and the cross validation stage, were administered the MACI research form (Millon, 2006). This occurred on two occasions, with interval time ranging from three and seven days. Appendix 15 presents the test retests scores for each scale, which range from poor for 'Peer insecurity' scale (0.57) to excellent for 'Borderline Tendency' scale (0.92). However, Kline (1986) argues that two significant factors need to be considered when exploring test-retest reliability. The sample used should represent the intended future population and caution should be applied if retesting is completed within a short amount of time as this might artificially increase the scores obtained therefore providing an inaccurate prediction of its reliability. Therefore, as the MACI was retested at either three or seven days, this should be taken into consideration and would benefit from further research.

Conclusion

The MACI is a popular measure used within the mental health arena (Millon, 1993), primarily due to it being one test that measures a number of concerns, in an environment where a therapeutic relationship is not essential (Strack, 2008). Despite criticism that it does not identify extreme psychopathology (Strack, 2008), it is pertinent that the MACI was not designed to provide mental health diagnosis but to aid formulation and management of adolescents and does not have to be a standalone measure. In the author's clinical experience the MACI is best utilised to compliment clinical assessments and can add valuable insight into formulation.

Although there remains a wealth of agreement that the MACI is both valid and reliable (e.g., Dyer, 1997; McCann & Dyer, 1996), concerns regarding its psychological construct remain, as highlighted by this study. Validity of the MACI remains a significant area of concern. With regards to concurrent validity, despite its positive correlations with other collateral scales, especially when content is similar (McCann, 1999), there remains a continued lack of correlation with clinical judgement. Millon (1993) argued that during test construction, clinician's time with participants was limited and therefore might have influenced ratings. This remains problematic, as an argument for the utility of the MACI is its usefulness regardless of a relationship; limited research into this area provides little comfort. However, the initial method of collecting this evidence is also compromised. Millon (2006) describes in

the MACI manual how clinicians were financially reimbursed for their participation and to provide information on their client. However, not only was the time they had with their client limited prior to their assessment of the client, clinicians were provided a list of predetermined personality traits and asked in their clinical judgement which the client most closely resembled. Following this they then indicated additional personality traits which the client resembled but not as strongly as the first. This rudimentary approach relies heavily on the clinician making a quick judgement based on first impression, which might be useful for more obvious traits, but subtle traits might not be so readily seen. In clinical settings this can be problematic as problematic areas can be missed as more externalised ones are more obvious and managed appropriately.

Overlapping items and correlations between scales are another significant issue for the MACI and question the ability of some of the scales to measure individual constructs. In addition, Salekin, Lestico, Schrum and Mullins (2005) criticised the ability of the modifying indices to be an accurate reflection of answering styles, due to item overlap. However, others argue that the technique of weighting items within the MACI, manages this concern (Romm et al., 1999) and information provided by the indices can provide supplementary information regarding attempts made to distort information, which can be informative as to what is going on for the adolescent, for example anxiety (Strack, 2008). Therefore, although clinicians should be cautious of these issues, the additional information obtained through this assessment tool can aid the overall formulation.

Although, there are difficulties with some of its psychometric construction, which assessors should remain mindful of when using and it would undoubtedly benefit from future research, the MACI has demonstrated utility with a number of client groups in both forensic and clinical settings, including eating disorders (Hopwood, Ansell, Fehon, & Grilo, 2010) and adolescent sex offenders (Richardson, Kelly, Graham & Bhate, 2004) and it has also demonstrated good internal consistency across many of the scales and test retest reliability over a short period of time (Strack, 2008).

This research development is significant for the credibility of the MACI. Historically, much of the research has been completed by a discreet number of researchers and often working collaboratively. Therefore, the need for independent research exploring the MACI and its utility is essential. As discussed, some research is appearing with this in mind, but further

research needs to be completed to ensure credibility. This is particularly imperative when considering the development in understanding of personality disorders and changes with diagnostic manuals such as DSM 5, which open up the opportunity for research within personality disorder and with adolescents. Therefore, this appears to be an exciting time, where despite the MACI being created over two decades ago, its use might now be coming into fruition and with the growing recognition that BPD might occur in adolescence (Miller, et al., 2008), the use of a measure that explicitly explores that personality disorder is essential.

Therefore, despite the limitations overall the MACI remains a useful measure to assist clinical assessments and management of adolescents. As with all psychometric measure the value is reliant upon the context in which it is used (Strand, Sarimento & Pasquale, 2005). The strength of the MACI is its use as part of a formulation to assist management of adolescents, which aids insight into a number of adolescent difficulties all within one test.

With regards to personality disorders, Millon and colleagues argue that the MACI utilises personality and psychopathology theory and the personality scales within the MACI reflect adult personality disorders (Millon et al., 1993, 2006). In addition, the MACI separates the scales into personality and clinical to separate more enduring characteristics suggestive of personality disorder. For adolescents with BPD traits, the MACI provides one scale to identify this. This scale was created using DSM IV and Millon's theory of ambivalent personality (McCann, 1999) to explicitly explore items that characterise the BPD diagnosis; regulation of affect, perception of self and relationships. Therefore, considering future research exploring BPD and adolescence, the MACI will be a useful assessment measure to assist formulation and treatment planning and within the context of criminal justice and the association with BPD, clustering of scales in the MACI in addition to the BPD scale, could form an effective risk management measure within the wider formulation context. Similar research has taken place considering the utility of the MACI in forensic settings (Baum et al., 2009) and also treatment needs for subgroups of adolescent offenders (Oxnam & Vess, 2008). However, no research has specifically focused on the BPD scale and association with criminal behaviour in adolescents, which would be beneficial.

Although suitable measures to assess problematic behaviours in adolescence remains challenging, the MACI is one measure which offers some utility in the formulation and

management of a variety of adolescent client groups, exploring both ‘normal’ problematic behaviours and behaviours indicative of BPD traits. Early identification and treatment of BPD is imperative not only to help prevent involvement of NHS services but also due to the strong association of BPD and crime, in particular violent crime (Sansone & Sansone, 2009), identification and treatment could help manage future risk of criminal behaviour.

Chapter 5

Discussion

The aim of this thesis was to explore gender issues and BPD in adolescents and treatment of this disorder using DBT.

Firstly, the research study explored the attitudes of clinicians working within mental health services for adolescents and whether gender might impact their assessment of BPD and treatment pathway. Diagnosis of personality disorder is based on specific criteria and normally for those aged over 18 years (APA, 2000). However, controversy regarding diagnosing BPD under 18 years of age has been evident for many years, although more recently has gained support for its applicability (Chanen & Kaess, 2012). In addition, gender differences and diagnosis of personality disorder has also created controversy (Pilkonis et al., 2011) and in relation to BPD, research to date has been mixed and fraught with complications, with no clear conclusions found. Therefore the aim of this study was to explore gender and whether this influenced diagnosis of BPD in adolescents and also the treatment pathway for those diagnosed with BPD traits, predicting that females diagnosed with BPD would be more likely to be referred to Dialectical Behaviour Therapy (DBT) than males.

This thesis also explored the MACI (Millon, et al., 1993, 2006), a psychometric measure used with adolescents to explore personality and psychopathology difficulties, including borderline personality traits. This chapter aimed to critique this measure, highlighting the shortcomings of this measure but also exploring its utility with this client group,

Finally, the issue of treatment is clearly important when considering the difficulties experienced by those diagnosed with BPD. DBT is the treatment of choice as recommended by NICE (2009) for BPD. Therefore, this thesis also explored available literature regarding DBT and its effectiveness with adolescents with BPD traits and again whether gender is a factor which influences referral to this treatment.

BPD is a debilitating and costly disorder both for the individual (Miller, 2008), their family and society in general (Pickard, 2011). During the course of this thesis, the controversy of whether BPD can or should be diagnosed under the age of 18 years has been discussed and although some have argued that the validity of BPD in adolescence is questionable (Beliberg, 1994) research has argued that the BPD behaviours seen in adolescence are comparable to adult BPD individuals (Miller et al., 2008). Despite a lack of research in this area and contradictory epidemiological studies (Banzhaf et al., 2012), interest has persisted as to

whether females are diagnosed more readily with BPD than males. In an attempt to explore gender implications in the diagnosis of BPD, a study was undertaken that examined gender differences, diagnosis of BPD and treatment pathways. Specifically, clinicians were asked to read a vignette and make a judgement as to whether the individual met diagnosis for BPD and to indicate which treatment pathway they felt would be most appropriate. Gender of the individual in the vignette was the only factor manipulated, in an attempt to explore its influence on diagnosis and treatment pathway.

The findings from this study indicated that despite the same presentation, clinicians indicated that females demonstrated enough symptoms to warrant a diagnosis of borderline personality disorder, however, for the male group and the neutral gender group, they under estimated BPD. Analysis suggested that females were twice as likely to be diagnosed with BPD as males or the neutral group. Other interesting findings from this study involving the professional identity of the participants, found professional identity did not impact on their confidence of diagnosis of BPD, but it did influence their diagnosis of BPD; with both psychology and psychiatry under diagnosing BPD, whilst the group which involved unqualified staff over diagnosing. Although additional analysis to explore the reasons for this, were not undertaken in this study, it does provide a useful opportunity for future research to explore.

With regards to treatment pathway, this study found that although gender of the individual in the vignette did not influence treatment pathway referral to DBT, this was influenced by BPD diagnosis. This is an important factor for organisations such as the NHS with financial pressures, who need to target training appropriately; as it would suggest that their clinicians follow recommended treatment pathways and do not get influenced by factors such as gender, which is reassuring. Following this study, future research would benefit from exploring some of the areas highlighted within this study.

Exploring the number of referrals received within a community CAMHS team and comparing these with diagnosis rate would be beneficial in an attempt to clarify whether females seek mental health services more readily, which might explain their higher rate of diagnosis. Additional research would also benefit from comparison groups with adults diagnosed with BPD. Advancements in the literature have generally accepted that adolescents demonstrate similar symptoms of BPD to adults (Chanen & Kaess, 2012). However, diagnosis of BPD in

adolescents is likely to create controversy for some time and more basic issues need agreement such as the structure of personality disorder, rather than being restricted by age alone. One future imperative area of research would be to explore BPD symptoms separate from stereotypical gender associations but as individual difficulties that require intervention. This might help move away from gendered expectations and potential bias as the focus moves to the problem rather than whether that is normal for that gender.

DBT is one recommended treatment for those diagnosed with BPD (NICE, 2009) and despite effectiveness being demonstrated with adults with BPD, the evidence for adolescents with BPD is more limited. Seven studies were quality assessed within this review and although DBT did demonstrate effectiveness with adolescents with BPD symptoms which would meet diagnostic criteria using DSM IV TR (APA, 2000), there was a lack of research available which compared males and females to be able to make any distinction regarding effectiveness based on gender. Overall, this review highlighted the lack of robust research and the need for more appropriately sound research to explore effectiveness of DBT with adolescents with BPD symptoms. Methodological issues and problematic research design, including a lack of clear identification of BPD traits, variation in DBT programme delivery and degree of DBT training, coupled with low participant sample size and significant drop out rates makes comparisons difficult between studies. However, this review did highlight that in the context of such a limited field of research, initial findings are positive and from the three studies that explored BPD symptoms following DBT treatment, they all reported positive effect. However, these results are tentative due to confounding issues such as participant size.

Finally, the critique of the MACI (Millon et al., 1993, 2006) demonstrated that despite some difficulties with its psychological construction, the MACI has demonstrated practical utility and is valuable in assisting with the formulation and management of adolescents.

Although, there are difficulties with some of its psychometric construction, which assessors should remain mindful of when using, this would undoubtedly benefit from future research, the MACI has demonstrated utility with a number of client groups in both forensic and clinical settings, including, eating disorders (Hopwood, Ansell, Fehon, & Grilo, 2010) and adolescent sex offenders (Richardson, Kelly, Graham, & Bhate, 2004). It has also demonstrated good internal consistency across many of the scales and test retest reliability over a short period of time (Strack, 2008). However, the strength of the MACI is in its use as

part of a formulation of adolescents needs rather than as a diagnostic tool, which in fairness to the MACI it has never claimed to be. When used within an assessment, the MACI is a useful tool, which highlights issues relevant to the adolescent, not always visible in the assessment.

Strengths of this Thesis

Although there is a wealth of research on personality disorders, one of the major strengths of this thesis is that it identified the gaps in understanding and raises awareness in the area of interest specifically regarding personality disorder in adolescents. With the recent publication of DSM 5 (APA, 2013), it had been anticipated that personality disorder in adolescents would be more easily diagnosed. Although this did not happen, it has highlighted the need for additional research to explore this area. This is in addition to the continued interest over some time as to when personality disorders might possibly develop and the implications this might have on diagnosis.

Personality disorders and adolescence appears to be at an interesting juncture. Despite many years of controversy, much of which has not been resolved, the recent publication of DSM 5 has reignited an interest in the area. This new interest feels exiting and optimistic about what the future can hold with regards to this area. The findings from this thesis helps streamline the focus on adolescents and provides a foundation for this new wave of research and interest and will encourage further research to take place. Throughout this thesis it highlights how the literature is dated or limited and so the main thing this thesis adds is that it brings the topic up to date and highlights that despite decades of interest, questions regarding the influence of gender and gender bias have not been resolved.

In addition, by reviewing the literature for DBT effectiveness, this thesis has been able to constructively explore what research needs to be undertaken to help the area develop. With an area as small as DBT and adolescents, studies are likely to be compromised and some findings over embellish its usefulness. However, during the review the positives and negatives were explored and, although issues primarily regarding methodology were exposed, it has also highlighted that research in this area is very much in its infancy and will improve with time with more robust research managing some of the identified difficulties and challenges. This is important as effectiveness of DBT with adolescents needs to be established in its own right, not just presented as acceptable based on research completed

with adults; adolescents should not be treated as mini adults and this thesis reinforces this need.

This thesis also bridges the gap between the clinical and forensic environment with regards to personality disorder. Personality disorder impacts on mental health services, where treatment can be expensive and draining of resources and the criminal justice system, where those in particular with cluster b personality disorder diagnosis, are at an increased risk of committing criminal behaviour and serving time in prison. This thesis offers support regarding the benefits of early identification and treatment to help prevent involvement of both clinical and forensic services as the overlap between these services becomes apparent.

Limitations of this Thesis

The limitations of this thesis should be considered in the context of the limitations presented within the previous chapters; however particular issues will be discussed here. Psychometric measures exploring BPD in adolescents are limited. The MACI (Millon et al., 1993, 2006) is one such measure which can be utilised with adolescents. However, BPD traits are measured alongside other adolescent behaviours and personality traits. The MACI (Millon et al., 1993, 2006) has some questionable validity and reliability; therefore other measures specifically exploring this area are very much needed. Frequently diagnosis is achieved using a structured interview based on DSM, such as the SCID. However, this is an adult measure used within an adolescent arena. Arguably, BPD behaviours remain constant in which case this is applicable, however unless further research is completed looking at this then assumptions are being rather than being based upon sound empirical evidence. However, until a consensus can be reached as to whether BPD exists in adolescents then it will remain challenging to agree a measure to assist in its diagnosis. Initially it might be appropriate for some level of agreement to be sought as to what constitutes BPD in adolescents and from there look to explore measures to identity and diagnoses this; however this is unlikely to be an easy task.

This research aimed to explore the influence of gender on making a diagnosis of BPD and DBT as a treatment pathway. However, limitations with the methodology including the vignettes used and participant sampling bias previously discussed, mean that making generalisations is difficult. A further significant issue transpired with the lack of a pilot study. The intention had been to use a small group of adult mental health professionals in an explorative manner; however this provided additional difficulties which would need to be

accounted for in future research. Despite these difficulties, the research does collate all of the relevant information to date and this provides a useful foundation for future research.

With regards to the thesis, it is apparent that a clear idea of what behaviours constitute BPD is required before further research can confidently take place. With a complex presentation inherent in BPD diagnosis, if clinicians are not in agreement and more kudos is given to some behaviour than others (e.g., suicidal behaviour or self harm, then further research is compromised. Unfortunately with the intention of this being to collate all of the information to date to explore future research, the basic underpinnings of what constitutes BPD remains missing. It would appear that research in this area rather than trying to advance forward, would benefit from taking a step back and establishing these basics fundamental principles. It is noteworthy that research has again started to consider this. Ramos, Guilherme, de Castro and Leal (2014) have recently published their research exploring adolescents who met diagnostic criteria for BPD and by using the MACI found two subgroups of BPD an internalised group consisting of personality patterns such as doleful and introverted and an externalised group consisting of forceful and unruly personality types. However, interestingly they also reported a gender difference between the groups with females presenting with more internalised behaviours and males externalised behaviours. These results are similar to previous research (Bradley et al., 2005), but demonstrate the need for longitudinal research exploring BPD and its constitution in addition to gender differences.

Future research and clinical implications

This thesis has provided an opportunity to explore and discuss personality disorder in adolescents and treatment of those difficulties. However, research in this area remains limited and further research is required. Through additional research the issue of gender bias would be more systematically explored, not only regarding diagnosis but also in relation to treatment options. It would be beneficial for future research to deconstruct BPD and explore the individual components. This would essentially allow investigation as to which modalities prove beneficial with this group and also whether some difficulties could be more effectively targeted. BPD is characterised by a variety of maladaptive behaviours including, problematic relationships, difficulties managing emotions and maladaptive coping skills such as self-harm and suicidal behaviour. Much of the research to date has explored effectiveness of DBT with individual problems identified such as, self-harming behaviour. However, arguably DBT

effectiveness needs to be established with BPD as a whole in addition to the individual problem behaviours.

Overall, this thesis has provided some significant implications both from a research perspective and from a clinical point of view. The findings that gender differences regarding diagnosis of BPD still occurs, remains an important issue. Although, controversy has continued for many years regarding this, these findings demonstrate that from a practical position within a current NHS organisation, the issue remains the same. Although, additional research is required to more thoroughly explore the complexities of this, on a practical level clinicians and organisations should remain mindful of this issue when exploring diagnostic prevalence rates and appropriate services. Reassuringly this thesis has shown that gender did not influence DBT referral. In a time of austerity, where funding decisions are precarious and evidence required for justifying decision making is ever increasing, the findings from this thesis provide some comfort that treatment pathways are appropriate and supported by clinical staff and are not influenced by factors such as gender. However, what is essential is that DBT and adolescence is researched and clinically implemented in its own right. Using adult studies as a justification for effectiveness is not acceptable. Although diagnosis of BPD can demonstrate stability in adults, there remains currently a lack of a convincing body of research that would support this being applied to adolescents. However, organisations comfortable with this treatment approach are in an ideal position to help move this forward and provide evidence for its utility.

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Zanarini, M. C., Frankenburg, F. R., Reich, D. B., & Fitzmaurice, G. (2010). Time to attainment of recovery from borderline personality disorder and stability of recovery:

A 10-year prospective follow-up study. *American Journal of Psychiatry*, *167*, 663–667. doi: 10.1176/appi.ajp.2009.09081130

Appendices

Appendix 1: Initial introduction by email (identifying information about the organisation has been removed)

Dear …..

Understanding personality disorder traits in adolescents

I would like to invite you to take part in this research looking at personality disorder traits in adolescents. This research forms part of my doctoral qualification at the University of Birmingham supervised by Dr Catherine Hamilton-Giachritsis.

As an experienced clinician working within Child and Adolescent Mental Health Services (CAMHS) your experience is invaluable in helping me explore this area.

Attached is a link to Survey Monkey, where there is a brief questionnaire, which I would like you to fill in. It will also ask you demographic information, but all information will be anonymous. This questionnaire should take no longer than 5-10 minutes. Everything you enter will be anonymous - the research team will not be able to identify you from the information provided

The benefits of taking part in this research will be an opportunity for you to use your expertise and experience to help enable us to explore personality disorder. You **do not have to take part and all responses will be anonymous** so no one will know who did or did not take part. However, if you would like to take part you can simply click on the Survey Monkey link below and this will take you to the appropriate page. You will be asked to tick to say you have given your consent, that you understand that everything will be anonymous, that you do not have to take part and that you can stop at any time. In addition, by creating a unique ID on Survey Monkey when you complete the survey, then should you wish to withdraw your data, this can be done until July 2013.

When this study is completed, you will be provided with a copy of the report to read. This will be made freely available through the work intranet and a global email will be sent regarding accessibility.

Many thanks for your time reading this e-mail and I hope that many of your will feel able to give a small amount of time to completing the questionnaire. By means of a thank you, you will also be asked at the start of the questionnaire to nominate the team which you would like the chance to receive book tokens to the value of £150. The team with the most nominations will receive the tokens. Unfortunately if you withdraw your questionnaire then this nomination will also be withdrawn.

If you have any further questions, please feel free to contact me on this e-mail or my supervisor by e-mail or telephone.

Appendix 2: Information sheet

Information about the study

Understanding personality disorder traits in adolescents

Why is this study being done? As part of my doctoral research with University of Birmingham and to explore future training needs with Oxford Health Foundation Trust, this research will explore clinicians' experience of working with personality disorder in adolescents.

Why am I being asked to take part? As an experienced clinician in Child and Adolescent Mental Health Services (CAMHS) your experience is invaluable in helping me explore this area

What will I have to do? Attached is a brief questionnaire, which I would like you to fill in. It will also ask you demographic information, but all information will be anonymous. This questionnaire should take no longer than 5-10 minutes.

Do I have to take part and what are the benefits if I do? The benefits of taking part in this research will be an opportunity for you to use your expertise and experience to help enable us to explore personality disorder. You **do not have to take part and all responses will be anonymous** so no one will know who did or did not take part. In addition, the team who has the highest number of nominations from completed questionnaires will be awarded book tokens to the value of £150, by means of a thank you.

What are the potential risks of taking part? The information used within the questionnaire is widely available to all clinicians and so there are no identified risks.

Will my answers be confidential? All information given will be anonymous – there will be no way to connect you to your answers. You will be asked to tick to say you have given your consent, that you understand that everything will be anonymous, that you do not have to take part and that you can stop at any time. In addition, by creating a unique ID on Survey Monkey when you complete the survey, then should you wish to withdraw your data, this can be done until July 2013.

What happens after the research ends? A report will be provided which you will be sent an email about when you are able to access it through the Oxford Health intranet. This report will be free to access and your personal details will never appear in it.

What do I do if I want to take part? If you want to take part, then please proceed onto the next page which will ask for your consent. Following this you will be provided with the questionnaire.

What do I do if I want to speak to someone about this further? You can contact me on details provided Or my Supervisor: details provided

Thank you for your time

Appendix 3: Consent form

Consent form

Please make up a unique ID and write it below. This is so if you wish to withdraw your questionnaire at a later date then you can do this anonymously, without stating your real name - you can provide this unique ID. Remember to keep this ID safe in case.

Unique ID.....

Please feel free to ask any questions about taking part in this study. By ticking the box at the end you are providing consent and you understand the following:

- **I understand that I am being asked to participate in a research project as part of my doctoral research with University of Birmingham and to explore future training needs with ** Foundation Trust**

- **I have been informed in writing about the nature and purpose of the study, that this will be within a questionnaire format and I have had the opportunity to discuss this in person with the researcher and their supervisor, if I desire.**

- **I understand that I do not have to take part in this study, no one will be aware of this if I do not. If for any reason I am unhappy about participating, I can withdraw my questionnaire before July 2013 using my unique ID I have created, my data will be destroyed and there will be no consequences.**

- **I understand that taking part in this study (or withdrawing from the study) will have no personal or professional repercussions for me in any way. All information will be confidential and not be disclosed.**

By ticking the box below, I understand that I am consenting to participate in this study.

[ ] I agree to take part in this study

Appendix 4: Demographic information

Gender	male
	Female
Age	…..... years
Ethnicity	**.....**
Professional identity	psychology
	Psychiatry
	Nurse
	Social worker
	Occupational Therapist
	Family therapist
	Other (please state).....

How many years have you been qualified?.....

How many years have you worked in CAMHS?.....

How much experience would you say you have of working with adolescents with moderate to severe behavioural or mental health difficulties?

None some a lot

How many years have you worked with this client group? .....

Which area do you work in (if more than one area, choose the predominant one)

Oxfordshire

Buckinghamshire

Wiltshire

Which team would you like your questionnaire to be used against for their chance of book tokens to the value of £150?

..... (please be specific on team and location)

Appendix 5: Vignettes

Vignette A

You will now see a vignette of a young person's assessment with CAMHS. Please read through this and answer the following questions. You are welcome to use any diagnostic material you are familiar with (DSM IV-TR, SCID etc), but please do not discuss with your colleagues.

Teresa has been seeing her CAMHS team frequently for the last five months. She was initially referred due to feelings of anxiety and being irritable, coupled with a sense of hopelessness about her future. During sessions with CAMHS, she has admitted taking drugs and on at least three occasions in the last two weeks, she has woken up following a drinking episode and not known how she got home. Teresa states that she has no true friends. The only person Teresa feels understands her and would care whether she was alive or not, is a teacher at school, who she often spends time with, but Teresa worries that the teacher will leave and she will be left with no one with whom she can talk to. Teresa reports feeling depressed at times, but these do not last long. She denies any appetite or sleep disturbance.

Teresa's mother reports struggling to understand Teresa at home and they communicate little. She reports that when trying to talk to Teresa, she will respond with sarcasm, often stating how she hates the family and they do not care. Teresa' mother finds this difficult to hear and any attempt at supporting Teresa is rebuffed. Teresa's mother reports becoming concerned that Teresa gets fixated on things and looks for the negative in anything anyone says. This has resulted in Teresa being sent home from school on a number of occasions for fighting.

Do you think this young person has borderline personality disorder and would warrant a diagnosis as such using DSM IV TR?

Not present

Present

1 2 3 4 5 6 7

How confident are you in the diagnosis of the presence of BPD for this vignette?

Not very

confident confident

1 2 3 4 5 6 7

Can you tick which treatment pathway you would be likely to recommend for this young person (please choose the most preferred option):

Family therapy

Medication

Generic CAMHS intervention

Substance misuse intervention

CBT

DBT

Vignette B

You will now see a vignette of a young person's assessment with CAMHS. Please read through this and answer the following questions. You are welcome to use any diagnostic material you are familiar with (DSM IV-TR, SCID etc), but please do not discuss with your colleagues.

Robert has been seeing his CAMHS team frequently for the last five months. He was initially referred due to feelings of anxiety and being irritable, coupled with a sense of hopelessness about his future. During sessions with CAMHS, he has admitted taking drugs and on at least three occasions in the last two weeks, he has woken up following a drinking episode and not known how they got home. Robert states that he has no true friends and he often feels lonely, he reports that no one understands him. The only person Robert feels understands him and would care whether he was alive or not, is a teacher at school, who he often spends time with, but Robert worries that the teacher will leave and he will be left with no one with whom he can talk to. Robert reports feeling depressed at times, but these do not last long. He denies any appetite or sleep disturbance.

Robert's mother reports struggling to understand Robert at home and they communicate little. She reports that when trying to talk to Robert, he will respond with sarcasm, often stating how he hates the family and they do not care. Robert's mother finds this difficult to hear and any attempt at supporting Robert is rebuffed. Robert's mother reports becoming concerned that Robert gets fixated on things and looks for the negative in anything anyone says. This has resulted in Robert being sent home from school on a number of occasions for fighting.

Do you think this young person has borderline personality disorder and would warrant a diagnosis as such using DSM IV TR?

Not present

Present

1 2 3 4 5 6 7

How confident are you in the diagnosis of the presence of BPD for this vignette?

Not very

confident confident

1 2 3 4 5 6 7

Can you tick which treatment pathway you would be likely to recommend for this young person (please choose the most preferred option):

Family therapy

Medication

Generic CAMHS intervention

Substance misuse intervention

CBT

DBT

Vignette C

You will now see a vignette of a young person's assessment with CAMHS. Please read through this and answer the following questions. You are welcome to use any diagnostic material you are familiar with (DSM IV-TR, SCID etc), but please do not discuss with your colleagues.

A young person has been seeing the CAMHS team frequently for the last five months. They were initially referred due to feelings of anxiety and being irritable, coupled with a sense of hopelessness about their future. During sessions with CAMHS, they have admitted taking drugs and on at least three occasions in the last two weeks, they have woken up following a drinking episode and not known how they got home. They state that they have no true friends and they often feel lonely, they report that no one understands them. The only person this young person feels understands them and would care whether they were alive or not, is a teacher at school, who they often spends time with, but they worry that the teacher will leave and they will be left with no one with whom they can talk to. This young person reports feeling depressed at times, but this do not last long. They deny any appetite or sleep disturbance.

This young person's mother reports struggling to understand them at home and they communicate little. She reports that when trying to talk to this young person, they respond with sarcasm, often stating how they hate their family and they do not care. This young person's mother finds this difficult to hear and any attempt at supporting their child is rebuffed. This young person's mother reports becoming concerned that her child gets fixated on things and looks for the negative in anything anyone says. This has resulted in this young person being sent home from school on a number of occasions for fighting.

Do you think this young person has borderline personality disorder and would warrant a diagnosis as such using DSM IV TR?

Not present

Present

1 2 3 4 5 6 7

How confident are you in the diagnosis of the presence of BPD for this vignette?

Not very

confident confident

1 2 3 4 5 6 7

Can you tick which treatment pathway you would be likely to recommend for this young person (please choose the most preferred option):

Family therapy

Medication

Generic CAMHS intervention

Substance misuse intervention

CBT

DBT

Appendix 6: debrief

Thank you for taking part in this study. This study aimed to explore clinicians' experiences of personality disorder traits in adolescents and explore whether gender has an impact on how this is perceived.

Through this study we aim to explore personality disorder and the implications for further training. As you may be aware the Dialectical Behaviour Team is an expanding service within the trust and future appropriate training is essential. Your participation in this research will greatly impact future training and our understanding of gender bias and borderline personality disorder.

If you have any questions or concerns about the research, you can contact the researcher or supervisor on the details below:

Amanda Leather

Address:

Tel:

email :

University supervisor:

Details

Appendix 7 . Diagnostic criteria for diagnosis of Borderline Personality Disorder (taken from DSM IV TR: APA, 1994)

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

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

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

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

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

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

6. Affective instability due to a marked reactivity of mood (for example, 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 (for example, frequent displays of temper, constant anger, recurrent physical fights).

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

Appendix 8. Literature search strategies, syntax and sources used in systematic review

Web Of Science

Completed 10th February 2014

*((**TOPIC:** (borderline personality disorder*) AND **TOPIC:** (adolescent*)) AND **TOPIC:** (dialectical behaviour therapy*))*
Timespan=1980-2014. Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH.

Sage

Completed 10th February 2014

adolescent* and borderline personality disorder in all fields and dialectical behaviour therapy in all fields in SAGE journals available to me.

Pubmed
Completed 10th February 2014

((("adolescent"[MeSH Terms] OR "adolescent"[All Fields] OR "adolescence"[All Fields]) OR adolescence'[All Fields] OR adolescence's[All Fields] OR adolescenceadulthood[All Fields] OR adolescencents[All Fields] OR adolescences[All Fields] OR adolescencet[All Fields]) AND ("borderline personality disorder"[MeSH Terms] OR ("borderline"[All Fields] AND "personality"[All Fields] AND "disorder"[All Fields]) OR "borderline personality disorder"[All Fields])) AND (dialectical[All Fields] AND ("behaviour therapy"[All Fields] OR "behavior therapy"[MeSH Terms] OR ("behavior"[All Fields] AND "therapy"[All Fields]) OR "behavior therapy"[All Fields]))

PsycInfo

1	adolescent*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures]	144889
2	borderline personality disorder*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures]	6966
3	dialectical behaviour therapy*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures]	120
4	1 and 2 and 3	8

Appendix 9: Using full text studies excluded

Author(s) and date	Paper title	Reason for exclusion
Hjalmarsson, Kåver, Perseius, Cederberg & Ghaderi (2008)	Dialectical behaviour therapy for borderline personality disorder among adolescents and young adults: Pilot study, extending the research findings in new settings and cultures	Wide age range (15-40 years) and from total 27 participants 17 patients were over18 years. Analysis does not separate by age
Wood, Trainor, Rothwell, Moore and Harrington, (2001)	Randomized Trial of Group Therapy for Repeated Deliberate Self-Harm in Adolescents	DBT not main treatment, group therapy or routine care
Katz and Cox (2002)	Dialectical Behavior Therapy for Suicidal Adolescent Inpatients	Case study
Salsman (2011)	Adapting dialectical behavior therapy to help suicidal adolescents	Review of DBT no empirical study
Klein and Miller (2011)	Dialectical Behavior Therapy for Suicidal Adolescents with Borderline Personality Disorder	Review of literature and studies
MacPhearson, Cheavens and Fristad (2013)	Dialectical Behaviour Therapy for Adolescents: Theory, Treatment, Adaptations and Empirical Outcomes	Review of literature and research
Shelton, Kesten, Zhang & Trestman (2011)	Impact of a Dialectic Behavior Therapy—Corrections Modified (DBT-CM) Upon Behaviorally Challenged Incarcerated Male Adolescents	Only focus on aggression, impulsivity and improve coping post treatment. No exploration of other BPD symptoms
Wasser,Tyler, McIlhaney, Taplin, & Henderson (2008)	Effectiveness of Dialectical Behavior Therapy (DBT) versus Standard Therapeutic Milieu (STM) in a Cohort of Adolescents Receiving Residential Treatment	Not exploring BPD symptoms more general psychiatric difficulties – depression, withdrawn, psychomotor excitation
Woodberry &	Implementing Dialectical Behavior	Sample did not

Poppenoe (2008)	Therapy with Adolescents and Their Families in a Community Outpatient Clinic	include BPD symptoms as inclusion
McDonell, Tarantino, Dubose, Matestic, Steinmetz, Galbreath & McClellan (2010)	A Pilot Evaluation of Dialectical Behavioural Therapy in Adolescent Long-Term Inpatient Care	BPD symptoms not part of inclusion criteria
Katz, Cox, Gunasekara & Miller (2004)	Feasibility of Dialectical Behaviour for Suicidal Adolescent Inpatients	BPD symptoms not assessed at assessment or part of inclusion

Appendix 10. Critical appraisal tool for Quasi experimental studies with no randomised control based on CASP appraisal tool (2004, 2006) and criteria identified by Mallen et al. (2006)

Question	Y	N	DK	Comments
Participant selection and recruitment				
Does the research have clear aims?				
Where males and females compared?				
Clear inclusion/exclusion criteria inc assessment of bpd symptoms relevant to criteria (i.e. >3 symptoms bpd)				
Study design				
Was allocation to group appropriate considering study design?				
Does DBT intervention components appear appropriate and not compromised (individual, group skills, consult)				
Sample size and analysis				
Was the sample size clear and suitable for the study?				
Could analysis of data be reliably done?				
Any follow up and if so appropriate time frame?				
Confounding variables and outcome measures				
Were confounding variables considered?				
Were participants who dropped out accounted for or explained?				
Were instruments used for assessment, valid?				
Did research rely soley on self report measures and if so were steps taken to minimise bias (objective measures)				
Were instruments used comparable to other studies?				
Bias				
Where the participants blind to the research question before participation?				

Is there evidence of over interpretation or over generalisation of results? Consider also DBT programme type could influence bias?

Other considerations

Was it an appropriate study given nature of the research – RCT/ controlled trials? However, due to paucity of research studies involving comparison group can be included.

Are the findings clearly described and differences explored?

Can results be generalised with confidence?

Clear outline of where assessment took place – inpatient, outpatient, CAMHS

Does the quality of the research appear robust?

Is this research relevant to my question?

Other information which might affect overall weight of study:

Total score /40

Overall rating; weak moderate strong

Is there a discrepancy with second reviewer?

No Yes .....

Final decision of both reviewers? Weak moderate strong

Critical appraisal for observational study without control based on CASP Cohort tool (Critical Appraisal Skills Programme (CASP, National Critical Appraisal (2004; 2006) and criteria identified by Mallen et al. (2006)

Screening questions

Was the aim of the study clear? **Yes** **No**

Note:

Is the aim relevant?

Is the methodology appropriate? **Yes** **No**

Note:

Consider other research in this area

Did it address the research question?

Is it worth continuing?

1. Was the design of the research considered appropriate? **Yes** **No**

Note: *comments:*

Is the rationale of the design discussed/explained?

2. Was recruitment of participants appropriate? **Yes** **No**

Note: *comments:*

Is consideration given to any bias with participants used?

Do they explain how participants were recruited?

Any special features of participant group explained?

3. Were measures used appropriate for design? **Yes** **No**

Note: *comments:*

Objective measures used where possible or reliance on self report?

Did all participants complete same measures?

Any indication of measurement bias and if so was it managed?

In particular were bpd symptoms explored through appropriate

Measure – SCID, DSM etc

4. Were confounding variables accounted for? **Yes** **No**

Note: *comments:*

Were drop out rates considered and accounted for?

Any other confounding variables?

5. Were participants appropriately followed up considering time? **Yes** **No**

Note: *comments:*

Was enough time allowed for follow up?

Any consideration to those 'lost' to follow up?

Results

6. What are the results?

7. Are the results believable? **Yes** **No**

Is anything likely to have influenced this – e.g. confounding bias? *Comments:*

Does the methodology influence the results?

8. Can the results be generalised? **Yes** **No**

Specific populations *comments:*

Do they add to the research field?

9. Do these results fit with other studies? **Yes** **No**

10.Is this research relevant to my research question? **Yes** **No**

Overall rating of study considering above factors

Weak moderate strong

Any additional points?

Is there a discrepancy with second rater? **Yes /No**

Overall decision Weak moderate strong

Appendix 11

Quality assessment of quasi experimental study included in review

Author (date)	Participant selection	Study design	Sample size and analysis	Confounding variable	Bias	Other consideration	Overall score
Rathus and Miller (2002)	Clear aims of study used and inclusion/exclusion criteria. Males and females not compared	Good selection measures and specifically explored BPD symptoms. However, not randomised grouping.	Good sample size and even with dropout still high number compared to other studies. Chi square analysis, some of analysis not clear	Dropout participants clearly indicated Objective measures also used	Unclear whether participants blind to study	Intention to treat analysis used Findings relevant to research No post treatment assessment on TAU Lack random assignment	26/40

Appendix 11:

Quality assessment of observational studies included in review

Author (date)	Design of research	Appropriate recruitment	Appropriate measures used	Confounding variables accounted for	Follow up	results	Generalise results?	Result fit with other studies?	Relevant to my questions	Overall rating
Trupin, Stewart, Beach & Boesky (2002)	Limited information design	Specific to target group all incarcerated	Over reliance on self report or behavioural logs	No, significant difference in degree of DBT training Impact of all being incarcerated not considered	No	Significant confounding bias provides doubt over results	No	No distinction between difficulties	No – female only, not really BPD and significant confounding variables	Low 1/18
James, Winmill, Anderson & Alfoadari (2011) UK	Yes Clear rational and inclusion/exclusion and definition of DSH	Looked after young children/ Forensic clients	Large use of measures including clinical interview DBT package	No - high drop out rate, no control group, question finings	No	Yes believable and included intention to treat analysis	With difficulty as discusses at length unique difficulties with this client group, but clearly	Yes generally	Yes male and female	Mod 12/18

			robust, but additional outreach measures employed due to nature of client group				explained within this context so not over generalised			
Geddes, Dziurawiec & Lee (2013) Australia	clear inclusion/exclusion All female 6 participants	Limited information and appears complicated by parental involvement	Limited number of measures used, and reliance on self report BPD not explicitly explored but emotion regulation	Drop out high in relation to small start number of participants and not explored	3 months follow up	Difficult to determine with such low numbers and use of group mean scores to calculate change and over justification of results	No confidence	Few comparable to other results given specific exploration of trauma	compromised due to very low numbers no males	Low 6/18
James, Taylor, Winmill & Alfoadari (2008) UK	limited methodology all female	Yes- clear description	limited number of measures used	Not clear on blinding Other issues: drop out	does not indicate time frame so offers little information	Difficult to determine when statistically significant pre and post treatment or follow up. Over	as before	Compromised due to limitations	Limited All female	Mod 8/18

				scores used within finale analysis (scores carried over) Resource implications meant not all re interviewed at end		reliance on describing additional information				
Fleischhaker, Böhme, Sixt, Brück, Schneider, Schulz (2011) Germany	Yes clear description of measurement points inclusion/exclusion criteria all female	Limited information but overall seems appropriate	Large selection of measures and not over reliance on self report	Not adequately – potential bias by therapist completing assessment Low numbers	Yes	Difficult as no post treatment just follow up so difficult to determine if DBT effective or other issues	Yes but with consideration of numbers	Yes, general CAMHS	All female	Mod 12/18
Miller, Wyman, Huppert,	Yes Clear rationale	Yes	Self report measures	Briefly discussed within context of	No	No pre treatment scores presented	Limited by specificity of results and no pre	Yes	Yes Female and	Mod 12/18

Glassman & Rathus (2000) USA	Female and male	DBT package appropriate and treatment fidelity to model	findings but not explored	in study	treatment data	male

Appendix 12: Data Extraction Sheet

Extracted information from included studies:

1. Author (s), date and country of study
2. Participant details including how they were recruited and whether blind recruitment
3. Sample size
4. Borderline Personality Disorder symptoms identified through valid measure, inclusion criteria
5. Description of procedure, including DBT training and DBT programme
6. Statistical analysis
7. Consideration of confounding variables inc drop out rates, bias
8. Main findings especially BPD symptoms individually and clustered for BPD diagnosis
9. Overall assessment of quality (weak, moderate, strong for observational studies or overall score for quasi experimental study)

Appendix 13: Assessment tools descriptions and relevant information regarding validation where known

Name and author	Description
Attachment Style Questionnaire (ASQ) Feeney, Noller & Patty, 1993	
Beck Depression Inventory (BDI) (Beck, Ward, Mendelson, Mock & Erbaugh, 1961)	21 item self report questionnaire exploring symptoms of depression. Well validated psychometric credibility and widely used (Beck, Steer & Garbin, 1988). Designed for 13 years and above
Beck Hopelessness Scale Beck, Weissman, Lester & Texler (1974);	20 item self report exploring the future, motivation, and expectations for the future. Designed for 17+ years old. Well designed and validated measure (Dowd, 1992)
Children's Automatic Thoughts Scale (CATS) – Schhniering & Rapee, 2002	Designed for 8 to 17 year olds, explores internalised and externalised difficulties
Child and Adolescent Functional Assessment Scale (CAFAS: Hodges, 1995)	Interview and review of charts to explore functional difficulties
Child Behaviour Checklist (CBCL)	Child behaviour measured by reporting parent. Well established and validated
Clinical Global Impression	CGI is well used measure, often with anxiety studies and treatment effectiveness

Comprehensive Quality of Life Scale McCabe & Cummins, 1998	Self rated scale for 11 to 18 years olds with acceptable validity and reliability
Diagnostic Interview Schedule for Children (DISC: Shaffer, Schwab & Fisher, 1993)	Structured interview used to assess psychiatric conditions through DSM IV, age related
Depression Inventory for Children and Adolescents (DIKJ) 2000	German measure for 7 to 18 year olds. Has validity and reliability with other measures
Global Assessment of Functioning (GAF) DSM IV TR, 2000	Subjective scale with measures functioning socially, occupational and psychological for adults
Harkavy-Asnis Suicide Survey (HASS)	10 item self report exploring suicidality. Consistency levels vary between this scale and interview (Velting, Rathus & Asnis, 1998)
Harkavy-Friedman & Asnis (1989a, 1989b)	
Inventory of Life Quality in Children and Adolescents	Measure of quality of life in adolescents
Kiddie-SADS PL (Delmo, Weiffenbach, Gabriel, Stadler, Poustka, 2000)	Semi structured interview exploring present and past psychopathology in line with DSM diagnostic criteria
Life Problems Inventory (LPI; Rathus, & Miller, 1995)	60 item self report measure exploring symptoms of BPD. Split into four modules of DBT. Has demonstrated good internal consistency (.82 to .90 on subscales) and criterion validity demonstrated with SCID II

Lifetime parasuicide count (LPC) Linehan 1994	Questions relating to self harm, adult measure
Massachusetts Youth Screening Instrument (MAYSI: Grisso, 1999)	Measure used to explore mental health problems
Modified Affective Control Scale for Adolescents (MACS-A). Geddes, Dziurawiec & Lee (2007)	Emotion regulation measure for adolescents, psychologically sound measure
Neale Analysis of Reading Ability	Measures reading accuracy in 6 to 12 year olds
Scale for Suicidal Ideation (SSI; Beck et al., 1979)	19 item scale used to explore suicidal thinking and planning. Has demonstrated inter rater reliability and internal consistency and demonstrated validity (Beck, Steer & Brown, 1993)
Structured Clinical Interview for DSM III (SCID II; Spitzer, Williams, Gibbon & First, 1990)	Structured interview to assist with diagnosis within DSM Not validated under 18 years
Schedule for Affective Disorders and Schizophrenia child version	Reliable and valid measure for psychiatric diagnosis in school age children
Symptom Checklist 90-Revisted (SCL90R; Derogatis, 1977)	90 item scale exploring nine symptoms. This scale has demonstrated acceptable internal consistency and test retest reliability. Validity has been demonstrated both concurrent and discriminant (Derogatis, 1977)

Trauma Symptom Checklist for Children (TSCC) Briere 1996	Well used measure, designed for children and adolescents exploring symptoms of trauma
Youth Self Report	112 items, well used measure exploring difficulties linked to behaviour or emotions

Appendix 14:

Table 14: **correlations for MACI scales and shared item for MACI personality scales**

Scale	Overlap of items with other scales	Number of shared items	Significant Comments
Scale 1: introversive (44 items)	Scale 2a Inhibited (0.68)	20	Shares high number of items and expected correlations, query content validity
	Scale 2b Doleful (0. 55)	6	
	Scale 9 borderline tendency (0.45)	6	
	Scale 8b self demeaning (0.47)	9	
Scale 2a: Inhibited (37 items)	Scale 1 introversive (0.68)	20	If scale 2a is elevated, may cause elevation on other related scales due to overlapping items
	Scale 2b doleful (0.47)	7	
	Scale 8b self demeaning (0.49)	15	
Scale 2b: Doleful Scale (24 items)	Scale 1 introversive (0.55)	6	Correlates highly and significant item overlap so query content validity
	Scale 8a oppositional (0.64)	9	
	Scale 8b self demeaning (0.74)	13	
	Scale 9 borderline (0.67)	8	
	Scale 2a inhibited (0.47)	5	
Scale 3: Submissive (48 items)	Scale 7 conforming (0.74)	16	Only scale 7 correlates highly with scale 3, despite overlapping items
	Scale 2a inhibited (0.27)	7	
	Scale 8b self demeaning (-0.22)	5	
Scale 4: Dramatising	Scale 5 Egotistic (0.83)	18	Questionable content validity. Moderate item
	Scale 6a unruly (0.28)	11	

(41 items)	Scale 7 conforming (0.45) Scale 1 introversive (-0.82) Scale 2a Inhibited (-0.74) Scale 2b doleful (-0.58)		overlap. High negative correlation with Scales 1, 2a and 2b to be expected as this scale explores sociability
Scale 5: Egotistic (39 items)	Scale 4 dramatizing (0.83) Scale 6a unruly (0.19) Scale 1 introversive (-0.74) Scale 2a Inhibited (-0.69) Scale 2b doleful (-0.65) Scale 8b self demeaning (-0.64) Scale 9 borderline (-0.59)	18 8	Good content validity as little overlap with other items and expected correlations
Scale 6a: Unruly (39 items)	Scale 4 dramatizing (0.28) Scale 5 egotistic (0.19) Scale 6b forceful (0.75) Scale 8a oppositional (0.48)	11 8 12 13	Good content validity although moderate item overlap and expected high positive correlations with 6b and 8a
Scale 6b: forceful (22 items)	Scale 6a unruly (0.75) Scale 8a oppositional (0.57)	12 11	Moderate overlap therefore good content validity
Scale 7: conforming (39 items)	Scale 3 submissive (0.74) Scale 5 egotistic (0.55)	16	Questionable content validity, influenced by other

	Scale 4 dramatizing (0.46)		scales. Socially desirable answering can also elevate this scale
Scale 8a: oppositional (43 items)	Scale 2b doleful (0.64)	9	Elevations on this scale might be influenced by other scales
	Scale 6b forceful (0.57)	11	
	Scale 8b self demeaning (0.58)	14	
	Scale 6a unruly (0.47)	13	
Scale 8b: self demeaning (44 items)	Scale 2b doleful (0.74)	13	High item overlap and correlations. Questionable content validity
	Scale 8a oppositional (0.58)	14	
	Scale 9 borderline (0.67)	12	
	Scale 2a inhibited (0.49)	15	
	Scale 1 introversive (0.47)	9	
	Scale 5 egotistic (-0.64)		
Scale 9: Borderline tendency (21 items)	Scale 2b doleful (0.67)	8	All items on this scale use other scales and so other elevations will cause elevations here. Questionable content validity
	Scale 8a oppositional (0.67)	9	
	Scale 8b self demeaning (0.67)	12	
	Scale 1 introversive (0.45)	6	
	Scale 6a unruly (0.34)	5	
	Scale 6b forceful (0.45)	5	
	Scale 7 conforming (-0.71)		
Scale A: identity	Scale 1 introversive (0.64)		High correlations and questionable
	Scale 2b doleful (0.58)		

diffusion (32 items)	Scale 8a oppositional (0.64) Scale 8b self demeaning (0.54) scale 9 borderline (0.72) Scale B self devaluation (0.62) Scale GG suicidal tendency (0.61) Scale 4 dramatizing (-0.57) Scale 5 egotistic (-0.62) Scale 7 conforming (-0.74)	content validity
Scale B: self devaluation (38 items)	Scale 1 introversive (0.63) Scale 2a Inhibited (0.65) Scale 2b doleful (0.75) Scale 8a oppositional (0.57) Scale 8b self demeaning (0.79) Scale 9 borderline (0.64) Scale A identity diffusion (0.62) Scale C body disapproval (0.68) Scale H childhood abuse (0.53) Scale AA eating dysfunctions (0.59) Scale FF depressive affect (0.89) Scale GG suicidal tendency(0.73) Scale 4 dramatizing (-0.72) Scale 5 egotistic (-0.83)	High correlations suggest a number of scales measure self devaluation. Questionable content validity

	Scale 7 conforming (-0.55) Scale F social insensitivity (-0.52)	
Scale C: Body disapproval (17 items)	Scale 8b self demeaning (0.52) Scale B self devaluation (0.68) Scale AA eating dysfunctions (0.90) Scale FF depressive affect (0.66) Scale GG suicidal tendency (0.56) Scale 5 egotistic (-0.61)	Expected high correlation with scale AA, but questionable content validity as short scale
Scale D: sexual discomfort (37 items)	Scale 3 submissive (0.58) Scale 7 conforming (0.60) Scale EE anxious feelings (0.59) Scale 6a unruly (-0.64) Scale 6b forceful (-0.52) Scale 8a oppositional (-0.54) Scale BB substance abuse (-0.63) Scale DD impulsive propensity (-0.54)	Expected correlations and good content validity
Scale E: peer insecurity (19 items)	Scale 1 introversive (0.61) Scale 2a Inhibited (0.77) Scale 4 dramatizing (-0.67) Scale CC delinquent predisposition (-0.54)	Short scale and high correlations with other scales suggesting overlap
Scale F: social	Scale 5 egotistic (0.59)	Questionable content validity due

insensitivity (39 items)	Scale 6a unruly (0.67) Scale 6b forceful (0.60) Scale CC delinquent predisposition (0.80) Scale 2a Inhibited (-0.67) Scale 3 submissive (-0.52) Scale B self devaluation (-0.52) Scale EE anxious feelings (-0.57) Scale FF depressive affect (-0.57)	to a number of scales measuring similar items
Scale G: family discord (28 items)	Scale 6a unruly (0.55) Scale 8a oppositional (0.52) Scale 3 submissive (-0.56)	Not high correlations with other scales, suggests good content validity
Scale H: childhood Abuse (24 items)	Scale 2b doleful (0.50) Scale 8b self demeaning (0.50) Scale B self devaluation (0.53) Scale GG suicidal tendency (0.70)	Moderate level of correlation with other scales measuring depression and high with suicidal tendency. Questionable content validity
Scale AA : eating dysfunctions	Scale 8b self demeaning (0.50) Scale B self devaluation (0.59) Scale C body disapproval (0.90)	Expected high correlation with scale C

(20 items)	Scale FF depressive affect (0.60) Scale 5 egotistic(- 0.51)	
Scale BB: substance abuse Proneness (35 items)	Scale 6a unruly (0.72) Scale 6b forceful (0.61) Scale 8a oppositional (0.57) Scale 9 borderline (0.54) Scale CC delinquent predisposition (0.59) Scale DD impulsive propensity (0.65) Scale 3 submissive (-0.64) Scale 7 conforming (-0.67) Scale D sexual discomfort (-0.63) Scale EE anxious feelings (-0.71)	Expected high correlations with some scales
Scale CC: delinquency Predisposition (34 items)	Scale 6a unruly (0.81) Scale 6b forceful (0.60) Scale F social insensitivity (0.80) Scale BB substance abuse proneness (0.59) Scale DD impulsive propensity (0.58) Scale 2a Inhibited (-0.62) Scale 3 submissive (-0.61) Scale EE anxious feelings (-0.74)	

	Scale FF depressive affect (-0.52)	
Scale DD: impulsive propensity (24 items)	Scale 6a unruly (0.77) Scale 6b forceful (0.75) Scale 8a oppositional (0.60) Scale 9 borderline (0.63) Scale G family discord (0.59) Scale BB substance abuse proneness (0.65) Scale CC delinquent predisposition (0.58) Scale 3 submissive (-0.67) Scale 7 conforming (-0.70) Scale D sexual discomfort (-0.54) Scale EE anxious feelings (-0.69)	
Scale EE: Anxious feelings (42 items)	Scale 3 submissive (0.74) Scale 7 conforming (0.55) Scale D sexual discomfort (0.59) Scale 6a unruly (-0.82) Scale 6b forceful (-0.66) Scale F social insensitivity (-0.57) Scale BB substance abuse proneness (-0.71) Scale CC delinquent predisposition (-	High correlations, but on few scales, most reflect negative correlations

	0.73) Scale DD impulsive propensity (-0.69)	
Scale FF: Depressive affect (33 items)	Scale 1 introversive (0.56) Scale 2a Inhibited (0.62) Scale2b doleful (0.70) Scale 8b self demeaning (0.70) Scale 9 borderline (0.53) Scale A identity diffusion (0.51) Scale B self devaluation (0.89) Scale C body disapproval (0.66) Scale AA eating dysfunctions (0.60) Scale GG suicidal tendency (0.71) Scale 4 dramatizing (-0.67) Scale F social insensitivity (-0.57) Scale CC delinquent predisposition (-0.52)	Questionable content validity as depressive affect is measured by number of scales
Scale GG: suicidal tendency (25 items)	Scale 2b doleful (0.68) Scale 8a oppositional (0.61) Scale 8b self demeaning (0. 63) Scale 9 borderline (0.61) Scale A identity diffusion (0.61) Scale B self devaluation (0.73)	Questionable content validity as suicidal tendency is measured across a number of scales

Scale C body disapproval (0.56)
Scale H childhood abuse (0.70)
Scale AA eating dysfunctions (0.53)
Scale FF depressive affect (0.71)
Scale 4 dramatizing (-0.53)
Scale 5 egotistic (-0.66)
Scale 7 conforming (-0.61)

Appendix 15

Table 15: **Alpha coefficient for each scale and facet scale**

Name of Scale	**Number of items within scale**	**Internal consistency**	**Cross validation sample**	**Test re-test**
Modifying Indices				
X. Disclosure	-	-	-	0.86
Y. Desirability	17	0.73	0.75	0.71
Z. Debasement	16	0.87	0.85	0.84
Personality Patterns				
1. Introversive	44	0.83	0.82	0.63
i. Expressively Impassive	7	0.76	-	-
ii. Temperamentally Apathetic	7	0.50	-	-
iii. Interpersonally Unengaged	7	0.77	-	-
2a. Inhibited	37	0.86	0.86	0.70
i. Expressively fretful	9	0.77		
ii. Interpersonally Aversive	12	0.80		
iii. Alienated self-image	9	0.83		
2b. Doleful	24	0.86	0.85	0.83
i. Temperamentally Woeful	8	0.79		
ii. Expressively Disconsolate	8	0.71		
iii. Cognitively Pessimistic	8	0.67		
3. Submissive	48	0.74	0.73	0.88
i. Interpersonally Docile	7	0.44		
ii. Temperamentally Pacific	10	0.71		
iii. Expressively Incompetent	8	0.53		
4. Dramatising	41	0.82	0.84	0.70
i. Interpersonally Attention seeking	9	0.59		
ii. Gregarious Self Image	12	0.63		
iii. Cognitive Flighty	6	0.58		
5. Egotistic	39	0.80	0.82	0.82
i. Admirable self image	10	0.79		
ii. Cognitively Expansive	7	0.63		
iii. Interpersonally Exploitive	8	0.58		
6A. Unruly	39	0.84	0.83	0.79
i. Expressively Impulsive	8	0.77		
ii. Acting Out Mechanism	9	0.78		
iii. Interpersonally Irresponsible	11	0.69		
6b. Forceful	22	0.83	0.81	0.85
i. Interpersonally Abrasive	7	0.80		
ii. Expressively Precipitate	7	0.80		

iii. Isolation Mechanism	7	0.55		
7. Conforming	39	0.86	0.86	0.91
i. Expressively Disciplined	8	0.71		
ii. Interpersonally Respectful	10	0.65		
iii. Conscientious Self-image	8	0.64		
8a. Oppositional	43	0.85	0.82	0.76
i. Discontented self image	9	0.74		
ii. Expressively Resentful	9	0.72		
iii. Interpersonally Contrary	12	0.76		
8b. Self demeaning	44	0.90	0.89	0.88
i. Cognitively Diffident	9	0.78		
ii. Undeserving Self Image	9	0.72		
iii. Temperamentally Dysphoric	7	0.73		
9.Borderline Tendency	21	0.86	0.86	0.92
i. Temperamentally Labile	10	0.74		
ii. Cognitively Capricious	11	0.76		
iii. Uncertain Self Image	8	0.75		
Expressed concerns:				
A. Identity Diffusion	32	0.79	0.76	0.77
B. Self Devaluation	38	0.91	0.90	0.85
C. Body Disapproval	17	0.85	0.84	0.89
D. Sexual Discomfort	37	0.73	0.69	0.74
E. Peer Insecurity	19	0.75	0.77	0.57
F. Social Insensitivity	39	0.79	0.79	0.83
G. Family Discord	28	0.79	0.76	0.89
H. Childhood Abuse	24	0.83	0.81	0.81
Clinical Syndromes				
AA. Eating Dysfunctions	20	0.86	0.85	0.78
BB. Substances Abuse Proneness	35	0.89	0.88	0.90
CC. Delinquent Predisposition	34	0.77	0.76	0.80
DD. Impulsive Propensity	24	0.79	0.75	0.78
EE. Anxious Feelings	42	0.75	0.75	0.85
FF. Depressive Affect	33	0.89	0.88	0.81
GG. Suicidal Tendency	25	0.87	0.87	0.91