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THE EFFECTIVENESS OF MINDFULNESS-BASED COGNITIVE THERAPY FOR INDIVIDUALS WITH A DIAGNOSIS OF BORDERLINE PERSONALITY DISORDER

Sandy Sachse

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THE EFFECTIVENESS OF MINDFULNESS-BASED COGNITIVE THERAPY FOR INDIVIDUALS WITH A DIAGNOSIS OF BORDERLINE PERSONALITY DISORDER

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COMPARE AND CONTRAST THE CONSTRUCTION OF 'PSYCHOPATHOLOGY' IN ADULT AND OLDER ADULT MENTAL HEALTH.

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COMPARE AND CONTRAST THE CONSTRUCTION OF 'PSYCHOPATHOLOGY' IN ADULT AND OLDER ADULT MENTAL HEALTH.

Introduction

With a subject as complex as the construction of psychopathology, particularly given the limited space available, it seems necessary to structure an account along some core issues, mainly those contributing to our current understanding of behaviour considered to be psychopathological, at the expense of a detailed and comprehensive account of examples even if this can be held to be equally important. Thus rather than focusing at one client group and then the other and drawing together apparent similarities and differences as the given title invites to, it seems appropriate to look at the construction of psychopathology in general, as the issues surrounding this topic would seem to apply to both client groups, which in the case of adult (individuals between the age of 17 and 65) and older adult mental health (usually individuals aged 65 and above) seem to primarily be divided by an arbitrary age cut-off rather than any particular qualitative differences (Woods, 2003). In my view, it could even be argued that there would seem to be more difference within each of the two populations than between those around either side of the age cut-off point, which nonetheless has important implications for the types of services offered. In addition, there seems to be a particular lack of literature addressing mental health experiences of those regarded to be elderly, making an exploration of the construction of psychopathology in this client group rather difficult. Thus, before immersing into a discussion about the different ways in which experiences such as 'mental health' or 'psychopathology' may or may not be constructed between different client groups it seems important to take a look at the terms employed as this is likely to point to inherent assumptions of these concepts including their consequences, for example in determining how they should be dealt with. This will be followed by an exploration of the different variables which seem of particular relevance to the construction of psychopathology in the respective client groups.

Construction of what? Construction or not?

According to Hare-Mustin (1994) the way people in a society talk about and act towards any given phenomenon creates discourses (various statements, cultural practices and societal structures with inherent values which provide notions for behaviours and thoughts shared by individuals in this society) which serve different functions. Burr (1995) notes that one function of discourse relating to identities and people is to support power inequalities, which create and maintain the particular society they circulate in. Dominant discourses are argued to reflect widely shared assumptions and beliefs, which in turn structure and influence an individual's experience of 'reality.' The theoretical orientation most closely associated with this line of thinking is social constructionism (e.g. Burr, 1995; Parker, Georgaca, Harper, McLaughlin & Stowel-Smith, 1995). According to this orientation, our understanding of ourselves and our social world (and thus our often taken-for-granted knowledge) is not pre-given but actively constructed between people through discourse and is thus historically and culturally relative. In addition, societal and cultural structures are argued to construct a reality that individuals have to live in which further influences how people make sense of the world. It may therefore be useful to take a brief look at the historical development of the field of psychiatry and psychology and its relationship to the management of behaviour and human experience to gain an understanding of the concept of 'psychopathology' as it is currently viewed and debated.

According to Parker *et al.* (1995), the term 'psychopathology' reflects an attempt to apply scientific and medical terminology to psychological phenomena such as behaviours, feelings and thoughts. The term 'pathology' is noted to imply an 'incapacity' or 'lack' with its medical background, where disease is located in the individual, further implying psychological pathology to also reside within the person. Attempts to define what human experiences could be considered psychopathological in the literature (e.g. Maddux, Gosselin & Winstead, 2005; Rogers & Pilgrim, 2005) ultimately direct one towards different ways society and thus people have made sense of human behaviour in general. Thus, psychopathology (whatever it refers to) is a concept constructed via relevant discourses which, as was noted above, are actively

created between people at a given point in time and place and is further connected to our notions of knowledge and what type of knowledge is held to be credible. According to Foucault (1976: cited in Burr, 1995) changes in society such as the increase in population and advances in technology in the 18th century led to the issue of management and control of people living in a given country. These changes brought with them certain social practices and thus promoted certain discourses over others. For example, at the end of the middle ages, at a time when it had become practice to isolate those with threatening diseases, it also became practice to confine those regarded to be socially deviant. It is argued that this paved the way for the application of special treatment to those considered 'mad.' Further, with the Enlightment movement, rationality was given precedence over more mystical ways of explaining phenomena such as behaviour (e.g. in the middle ages people were thought to be possessed by demons rather than suffering a mental illness) and with medicine moving into the realm of science around the 18th century this approach was soon also employed to gain an 'accurate' understanding of 'mental illness' (Parker *et al.,* 1995).

As was already noted, the medical approach carried with it certain consequences, namely the idea of a need to diagnose (identify the sick), establish the cause of the problem (its aetiology), predict the course of illness (prognosis) and to treat as deemed appropriate (Rogers & Pilgrim, 2005). However, rather than being linked to systematic scientific discovery and advances in treatment, a medicalisation of human behaviour has been argued to have been promoted by the function it serves (Parker *et al.*, 1995). According to Leifer (2001), it legitimises the institutionalisation (segregation) and potentially forceful treatment of individuals who are regarded to be of 'unsound' mind, as well as this treatment to primarily take a physical form (e.g. medication, Electro Convulsive Therapy, ECT), and thus gives power to certain structures and individuals in society who are involved in managing these individuals; i.e. mental health practitioners, the institutions they work in and the government bodies which regulates them. In addition, economic forces are also argued to play an important role in the construction of psychopathology, and have been shown to play a particular role in the current upholding of the biomedical model as the dominant approach. This includes, for example, the influence of the pharmaceutical industry

over funding for and publication of research (Newness, 2002), as well as the government via contributions to party political funds (Johnstone, 2000). Other parties having a vested interest in maintaining a medical view of human distress may be 'patients' themselves, since they are 'sick' and in need of help thus shifting responsibility, but are nonetheless held responsible for their cure to the extent that they are to follow a prescribed treatment (Parker *et al.*, 1995). Similarly, families may have an interest to locate problems within the 'patient' as this distracts from any responsibility on their part. This could for example be argued to be reflected in organisations of lay people (often relatives or carers of 'patients') who try to raise funds to aid the discovery of the biological basis of 'mental illness' (Johnstone, 2000; Parker *et al.*, 1995) as is for example the case in the Schizophrenia Association of Great Britain (SAGB, 2005) who are still actively campaigning for Schizophrenia to be fully acknowledged as a physical illness (Parker *et al.*, 1995).

Which behaviours should be regarded as representing mental illness has been heavily debated (e.g. Boyle, 1996; Johnstone, 2000; Maddux *et al.*, 2005; Parker *et al.*, 1995; Rogers & Pilgrim, 2005). However, whether a statistical notion is applied (i.e. behaviours which are infrequent in a population and thus away from the 'norm' are pathological), psychopathology is viewed as maladaptive behaviour (i.e. behaviour that is dysfunctional in that it does not allow the person to deal with life and its challenges effectively), the experience of distress and disability (i.e. the experience of unpleasant or unwanted feelings which may lead to restricted ability) or sheer social deviance (i.e. behaviour which is not in line with given social or cultural norms) the inherent problem when conceptualising human behaviour is the subjectivity of judgements. This led Maddux *et al.* (2005) to argue that an application of scientific principles (e.g. as done in the biomedical model where problems in human experiences are portrayed as entities which are subject to objective discovery) to a definition of pathological behaviour is ill-founded because they are socially constructed, not scientifically (Boyle, 1996). Thus, any concept of mental illness is inherently linked to social norms which are based on beliefs, values and social practices in a certain culture. It is because these values and beliefs are ever evolving that classification systems like the Diagnostic and Statistical Manual (DSM) and thus

prevalence rates of different 'disorders' are also ever changing (Wilson, 1993), even though this is supposed to reflect more accurate understanding (Parker *et al.*, 1995). Furthermore, this 'knowledge' which is informed by 'expert' opinion is argued to feed back to the population at large (e.g. via the media, contact with mental health professionals) who then internalise it and use it to make sense of their own behaviour, thus validating circulating discourses and creating a certain reality; in the case of behaviour judged to be 'abnormal' that of 'mental illness'. In addition, by applying an illness principle, it becomes possible to divert attention from social contexts and inequalities and the role of language which contribute to distress and thus prevent changes in society, focusing instead on the internal workings of the individual which are in need of change. It needs to be noted that this is not a problem restricted to psychiatry (a specialty within medicine) but can also be found in psychological theories, with psychoanalysis in particular also being responsible for the drive to classify people into illness categories (Boyle, 1996; Rogers & Pilgrim, 2005). For example, psychoanalytic approaches may not describe psychopathology in terms of organic deficits or biochemical imbalances as is suggested by the biomedical model, but nonetheless place the responsibility within the individual who needs to articulate unconscious conflicts and distress and make them conscious before relief can be achieved (Parker *et al.*, 1995). It needs to be noted though that this theory offered a constructionist approach by addressing the influence of the environment, particularly the family but also culture, at least on the development of personality. However, even a biological illness framework allows for environmental factors to be conceptualised as contributing to distress (e.g. living conditions, experience of abuse); but it focuses on presumed biochemical changes which are argued to follow these stresses as the main site of corrective intervention, whereby the presence of this imbalance does not seem to need to be established (as would be the case to treat e.g. anaemia); one of many criticism of the validity of medical treatment and the physical basis to psychological problems (Boyle, 2002b; Johnstone, 2000), a full discussion of which is beyond the scope of this account. Similarly, even though cognitive-behavioural therapy (CBT) approaches would acknowledge that 'core beliefs' or 'dysfunctional assumptions' are learned via experiences (e.g. in the family and society) when addressing these in therapy it is the individual who needs to challenge their cognitions

and thus how they understand what is happening in their social world; not the social world itself, even if it can be argued to at least contribute to the distress. Family therapy goes one step further in addressing family communication patterns and conceptualising an individuals experience to at least reside within the family system (and even wider social and cultural systems) and as potentially serving certain functions (Dallos & Ury, 1999; Gergen & Warhus, 2001). Nonetheless, therapy with its role in the mental health system can also be argued to maintain dominant discourses about psychological problems and with its goals of normalising (e.g. being able to participate in social activities or work) could be argued to represent another form of social control (Hare-Mustin, 1994; Gergen & Warhus, 2001). It needs to be stressed that this is a rather simplistic comparison, necessitated by the restricted space available here. I will later argue that a psychotherapeutic approach with its use of formulation still represents a better alternative than that of diagnosis as implied in the concept of psychopathology and thus the biomedical model. I shall now turn to the different factors which seem of particular relevance when discussing the construction of psychopathology in adults and then older adults.

The role of gender, race and social class and norms …

According to Williams (2002), the factors which contribute to social inequalities are of particular interest when looking at the construction of psychopathology, as these have been shown to be major contributors to the distress and behaviours which are referred to under the term 'mental illness'. These include social inequalities based on race, class and gender; the latter having been argued by feminist postmodernists to be of particular relevance in the concept of mental health (Hare-Mustin, 1994). For example, women are more likely to be diagnosed with affective disorders such as depression or anxiety, as well as eating disorders and bipolar personality disorder, with men being overrepresented in diagnostic categories such as antisocial personality disorder, obsessive compulsive disorder and substance misuse (Parker *et al.*, 1995; Rogers & Pilgrim, 2005). The scientific status of such diagnostic concepts is brought into question when looking at prevalence rates between different cultures and thus points to a social construction of these. For example, eating disorders have been documented to be markedly more prevalent in Western industrialised countries (e.g.

Striegel-Moore, Silberstein & Rodin, 1986) where attitudes towards obese people is more negative (e.g. Furnham & Baguma, 1994) and appearance in girls is emphasised and praised form an early age which has been argued to lead to a ready internalisation of these concepts by females who appear to mostly construct their self-concept in interpersonal terms (Striegel-Moore *et al.*, 1986). As Parker *et al.* (1995) point out, each psychiatric condition seems to represent concerns of the age in which they were described since they are bound to historical and cultural changes. Thus, as with the introduction of eating disorders to the DSM in 1980 representing a concern in Western society with body shape and eating particularly for women, the more general discourse about gender and sexuality and what is deemed appropriate has also changed and so have diagnostic categories. For example, the disease status of homosexuality as advocated in the DSM-II was withdrawn when it was again revised in its third edition (DSM-IIIR) in 1987 (Wilson, 1993). This has been linked to lobbying by the gay rights movement in the 1970s, which has led to a change in notions of sexuality and what was to be regarded as abnormal behaviour. This could be argued to be one of the clearest examples of how social and cultural factors have come to shape concepts of psychopathology. Other examples include the diagnosis of 'love affair' to women bearing illegitimate children who were then admitted to asylums such as Severalls Hospital in Colchester at the beginning of the 20th century (Gittins, 1998; Newnes, 2002) or the introduction of post-traumatic stress disorder in 1980 following the aftermath of the two world wars and the Vietnam war (Davison & Neale, 2001). It makes one wonder whether one day notions of hearing voices, possibly via wider acknowledgment of such experiences in the general population, may also make these more acceptable and shift focus form their sheer presence as a basis for diagnosis to their content and potential function given the circumstances in which they occur. For example, Boyle (2002b) noted that approximately 10-40% of the general population have been found to experience auditory or visual hallucinations, thus questioning the uniqueness of these to the psychiatric population or the concepts of schizophrenia and psychosis.

Other ways in which gender and sexuality have been argued to be of particular relevance to the construction of psychopathology in adults refer to the notion of a

particularly female discourse. Thus, as was already noted in relation to gender biases in particular diagnostic categories, it seems that those behaviours judged to be abnormal tend to contain characteristics typically ascribed to women (including for example being more sensitive, dependent, submissive, emotional, or narcissistic and less aggressive, competitive and objective) with 'male' behaviour being considered healthy, as was for example found by Broverman *et al.* (1970: cited in Rogers & Pilgrim, 2005). However as Hare-Mustin (1994) points out, the traditional discourse of marriage defines women's role as selfless, putting other's needs before their own and supporting men in their provider role. It is interesting then that such behaviour was included in the concept of self-defeating personality disorder which was proposed for inclusion in the DSM-IIIR; thus overcompliance with a traditionally female role as well as its rejection, as for example reflected in embarking on a career and choosing not to have children (e.g. Woollett, 1991) is problematised, and if distress is experienced, pathologised (Boyle, 2002a). As was outlined with particular reference to women, the same principles apply to other marginalised groups such as people who are not white (e.g. the widely documented overrepresentation of black people with Schizophrenia who are also more likely to be treated coercively; Rogers & Pilgrim, 2005), or of lower social status (e.g. due to unemployment, lower income, less education), whereby the commonality seems to be a transgression against what is socially and culturally deemed appropriate behaviour. However, even the group on which dominant discourse of normality seems to be based, namely white middle class males, have been argued to suffer detrimental effects, when violating social expectations about masculinity, whereby this has been argued to be particularly the case for men who are poor, from an ethnic minority, gay or unemployed (Williams, 2002). All this is not to claim that people do not experience distress, nor that medication cannot be helpful in times of severe distress. However, by pathologising experiences which may be understandable within the dominant societal discourses, the mental health system can be argued to actively contribute to the current construction of psychopathology and its status of 'truth', and via the power that reside within this system to contribute to social control (Leifer, 2001). Thus, according to Parker *et al.* (1995), another function of the individualisation of distress as promoted in the application of diagnostic classification systems, is that it makes it unnecessary to

consider the role of gender, race and social class to the diagnosed individual, thus preventing social change.

… and finally age

With the adult population showing some gender, ethnicity and class bias in the application of diagnosis and construction of psychopathology, the picture for adults having crossed the arbitrary age cut-off is somewhat different. Interestingly, a discussion of the role of gender, ethnicity and social class seems largely absent in the older adult literature. According to Jeste, Blazer, and First (2005), the few studies concerned with the prevalence of serious mental illness in the elderly have led to the commonly held belief that apart from dementia, older adults do not suffer from severe mental health problems at the same rate as younger adults, with new onset of such problems further considered to be rare. The authors note that there was high variability in the prevalence estimates between different studies and even acknowledge that this was compounded by the different operational definitions of depression and diagnostic criteria employed. However, rather than asking the question of whether the concept of diagnosis is valid and/or helpful, the authors go on to explore the different variables which may contribute to this picture. This includes the notion that symptoms of mental illness may vary with age (with the DSM-IV being based on a young adult population it is argued that diagnostic criteria do not capture the presentation of mental illness in the elderly) which is further linked to the notion of older adults being less likely to report psychiatric symptoms (e.g. Knauper & Wittchen, 1994, noted how older adults tend to attribute symptoms of depression to physical illnesses, thus being misdiagnosed and rates of depression underestimated), as well as variations of symptoms with time of onset (late vs. early), and the complication of diagnosis in the face of comorbidity with physical conditions as well as psychiatric conditions, mainly dementia (Jeste *et al.*, 2005; Snowdon, 2001). Thus, as with concepts of psychopathology in adults, it is implied that this seems to reflect the notion inherent to the medical or illness model, i.e. that there are entities such as depression, anxiety, schizophrenia etc. which await our discovery if only we could manage to get the criteria for diagnosis right. However, I will argue that if there is a tendency to construct mental distress as a physical or medical problem this is particularly the case

in older adults, which is for example reflected in the type of treatments offered to this population.

Charlesworth and Greenfield (2004) note that one form of ageism is reflected in views of older adults as being unable to change and mental and physical decline to be inevitable with advancing age. This could be argued to be fuelled by a tendency to generalise from the notion that dementia rates increase with increasing age (even though only affecting a minority) to all older adults inevitably experiencing cognitive decline as described by Woods (2003). Davis (2004) notes that the current conceptualisation of dementia is that of a biomedical disease, where brain tissue is plagued by neurofibrillary tangles, β-amyloid plaques and general atrophy. However, this seemingly straight causality, which may appear plausible given the degree of cognitive and personality changes commonly observed in the later stages of dementia, is not always found (e.g. post-mortem; Davis, 2004; Rogers & Pilgrim, 2005) again questioning a strictly physical basis to 'mental illness'. However, in line with such societal views of old age, older adults have been documented to be less likely to receive psychological therapies compared to younger adults (Gilleard, Askham, Biggs, Gibson & Woods, 1995: cited in Woods, 2003). In addition, Woods and Roth (1996) note that a relatively large part of the older adult population are being treated with minor tranquilisers such as benzodiazepines to treat for example anxiety, even though they are more vulnerable to suffer from side-effects (such as confusion or falls due to drowsiness) which may even be confused with dementia (Johnstone, 2000). Similarly, a large part of people receiving ECT has been reported to consist of elderly people[1], particularly women (e.g. Johnstone, 2000, notes women to be twice as likely to receive ECT compared to men), with women over 65 years making up the largest single group. This seems curious given potentially greater physical vulnerability and complications with general anaesthetics. It has been reported that in the USA one in 200 elderly people have died shortly after receiving ECT, mostly due to cardiovascular problems (Arscott, 2002; Johnstone, 2000) with official estimates varying greatly. Even though this approach would thus seem counterintuitive, this is

[1] According to Arscott (2002), this is as high as 50% in the USA with comparative data not being easily available for the UK.

not the case if one was to assume that mental distress in the elderly is primarily and foremost an organic problem, possibly even more so than in the adult population, thus requiring the most severe of physical treatments.

Kitwood is normally cited as having pioneered psychosocial approaches to understand the experiences referred to as dementia and has drawn attention to factors such as life stresses (e.g. bereavement, accidents, role losses associated with older age) and the way the dementing person is treated by relatives, carers or society at large (e.g. marginalisation of emotional reaction; exclusion from social activities) as contributing to their cognitive and behavioural decline (Adams, 1996; Davis, 2004). As with other diagnostic categories and psychopathology generally, a biomedical disease construction of dementia can be argued to serve the function of allowing it to be managed as such (bringing it into the realm of doctors and hospitals for control), prioritise it over other issues in research, and creating a more reassuring picture for relatives, carers and society by providing an explanation for cognitive decline (Davis, 2004).

However, apart from a tendency to assume cognitive decline, older adults have also been found to be subject to often subtle discrimination by mental health worker, in that their experiences of distress may easily be construed to be a reflection of their current situation, as though saying 'who wouldn't be depressed' (Charlesworth & Greenfield, 2004; Woods, 2003). This bias of emphasising the importance of the here-and-now (e.g. as advocated in CBT approaches) or organic deficits, can distract from experiences throughout the life-span which may only come to the forefront later in life and have been argued to be important to the experience of distress (Woods, 2003). For example, whereas attachment has been deemed important for psychological well-being in childhood and adulthood, it is only recently that researchers have addressed this in older adults (McCarthy & Davies, 2003). In addition, new research is also emphasising that age effects, in relation to for example depression (Blazer, 2005) or the need to use social services (Boniface & Denham, 1995), function as a mediator between variables generally found to be associated with mental distress, such as long-term health problems and social isolation (Blazer, 2005; Snowdon, 2001). As was noted earlier, social constructionist perspectives of psychopathology draw attention to

the function a concept may serve in society (Burr, 1995). For example, focusing on age as promoted by split services, or on organic and cognitive decline with increasing age as reflected in dominant discourse about ageing (Coleman, 1999) distracts form a need to focus on other dimensions which contribute to distress such as social and economic resources which would require wider changes in society and how services are structured in order to address these. Similarly, according to Snowdon (2001), it seems that particularly studies implying lower prevalence rates of 'mental illness' in older adults have been quoted in policy documents which determine allocation of mental health care resources, the greatest benefits of which seem to be felt by that part of the population regarded to be of value to society via their capacity to work and pay taxes (Philips & Appleby, 2005). In line with this, Warnes (1993) for example, noted how in Western culture there was a dominant view of old age to be considered as burdensome. It is no surprise then that the official retirement age serves as the cut-off between adult and older adult mental health services.

Conclusion

In conclusion it can be stated that 'psychopathology' in adults and older adults seem to be constructed in line with societal values, beliefs and norms which nonetheless problematise different issues in these populations. For example, adults who do not conform to the dominant discourse of 'normality' as was outlined with particular reference to gender, may find their psychological experiences problematised in a medical framework, even though this is likely to fail to address the issues which may be instrumental in the experience of distress. This also seems to be the case in older adults whereby the dominant discourses relating to expected cognitive decline and inability to change would seem to harden a medicalised view to their experience of mental distress which was argued to be reflected in approaches to treatment. Whereas concepts such as gender, ethnicity and social class have been addressed in their role in the construction of psychopathology in adults, in older adult literature this would seem to mainly consist of concepts of organic and cognitive decline. However at this point it is important to note alternatives to the diagnostic approach, as it is currently advocated in the mental health system, and its limitations as well as some of its potential advantages. For example, having a diagnosis can give people access to much

needed resources, such as benefits, social services or respite from a situation that seems instrumental in their distress. In addition, it may support communication between professionals, even though I would argue that it is still necessary to gain an understanding of an individual's particular experience (e.g. of depression) with the label not indicating what it is that seems to contribute to the experience or what it consists of. Similarly it is likely that, at the same time as serving the function of guiding our hypothesising about an individual's experience it may also narrow our thinking and potentially lead to important information being missed. Boyle (1996) with reference to the concept of schizophrenia, argues that rather than looking for alternative views for a given diagnostic concept, we need to seek alternative accounts of the experiences and behaviours on which these are based and ask questions around what makes certain experiences, like hearing voices, distressing to one person but not another. This could be achieved by looking at the content, function (e.g. as a way of coping) and meaning of experiences and behaviours (Boyle, 2002a) as well as circumstances which may have contributed to its development as is for example emphasised in psychotherapeutic formulation which unlike diagnosis may thus also indicate points for intervention (Butler, 1998). For example, beliefs categorised as grandiose delusions (e.g. believing to possess special powers) could, depending on their content, be understood as one way of dealing with low self-esteem, just as behaviours which were suggested for the concept of self-defeating personality disorder could be considered quite understandable coping mechanisms in an abuse situation (Boyle, 2002a). In addition, the social construction of behaviour and experiences needs to be acknowledged (which would include bias and power issues as noted throughout the account) and enter the arena of 'intervention' in order to gain lasting changes in experiences of distress. Emphasising the social construction of experiences is not to say that mental distress does not exist; it primarily serves to turn our gaze outwards to the social, political and cultural variables which contribute to it (Cox, 2002).

References

Adams, T. (1996). Kitwood's approach to dementia and dementia care: a critical but appreciative review. *Journal of Advanced Nursing, 23*, 948-953.

Arscott, K. (2002). ECT: The facts psychiatry declines to mention. In G. Holmes & C. Dunn (Eds.), *This is madness: A critical look at psychiatry and the future of mental health services* (pp. 97-118). Ross-on-Wye: PCCS Books.

Blazer, D. G. (2005). Depression and social support in late life: A clear but not obvious relationship. *Aging & Mental Health, 9*(6), 497-499.

Boniface, D. R., & Denham, M. J. (1995). Factors influencing the use of communtiy health and social services by those aged 65 and over. *Health and Social Care in the Community, 5*(1), 48-54.

Boyle, M. (1996). Schizophrenia: The fallacy of diagnosis. *Changes, 14*(1), 5-13.

Boyle, M. (2002a). Diagnosis. In G. Holmes & C. Dunn (Eds.), *This is madness: A critical look at psychiatry and the future of mental health services* (pp. 75-90). Ross-on-Wye: PCCS Books.

Boyle, M. (2002b). *Schizophrenia: A scientific delusion?* (2 ed.). London: Routledge.

Burr, V. (1995). *An introduction to social constructionism*. London: Routledge.

Butler, G. (1998). Clinical furmulation. In P. M. Salkovskis (Ed.), *Comprehensive clinical psychology* (Vol. 6, pp. 1-24). Oxford: Elsevier Science Ltd.

Charlsworth, G., & Greenfield, S. (2004). Overcoming barriers to collaborative conceptualization in cognitive therapy with older adults. *Behavioural and Cognitive Psychotherapy, 32*, 411-422.

Coleman, P. G. (1999). Identity management in later life. In R. T. Woods (Ed.), *Psychological problems of aging: Assessment, treatment and care* (pp. 49-71). Chichester: John Wiley & Sons, Ltd.

Cox, R. (2002). From anti-psychiatry to critical psychology. *The Journal of Critical Psychology, Counselling and Psychotherapy, 2*(3), 171-174.

Dallos, R., & Urry, A. (1999). Abandoning our parents and grandparents: Does social construction mean the end of systemic family therapy? *Journal of Family Therapy, 21*(2), 161-186.

Davis, D. H. J. (2004). Dementia: sociological and phylosophical construction. *Social Science & Medicine, 58*, 369-378.

Davison, G. C., & Neale, J. M. (2001). *Abnormal Psychology* (8 ed.). New York: John Wiley & Sons, Inc.

Furnham, R. K., & Baguma, P. (1994). Cross-cultural differences in the evaluation of male and female body shape. *International Journal of Eating Disorderds, 15*, 81-89.

Gergen, K. J., & Warhus, L. (2001). Therapy as social construction. In K. J. Gergen (Ed.), *Social construction in context* (pp. 96-114). London: SAGE.

Gittins, D. (1998). *Madness in its place: Narratives of Severalls hospital, 1913-1997*. London: Routledge.

Hare-Mustin, R. T. (1994). Discourses in the mirrired room: A postmodern analysis of therapy. *Family Process, 33*, 19-35.

Jeste, D. V., Blazer, D. G., & First, M. (2005). Aging-related diagnostic variations: Need for diagnostic criteria appropriate for elderly psychiatris patients. *Biological Psychiatry, 58*, 265-271.

Johnstone, L. (2000). *Users and abusers of psychiatry* (2 ed.). London: Routledge.

Knauper, B., & Wittchen, H. U. (1994). Diagnosing major depression in the elderly: evidence for response bias in standardized diagnostic interviews? *Journal of Psychiatric Research, 28*(2), 147-164.

Leifer, R. (2001). A critique of medical coercive psychiatry and an invitation to dialogue. *Ethical Human Science and Services, 3*(3), 161-173.

Maddux, J. E., Gosselin, J. T., & Winstead, B. A. (2005). Conceptions of Psychopathology: A Social Constructionist Perspective. In J. E. Maddux & B. A. Winstead (Eds.), *Psychopathology: Foundations for a contemporary understanding* (pp. 3-18). Mahwah, US: Lawrence Erlbaum.

McCarthy, G., & Davies, S. (2003). Some implications of attachment theory for understanding psychological functioning in old age: An illustration from the long-term psychological effects of world war two. *Clinical Psychology and Psychotherapy, 10*, 144-155.

Newnes, C. (2002). Histories of psychiatry. In C. Newnes, G. Holmes & C. Dunn (Eds.), *This is madness: A critical look at psychiatry and the future of mental health services* (pp. 7-28). Ross-on-Wye: PCCS Books.

Parker, I., Georgaca, E., Harper, D., McLaughlin, T., & Stowell-Smith, M. (1995). *Deconstructing Psychopathology*. London: Sage.

Philip, I. & Appleby, L. (June, 2005). *Securing better mental health for older adults.* Retrieved January 22, 2006 from Department of Health website: http://www.doh.gov.uk.

Rogers, A., & Pilgrim, D. (2005). *A sociology of mental health and illness* (3 ed.). New York: Open University Press.

Schizophrenia Association of Great Britain. *http://www.sagb.co.uk.* Last updated: November 11, 2005.

Snowdon, J. (2001). Is depression more prevalent in old age? *Australian and New Zealand Journal of Psychiatry, 35*, 782-787.

Striegel-Moore, R. H., Silberstein, L. R., & Rodin, J. (1986). Toward an understanding of risk factors for bulimia. *American Psychologist, 41*(3), 246-263.

Williams, J. (2002). Social inequalities and mental health. In G. Holmes & C. Dunn (Eds.), *This is madness: A critical look at psychiatry and the future of mental health services* (pp. 29-50). Ross-on-Wye: PCCS Books.

Wilson, M. (1993). DSM-III and the transformation of American psychiatry: A history. *American Journal of Psychiatry, 150*(3), 399-410.

Woods, R. (2003). What's so different about older people? *Clinical Psychology and Psychotherapy, 10*, 129-132.

Woods, R., & Roth, A. (1996). Effectiveness of psychological interventions with older adults. In A. Roth & P. Fonagy (Eds.), *What works for whom? A critical review of psychotherapy research* (pp. 321-340). New York: Guilford Press.

Woollett, A. (1991). Having children: Accounts of childless women and women with reproductive problems. In A. Phoenix, A. Woollett & E. Lloyd (Eds.), *Motherhood: Meanings, Practices and Ideologies*. London: Sage.

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DISCUSS THE USE OF SYSTEMIC AND PSYCHODYNAMIC APPROACHES FOR PEOPLE WITH LEARNING DISABILITY. WHAT ARE THE POTENTIAL DILEMMAS AND CHALLENGES FACED BY A CLINICAL PSYCHOLOGIST WHEN USING THESE TWO APPROACHES WITH LEARNING DISABLED PEOPLE, AND HOW CAN THEY BE ADDRESSED?

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Introduction

Before addressing the questions set out in the title, it feels important to acknowledge some of the limitations of the current account which, with sufficient space, could be argued to be important to a full discussion of the dilemmas and challenges encountered by psychologists when working with people with a learning disability (PwLD). For example, it will not be possible to discuss the theoretical and conceptual issues of the diagnosis of learning disability (LD) and how this has changed historically. Similarly, this account will not discuss the label of learning disability, with the various synonyms it has received depending on when and where research has been conducted, nor will it debate the element of social construction inevitably playing into any diagnostic category and labelling (see Finlay & Lyons, 2005). In relation to the approaches to be discussed here, it will not be possible to explore differences in psychoanalytic and psychodynamic schools of thought, or different theoretical underpinnings (e.g. Freudian vs. Kleinian), which will collectively be referred to under the term 'psychodynamic' focusing on the features these approaches have in common (e.g. interpretation, use of transference and countertransference). Similarly, this account will also not discuss the different approaches, which fall under the umbrella term of 'systemic' (e.g. strategic, Milan), especially as these tend to work in an integrative way, drawing on a range of techniques (Burnham, 1992; Pocock, 1995).

Thus this account will briefly outline the history of the use of psychotherapy with PwLD in general, focusing on systemic and then psychodynamic approaches in particular. This will be followed by an overview and discussion of those dilemmas and challenges common to all therapies, primarily those relying on language as their main medium, as these also apply to systemic and psychodynamic approaches, before addressing issues specific to these two approaches. In addition, the focus will be on adults accessing learning disability services.

Finally, it needs to be noted that the author is writing from a position of limited experience with the client group of concern and where this feels appropriate will use some of the few clinical examples encountered thus far to illustrate certain points.

However, as noted, due to only having commenced work with this client group without prior experience this is likely to be limited and may thus need to primarily rely on accounts found in the literature.

Psychotherapy with people with learning disability

Historically the diagnosis of LD has involved, and continues to involve, an IQ score of at least two standard deviations below the mean (i.e. 70>) as well as significant limitations in social functioning (e.g. self-care, social skills; Baum, 2006; Hatton, 1998). As already noted this conceptualisation has changed historically and cross-nationally which further impacted on changing perspectives regarding needs of PwLD, such as how they should be treated, including where. For example the move of institutionalisation at the beginning of the 20th century was in line with the then dominant medical view, which emphasised organic impairment that could not be changed. This only changed with growing observations of the debilitating effects of these impoverished environments in the 1960s and 70s coupled with the development of behaviourism, thus slowly paving the way for the application of psychological approaches to this client group (Baum, 2006; Hodges, 2003). Together with the normalisation movement (Wolfensberger, 1972) and the government's most recent white paper, Valuing People (Department of Health, 2001), emotional and mental health needs have further moved into the realm of service provision; previously, the emotional needs of PwLD had been marginalised (Sinason, 1992; Hodges, 2003) as they were commonly viewed as eternal children who do not have a significant role in an adult world (Emerson, Caine, Bromley & Hatton, 1998). As a result psychotherapeutic interventions have been largely unavailable (e.g. Wilner, 2005) and continue to be patchy (Baum, 2006) with behavioural interventions still making up the most common interventions used (e.g. 81%, as found in a staff survey by Nagel & Leiper, 1999). This is despite the well-documented higher prevalence rate of mental health problems in PwLD (e.g. Whitehouse, Tudway, Look & Stenfert-Kroese, 2006; Hatton, 1998). The limited interest in applying talking treatments to PwLD has further (at least to some extent) been attributed to statements made by Freud and later Carl Rogers (Sinason, 2002) that PwLD would not be able to benefit from psychoanalytic

or client-centred therapy which were viewed to require high levels of intelligence and verbal skills.

Systemic approaches in LD

With the closure of hospitals and the development of community-based services came a shift in the research literature towards difficulties and long-term responsibilities of families who cared for someone with a learning disability (Vetere. 1993). Despite this still taking an individual focus initially and literature primarily being concerned with the learning disabled child, this has now changed with a growing body of literature addressing families of adults with LD (Baum, 2006). As in the field of child and adolescent mental health, the greater dependence of PwLD on their families and support from services, led authors to consider systemic approaches as being potentially useful, further helped by a growing body of evidence supporting its effectiveness (Lynggaard & Baum, 2006). The core feature of systemic approaches is that they view difficulties not as residing within individuals but rather between individuals, their relationships and wider context (family, services, community, society), which are addressed by exploring beliefs around the presenting problem, roles, relationships, family scripts, often in the form of hypotheses (put forward by a therapist or reflecting team to an individual or family) aimed at linking past and present experiences. This may lead to the safe expression of difficult feelings (e.g. hostility), identification of areas where change is possible and addressing themes (e.g. overprotection) which may play part in keeping a family 'stuck' in a particular life-stage, as coping strategies have become counter-productive (Goldberg *et al.*, 1995; Pote, 2006). It needs to be stressed that this is a rather simplified outline of the many ways in which systemic approaches may lead to change, which often also address difficulties at different levels of the system, i.e. services and professionals involved in an individual's care, for example by providing consultation (i.e. indirect work) and training (Pote, 2006; Jenkins & Parry, 2006).

A systemic perspective to the lives of PwLD has highlighted many issues, which can contribute to a greater vulnerability to experience more difficult reactions to stresses they are exposed to (potential stresses further being larger in number due to stigma,

abuse etc.; Fidell, 2000). Issues repeatedly highlighted in the literature concern loss (e.g. of the ordinary life and ideal child that was expected; Ditchfield, 1992), overprotection (Goldberg *et al.* 1995), life-cycles and transitions which often occur out of sequence, and accompanying grief, which may continuously be evoked at different life stages when new losses come into awareness (Vetere, 1993; Goldberg *et al.*, 1995; Fidell, 2000). In addition, families are often involved with a number of professionals, which can be very intrusive, particularly at times of transition from child to adult services when decisions may need to be made about the child leaving home, something which would normally be a private matter (Fidell, 2000). Other issues highlighted in the systemic literature include those of power imbalances (whether for PwLD themselves or their family), difficulties in social networks and marital relationships (for parents of PwLD and PwLD in relationships), especially if the adult with LD continues to live in the family home (Fidell, 2000). In addition, the influence of cultural background in families' understanding, beliefs and preferred ways of coping with learning disability has been highlighted in the literature as well as how services struggle with ethical issues this may pose (O'Hara, 2003).

Psychodynamic approaches in LD

According to Gravestock and McGauley (1994) early psychodynamic literature largely did not address PwLD, with only isolated accounts conceptualising the experiences of this client group. Themes that were discussed included personality development which was judged to be hindered by a failure of parents to separate from their child (a maladaptive response due to the grief of having lost the ideal child, which would be uncovered by separation) or influenced by experiences of for example abuse or deprivation (Bicknell, 1983). Another idea that was put forward was that PwLD may develop insight into their disability (e.g. at different life-stages or with certain life events) which can lead to the activation of sometimes maladaptive ego defence mechanisms (to cope with the pain these experiences evoke) which in turn may lead to emotional difficulties or challenging behaviour. In relation to children, it has been argued that an infant may experience himself through his parents' eyes, who are perceived as looking at him as not being the child they hoped for, which may lead to an internalisation of this perception. This in turn may lead to the development of a

harsh, judgemental superego, which looks at the self in a critical, hostile manner generating low self-esteem, something, which Miller (2004) argues, is often found in work with adolescents with LD.

The literature further distinguishes primary and secondary handicap (Bicknell, 1983; Sinason, 1986, 1992; Stokes & Sinason, 1992): primary handicap is regarded to be due to the organic impairment (the learning disability) with secondary handicap referring to a defensive exaggeration of difficulties which could be more handicapping than the primary handicap. Secondary handicap is further classified into (1) mild secondary handicap, whereby individuals exacerbate their original LD to keep others happy, (2) opportunist handicap were personality development is disturbed, linked to the individual's LD and (3) secondary handicap as a defence against trauma, whereby the handicap serves the function of protecting the self from unbearable memories of trauma. Sinason (1992, 2002) notes how trauma is a common experience for PwLD, taking the form of sexual, physical, emotional, environmental or even political abuse. Defence mechanisms, which have received particular attention in the literature are those of (1) splitting, where feelings of ambivalence are dealt with by dividing the world/people/experiences into good and bad; (2) projection, where difficult or unacceptable feelings are attributed to others; (3) projective identification, where bad experiences are projected to the world or others whilst retaining the good inside oneself and (4) denial, where difficult or unacceptable feelings/experiences are not allowed into consciousness (Sinason, 2002; Hodges, 2003; Summers & Witts, 2003; Spurling, 2004).

In psychodynamic approaches, the general notion is that patients' difficulties (e.g. emotional, behavioural, somatic) are an expression of unconscious conflicts, which they cannot easily recognise or understand (Hodges, 2003). Through (at minimum) once weekly sessions the therapist would use the therapeutic relationship/transference situation (where past experiences are transferred to another person) in order to understand the nature of clients' difficulties (i.e. the unconscious feelings and meaning which are hidden behind a particular defence; Malan, 1979) which are reflected back to clients via interpretations (Stokes & Sinason, 1992; Sinason, 2002;

Beail, Warden, Morsley & Newman, 2005). Similarly, to facilitate healing in the case of past trauma, it has been argued that it is necessary for the individual to re-experience the traumatic experiences, however in the presence of an object that protects and contains the helplessness and pain that this evokes (Sinason, 1986). As already noted for systemic approaches, this is again a very simplistic outline of the way psychodynamic approaches may help to relieve symptoms of distress.

Potential dilemmas and challenges and how these can be addressed

Dilemmas and challenges common to all therapeutic approaches in LD

Assessment and Interviewing

According to Prosser and Bromley (1998), mental health symptoms are harder to detect in PwLD as they often experience difficulties in describing their subjective feelings and changes in mood, due to limited expressive language skills (whereby it needs to be stressed that this varies hugely between PwLD). A further complication is the reported tendency of PwLD to acquiesce, i.e. replying affirmatively to contradicting questions, which has been noted to be a particular problem when asked closed questions. This has been linked to clients seeking social approval as well as to limitations in cognitive abilities. Thus, when working with PwLD, clinical psychologists need to have some understanding of their client's intellectual abilities, as this will influence how an interview may need to be adapted (e.g. whether to use visual aids, sign language, how to ask questions). Prosser and Bromley (1998) provide general guidelines to maximise the client's ability to provide valid and reliable information in an interview such as avoiding jargon, double negatives, abstract questions about future behaviours or attitudes and checking the validity of a client's response by following a question with a reverse question. For example, during a recent exploration of a client's emotional experiences, the client stated that she felt depressed a lot of the time and when asked to describe what that was like she described feeling down and tearful. When asked if she was happy she stated that she does have better days but not often.

It is often still important to also see a parent or carer who knows the client very well, particularly for factual information (e.g. dates and events) which can be easier for

them to provide. Prosser and Bromley (1998) further emphasise the value of getting a sense of how aware carers are of the client's needs and problems.

Presentation of symptoms of distress and language

Caine and Hatton (1998) point out that presentation of symptoms of distress is often influenced by the level of LD. Particularly in people with severe LD, this is likely to take a more behavioural form and makes differential diagnosis difficult. This is next to all the factors, which influence presentation in people generally (with or without LD) such as their current and past life circumstances, culture, ethnicity, gender or previous experiences with professionals. For PwLD the latter is more likely to have been negative (e.g. institutionalisation) which may leave them feeling worried about being seen by a clinical psychologist (e.g. fearing further medication, change in residency) making it less likely for them to disclose feelings of distress. Similarly they may have concerns regarding confidentiality (Prosser & Bromley, 1998). An awareness of such concerns is therefore important so that they can be addressed with the client. In addition, the need to develop a shared vocabulary regarding difficulties and experiences have been emphasised which may take some time and requires therapists to check the meaning of language used (Bates, 1992). Similarly it may be necessary to help clients become aware of differences between emotions (e.g. by exploring different bodily sensations) and labels for these, which can be limited. For example, Bates (1992) described how one client responded to different situations as making her feel angry, even when she was considered to be the 'perpetrator' who was responsible.

The therapeutic relationship

As already noted, concerns for PwLD in seeing a clinical psychologist and previous experiences of rejection (Nezu *et al.* 1995) may make it harder to develop trust wherefore it may take longer to develop a therapeutic relationship and engage clients (Bates, 1992). Hurley, Tomasulo and Pfadt (1998) therefore stress the importance of therapists taking an active role in facilitating the development of a supportive, trusting relationship where clients are free of fears of judgement or reprisal. This may include communicating concern, empathy, genuineness and warmth, which will need to be adapted to the client's cognitive abilities. This can pose a particular challenge when

clients have very limited or no verbal abilities and has led therapists to use non-verbal means, including touch (e.g. walking arm in arm to the therapy room), or going for car rides, which would normally be regarded as inappropriate (Berry, 2003). With more verbal clients trust may only be able to be established by meeting outside of the formal setting of the therapy room (at least initially). Each of these cases poses a dilemma in terms of setting appropriate boundaries, as there may be a risk of therapists being viewed as friends (Caine & Hatton, 1998). Thus the therapeutic relationship may need to be clarified, and reviewed at different stages of therapy, using clear and concrete language.

Lack of research evaluating treatment efficacy and effectiveness

The current climate in the National Health Service places greater emphasis on providing interventions, which are evidence-based and effective. Different types of evidence are distinguished with randomised control trials (RCTs) generally being regarded as providing the highest levels of evidence for the effectiveness of a particular intervention. According to Wilner (2005), RCTs are still rare, with available studies having been criticised for their methodological inadequacies. He further notes a general lack of evaluation of psychotherapeutic approaches for PwLD. In line with this, the often-quoted reference aimed at providing a critical review of psychotherapy research 'What works for whom?' (Roth & Fonagy, 2005) is still lacking a chapter (or any reference) addressing PwLD. Beail (1998) further points out that the majority of outcome research has been concerned with behavioural problems, using behavioural interventions. Many reasons for this lack of research are noted, including ethical dilemmas around participating (especially when needing to consent to randomisation), unreliable psychiatric diagnosis and difficulties in assessing outcome due to limited valid and reliable self-report measures (Benson, 2004). Indeed, the lack of self-report measures for this client group also poses a dilemma in the day-to-day practice of clinical psychologists in providing interventions, as severity of symptoms and outcome can be more difficult to ascertain (Prosser & Bromley, 1998). However, the lack of research leads to a dilemma for clinical psychologists in terms of choosing interventions in line with principles of best practice. As King (2005) notes, though, this should not be a reason to not offer therapeutic interventions, as an absence of

evidence does not indicate that interventions are ineffective. Indeed, many examples of single case-studies or interventions in books, addressing individual, group and family therapy do exists which all point to the potential of psychotherapies enhancing the quality of the lives of PwLD and the people they live with (Hurley, 2005).

In terms of psychodynamic interventions research evidence has been criticised for primarily relying on anecdotal and descriptive measures of outcome (e.g. Berry, 2003; Gravestock & McGauley, 1994), or as being vague in their description of process (Wilner, 2005). A better study by Beail (1998) involved 25 men who were referred for behaviour problems or having committed an offence and were seen for individual psychoanalytic psychotherapy sessions. Frequency counts of behaviours, diary and interview methods were used for assessment and to evaluate outcome which for all cases (except one) showed a complete elimination of the target behaviours, even at 6-months follow-up. Beail (1998) acknowledges that it is difficult to attribute this effect to the particular techniques used (i.e. the process of interpretation and containment offered) as this had not been evaluated. In another, more recent, outcome study with clients referred for similar problems (Beail *et al.*, 2005) more standard outcome measure were adapted (e.g. SCL-90) and showed a significant reduction in psychological distress and increased self-esteem for clients following psychodynamic psychotherapy.

Regarding systemic interventions, research is even more limited with the literature giving indications of the potential usefulness of the approach without any process or outcome research at this point being available (e.g. Pote, 2006). However even though there may not be research directly addressing PwLD, systemic approaches more generally have been shown to be effective and descriptive accounts are beginning to grow (Lynggaard & Baum, 2006).

Challenges and dilemmas specific to systemic approaches

Engagement

A central question raised in systemic practice is the one of 'whose problem is it?' Often the person with LD will be seen as the problem and the family may be reluctant

to engage (Fredman, 2006). Thus one dilemma, rather typical to the practice of family therapy, is the question of who to invite. Fidell (2000) notes how she almost always includes the client with LD and points out several advantages, such as observing the interaction patterns between family members surrounding the problem. A client's position within the family, particularly in terms of power and blame (e.g. for carers' distress), should nonetheless be kept in mind and if appropriate may involve seeing the person with LD individually to empower them.

Due to cognitive difficulties (e.g. memory, attention) PwLD may find it hard to hold several ideas in mind or make abstract links between past and present experiences (Wilner, 2005), thus exploring these can be a challenge. A useful tool in the assessment phase of family therapy is the genogram and this may be particularly the case for PwLD as it offers a way of mapping family relationships visually and verbally. When working with PwLD, this may also include professionals and other important networks in their lives, which can highlight beliefs around seeking help and any issues that may impact on outcome of therapy (e.g. past negative experiences; Cardone & Hilton, 2006).

One general dilemma is the inclusion of clients with very limited verbal abilities, which may call for creativity on the therapist's part. For example, when trying to develop a genogram, it may be necessary to use photos, electronic communication aids and allowing clients to direct the therapist by pointing (Cardone & Hilton, 2006). Other suggestions by Lynggaard and Baum (2006) include asking the family to decide who might be best placed to speak for the PwLD, thus inviting people to relate from a different position, or offering words to clients when they struggle to express how they feel. The particular dilemma with the latter is the danger of constructing a client's experience for them, given the therapists greater power in the use of language, something for which there is probably no easy answer or solution but one needs to be mindful of.

Use of reflecting teams

Traditionally family therapy has used teams of therapists who behind a screen or in the presence of the family reflect on the therapeutic encounter they have witnessed, thus providing a greater range of hypotheses and ideas around the presenting issues. This is a highly complex process, which could leave the client with LD excluded, as the process may be difficult to follow due to cognitive limitations. According to Cardone and Hilton (2006) one important difference when involving a reflecting team in family therapy with PwLD is therefore to limit the number of ideas that are presented (stating a maximum of three) as the idea of reflecting is often new to PwLD who may further need more time. In addition they have noted that it is helpful to ask the person with LD to reflect first as the process may otherwise be hard to follow and their voice not be heard. Fidell (2000) speaks of the pace of therapy being much slower partly due to needing to check the client's understanding, a need for repetition (Goldberg *et al.*, 1995) and problems often having been long-standing.

Circular questioning and the use of metaphors

Systemic interventions have developed certain types of questioning which draw out differences in people's perspectives on relationships, feelings, events, the future, the problem, beliefs etc. As was outlined under dilemmas and challenges common to all therapies it is recommended to avoid abstract considerations of future actions, events or attitudes and avoid subordinate clauses in sentences (i.e. those containing several ideas, or conditions; Prosser & Bromley, 1998). Thus one challenge involves adapting circular questioning in a way that accommodates client's cognitive limitations regarding abstraction and conceptualisation. Cardone and Hilton (2006) outline several ways in which this may be achieved such as using concrete context when using hypothetical questions (e.g. a place or situation) and give the example of using a clients' birthday as an anchor when posing the miracle question. They also outline ways of adapting classification questions, which typically involve ranking, which they have found more difficult and less useful in their practice. However, as noted above, even non-verbal clients may be able to participate in this and express their views, which may previously have been unheard and be surprising to other family member, such as who they like or why they do not like an activity or person.

In addition, using metaphors such as externalising emotions and behaviours can be helpful in opening up conversations of exceptions to the problem behaviour.

Expert position

A rather unique dilemma in systemic practice is the positioning of the therapist in relation to the client, family and even wider system, depending on the level of intervention. Pote (2006) points out that in work with PwLD there may be a particular risk to have a tendency to align with the family or client, for example to protect their human rights (e.g. choice, risk-taking) and to be tempted to give advice, possibly due to role expectations. The concepts of curiosity and neutrality but particularly reflexivity have long been employed by systemic therapists to remain aware of and monitor their own values, feelings and actions, for example through the practice of reflective discussion. This may be of even greater relevance when working with this client group whether directly or indirectly with the wider system (e.g. consultation; network training; Jenkins & Parry, 2006).

Challenges and dilemmas specific to psychodynamic approaches

Transference and Countertransference

According to Hurley *et al.* (1998), PwLD have been found to display transference reactions (i.e. reacting to the therapist as though s/he was someone from their life) that are stronger than in clients without LD. She argues that this makes psychotherapy particularly effective and should not be viewed as a problem. Therapists, however, need to be prepared for this and make extra efforts to clearly define and review the limits of the therapeutic relationship as was already outlined earlier. Similarly, countertransference (i.e. the therapists reactions to the client) has been reported to be stronger and quicker and is more likely to involve feelings of overprotection towards the client and bring up feelings about disability and difference. Hurley *et al.* (1998) argue that there may be repetitive reactions, which may not be understood by the therapist, indicating unconscious countertransference, which need to be addressed via supervision. The stronger transference and countertransference reactions have been postulated to be due to greater dependence needs of PwLD.

Transference issues are heightened if clients are also physically dependent. Hodges and Sheppard (2004) describe their dilemma of managing this in group therapy with children with progressive musculo-skeletal wasting disorder who required assistance to move and leave the room (being wheelchair bound), to hold a pen or even move their head to look away. They described instances where this seemed to provoke strong defence mechanisms and note that it can make it harder for clients to use therapy as a safe place to explore anxieties.

Somewhat related to these issues, is the need to also involve caregivers (staff or family members) at different points during treatment. This is not merely to aid assessment or information gathering but simply necessary due to the assistance clients' sometimes require, and is something psychotherapists would normally not get involved with. This poses a dilemma in terms of the therapeutic relationship, which is more central in psychodynamic approaches, again making it necessary to continuously review this explicitly. Hurley *et al.* (1998) note how the involvement of carers can facilitate therapeutic work and notes the great flexibility that is required, regarding session length, timing or frequency not normally accommodate in psychodynamic approaches.

Use of interpretation/breaking of defences

Hodges and Sheppard (2004) describe their dilemmas of using interpretations in a safe way or finding the best way to question clients' defence mechanisms. They ask how appropriate it is to challenge defences, which typically have a protective function, sometimes hiding unbearable anxiety. They note that the reality of a client's disability needs to be accommodated (especially when linked to terminal illness) and therapists need to be more sensitive in their approach. Similarly, interpretations (used to make unconscious processes conscious, to facilitate self-awareness and integration of experiences) may need to be made more carefully (e.g. in timing and wording) creating the dilemma of what level these should be aimed at. The authors describe how they relied on their feelings of countertransference and abandoned any attempts for interpretations when they felt any doubt about their appropriateness.

Due to cognitive limitations, interpretations will also need to be made in clear and simple language and take memory problems of clients into account; i.e. when interpretations are more complex, these may need to be broken down and repeated and attention paid to the client's understanding (Beail, 1998).

Conclusion

In conclusion it needs to be noted that there are many more dilemmas or challenges for clinical psychologists in working with this client group, which have not been touched upon at all or only in passing. These include additional physical disability (including sensory impairments) and practical issues in attending sessions (e.g. relying on others for transport). Similarly, services can experience a lack of resources (especially in the current financial climate) impacting on the environment in which clients are seen. For example, as in this author's case, one may have to see clients in meeting rooms rather than therapy rooms or rooms which are not soundproof, giving an impression of these clients not being valued. This poses a dilemma in terms of the values clinical psychologists are being taught during training, which short of refusing to see clients, one can only remain mindful of and try to address with managers.

A further shortcoming of the current account is the lack of a discussion around specific cognitive limitations (e.g. egocentricity, differences between expressive and receptive language abilities) and issues of consent to often-used indirect work (e.g. in the case of severe LD or challenging behaviour; Hubert & Hollins, 2006), or therapy generally, a dilemma especially as PwLD rarely self-refer and risks of therapy may be more difficult to explain. Similarly dilemmas around length of therapy, which varies greatly but is generally held to require longer, and what constitutes success also need to be considered (e.g. Bates, 1992).

Overall however, it is felt that the stated dilemmas and challenges are not outside the work of clinical psychologists generally, who may encounter any combination of these in their work whatever the setting. Perhaps one difference is the greater likelihood and number of challenges or dilemmas faced at any one time making this work more complex but potentially also more rewarding. As Hurley *et al.* (1998) point out, however, treatment approaches need to be adapted to all clients, with an extending

body of literature now offering specific guides allowing clinical psychologists to maximise the effectiveness of their interventions.

References

Bates, S. (1992). Psychotherapy with people with learning difficulties. In A. Waitman & S. Conboy-Hill (Eds.), *Psychotherapy and mental handicap* (pp. 81-98). London: Sage Publications.

Baum, S. (2006). The use of the systemic approach to adults with intellectual disabilities and their families: historical overview and current research. In S. Baum & H. Lynggaard (Eds.), *Intellectual disabilities: A systemic approach* (pp. 21-41). London: Karnac Books.

Beail, N. (1998). Psychoanalytic psychotherapy with men with intellectual disabilities: A preliminary outcome study. *British Journal of Medical Psychology, 71*, 1-11.

Beail, N., Warden, S., Morsley, K., & Newman, D. (2005). Naturalistic evaluation of the effectiveness of psychodynamic psychotherapy with adults with intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities, 18*, 245-251.

Benson, B. A. (2004). Psychological interventions for people with intellectual disability and mental health problems. *Current Opinion in Psychiatry, 17*, 353-357.

Berry, P. (2003). Psychodynamic therapy and intellectual disabilities: dealing with challenging behaviour. *International Journal of Disability, Development and Education, 50*(1), 39-51.

Bicknell, J. (1983). The psychopathology of handicap. *British Journal of Medical Psychology, 56*, 167-178.

Burnham, J. (1992). Approach – Method – Technique: Making distinctions and creating connections. *Human Systems: Journal of Systemic Consultation & Management, 3, 3-26.*

Caine, A., & Hatton, J. (1998). Working with people with mental health problems. In E. Emerson, J. Hatton, J. Bromley & A. Caine (Eds.), *Clinical Psychology and People with Intellectual Disabilities* (pp. 210-230). Chichester: John Wiley & Sons Ltd.

Cardone, D., & Hilton, A. (2006). Engaging people with intellectual disabilities in systemic therapy. In S. Baum & H. Lynggaard (Eds.), *Intellectual disabilities:*

A systemic approach (pp. 83-99). London: Karnac Books.

Department of Health (2001). *Valuing people: A strategy for learning disability services in the 21st century*. London: Department of Health.

Ditchfield, H. (1992). The birth of a child with a mental handicap: Coping with loss? In A. Waitman & S. Conboy-Hill (Eds.), *Psychotherapy and mental handicap* (pp. 9-23). London: Sage Publications.

Emerson, E., Caine, A., Bromley, J., & Hatton, J. (1998). Introduction. In E. Emerson, J. Hatton, J. Bromley & A. Caine (Eds.), *Clinical Psychology and People with Intellectual Disabilities* (pp. 3-19). Chichester: John Wiley & Sons Ltd.

Fidell, B. (2000). Exploring the use of family therapy with adults with a learning disability. *Journal of Family Therapy, 22*, 308-323.

Finlay, W. M. L., & Lyons, E. (2005). Rejecting the label: A social constructionist analysis. *Mental Retardation, 43*(2), 120-134.

Fredman, G. (2006). Working systemically with intellectual disability: why not? In S. Baum & H. Lynggaard (Eds.), *Intellectual disabilities: A systemic approach* (pp. 1-20). London: Karnac Books.

Goldberg, D., Magrill, L., Hale, J., Damaskinidou, K., Paul, J., & Tham, S. (1995). Protection and loss: working with learning-disabled adults and their families. *Journal of Family Therapy, 17*, 263-280.

Gravestock, S., & McGauley, G. (1994). Connecting confusion with painful realities: Group analytic psychotherapy for adults with learning disabilities. *Psychoanalytic Psychotherapy, 8*(2), 153-167.

Hatton, J. (1998). Intellectual disabilities - Epidemiology and causes. In E. Emerson, J. Hatton, J. Bromley & A. Caine (Eds.), *Clinical Psychology and People with Intellectual Disabilities* (pp. 20-38). Chichester: John Wiley & Sons Ltd.

Hodges, S. (2003). *Counselling adults with learning disabilities*. Houndmills: Palgrave Macmillan.

Hodges, S., & Sheppard, N. (2004). Therapeutic dilemmas when working with a group of children with physical and learning disabilities. In D. Simpson & L. Miller (Eds.), *Unexpected gains: Psychotherapy with people with learning disabilities* (pp. 14-29). London: Karnac Books.

Hubert, J., & Hollins, S. (2006). Men with severe learning disabilities and challenging

behaviour in long-stay hospital care. *British Journal of Psychiatry, 188*, 70-74.

Hurley, A. D. (2005). Psychotherapy is an essential tool in the treatment of psychiatric disorders for people with mental retardation. *Mental Retardation, 43*(6), 445-448.

Hurley, A. D., Tomasulo, D. J., & Pfadt, A. G. (1998). Individual and group psychotherapy approaches for persons with mental retardation and developmental disabilities. *Journal of Developmental and Physical Disabilities, 10*(4), 365-386.

Jenkins, R., & Parry, R. (2006). Working with the support network: applying systemic practice in learning disabilities services. *British Journal of Learning Disabilities, 34*, 77-81.

King, R. (2005). Proceeding with compassion while awaiting the evidence: Psychotherapy and individuals with mental retardation. *Mental Retardation, 43*(6), 448-450.

Lynggaard, H., & Baum, S. (2006). So how do I ... ? In S. Baum & H. Lynggaard (Eds.), *Intellectual disabilities: A systemic approach* (pp. 185-202). London: Karnac Books.

Malan, D. H. (1979). *Individual psychotherapy and the science of psychodynamics*. London: Butterworths & Co Ltd.

Miller, L. (2004). Adolescents with learning disabilities: psychic structures that are not conducive to learning. In D. Simpson & L. Miller (Eds.), *Unexpected gains: Psychotherapy with people with learning disabilities* (pp. 83-97). London: Karnac Books.

Nagel, B., & Leiper, R. (1999). A national survey of psychotherapy with people with learning disabilities. *Clinical Psychology Forum, 129*, 14-18.

Nezu, C. M., Nezu, A. M., Rothenberg, J. L., DelliCarpini, L., & Groag, I. (1995). Depression in adults with mild mental retardation: Are cognitive variables involved? *Cognitive Therapy and Research, 19*(2), 227-239.

O'Hara, J. (2003). Learning disabilities and ethnicity: achieving cultural competence. *Advances in Psychiatric Treatment, 9*, 166-176.

Pocock, D. (1995). Postmodern chic: Postmodern critique. *Context, 24*, 46-48.

Pote, H. (2006). The practitioner's position in relation to systemic work in intellectual

disability context. In S. Baum & H. Lynggaard (Eds.), *Intellectual disabilities: A systemic approach* (pp. 164-184). London: Karnac Books.

Prosser, H., & Bromley, J. (1998). Interviewing people with intellectual disabilities. In E. Emerson, J. Hatton, J. Bromley & A. Caine (Eds.), *Clinical Psychology and People with Intellectual Disabilities* (pp. 99-113). Chichester: John Wiley & Sons Ltd.

Roth, A., & Fonagy, P. (2005). *What works for whom? A critical review of psychotherapy research* (2 ed.). New York: The Guilford Press.

Sinason, V. (1986). Secondary mental handicap and its relationship to trauma. *Psychoanalytic Psychotherapy, 2*(2), 131-154.

Sinason, V. (1992). *Mental handicap and the human condition: New approaches from the Tavistock*. London: Free Association Books.

Sinason, V. (2002). Treating people with learning disabilities after physcial or sexual abuse. *Advances in Psychiatric Treatment, 8*, 424-432.

Spurling, L. (2004). *An introduction to psychodynamic counselling*. Houndmills: Palgrave Macmillan.

Stokes, J., & Sinason, V. (1992). Secondary mental handicap as a defence. In A. Waitman & S. Conboy-Hill (Eds.), *Psychotherapy and mental handicap*. London: Sage Publications.

Summers, S. J., & Witts, P. (2003). Psychological intervention for people with learning disabilities who have experiences bereavement: a case study illustration. *British Journal of Learning Disabilities, 31*, 37-41.

Vetere, A. (1993). Using family therapy in services for people with learning disabilities. In J. Carpenter & A. Treacher (Eds.), *Using family therapy in the nineties*. Oxford: Blackwell.

Whitehouse, R. M., Tudway, J. A., Look, R., & Stenfert-Kroese, B. (2006). Adapting individual psychotherapy for adults with intellectual disabilities: A comparative review of the cognitive-behavioural and psychodynamic literature. *Journal of Applied Research in Intellectual Disabilities, 19*, 55-65.

Willner, P. (2005). The effectiveness of psychotherapeutic interventions for people with learning disabilities: a critical overview. *Journal of Intellectual Disability Research, 49*(1), 73-85.

Wolfensberger, W. (1972). *The principle of normalisation in human services*. Toronto: National Institute of Mental Retardation.

University of Hertfordshire
Doctorate in Clinical Psychology
Year 2

SMALL SCALE SERVICE RELATED PROJECT
AN AUDIT/SERVICE EVALUATION EXAMINING DISCHARGE PRACTICE AT A COMMUNITY MENTAL HEALTH TEAM

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Abstract

This study investigated the discharge practice of a Community Mental Health Team (CMHT) by examining records (electronic and file) of clients discharged between April 2005 and March 2006. Out of a total of 211 discharged clients a random sample of 20 clients was selected to examine the extent to which records and reasons for discharge adhere to current CMHT policies and guidelines. In addition, a sample of clients who had been engaged by the CMHT for 6 months or less was compared to a sample of clients who have been engaged for 1 year or longer to establish whether these differed in sociodemographic characteristics, diagnoses and extent of service provision. The majority of clients discharged during the specified period consisted of clients engaged for 6 months or less. The sampling process revealed that a proportion of these included clients seen for one-off assessments or duty calls, indicating that there is room for improvement to clarify referral criteria (e.g. to GPs) and the role of the CMHT. Similarly, the examination of recording practice also revealed room for improvement in the closing of care packages electronically and inclusion of required information in discharge letters. Almost 50% of clients in the sample were discharged following a decline of any further intervention the reasons for which it will be important to investigate in the form of an audit or survey of service user's views. Clients engaged for 6 months or less and 1 year or longer seemed to differ mostly in terms of employment rates, diagnosis and previous inpatient admission and mental health act sections. The findings are discussed in relation to the limitations of this study, implications for the service and further research.

Introduction

Since Enoch Powell's landmark "Watertower" speech in 1961, there has been an increasing drive to relocate care of mental health patients into the community, resembling a shift in social, political and economical perspectives on the treatment of mental illness, in the context of increased criticism of institutional care of patients in 'mental asylums' (Rogers & Pilgrim, 2005). To support this change, there has been a steady expansion in the number of Community Mental Health Teams (CMHTs) following their emergence in 1977 (Rogers & Pilrgim, 2005; Johnstone, 2000). They now form an integral part of government policy regarding the National Health Service (NHS) mental health service provision. Apart from the inherent economic advantages (e.g. savings compared to the greater cost of hospital based treatment), CMHTs address difficulties faced by mental health service users due to social exclusion, i.e. by promoting social inclusion. This element of community care is promoted in various government documents including the National Service Framework for Mental Health (NSF; DH, 1999) and Mental Health and Social Exclusion (ODPM, 2004).

Within the North Essex Mental Health Partnership Trust (NEMHPT) this has led to an agreed change in the function of CMHTs to work within the recovery/social inclusion model of care following the CMHT review in 2005 (NEMHPT, 2006). The notion of recovery is highly complex and idiosyncratic and steps away from a mere symptom perspective (with the end goal of 'cure') to include notions of personal growth and overcoming disability with an emphasis on process rather than an end point (e.g. Wallcraft, 2005). Similarly social inclusion goes beyond a provision of mental health services away from hospital settings stressing the need to enable service users to participate fully and access the same opportunities often taken for granted by people, such as employment and accessing leisure facilities (Repper & Perkins, 2003). The move to care in the community which saw increasing closure of hospital beds has meant that clients with more severe mental health difficulties are now living and being cared for in the community (DH, 2006). Despite this fact, the Mental Health Policy Implementation Guide (MHPIG) for CMHTs (DH, 2002) states that 'most patients treated by the CMHT will have time limited disorders and be referred back to their GPs after a period of weeks or months' (p.4) further quoting an average of 5-6

contacts before discharge. In addition the document holds that only 'a substantial minority will remain with the team for ongoing treatment, care and monitoring for periods of several years' (p.4). Although the recovery/social inclusion model for mental health practice does not regard discharge as the best index for success it nonetheless provides one indicator of 'recovery' and possibly social inclusion, due to the implicit notion of no longer requiring the input of specialist mental health services, with their associated stigma and service provision which still tends to separate service users from their community (e.g. involving day centres or activities only accessible to service users).

Although the Care Programme Approach (CPA) and MHPIG for CMHTs (DH, 2002) outline some reasons for discharge which need to be documented (along with procedural guidelines), there are no clear guidelines available addressing the discharge of clients being seen in CMHTs and no Trust-wide operational policy for teams across the Trust, which differ greatly in size, case load and skill mix (NEMHPT, 2006).

Audit aims

At the time of the current audit the CMHT was split into two teams, which occupied separate buildings. The entire CMHT comprised 3 Social Workers, 2 Senior Social Work Practitioners, 4 Community Support Workers, 4 Community Mental Health Nurses, 1 Bipolar Nurse Specialist, 2 Psychiatrists and 1 Team Leader.

In the absence of a trust wide operational policy for CMHTs, this CMHT has produced a local document explaining their work which includes describing them as accepting referrals from any source for people who come within the definition of severe mental illness or people who experience the consequences of a severe crisis which has led to a significant impairment in their social functioning and risk to their health and safety.

Discussions with the team leader identified a need to audit current discharge practices and to determine essential data enabling evaluation of the discharge process. In particular, this will include the amount of time clients are seen in the CMHT. This

data is important as the CMHT is currently in the process of implementing the recovery model of care, which promotes prompt discharge to primary care services. In addition, prompt discharge is essential to protect a CMHT's capacity to respond to new referrals (DH, 2002). Thus, it may be useful to establish the current practise of discharge at the CMHT and identify characteristics of clients who tend to remain in the service for extended periods of more than one year, compared to clients who are engaged for 6 months or less. This will also give an indication of the extent to which current practice at the CMHT is in line with the function outlined in the MHPIG (DH, 2002). Collecting such essential data will allow a comparison with data to be collected at a later point as part of the audit cycle, thereby helping with the evaluation of CMHT functioning.

Audit questions

1. (a) How many clients have been discharged during the financial year of 2005/2006?
   (b) How many clients were seen for 6 months or less before being discharged during this period?
   (c) How many clients were seen for 1 year or longer before being discharged during this period?
   (d) How many clients on the CMHT caseload have been engaged for 1 year or longer?
2. (a) How many contacts do clients have with CMHT staff before being discharged?
   (b) Is this in line with the definition of the function of CMHTs as stated in the MHPIG for CMHTs (DH, 2002)?
3. What are the reasons for discharge and do these adhere to the current CPA and MHPIG for CMHTs?
4. Do clients seen for 1 year or longer differ in terms of diagnosis or socio-demographic data from those seen for 6 months or less?

Method

Design

Following an application to the Trust R&D department this project was classed as an audit/service evaluation project wherefore it was not considered necessary to apply for ethical approval.

Data Source

The data source comprised all clients discharged from the CMHT to primary care services from April 2005 to the end of March 2006 (i.e. the financial year 2005/2006). A list was provided by the NEMHPT Information Technology (IT) Department. Clients who had been discharged following an initial assessment (i.e. were not engaged by the team) or were seen as part of a duty call (e.g. when a client was on the caseload of a different team member but needed urgent input) were not selected for this audit as the discharge criteria as outlined under the CPA did not apply. In addition, clients who still received input from a psychiatrist as part of an outpatient clinic were not included as these had not been fully discharged to primary care. Twenty clients (not meeting the exclusion criteria) were randomly selected and their files and CareBase records explored to answer audit questions 1-3 (see Appendix 1 for the record form used). CareBase is the electronic record system used by the NEMHPT and staff are required to log all clinical activity and correspondence in this system to promote the sharing of essential information between Health Care Professionals (HCPs). In order to investigate audit question 4 it was necessary to expand the sample by identifying clients who had been engaged for 1 year or longer at the end of March 2006. Twenty clients were randomly selected from a list provided by the NEMHPT IT Department. In order to compare characteristics of clients to those seen for 6 months or less, clients falling into this category were selected from the original 'discharged' sample and supplemented with additional, randomly selected cases to arrive at a sample of 20 clients who had been engaged for 6 months or less.

Analysis

The main analyses consist of descriptive statistics. Additional analysis consists of inferential statistics to explore whether any differences found between the two client groups are statistically significant.

Results

Number of clients discharged during the financial year 2005/2006

A total of 211 cases were closed by the CMHT during this period. Of these cases, 28 clients had been seen for 1 year or longer and 128 clients were seen for 6 months or less. This would suggest that an additional 55 clients who have been discharged were engaged for a period of approximately 7 months to 1 year. It needs to be noted that the number of clients engaged for 6 months or less (and the total number of closed cases) also includes clients seen for one-off assessments (not taken on by the team) and duty calls. During the selection process 8 such cases were excluded before arriving at a sample of 20 cases, i.e. about 28% of randomly selected cases had to be excluded.

Sociodemographic characteristics of the sample

Sociodemographic data was collected to describe the sample. As this was done based on random selection this also gives an indication regarding the status of current record keeping. As can be seen in Table 1, the sample consists of more females than males and is predominantly White British. This would seem representative of the local service user population. The average age of clients was approximately 38 years ranging from 20 to 63 years. General Practitioners (GPs) and psychiatrists constitute the main line of referral source, with somewhat more clients having been referred by their GP.

Table 1. Relevant descriptive statistics relating to audit question 1. Percentage of missing data is reported relating to the total sample of N=20, with the remaining percentages reported relating to the total available data.

N=20		**NUMBER**	**PERCENTAGE**
GENDER			
	Male	7	35%
	Female	13	65%
	Total	20	100%
	Missing	0	0
ETHNIC ORIGIN			
	White British	9	56.25%
	British	4	25%
	Other	0	0%
	Not stated	3	18.75%
	Total	16	100%
	Missing	4	20%
MARITAL STATUS			
	Single	8	44.44%
	Married	2	11.11%
	Separated	5	27.78%
	Divorced	3	16.67%
	Total	18	100%
	Missing	2	10%
EMPLOYMENT STATUS			
	Employed	5	31.25%
	Unemployed	10	62.5%
	Disabled	1	6.25%
	Total	16	100%
	Missing	4	20%
REFERRAL SOURCE			
	GP	11	55%
	Psychiatrist	7	35%
	Other	2	10%
	Total	20	100%
	Missing	0	0
AGE			
	Average	38.50	
	Standard Deviation	12.67	
	Minimum	20	
	Maximum	63	
	Total	20	100%
	Missing	0	0

Length of stay, number of contacts and DNAs of randomly selected clients

As illustrated in Table 1, the average length of stay of discharged clients was approximately 40 weeks, with an average of 9 contacts with a CMHT HCP. However, exploration of the data revealed an outlier and positive skew of the data (see Figure 1). It was therefore decided to establish the median, which is a more conservative measure of central tendency. As can be seen in Table 1, this reduces the length of stay to 31 weeks and number of contacts with HCPs to 5. The number of missed appointments (DNAs) ranged from 0 to 7 with an average of 1.3 DNAs in this sample.

Table 1. Average length of stay of a random sample of discharged clients, number of contacts with HCPs, DNAs, further showing standard deviation (S.D.), confidence intervals (CI), minimum and maximum, median and variance.

	Length of stay in weeks	**Number of contacts with HCPs**	**DNAs**
Average	40.86	9	1.30
S.D.	38.32	11.72	2.18
95% CIs	22.93 – 58.80	3.52 – 14.48	.28 – 2.32
Minimum	3.29	1	0
Maximum	159.43	54	7
Median	31.71	5	0
Variance	1468.67	137.26	4.75

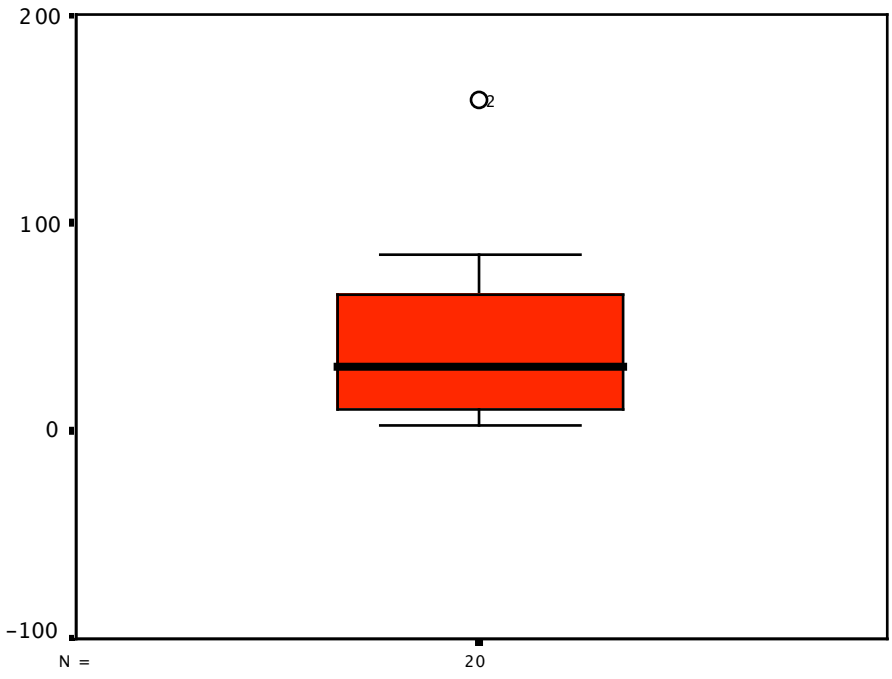

Figure 1. Boxplot showing distribution of varying lengths of stay of clients discharged from the CMHT

Adherence to CPA and MH policy implementation guidelines regarding discharge procedures.

The extent to which HCPs adhere to requirements set out by the CPA and MHPIG (see Appendix 2) relating to the discharge of clients is reported in Table 3 in the form of failure rates, i.e. when this has not been achieved. There appears to be a particular failure to include required information into discharge letters. Moreover, approximately 15% of discharged cases were still open on CareBase despite neither receiving any input from mental health services nor awaiting input.

Table 3. Recording of discharge and available information as required under the CPA and MHPIG reported in failure rates.

N=20		**Number**	**Percentage**
Discharge from CPA NOT recorded on CareBase		3	15%
Reasons for discharge NOT noted			
	CareBase	2	10%
	File	4	20%
Package of care NOT completely closed on CareBase		3	15%
Information required to be available according to MHPIG		**Number**	**Percentage**
	1. The discharge letter was NOT present in the file.	5	25%
	2. The existence of the letter was NOT recorded on CareBase.	5	25%
	3. The letter did NOT indicate current treatment.	11	55%
	4. The letter did NOT indicate procedures for re-referral.	8	40%

Under the CPA four reasons for discharge are stated. The percentage of each in the current sample can be found in Table 4 (see Appendix 3 for a detailed list of reasons for discharge). It needs to be noted that the category referring to a decline of intervention also includes those clients who failed to respond to appointments offered in line with the local appointments policy as this is taken to indicate such a decline. As can be seen in Table 3, the percentage of clients discharged due to declining further intervention is higher than the percentage of clients who were discharged due to no longer requiring specialist input, likely to indicate 'recovery'.

Table 4. Reasons for discharge from CPA.

According to CPA guidelines a service user should be discharged when:		Number	Percentage
	1. The service user and/or carer have indicated that the service user no longer requires specialist MH services.	7	38.89%
	2. The service user has left the area and is discharged to care services in the new area.	0	0
	3. The service user has declined further intervention from specialist services (including appointment policy regarding DNAs).	9	50%
	4. The service user has lost contact with the services (for not less than 1 year and despite every effort contact has not been resumed).	2	11.11%
	Total	18	100%
	Missing	2	10%

Clients engaged for 6 months or less vs. clients engaged for 1 year or longer

Sociodemographic characteristics of the two samples are illustrated in Table 5. The two samples differ primarily in terms of employment, with clients engaged for 1 year or longer (1year+) showing higher rates of unemployment. A total of 154 clients on the CMHT caseload were engaged for 1 year or longer at the end of March 2006.

Table 5. Sociodemographic characteristics of the two samples.

SAMPLE BY LENGTHS OF ENGAGEMENT		**6 MONTHS OR LESS N=20**		**1 YEAR OR LONGER N=20**	
		Number	**Percentage**	**Number**	**Percentage**
GENDER					
	Male	6	30%	8	40%
	Female	14	70%	12	60%
	Total	20	100%	20	100%
ETHNIC ORIGIN					
	White British	9	52.94%	9	45%
	British	4	23.53%	9	45%
	Other	1	5.88%	1	5%
	Not stated	3	17.65%	1	5%
	Total	17	100%	20	100%
	Missing	3	15%	0	0
MARITAL STATUS					
	Single	5	27.78%	8	40%
	Married	2	11.11%	6	30%
	Separated	8	44.44%	1	5%
	Divorced	3	16.67%	5	25%
	Total	18	100%	20	100%
	Missing	2	10%	0	0
EMPLOYMENT STATUS					
	Employed	11	68.75%	4	21.05%
	Unemployed	5	31.25%	15	78.95%
	Disabled	0	0	0	0
	Total	16	100%	19	100%
	Missing	4	20%	1	5%
AGE					
	Average	37.45		44.05	
	SD	10.81		9.44	
	Minimum	20		23	
	Maximum	58		60	
	Total	20	100%	20	100%

Further differences between the two samples relating to for example the source of referral and engagement by the service are illustrated in Table 6. As shown, more clients seen for 6 months or less (6months>) were referred by their GP, were on a standard CPA, had no previous inpatient admission or mental health act (MHA) section. There did not appear to be a great difference in terms of the number of HCPs involved, however, clients seen for 1year+ receive more additional services.

Table 6. Relevant descriptive statistics relating to audit question 4.

SAMPLE BY LENGTHS OF ENGAGEMENT		**6 MONTHS OR LESS N=20**		**1 YEAR OR LONGER N=20**	
		Number	**Percentage**	**Number**	**Percentage**
REFERRAL SOURCE					
	GP	9	47.37%	4	20%
	Psychiatrist	6	31.58%	10	50%
	Other	4	21.05%	6	30%
	Total	19	100%	20	100%
	Missing	1	5%	0	0
CPA LEVEL					
	Standard	15	75%	8	40%
	Enhanced	5	25%	12	60%
	Total	20	100%	20	100%
INPATIENT ADMISSIONS					
	0	15	75%	5	25%
	1	4	20%	4	20%
	2+	1	5%	11	55%
	Total	20	100%	20	100%
MHA SECTIONS					
	0	19	95%	11	55%
	1	1	5%	2	10%
	2+	0	0	7	35%
	Total	20	100%	20	100%
HCP INVOLVED					
	1	3	15%	1	5%
	2	13	65%	11	55%
	3+	4	20%	8	40%
	Total	20	100%	20	100%
ADDITIONAL SERVICES INVOLVED					
	0	8	40%	3	15%
	1	7	35%	8	40%
	2+	5	25%	9	45%
	Total	20	100%	20	100%

Differences in diagnosis between the two samples are outlined in Table 7. A detailed breakdown of diagnoses can be found in Appendix 4, with the information presented here having been clustered into super-ordinate categories. Categories for analysis include, (1) affective disorders (depression and/or anxiety disorders, adjustment disorder), (2) substance related disorders, (3) psychotic disorders (e.g. including schizophrenia, psychotic depression) and personality disorders (PD), (4) eating disorders (5) other or non-specified diagnosis. Cases where co-morbidity was recorded were grouped into the more severe category (e.g. psychotic depression and anxiety would be grouped under psychotic disorders). As shown in Table 7 there appears to be a difference between diagnoses between the groups, whereby clients engaged for more than 1 year included a larger proportion of psychotic and personality disorders and fewer affective disorders.

Table 7. Differences in diagnoses between the two samples.

DIAGNOSIS	**CLIENTS ENGAGED FOR 6 MONTHS OR LESS**		**CLIENTS ENGAGED FOR 1 YEAR OR LONGER**	
	Number	**Percentage**	**Number**	**Percentage**
Affective disorders	15	75%	9	47.37%
Substance related disorders	1	5%	0	0
Psychotic disorders and PD	2	10%	8	42.11%
Eating disorder	1	5%	1	5.26%
Other (including non-specified disorders)	1	5%	1	5.26%
Total	20	100%	19	100%
Missing	0	0	1	5%

Further Analysis

To explore whether observed differences between the two samples reached statistical significance, inferential statistics were used.

Employment status

A 2x2 Chi-Square analysis of the data revealed that the frequency of employment varied as a function of group (χ^2=8.07, df=1, p=.005). Clients engaged for 1year+

more frequently were unemployed, whereas clients engaged for 6months> more frequently were in employment.

Source of referral

A 2x3 Chi-Square analysis of the data revealed that the frequencies relating to source of referral did not vary as a function of group, not reaching statistical significance (χ^2=3.30, df=2, p=.192). This would suggest that a tendency to remain engaged in the CMHT for an extended period was not related to the source of referral. Nonetheless, the data would suggest that there is a trend for clients who were referred by their GP, rather than a psychiatrist or other source, to be less likely to be engaged for extended periods of more than one year.

Previous inpatient admission

A 2x3 Chi-Square analysis of the data revealed that the frequency of previous inpatient admissions varied as a function of group (χ^2=13.33, df=2, p=.001). Clients engaged for 6months> more frequently had no previous inpatient admission, whereas clients engaged for 1year+ more frequently had one or more previous inpatient admissions.

Use of additional services

A 2x3 Chi-Square analysis of the data revealed that the observed differences in frequencies relating to the use of additional services did not vary as a function of group (χ^2=3.48, df=2, p=.175). This nonetheless would suggest a trend for clients who are engaged for 1year+ to be more likely to utilize additional services, despite this not reaching statistical significance.

Diagnosis

A 2x2 Chi-Square analysis of the data relating to diagnosis revealed that the frequency of diagnosis varied as a function of group (χ^2=5.10, df=1, p=.024). Clients engaged for 1year+ more frequently had a diagnosis of psychotic or personality disorder, whereas clients engaged for 6 months> more frequently had a diagnosis of affective disorder.

Discussion

Summary of results

The CMHT closed a total of 211 cases during April 2005 to March 2006. Of these cases 28 had been engaged for 1 year or longer and 128 for 6 months or less. The latter number however, also reflects those cases were only a one-off assessment had been conducted as well as duty calls to clients not on the caseload of the HCP in question, which requires a referral, community event and discharge to be logged in CareBase. Unfortunately, it was not possible to establish the total number of cases who had been seen for such one-off assessments, since this measure was not within the scope of this project. This would have provided interesting information, for example indicating a measure of the new Crisis Resolution and Home Treatment (CRHT) Team's effectiveness in responding to crisis calls. This duty no longer falls under the remit of CMHTs. A measure of the one-off assessments would also provide an index of how appropriate referrals to the CMHT are (e.g. should a large number of such one-off assessments have been a result of GP referrals). Nonetheless, during the selection process 8 such cases had to be excluded before arriving at a total sample of 20 discharged clients, 7 of which had been referred by their GP for team input and one by A&E. Since the selection was done randomly this would suggest that approximately 28% of discharges of clients seen for 6 months or less constitute clients not taken on for care by the team following assessment or were seen as part of a duty call due to a crisis. This is an important finding, suggesting that there is considerable room for improvement in terms of clarifying appropriate referral criteria, for example to GPs who in this sample made the majority (over half) of referrals. Moreover, this confirms the noted duplication, at the time this evaluation was undertaken, between the role of duty between the CMHT and CRHT team in the local area as found by the CMHT review (NEMHPT, 2006) since it is not always clear which service should be accessed by service users in a crisis. As already noted, the majority of cases closed seem to consist of clients seen for 6 months or less. This would further suggest that once clients have been engaged by the CMHT for more than 6 months the likelihood of being discharged decreases as indicated by lower numbers of clients being discharged between 6 months and 1 year as well as subsequent to having been

engaged for over 1 year. This provides some evidence of anecdotal reports amongst CMHT staff, which indicate awareness that if clients are not discharged "quickly" they tend to remain engaged for a long time.

A total of 154 clients on the CMHT caseload have been engaged for 1 year or longer at the end of March 2006. Since this audit did not look into total caseloads across the financial year it is not possible to gauge what proportion of cases this reflects, i.e. whether this constitutes 'a substantial minority' of their cases as set out in the function of CMHTs in the MHPIG (DH, 2002). However, an exploration of a random sample of discharged clients revealed that the average length of stay was approximately 40 weeks (30 weeks using the median) with an average of 9 contacts (5 contacts using the median). This would suggest that typically clients tend to be engaged by the CMHT over 6 months but less than 1 year with contacts varying greatly between clients. With a total of 211 clients discharged, a selection of 20 constitutes less than 10% of cases and as such it is not clear whether the outlier found, which led to the calculation of median measures, is typical for this CMHT or indeed constitutes an extreme case (see limitations of this report noted on page 18). Thus it is difficult to judge whether the 9 contacts found to be the average or 5 contacts as indicated by the median estimate reflect the typical number of contacts prior to discharge. However, even when considering the higher average of 9 contacts, this is only somewhat higher than the 5-6 contacts stated in the MHPIG. What this does not allow however, is judgement about the amount of input received by clients who remain engaged for several years, and what proportion of the CMHT's capacity this uses.

Regarding the adherence to current CPA and MHPIG requirements around discharge the data indicates substantial room for improvement, for example regarding the recording of discharge on CareBase (including the complete closure of care packages), which was found to be lacking in 15% of cases. Similarly, discharge letters from the CMHT tend to lack information on current treatment or how to get re-referred to the team. It is important however to consider these findings in the context of CMHT practice, whereby clients are often made aware verbally regarding how to

gain access to the service, with team members generally offering to be contacted again directly (without requiring a GP visit) even though clients are officially discharged.

In terms of reasons for discharge the data suggest that approximately 38% of cases were closed due to clients no longer requiring specialist input, thus indicating 'recovery'. However, 50% in the current sample were discharged following a decline of any further intervention, which also includes clients who failed to take up offered appointments in line with the local appointments and DNA policy. It is not clear whether this rather large proportion represents a CMHT problem with engaging clients in need of service or to what extent this reflects a lack of need for service input by the clients. This is an important question for the CMHT, which it wants to address, and which highlights a need for further audit, or survey of service users' views.

A comparison of clients engaged for 6months> to clients engaged for 1year+ identified the main sociodemographic difference to be around employment. It is not possible to establish whether the higher rate of unemployment amongst clients engaged for longer is (a) a result of longer engagement, (b) a result of more severe presentation necessitating longer CMHT input and break/absence from work, or (c) was already the case at the time of engagement. It also needs to be noted that these numbers are based on electronic and file records whereby it is possible that this may also reflect differences in recording of information (e.g. if employment is not known this may have been recorded as unemployed even though this would seem less likely in a sample of clients engaged for an extended period). Nonetheless, the importance of employment to mental health and well-being is emphasised in the social inclusion/recovery model and has been found to have a particularly strong relationship to mental health difficulties (Repper & Perkins, 2003; Warr, 1987). In addition, mental health service users have been documented to be at a disadvantage when trying to access jobs, particularly when still receiving treatment (Webber, 2005).

Additional differences found between the two samples are in line with expectations: clients who remain engaged for periods of 1year+ present with more severe mental health difficulties as indicated by significantly higher rates of psychotic and

personality disorders as well as greater numbers of previous inpatient admissions and MHA sections.

Interestingly, there did not appear to be a difference in the number of CMHT health care professionals involved in the two groups. Greater intensity of input would seem to have been absorbed by other services (despite not reaching statistical significance) which may become involved (e.g. voluntary agencies, day centre activities, psychotherapy or CBT services) with clients engaged for 1year+ seeming more likely to receive such input. To the extent that this reflects input by voluntary agencies not regarded to fall under the category of mental health services, this could be viewed as a positive indication. Namely, rather than offering more intensive involvement from CMHT staff, services in the community are utilised which could be argued to reflect moves towards social inclusion and integration into the community (particularly given the fact that these would remain approachable for support in the future without need for a referral from a GP). It also suggests that CMHT staff are creative and comprehensive in their treatment plans by utilising external resources as indicated by their clients' needs.

Methodological issues and limitations

A major limitation of this audit concerned the definition of discharge from a CMHT, which for example according to electronic recording would also include clients not actually engaged by the CMHT but seen for one-off appointments. In addition, clients who had been engaged would often continue to be monitored by the psychiatrist as part of an outpatient clinic following discharge by the CMHT. However, for practical reasons and time constraints (particularly relating to the accessibility of files) the current sample consisted of clients who no longer received any mental health service input and as such could be argued to constitute a particular kind of client group, not necessarily representative of the CMHT population. It will be important for any future work around discharge, to define the term clearly.

Similarly, time constraints only allowed for small samples to be investigated. Particularly for audit questions 1-3 this meant that less than 10% of discharged cases

were used and it is possible that this was not enough to assume this sample to be representative despite random selection. As noted, this may have contributed to difficulties in evaluating the average length of stay of discharged clients due to an outlier skewing estimates. Initially it was intended to also include expert interviews with CMHT staff to allow an exploration of the discharge process and what tends to make this more difficult. It was also hoped that an exploration of staff's awareness of the social inclusion/recovery model would identify any needs staff might have in this area to highlight potential ways of improving its implementation. However, due to the time consuming nature of the data collection and subsequent analyses this had to be overlooked.

It is important to note for several reasons that the data and findings reported here are specific to this CMHT, and may not generalise to other CMHTs. Firstly, not being able to generalise speaks volumes about the flexible nature of CMHT work, and how much it is left to the discretion of CMHT managers, and CMHT staff. Secondly, drawing on ideas from qualitative research, the findings are generative, rather than generalisable. CMHT managers, Service Managers, and senior managers reading this report may well recognise the general picture that emerges beyond the detail, and may recognise important avenues for further research.

Implications for the service and further research

It would seem that based on this audit that there is room to improve records kept around clients' discharge (e.g. closing cases on CareBase) and particularly the information included in discharge letters, for example by raising staff's awareness regarding the information which is required as part of the MHPIG. This would also extent to the recording of sociodemographic data, which is required by the Trust (and constitutes a requirement for gaining Foundation Trust status). As this audit serves to establish essential baseline data, it can be repeated in the future to explore improvements in these areas. Regarding the move to the social inclusion/recovery model it may be beneficial to have discussion around how to improve clients' access to employment opportunities, particularly as this seemed to be the main sociodemographic difference between the two samples, and has been documented to

be important to mental health. The extent to which this can be accommodated in already stretched services, however, is unclear. Focusing on employment status and opportunities also introduces the notional value of considering wellbeing and wellness in general for this population, and utility of doing so within a CMHT setting.

Another major area for research would be to further investigate reasons for discharge particularly since this audit indicated that about half of service users' discharges follow a decline for further input by the team. This could be done using a questionnaire format and could serve to improve services offered by the CMHT should this highlight difficulties with engagement.

Unfortunately it has not been possible to consult CMHT staff on the findings of this audit in time for this write-up[1] due to a change in team leader and move of the team into a single building, which coincided with the time of data analysis and establishment of findings. It is felt that this would have enriched the discussion of findings as well as informing future areas of research and ways to improve the service. It is hoped that the provision of a copy of the final report will nonetheless be helpful in this respect.

[1] A meeting has been arranged, however, not in time to be included in this write-up.

References

Department of Health. (1999). *National service framework for mental health*. London: Department of Health Publications.

Department of Health. (2002). *Mental health policy implementation guide for community mental health teams*. London: Department of Health Publications.

Department of Health. (2006). *From segregation to inclusion: Commissioning guidance on day services for people with mental health problems*. London: Department of Health Publications.

Johnstone, L. (2000). *Users and abusers of psychiatry* (2 ed.). London: Routledge.

Office of the Deputy Prime Minister. (2004). *Mental health and social exclusion.* Wetherby: OMDP Publications.

North Essex Mental Health Partnership. (2006). *A summary of the review of strategic direction of community mental health teams: Adults of working age*.

Repper, J., & Perkins, R. (2003). *Social inclusion and recovery: A model for mental health practice*. Bailliere Tindall: Elsevier Science.

Rogers, A., & Pilgrim, D. (2005). *A sociology of mental health and illness* (3 ed.). New York: Open University Press.

Wallcraft, J. (2005). Recovery from mental breakdown. In J. Tew (Ed.), *Social perspectives in mental health: Developing social models to understand and work with mental distress* (pp. 200-215). London: Jessica Kingsley Publisher.

Warr, P. (1987). *Unemployment and mental health*. Oxford: Oxford University Press.

Webber, M. (2005). Social capital and mental health. In J. Tew (Ed*.), Social perspectives in mental health: Developing social models to understand and work with mental distress (pp. 90-111).* London: Jessica Kingsley Publisher.

Appendix 1 Record form used to collect data

AUDIT OF DISCHARGE DOCUMENTATION AT CARMELITE HOUSE & Villa II

Client Number

FOR INFORMATION ONLY:

GENDER ……..... D.O.B. …….....

ETHNICITY……...

MARITAL STATUS……EMPLOYMENT STATUS……

CPA LEVEL ……

PRINCIPAL DIAGNOSIS……

REFERRAL SOURCE……

REFERRAL REASON……...

MAIN AIMS OF CARE PLAN ……

TYPES OF CARE (CMHT MEMBERS INVOLVED)……

NUMBER OF CONTACTS PRIOR TO DISCHARGE (EXCLUDING TELEPHONE CONTACT)…...

LENGTHS OF INVOLVEMENT WITH CMHT PRIOR TO DISCHARGE……...MONTHS…….DAYS

NUMBER OF INPATIENT ADMISSIONS …….....

MHA SECTION IN PAST……..

AUDIT OF DISCHARGE DOCUMENTATION AT CARMELITE HOUSE & Villa II

STANDARDS & INFORMATION	**YES** *(tick)*	**NO** *(tick)*	**NOT APPLICABLE** *(tick and give reason)*	**NOTES**
CPA POLICY				
STANDARD 1: Discharge from CPA should be recorded on Carebase				
STANDARD 2: Reasons for discharge should be noted				***Noted on Carebase*** *Y/N* ***Noted on files*** *Y/N*
For information*:* *Describe reasons for discharge*				***Noted on Carebase*** *Y/N* ***Noted on files*** *Y/N*
STANDARD 3: The package of care should be completely closed on Carebase				
STANDARD 4: The service user should be discharged from CPA when :				
a) the service user (&/or carer) has indicated the user no longer requires specialist mental health services.				***Noted on Carebase*** *Y/N* ***Noted on files*** *Y/N*
b) the service user has left the area and is discharged to care services in a new area				***Noted on Carebase*** *Y/N* ***Noted on files*** *Y/N*
c) the service user has declined further intervention from specialist mental health services and is not at risk of harming themselves or others or at risk of exploitation.				***Noted on Carebase*** *Y/N* ***Noted on files*** *Y/N*
d) the service user has lost contact with the services for not less than one year and despite every effort contact has not been resumed.				***Noted on Carebase*** *Y/N* ***Noted on files*** *Y/N*

AUDIT OF DISCHARGE DOCUMENTATION AT CARMELITE HOUSE & Villa II

STANDARDS & INFORMATION	**YES (tick)**	**NO (tick)**	**NOT APPLICABLE (tick and give reason)**	**NOTES**
CMHT POLICY IMPLEMENTATION GUIDE				
STANDARD 5: The discharge letter should be present in the files				
STANDARD 6 The existence of the discharge letter should be recorded on Carebase				
STANDARD 7 The discharge letter should indicate current treatment				
STANDARD 8 The discharge letter should indicate procedures for re-referral				
For information: *Onward referral at discharge?*				
Other relevant information?				

Appendix 2 CPA and MHPIG relating to discharge

CPA Policy regarding discharge

When a service user is discharged from CPA following their CPA review, this must be recorded electronically on CareBase and their package of care should be completely closed down.

The service user is discharged from CPA when:

- The service user no longer requires specialist mental health services and is discharged to the care of his/her GP.
- The service user leaves the area and is discharged to the care of services in the new area.
- The service user declines further intervention from specialist mental health services and is not at risk of harming themselves or others or at risk of exploitation.
- The service user has lost contact with the service for not less than one year and despite every effort contact has not been resumed (please refer to the Appointments Policy).

MHPIG – Discharge from CMHT care

- Patients should be discharged back to primary care promptly when they are recovered. This is essential to protect capacity for new referrals.
- Discharge letters need to be comprehensive and indicate current treatment and procedures for re-referral.
- For patients with complicated care needs discussion at the liaison meeting is indicated before discharge.

Appendix 3 List of reasons for discharge.

CASE	REASONS FOR DISCHARGE
1	A letter in the file indicated a decline of further treatment by the client's partner as well as a planned move to a different area without forwarding address. The discharge letter indicates that contact has been lost (for less than 1 year) with the client stated to be at risk of emotional abuse by the partner.
2	The letter indicated that the client has been doing well with medication monitoring to be continued by the GP.
3	The client did not respond to offered appointments (less than one year) and was discharged in line with the local appointments policy.
4	Contact was lost for 2 years but attempts to contact the client were not indicated.
5	The client continuously DNAed for 1 year.
6	The client indicated feeling better and had resumed full time employment
7	No Contact had been recorded on CareBase for 1 year (with the CPN and psychiatrist). Attempts to contact not recorded on CareBase. No reason noted.
8	The client did not respond to offered appointments and was made aware of the local appointments policy (of 2 weeks no reply) which assumes this to indicate as a wish not to receive CMHT services (if does not get in touch) before being discharged.
9	The client made good progress in coping with emotional turmoil and wanted to move on.
10	No further input from the CMHT was required as there was no role for the team.
11	The client did not want further input by the team and declined the offer of an appointment with a psychologist.
12	The client and carer felt that the client had no biological symptoms of depression and was settled. Did not require further input.
13	The client DNAed an appointment. The CPN was unable to get hold of the client (for less than 2 months) and assumed the client had returned to full time work.
14	Contact was lost for 1 month with no reply to letters. The client was informed of the 2 week no reply/DNA policy and subsequently discharged.
15	The client did not attend the CPA review & left the surgery. The team assumed the client moved back to Liverpool.
16	Psychiatrist letter/care notes indicated that the client DNAed 2 appointments over 3 months and was discharged. No letter was sent by the team.
17	The client felt better (stable mood) and did not want further input.
18	The client DNAed appointments (less than one year) and was informed that case would be closed if did not get in touch.
19	No further need for support was identified due to a change in circumstances. The client was referred for CBT.
20	Missing

Appendix 4 Details of diagnoses comprising the categories used for analysis.

Diagnosis	**Clients engaged for 6 months or less**		**Clients engaged for 1 year or longer**	
	Number	Percentage	Number	Percentage
Depression (severe, mild, moderate, reactive)	8	40%	5	25%
Anxiety disorders	2	10%	1	5%
Anxiety and Depression	4	20%	0	0
Bipolar affective disorder	0	0	3	15%
Eating disorder	1	5%	1	5%
Schizophrenia	0	0	5	25%
Psychosis following head injury	1	5%	0	0
Psychotic depression	1	5%	1	5%
Alcohol dependence	1	5%	0	0
Adjustment disorder	1	5%	0	0
Problems managing anger	1	5%	0	0
Personality disorder (emotionally unstable PD, paranoid PD)	0	0	2	10%
Alzheimer Disease	0	0	1	5%
Total	20	100%	19	95%
Missing	0	0	1	5%

University of Hertfordshire
Doctorate in Clinical Psychology
Year 3

LITERATURE REVIEW:
BORDERLINE PERSONALITY DISORDER AND PSYCHOLOGICAL TREATMENTS FOR CLIENTS MEETING DIAGNOSTIC CRITERIA: PAST, PRESENT AND POSSIBLE FUTURE

Student Number: 05108126
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Introduction

According to Diagnostic and Statistical Manual – 4th edition (DSM-IV; APA, 1994) criteria, Borderline Personality Disorder (BPD), is characterised by patterns of instability in interpersonal relationships and self- image, and cognitive, emotional and behavioural dysregulation including impulsivity, self-harm and substance abuse. In trying to manage the large amount of information that has accumulated over the years about BPD this account will first review the literature concerning the concept of BPD looking at its historical development and problems with the concept of personality disorder (PD) in general followed by an outline of how these manifest in the concept of BPD in particular. The second part of this review will look at psychological interventions for clients meeting BPD criteria. Due to space limitations the focus will be on CBT and one psychodynamic treatment for BPD as these appear to have been researched most rigorously (e.g. all participants having a BPD diagnosis, randomised control trials). However, the author is aware of the vast range of other psychological treatments applied to clients meeting BPD criteria including cognitive analytic therapy (e.g. Ryle & Kerr, 2002), therapeutic communities and different types of psychoanalytic interventions, group therapy (e.g. Black, Blum, Pfohl, & St.John, 2004) and more recently family interventions (Fruzzetti & Boulanger, 2005). Similarly, it needs to be acknowledged that pharmacotherapy is an important aspect in the management of symptoms experienced by clients meeting BPD criteria (e.g. due to comorbid mood disorders) with most receiving some form of medication; again a discussion of this is beyond to scope of this account and will therefore be omitted. The account will conclude with an overview of recent developments in cognitive therapies, which offer new avenues for the conceptualisation and thus treatment of emotional distress, which are worth exploring in research, not only for their potential effectiveness but also in terms of mechanisms of change.

The concept of Borderline Personality Disorder

Historical development

From the first description of clients now captured under the label of BPD by Stern (1938) and Knight (1953) the concept of BPD has attracted considerable debate with the diagnosis remaining controversial (Roth & Fonagy, 2005; Allen, 2004). Despite

the borderline concept thus dating back over 60 years, originally developed by psychoanalysts to describe clients who appeared to fall on the neurotic spectrum of mental disorder but were found to be resistant to psychoanalysis (Aronsons. 1985), the diagnosis of BPD only became officially recognised with its inclusion in DSM-III (APA, 1980). With this, the concept had evolved from the first more systematic description of 'borderline personality organisation' (BPO) by Kernberg (1967) who attempted to outline intrapsychic features of patients who appeared to fall between psychotic and neurotic personality organisations. This description captured all severe PDs which were defined by three main characteristics: (1) identity diffusion, (2) use of primitive defences such as splitting, projective identification, and (3) difficulties with reality testing (Skodol *et al*., 2002). Following a systematic review of the available empirical literature by Gunderson and Singer (1975) the DSM-III diagnosis of BPD was born outlining 8 diagnostic criteria of which 5 had to be met to qualify for the label. Since the historical split of PDs onto a separate Axis with DSM-III, BPD has now come to be described by 9 diagnostic criteria in DSM-IV of which any 5 have to be met for a diagnosis. Thus, whereas there were already 93 different ways to meet diagnostic criteria for BPD in the 1980s (Clarkin, Widiger, Frances, Hurt & Gilmore. 1983), this has now almost doubled to 151 possible ways (e.g. Bateman & Fonagy, 2004; Skodol, 2005). It is thus not surprising that this client population, possibly more than any other, is characterised by heterogeneity, with any two individuals with this diagnosis potentially only sharing one diagnostic criterion.

At this point it is worth highlighting some of the many issues with the notion of PD in general and how these apply to BPD in particular.

The notion of personality pathology and categorical approach to diagnosis

Inherent in the above-mentioned separation of PDs on a separate diagnostic Axis is the assumption that the identified categories resemble disorders distinct from disorders of mental state and normal personality (Livesley, Schroeder, Jackson & Jang, 1994). This notion has been challenged extensively, with evidence being drawn from studies showing high rates of comorbidity not only between Axis-II and Axis-I diagnoses (e.g.

Zanarini *et al*., 1998a; Johnson *et al*., 2003) but also between different Axis-II disorders (e.g. Zanarini, *et al*., 1998b; Zanarini *et al*., 2004).

Numerous studies have been conducted exploring and documenting the issue of comorbidity in BPD. For example, Zimmerman & Mattia (1999) assessed 59 patients diagnosed with BPD and found that 61% met criteria for major depressive disorder (MDD) with 29% meeting diagnostic criteria for panic disorder with agoraphobia; overall only one did not receive a comorbid diagnosis. Similarly, Zanarini, Frankenburg, Hennen, Reich and Silk (2004) found that out of 290 patients meeting BPD criteria, 96.9% also met criteria for at least one Axis-I mood disorder. Comorbidity rates vary across studies with ranges reported between 41-83% for a history of MDD, 46-56% for PTSD, 23-47% for social phobia, 31-48% for panic disorder, and 29-53% for eating disorders, to name but a few (Lieb, Zanarini, Schmahl, Linehan & Bohus, 2004). Skodol *et al*. (2002) note that this situation partly arises from the criteria for BPD which include descriptions of behaviours and moods characteristic of various Axis-I diagnoses (e.g. disordered eating, substance abuse) and argue that studies using patient samples without a comorbid diagnosis cannot be considered representative of the BPD client population. In terms of Axis-II comorbidity Lieb *et al*. (2004) report ranges for the most frequently reported diagnoses in the literature including 43-47% for Avoidant PD, 16-51% for Dependent PD and 14-30% for Paranoid PD. In addition, as with the BPD diagnosis in general, there appear to be gender differences for Axis-I and II comorbidity (e.g. Johnson *et al*., 2003).

Similarly, the notion of PD reflecting abnormal personality (distinct from normal personality) has been challenged by studies demonstrating that 'abnormal' personality traits are found to generalise across different PDs as well as the general population and can be described using dimensions of normal personality (e.g. Livesley, Jackson & Schroeder, 1992; Livesley, 1998). It needs to be acknowledged that many clinicians and researchers favour a dimensional conceptualisation of psychopathology, with some viewing categorisation as applying a cut-off on a dimension, for example in the form of meeting threshold number of criteria (e.g. Perry, 1990; Livesley *et al*., 1994; Strack & Lorr, 1997).

Personality disorder as defined in DSM-IV consists of '*enduring patterns of inner experience and behaviour that deviates markedly from the expectations of the individual's culture*' (p.1230). Thus, not surprisingly, whether behaviours or experiences are judged to constitute a PD is culturally relative, depending on prevalent social norms, values and context (e.g. Perry, 1998). In line with this argument, prevalence of PD symptoms has been found to vary in different cultures and different cohorts (e.g. antisocial behaviour, substance abuse, parasuicide, which are all features of BPD; Millon & Davis, 2000; Paris, 1992; Perry, 1998).

As was already mentioned, there also appears to be a gender bias in the application of the borderline diagnosis with 75% of those diagnosed being female (e.g. DSM-IV). Skodol and Bender (2003) explored this issue, reviewing studies of general and clinical populations which addressed possible determinants including whether the observation was due to biased diagnostic constructs or criteria or biased application of criteria (Widiger, 1998). Skodol and Bender (2003) identified biased sampling (i.e. more women presenting in clinical settings) as the main reason why more women than men might receive the diagnosis, with evidence for other determinants (e.g. diagnostic bias) not being of the magnitude to explain such a wide difference. However, the authors note that this conclusion is limited by the fact that the gender ratio of BPD in the general population is not known.

Issues in Prognosis

The notion of patterns of behaviours and experiences as enduring has also come under scrutiny, especially as this is at the very core of the concept of PD, and has been blamed for much clinical pessimism being associated with PD diagnoses, to the point of clients being excluded from mental health services for 'untreatability'. This is now improving with specialist services for PD being developed and forming part of current government initiatives (National Institute for Mental Health in England, NIMHE; 2003).

McDavid and Pilkonis (1996) conducted a review of the literature on the stability of PD diagnoses and noted that demonstrating stability would provide evidence for the validity of the concept of PD. They report that in the 11 studies included in their analysis, 25-78% of participants retained a PD diagnosis at follow-up. However, follow-up varied greatly between studies (1-6 months vs. 15 years), as did sample size, method of assessment, attrition rate and other methodological aspects. There are now a growing number of studies that have investigated the issue of temporal stability which have addressed methodological problems of earlier studies (e.g. using prospective design, reporting inter-rater and test-retest reliability of diagnoses, blind assessment). For example, Grilo *et al*. (2004) prospectively examined diagnostic stability over 2 years at 4 intervals (baseline, 6, 12 and 24 months) and used two different definitions of remission (not meeting diagnostic threshold for 2 consecutive months vs. 12 months). For patients who met BPD criteria at baseline, 42% no longer met diagnostic threshold using the 2-months remission definition, with 28% no longer receiving a BPD diagnoses using the more stringent 12-months definition. With longer follow-up periods remission rates have been found to be even higher. For example, Zanarini, Frankenburg, Hennen, Reich and Silk (2003; 2006) report that over a 10-year period, 88% of 290 patients who received a BPD diagnosis at baseline, achieved remission. Gunderson *et al*. (2003) explored possible determinants of remission in BPD. Out of 160 participants meeting diagnostic criteria at baseline, 18 (about 11%) met only 2 or fewer diagnostic criteria for BPD within the first 6 months of follow-up and sustained this reduction for a further 6 months. Their findings suggested that amelioration of Axis-I disorders or stressful life situations led to this observation, with only one participant having been found to have been misdiagnosed at baseline. Therapeutic interventions were judged to have played a role in this although they were not regarded as a critical factor.

Issues in Assessment

Another important issue debated in the literature is that of assessment of PD (e.g. Zimmerman, 1994). Various strategies have been employed including administration of self-report inventories (e.g. Millon Clinical Multiaxial Inventory-III; Millon, Millon & Davis, 1997) and semi-structured interviews. The consensus appears to be that

without the use of semi-structured clinical interviews, PD diagnoses are quite unreliable (Widiger & Samuel, 2005; Farmer, 2000). However, the SCID-II (Structured Clinical Interview for DSM-IV Axis-II; First, Spitzer, Gibbon & Williams, 1995a, 1995b) has shown good to excellent inter-rater reliability and more importantly test-retest reliability (Perry, 1990) for BPD (First *et al*., 1995b; Rogers, 2003). Convergent validity between different semi-structured interviews was further found to be comparable to diagnoses of Axis-I mood disorders (e.g. Loranger, 1992). It has been noted though that interviewer training and experience are important factors influencing reliable assessment (e.g. Skodol *et al*., 2002; Widiger & Samuel, 2005; Davidson, 2008). Nonetheless, debates continue around the validity of assessment for example in view of clients ability to provide information (as this requires judgements about abnormality; e.g. Davidson, 2008), poor discriminant validity which is somewhat due to individual PD constructs overlapping (Farmer, 2000) and whether or how age of onset is assessed (Widiger & Samuel, 2005).

Despite many problems with the concept of PD in general and BPD in particular, with the issue of validity of diagnosis unresolved and the fundamental basis of BPD not being clearly understood (see below), the diagnosis of BPD has retained clinical use with the described behaviours being well recognised by clinicians (Krawitz & Watson, 2003; Skodol, 2005). Moreover, in our current climate of evidence-based practice, interventions and research are inseparably tied to diagnoses (Allen, 2004), and for this reason one cannot shy away from using such a label, especially if one aim is to increase available support, for example in the form of available therapeutic interventions.

Treatments

According to Coid, Yang, Tyrer, Roberts and Ullrich (2006) in their analysis from the British National Survey of Psychiatric Morbidity (a 2-phase survey assessing prevalence of mental disorders in the community) the prevalence of PDs in the UK is about 4.4%; for BPD this is estimated to be .7%. Estimates tend to vary between studies which, depending on the particular methodology employed (e.g. diagnosis by questionnaire alone), have been criticised for overestimating prevalence which has

generally been held to range between 10-13% for all PDs (Davidson, 2008; NIMHE, 2003). For clients accessing mental health services, rates of PD have been found to be much higher often in the region of 50%; the most prevalent PD being BPD (e.g. deGirolamo & Dotto, 2000; Moran, 2002). A recent review of the cost of PD to mental health services in the East of England in terms of service utilisation estimated an average of £135million of expenditure (38% of the total expenditure; Eastern Specialised Mental Health Commissioning Group, 2005). However, apart from economic costs there are costs in terms of life: up to 10% of clients meeting criteria for a BPD diagnosis are estimated to commit suicide (e.g. Roth & Fonagy, 2005). It seems therefore important to continue investigations into effective treatments.

A number of psychotherapeutic interventions have been developed for or applied to BPD and hold great promise. Due to space limitations the focus will primarily be on those providing good evidence regarding their effectiveness. Generally, views regarding treatment of BPD have been changing due to a re-evaluation of the nature and aetiology of BPD and a growing number of studies evaluating treatment outcome (Livesley, 2004).

Past and Present

Psychodynamic Therapies

There are several approaches using psychodynamic ideas for clients meeting BPD criteria including mentalisation-based treatment (MBT; Bateman & Fonagy, 2004), transference-focused psychotherapy (TFP; e.g. Clarkin, Yeomans & Kernberg, 1998); psychoanalytic psychotherapy (Stevenson & Meares, 1992) and approaches described by Gunderson (2000) and Gabbard (2000). The one with the strongest empirical support is MBT, which will form the focus of this section.

MBT conceptualises BPD as a disorder of attachment and mentalisation capacity, which refers to difficulties in comprehending and being able to think about others having a different state of mind from one's own (e.g. in terms of feelings, conceptualisations; Fonagy & Bateman, 2006). These difficulties are viewed to stem from either an inherent vulnerability and/or an exposure to neglectful or abusive

relationships. Regarding the former, traits such as affective instability, cognitive dysregulation, identity problems (captured collectively under the term emotion dysregulation; Skodol, 2005) which are characteristic of BPD have been found to have a genetic component (Togerson *et al*. 2000; Jang, Livesley, Vernon & Jackson, 1996). Regarding the latter, clients meeting BPD criteria are often found to report a history of abuse (e.g. sexual, physical, emotional) and/or neglect (e.g. physical, emotional). Sexual abuse in particular seems to be reported more often compared to people with other Axis-I and II diagnoses (e.g. Zlotnik, Mattia & Zimmerman, 2001) with rates as high as 27.4% reported by Zanarini *et al*. (1997) in inpatients with a BPD diagnosis, although the authors caution against generalisation to other settings. However, in other aspects of abuse and neglect (e.g. type) their findings are comparable to other studies with 91% of clients reporting some form of childhood abuse and 92% reporting some form of neglect. Although such experiences are not unique to BPD, they are likely to contribute to difficulties experienced by clients meeting diagnostic criteria.

In MBT, such traumatic experiences are argued to lead to individuals 'decoupling' their capacity to consider their own and the perpetrator's (often an attachment figure) mental state (i.e. avoiding this), which is viewed as an adaptive way of coping (Fonagy & Bateman, 2006). This is further suggested to be mediated by causing changes in the neuronal mechanisms of arousal that lead to the arousal system being more easily triggered by even mild emotional stimuli while dampening activity in frontal parts of the brain, generally associated with mechanisms of self-control. For example, neuro-imaging studies have found increased activity in the amygdala when clients with a BPD diagnosis were presented with affect-inducing slides (e.g. Herpertz *et al*., 2001); this was further found to take longer to subside. In terms of executive dysfunction, studies report equivocal results. For example, van Reekum *et al*., (1993, 1996) assessed participants with a BPD diagnosis and found a strong association to brain insults and neurodevelopmental injuries which was further linked to poorer performance on neuropsychological tests held to assess executive or frontal lobe functioning (e.g. Trail Making Test) when compared to a traumatic brain injury control group. However, Bateman and Fonagy (2004) point out that this may only apply to a small subgroup with other studies not having replicated such findings. Nonetheless, in

a recent meta-analytic review of neuropsychological deficits Ruocco (2005) concludes that compared to 'normal controls' clients meeting BPD criteria show deficits in attention and cognitive flexibility. Thus, it is possible that impulsivity and emotional reactivity or dysregulation are mediated by attentional mechanisms associated with frontal lobe functioning. Thus far, studies do not appear to have investigated changes in measures of attention following therapeutic intervention.

As already mentioned, in MBT difficulties to mentalise are attributed to failures of parental responsiveness which lead to the child developing an incoherent sense of self and inconsistent view of others which is expressed in inappropriate emotional expression (Bateman & Fonagy, 2004). Therapy therefore targets identification and appropriate expression of feelings, development of more stable internal representations and a more coherent sense of self as well as the ability to form secure attachments. As in more traditional forms of psychodynamic treatment, this is achieved via use of interpretations (although this tends to be approached more gradually) and the therapeutic relationship or transference manifestation with an emphasis on the emotional present. Treatment is intense with individual and group therapy sessions spanning over 5 days per week and involves partial hospitalisation to this end.

Cognitive Behaviour Therapies

Cognitive behaviour therapy (CBT) for PD and Schema-focused therapy (SFT)

The main contributors to the field of CBT for PD are Beck, Freeman and Davis (2004) and Davidson (2008). According to Beck *et al*. (2004), PD develops out of an interaction between the individual's environment, biological predispositions and temperamental tendencies already present at birth. Taking an evolutionary perspective, they argue that patterns of observed behaviours perceived as problematic (due to conflicting with prevailing norms of society) were originally adaptive and important for survival. These behaviour patterns are conceptualised as being related to, or driven by, underlying cognitive, affective, motivational, behavioural and self-regulatory schemata. Such schemata, which reflect concepts about self, others, the world etc., develop as a means to organise experiences (particularly early traumatic experiences). Difficulties arise due to certain 'maladaptive' schemata (specific to different PDs)

being overdeveloped and evoked across many different situations. By influencing an individual's perception and interpretation of events they thus shape behavioural and emotional responses. Clients meeting BPD criteria are held to view themselves as inherently unacceptable, vulnerable and powerless, further seeing the world and others as dangerous and malevolent. The combination of dependent assumptions (e.g. self as weak, others as strong and capable) and paranoid assumptions (e.g. others being malevolent) are thought to drive extreme and unstable interpersonal patterns of behaviour (e.g. oscillating between clinging and pushing others away). Another core feature in this CBT conceptualisation of BPD is dichotomous thinking, which it is argued leads to emotional turmoil and extreme decisions, marked by abrupt shifts. Layden, Newman, Freeman and Morse (1993) further suggest various additional biases and processes particularly related to early development (e.g. pre-verbal stage).

These ideas are closely related to Young's schema model (Young, 1994). SFT is essentially an expansion of Beck's original model and is influenced by social constructivist ideas. It integrates cognitive, behavioural, experiential and object-relations techniques and concepts; these are collectively captured in Young's concept of schema (Young & Behary, 1998). A particular difference to Beck' model is the notion of early maladaptive schemata, schema modes (certain constellations of schemata which are akin to the notion of regression into emotionally intense child-like states), schema domains and schema processes, which are the mechanisms by which schemata are maintained. The latter is one of the targets in therapy, which takes a hierarchical approach to difficulties. Techniques used in both CBT and SFT are behavioural (e.g. role plays, experimenting with new behaviours), cognitive (e.g. clarifying underlying schemata; tackling dichotomous thinking) and experiential, (e.g. imagery, experience of emotions); these are aimed at allowing clients to distance themselves from schemata as just one aspect of them.

Dialectic behaviour therapy (DBT)

DBT was developed by Linehan (1993) and is based on the biopsychosocial theory (e.g. Paris, 1993) which argues that biological factors determine the specificity of a PD but that psychological, environmental and social factors are the strongest determinants

of whether an underlying predisposition comes to develop into overt characteristics captured in concepts of PD. None of these factors are sufficient in themselves to develop a PD but act as risk factors or protective factors, thus reflecting a multidimensional model of aetiology. At the centre of DBT lies the notion of emotion dysregulation, which is thought to arise out of early experiences in invalidating environments (as noted, characterised by various forms of abuse and neglect) in which the child's experiences are denied, punished or responded to inconsistently. This is hypothesised to lead to difficulties in understanding, tolerating and regulating emotions and unrealistic views regarding these. A particular target of DBT is self-harm or parasuicidal behaviours, which are conceptualised as ways of managing extreme emotions; thus emotion tolerance and regulation are main aims of therapy. According to Linehan (1993), BPD clients learn to avoid negative emotions and thus may fail to learn that they can tolerate these. This would appear similar to trauma survivors who have been found to avoid situations, thoughts and the emotions associated with these which often has the now well-documented paradoxical effect of intensifying intrusive thoughts and negative emotional experiences (Follette, Palm & Pearson, 2006); this has also been found to be associated with BPD-related features (e.g. Rosenthal, Cheavens, Lejuez & Lunch, 2005). Linehan (1993) points out the importance of the ability to control attention as a way to regulate emotional experiences, for example by allowing the individual to shift it away from negative emotional stimuli and that an inability to do this may play an important part in the emotion dysregulation found in clients diagnosed with BPD. Therefore, a core aspect of DBT is the use of mindfulness, a form of meditation now increasingly being used in new forms of CBT (see below), which teaches clients a particular attitude and skills to disengage from more automatic, less helpful ways of reacting.

Evidence base for the treatment of BPD

Despite huge research interest in the borderline concept, evaluation of psychological treatments particularly using randomised control trials (RCTs), generally regarded as providing the highest levels of evidence for the effectiveness of interventions, are still limited (e.g. Binks *et al*., 2007; Roth & Fonagy, 2005). In a recent Cochrane Review of psychological therapies for people with BPD (Binks *et al*., 2007), seven RCTs were

included which evaluated DBT (Linehan, Armstrong, Suarez, Allmon & Heard 1991; Linehan *et al*., 1999; Koons *et al*., 2001; Turner, 2000; van den Bosch, Verheul, Schipper & van den Brink, 2002; Linehan *et al*., 2002) and MBT (Bateman & Fonagy, 1999). Generally, evaluations of treatments (whether controlled or uncontrolled trials) are characterised by small sample sizes, significant attrition rates, huge variation in employed outcome measures (ranging from symptom measures and behavioural indices, e.g. instances of self-harm, to re-assessment of meeting diagnostic criteria) and follow-up periods. Bateman & Fonagy (1999, 2001) in their evaluation of MBT reported decreased levels of self-harm and depression and improvements in social and interpersonal functioning; effects which were sustained at 36-months follow-up. DBT has been found to effectively reduce self-harming behaviour and time as inpatients during treatment and was further characterised by significantly lower drop-out than other therapies, with many improvements (e.g. social functioning) still maintained at 6-12 months follow-up (Linehan *et al*., 1991; Linehan, Heard & Armstrong, 1993; Linehan *et al*., 2006). Moreover, other studies have found DBT and adaptations of DBT to be effective in reducing substance abuse (Linehan *et al*., 1999; 2002; Verheul *et al*., 2003). Other studies looking at CBT interventions tend to include clients with primary diagnoses other than BPD (e.g. Tyrer *et al*., 2003) wherefore it is not possible to draw conclusions about their effectiveness at this stage. In an open uncontrolled trial of CBT for one year, Brown, Newman, Charlesworth, Crits-Christoph & Beck (2004) found significant reductions in suicidal ideation and depression, which was sustained at 18-months follow-up. However, a recent RCT (Giesen-Bloo *et al*. 2006), comparing 3-year treatment using SFT and TFP, found both to lead to statistically and clinically significant improvements on a range of measures (e.g. quality of life, BPD symptoms) but found SFT to be superior. Another RCT investigating effectiveness of CBT is currently being conducted by Davidson and colleagues (Davidson, Gumley, Millar, Drummond & Macaulay, 2006).

Possible Future

Over the last 15 years, CBT has undergone a transformation in the conceptualisation of emotional difficulties, referred to as the third wave, of which DBT is a part (e.g. Hayes, 2004). This has seen a move away from models based on diagnosis with

emphasis now being placed on processes common to all emotional disorders. Examples of transdiagnostic models include Interacting Cognitive Subsystems (ICS; Barnard & Teasdale, 1991) and Relational Frame Theory (RFT; Hayes, Barnes-Holmes & Roche, 2001). These models have a particular strength in being based on and developed from empirical and experimental literature with treatments developed out of these models beginning to be evaluated (e.g. Acceptance and Commitment Therapy, developed out of RFT; Mindfulness-Based Cognitive Therapy, MBCT, developed out of ICS). Furthermore, a shift has occurred in the focus of therapies, which now emphasise the role of attention and metacognition (e.g. Wells, 2000; Teasdale, 1999) rather than content of thoughts or schemata, also as main targets of treatment. For example, Wells and Matthews (1994; 1996) propose a self-regulatory executive function (SREF) model whereby self-beliefs drive the self-regulatory processing of information in the form of appraisals of internal and external events which guide or direct subsequent thoughts and experiences (e.g. via selective attention, memory retrieval). The SREF model fits well with schema theory (Beck *et al*. 2004) essentially extending it by specifying mechanisms by which beliefs affect or control cognitive processing (Wells, 2000). A core assumption is that self-regulatory processing occurs in a system characterised by limited capacity, which is sensitive to attentional resource demands. When clients experience intrusive thoughts (e.g. OCD), low mood (e.g. depression), hallucinations (e.g. psychosis), or flashbacks (e.g. PTSD) it is postulated that beliefs about such experiences (metacognitions) direct attention towards these, thus perpetuating and maintaining experiences, or lead to behaviours which promote experiential avoidance (e.g. substance abuse, self-harm; Hayes, Wilson, Gifford, Follette & Strosahl, 1996). In order to increase flexible metacognitive control of attention and unlock inflexible self-focused thinking Wells (1990) developed the concept of detached mindfulness and attention training (e.g. Wells, 2006). This technique alone has been found to be effective in the treatment of panic, social phobia and recurrent MDD (Wells, 2002). The role of metacognitive beliefs has also been explored for eating disorders (e.g. Cooper, Wells & Todd, 2004; Cooper, Grocutt, Deepak & Bailey, 2007), psychosis (e.g. Morrison, French & Wells, 2007) and PTSD (Wells & Sembi, 2004a; 2004b) with the authors strongly supporting the

incorporation of these as targets in treatment, for example via strategies such as detached mindfulness.

Mindfulness as part of MBCT (Segal, Teasdale & Williams, 2002) has a slightly different focus from Wells' concept. Participants are invited to direct attention to moment-by-moment experiences and observe these non-judgementally (Kabat-Zinn, 1994), thus becoming aware of and disengaging from habitual patterns of appraisal. This is argued to allow clients to develop a different relationship to their thoughts and emotions in which they become able to step-back from previously vicious spirals of negative emotions and hopelessness, and create space for more adaptive ways of coping (Williams & Swales, 2004; Williams, Duggan, Crane & Fennel, 2006). Models postulating mechanisms of how mindfulness may exert its effects have been proposed and give a central role to attentional control and changes in attitudes towards experiences (e.g. Bishop *et al.*, 2004; Shapiro , Carlson, Astin and Freedman, 2006; Lynch, Chapman, Rosenthal, Kuo & Linehan, 2006); however, these remain unexplored thus far. As mentioned earlier, one of the main treatment approaches for clients meeting BPD criteria, DBT, already uses mindfulness as one core aspect of treatment.

Conclusion

Research into the concept of BPD and effective treatments for clients meeting diagnostic criteria is characterised by difficulties partly due to problems with the former (e.g. heterogeneity of the client population; validity of diagnosis) and problems in conducting RCTs (e.g. Roth & Fonagy, 2005). Nonetheless, as was already noted, this should not be a deterrent in trying to explore what is likely to help people who present with experiences and behaviours captured in the diagnostic description, especially as this has finally moved into the focus of government legislation with the recognition that people can benefit from psychological interventions.

Mindfulness appears particularly relevant for this client group by potentially offering them one way to be able to create space between thoughts and feelings which contribute to impulsive behaviours or experiences of severe emotional distress (e.g.

Stratton, 2006). Research is only beginning to explore the particular value of mindfulness for this client group (e.g. Huss & Baer, 2006), which in its more common application in DBT comes as part of a comprehensive and intensive treatment package. It therefore seems important to (1) explore the effectiveness of mindfulness and (2) to explore the mechanisms by which mindfulness exerts its effects in this client population, particularly given difficulties with attention observed in neuropsychological studies and the potential role of attention and experiential avoidance in emotion regulation. This could be facilitated by using a manualised therapy programme with much greater emphasis on mindfulness practice and application than is typical in DBT, namely by using MBCT.

References

Allen, C. (2004). Borderline personality disorder: Towards a systemic formulation. *Journal of Family Therapy, 26*, 126-141.

American Psychiatric Association. (1980). *Diagnostic and Statistical Manual of Mental Disorders* (3 ed.). Washington, DC: American Psychiatric Association.

American Psychiatric Association. (1994). *Diagnostic and Statistical Manual of Mental Disorders* (4 ed.). Washington, DC: American Psychiatric Association.

Aronson, T. A. (1985). Historical perspectives on the borderline concept: A review and critique. *Psychiatry, 48*, 209-222.

Barnard, P. J., & Teasdale, J. D. (1991). Interacting cognitive subsystems: A systemic approach to cognitive-affective interaction and change. *Cognition and Emotion, 5*, 1-39.

Bateman, A. W., & Fonagy, P. (1999). Effectiveness of partial hospitalization in the treatment of borderline personality disorder: A randomized controlled trial. *American Journal of Psychiatry, 156*(10), 1563-1569.

Bateman, A. W., & Fonagy, P. (2001). Treatment of borderline personality disorder with psychoanalytically oriented partial hospitalization: An 18-month follow-up. *American Journal of Psychiatry, 158*(1), 36-42.

Bateman, A. W., & Fonagy, P. (2004). *Psychotherapy for borderline personality disorder: Mentalization-based treatment*. Oxford: Oxford University Press.

Beck, A. T., Freeman, A., & Davis, D. D. (2004). *Cognitive therapy of personality disorders*. New York: The Guildford Press.

Binks, C. A., Fenton, M., McCarthy, L., Lee, T., Adams, C. E., & Duggan, C. (2006). Psychological therapies for people with borderline personality disorder (Review). *Cochrane Database of Systematic Reviews, 1*.

Bishop, S. R., Lau, M., Shapiro, S., Carlson, L., Anderson, N. D., Carmody, J., *et al*. (2004). Mindfulness: A proposed operational definition. *Clinical Psychology: Science & Practice, 11*, 230-241.

Black, D. W., Blum, N., Pfohl, B., & St. John, D. (2004). The STEPPS group treatment program for outpatients with borderline personality disorder. *Journal of Contemporary Psychotherapy, 34*(3), 193-210.

Brown, G. K., Newman, C. F., Charlesworth, S. E., Crits-Christoph, P., & Beck, A. T. (2004). An open clinical trial of cognitive therapy of borderline personality disorder. *Journal of Personality Disorder, 18*(3), 257-271.

Clarkin, J. F., Widiger, T. A., Frances, A. J., Hurt, S. W., & Gilmore, M. (1983). Prototypic typology and the borderline personality disorder. *Journal of Abnormal Psychology, 92*, 263-275.

Clarkin, J. F., Yeomans, F. E., & Kernberg, O. F. (1998). *Psychotherapy for borderline personality*. New York: John Wiley & Sons Ltd.

Coid, J., Yang, M., Tyrer, P., Roberts, A., & Ullrich, S. (2006). Prevalence and correlated of personality disorder in Great Britain. *British Journal of Psychiatry, 188*, 423-431.

Cooper, M. J., Grocutt, E., Deepak, K., & Bailey, E. (2007). Metacognition in anorexia nervosa, dieting and non-dieting controls: A preliminary investigation. *British Journal of Clinical Psychology, 46*, 113-117.

Cooper, M. J., Wells, A., & Todd, G. (2004). A cognitive model of bulimia nervosa. *British Journal of Clinical Psychology, 43*, 1-16.

Davidson, K. (2008). *Cognitive therapy for personality disorders: A guide for clinicians* (2 ed.). Hove: Routledge.

Davidson, K., Gumley, A., Millar, H., Drummond, L., Macaulay, F., Tyrer, P., *et al*. (2006). A randomized controlled trial of cognitive behavior therapy for borderline personality disorder: Rationale for trial, method, and description of sample. *Journal of Personality Disorder, 20*(5), 431-449.

de Girolamo, G., & Dotto, P. (2000). Epidemiology of personality disorders. In M. G. Gelder, J. J. Lopez-Ibor & N. C. Andreasen (Eds.), *New Oxford Textbook of Psychiatry* (Vol. 1, pp. 959-964). New York: Oxford University Press.

Eastern Specialised Mental Health Comissioning Group. (2005). *Personality disorder services framework*.

Farmer, R. F. (2000). Issues in the assessment and conceptualisation of personality disorders. *Clinical Psychology Review, 20*, 823-851.

First, M. B., Spitzer, R. L., Gibbon, M., & Williams, J. B. W. (1995a). The structured clinical interview for DSM-III-R personality disorders (SCID-II), Part I: Description. *Journal of Personality Disorder, 9*, 83-91.

First, M. B., Spitzer, R. L., Gibbon, M., & Williams, J. B. W. (1995b). The structured clinical interview for DSM-III-R personality disorders (SCID-II), Part II: Multisite test-retest reliability study. *Journal of Personality Disorder, 9*, 92-104.

Follette, V., Palm, K. M., & Pearson, A. N. (2006). Mindfulness and trauma: Implications for treatment. *Journal of Rational-Emotive & Cognitive-Behavior Therapy, 24*(1), 45-61.

Fonagy, P., & Bateman, A. W. (2006). Mechanisms of change in mentalization-based treatment of BPD. *Journal of Clinical Psychology, 62*(4), 411-430.

Fruzzetti, A. E., & Boulanger, J. L. (2005). Family involvement in treatment. In J. G. Gunderson & P. D. Hoffman (Eds.), *Understanding and treating borderline personality disorder: A guide for professionals and families* (pp. 151-164). Washington: American Psychiatric Publishing, Inc.

Gabbard, G. O. (2000). Combining medication with psychotherapy in the treatment of personality disorders. In J. G. Gunderson & G. O. Gabbard (Eds.), *Psychotherapy for personality disorders* (Review of Psychiatry Series, Vol. 19, pp. 65-94). Washington: American Psychiatric Press, Inc.

Gieson-Bloo, J., van Dyck, R., Spinhoven, P., van Tilburg, W., Dirkens, C., van Asselt, T., *et al*. (2006). Outpatient psychotherapy for borderline personality disorder: Randomized trial of schema-focused therapy vs transference-focused psychotherapy. *Archives of General Psychiatry, 63*, 649-658.

Grilo, C. M., Shea, M. T., Sanislow, C. A., Skodol, A. E., Gunderson, J. G., Stout, R. L., *et al*. (2004). Two-year stability and change of schizotypal, borderline, avoidant, and obsessive-compulsive personality disorders. *Journal of Consulting and Clinical Psychology, 72*(5), 767-775.

Gunderson, J. G. (2000). Psychodynamic psychotherapy for borderline personality disorder. In J. G. Gunderson & G. O. Gabbard (Eds.), *Psychotherapy for personality disorders* (Review of Psychiatry Series, Vol. 19, pp. 33-64). Washington: American Psychiatric Press, Inc.

Gunderson, J. G., Bender, D. S., Sanislow, C. A., Yen, S., Bame Rettew, J., Dolan-Sewell, R., *et al*. (2003). Plausibility and possible determinants of sudden 'remission' in borderline patients. *Psychiatry, 66*(2), 111-119.

Gunderson, J. G., & Singer, M. T. (1975). Defining borderline patients: An overview. *The American Journal of Psychiatry, 132*, 1-10.

Hayes, S. C. (2004). Acceptance and commitment therapy, relational frame theory, and the third wave of behavioral and cognitive therapies. *Behavior Therapy, 35*, 639-665.

Hayes, S. C., Barnes-Holmes, D., & Roche, B. (Eds.). (2001). *Relational frame theory: A post-skinnerian account of human language and cognition*. New York: Plenum Press.

Hayes, S. C., Wilson, K. G., Gifford, E. V., Follette, V., & Strosahl, K. (1996). Experiential avoidance and behavioral disorders: A functional dimensional approach to diagnosis and treatment. *Journal of Consulting and Clinical Psychology, 64*(6), 1152-1168.

Herpertz, S. C., Dietrich, T. M., Wenning, B., Krings, T., Erberich, S. G., Willmes, K., *et al*. (2001). Evidence of abnormal amygdala functioning in borderline personality disorder: A functional MRI study. *Biological Psychiatry, 50*(4), 292-298.

Huss, D. B., & Baer, R. A. (2007). Acceptance and change: The integration of mindfulness-based cognitive therapy into ongoing dialectical behavior therapy in a case of borderline personality disorder with depression. *Clinical Case Studies, 6*(1), 17-33.

Jang, K. L., Livesley, W. J., Vernon, P. A., & Jackson, D. N. (1996). The heritability of personality disorder traits: a twin study. *Acta Psychiatrica Scandinavia, 94*, 438-444.

Johnson, D. M., Shea, M. T., Yen, S., Battle, C. L., Zlotnick, C., Sanislow, C. A., *et al*. (2003). Gender differences in borderline personality disorder: Findings from the collaborative longitudinal personality disorders study. *Comprehensive Psychiatry, 44*(4), 284-292.

Kabat-Zinn, J. (1994). *Wherever you go there you are: Mindfulness meditation in everyday life*. New York: Hyperion.

Kellog, S. H., & Young, J. E. (2006). Schema therapy for borderline personality disorder. *Journal of Clinical Psychology, 62*(4), 445-456.

Kernberg, O. F. (1967). Borderline personality organisation. *Journal of the American Psychoanalytic Association, 15*, 641-685.

Knight, R. (1953). Borderline states. *Bulletin of the Menninger Clinic, 17*, 1-12.

Koons, C. R., Robins, C. J., Tweed, J. L., Lynch, T. R., Gonzalez, A. M., Morse, J. Q., *et al*. (2001). Efficacy of dialectical behavior therapy in women veterans with boderline personality disorder. *Behavior Therapy, 32*(2), 371-390.

Krawitz, R., & Watson, C. (2003). *Borderline personality disorder: A practical guide to treatment*. Oxford: Oxford University Press.

Layden, M. A., Newman, C. F., Freeman, A., & Morse, S. B. (1993). *Cognitive therapy of borderline personality disorder*. Boston: Allyn & Bacon.

Lieb, K., Zanarini, M. C., Schmahl, C., Linehan, M., & Bohus, M. (2004). Borderline personality disorder. *Lancet, 364*, 453-461.

Linehan, M. (1993). *Cognitive-behavioral treatment of borderline personality disorder*. New York: Guildford Press.

Linehan, M., Armstrong, H. E., Suarez, A., Allmon, D., & Heard, H. L. (1991). Cognitive-behavioral treatment of chronically parasuicidal borderline patients. *Archives of General Psychiatry, 48*, 1060-1064.

Linehan, M., Comtois, K. A., Murray, A. M., Brown, M. Z., Heard, H. L., Korslund, K. E., *et al*. (2006). Two-year randomized trial + follow-up of dialectical behavior therapy vs. therapy by experts for suicidal behaviors and borderline personality disorder. *Archives of General Psychiatry, 63*, 757-766.

Linehan, M., Dimeff, L. A., Reynolds, S. K., Comtois, K. A., Welch, S. S., Heagerty, P., *et al*. (2002). Dialectical behavior therapy versus comprehensive validation therapy plus 12-steps for the treatment of opiod dependent women meeting criteria for borderline personality disorder. *Drug & Alcohol Dependence, 67*, 13-26.

Linehan, M., Heard, H. L., & Armstrong, H. E. (1993). Naturalistic follow-up of a behavioral treatment for chronically parasuicidal borderline patients. *Archives of General Psychiatry, 50*(12), 971-974.

Linehan, M., Schmidt, H., Dimeff, L. A., Craft, J. C., Kanter, J., & Comtois, K. A. (1999). Dialectic behavior therapy for patients with borderline personality disorder and drug-dependence. *American Journal on Addictions, 8*, 279-292.

Livesley, W. J. (1998). Suggestions for a framework for an empirically based classification of personality disorder. *Canadian Journal of Psychiatry, 43*, 137-147.

Livesley, W. J. (2004). Changing ideas about the treatment of borderline personality disorder. *Journal of Contemporary Psychotherapy, 34*(3), 185-192.

Livesley, W. J., Jackson, D. N., & Schroeder, M. L. (1992). Factorial structure of traits delineating personality disorders in clinical and general population samples. *Journal of Abnormal Psychology, 101*, 432-440.

Livesley, W. J., Schroeder, M. L., Jackson, D. N., & Jang, K. L. (1994). Categorical distinctions in the study of personality disorder: Implications for classification. *Journal of Abnormal Psychology, 103*(1), 6-17.

Loranger, A. W. (1992). Are current self-report and interview methods adequate for epidemiological studies of personality disorders? *Journal of Personality Disorder, 6*, 313-325.

Lynch, T. R., Chapman, A. L., Rosenthal, M. Z., Kuo, J. R., & Linehan, M. (2006). Mechanisms of change in dialectical behavior therapy: Theoretical and empirical observations. *Journal of Clinical Psychology, 62*(4), 458-480.

McDavid, J. D., & Pilkonis, P. A. (1996). The stability of personality disorder diagnosis. *Journal of Personality Disorder, 10*, 1-15.

Millon, T., & Davis, R. (2000). *Personality disorder in modern life*. New York: John Wiley & Sons, Ltd.

Millon, T., Millon, C., & Davis, R. (1997). *MCMI-III manual*. Minneapolis: National Computer Systems.

Moran, P. (2002). *The epidemiology of personality disorder*: Department of Health.

Morrison, A. P., French, P., & Wells, A. (2007). Metacognitive beliefs across the continuum of psychosis: Comparison between participants with psychotic disorders, patients at ultra-high risk and non-patients. *Behaviour, Research and Therapy, 45*, 2241-2246.

National Institute for Mental Health in England. (2003). *Personality disorder: No longer a diagnosis of exclusion*. London: Department of Health.

Paris, J. (1992). Social factors in borderline personality disorder: A review and a hypothesis. *Canadian Journal of Psychiatry, 37*, 510-515.

Paris, J. (1993). Personality disorders: A biopsychosocial model. *Journal of Personality Disorder, 7*(3), 255-264.

Paris, J. (2005). Recent advances in the treatment of borderline personality disorder. *Canadian Journal of Psychiatry, 50*, 435-441.

Perry, J. (1990). Challenges in validating personality disorders: Beyond description. *Journal of Personality Disorder, 4*(3), 273-289.

Perry, J. (1998). Personality disorder in sociocultural perspective. *Journal of Personality Disorder, 12*, 289-301.

Rogers, R. (2003). Standardizing DSM-IV diagnoses: The clinical applications of structured interviews. *Journal of Personality Disorder, 81*, 220-225.

Rosenthal, M. Z., Cheavens, J. S., Lejuez, C. W., & Lynch, T. R. (2005). Thought suppression mediates the relationship between negative affect and borderline personality disorder symptoms. *Behaviour, Research and Therapy, 43*, 1173-1185.

Roth, A., & Fonagy, P. (2005). *What works for whom? A critical review of psychotherapy research* (2 ed.). New York: The Guilford Press.

Ruocco, A. (2005). The neuropsychology of borderline personality disorder: A meta-analysis and review. *Psychiatry Research, 137*, 191-202.

Ryle, A., & Kerr, I. B. (2002). *Introducing cognitive analytic therapy*. Chichester: John Wiley & Sons, Ltd.

Segal, Z. V., Williams, M., & Teasdale, J. D. (2002). *Mindfulness-based cognitive therapy for depression: A new approach to preventing relapse*. New York: Guilford.

Shapiro, S. L., Carlson, L. E., Astin, J. A., & Freedman, B. (2006). Mechanisms of Mindfulness. *Journal of Clinical Psychology*, 1-14.

Skodol, A. E. (2005). The borderline diagnsois: Concept, criteria, and controversies. In J. G. Gunderson & P. D. Hoffman (Eds.), *Understanding and treating borderline personality disorder: A guide for professionals and families* (pp. 3-20). Washington: American Psychiatric Publishing, Inc.

Skodol, A. E., & Bender, D. S. (2003). Why are women diagnosed borderline more than men? *Psychiatric Quarterly, 74*(4), 349-360.

Skodol, A. E., Gunderson, J. G., Pfohl, B., Widiger, T. A., Livesley, W. J., & Siever, L. J. (2002). The borderline diagnosis I: Psychopathology, comorbidity, and personality structure. *Biological Psychiatry, 51*, 936-950.

Stern, A. (1938). Psychoanalytic investigation and therapy in the borderline group of neuroses. *Psychoanalytic Quarterly, 7*, 467-489.

Stevenson, J., & Meares, R. (1992). An outcome study of psychotherapy for patients with borderline personality disorder. *The American Journal of Psychiatry, 149*, 358-362.

Strack, S., & Lorr, M. (1997). Invited essay: The challenge of differential normal and disordered personality. *Journal of Personality Disorder, 11*, 105-122.

Stratton, K. J. (2006). Mindfulness-based approaches to impulsive behaviours. *The New School Psychology Bulletin, 4*(2), 49-71.

Teasdale, J. D. (1999). Metacognition, mindfulness and the modification of mood disorder. *Clinical Psychology and Psychotherapy, 6*, 146-155.

Togersen, S., Lygren, S., Oien, P. A., Skre, I., Onstad, S., Edvardsen, J., *et al*. (2000). A twin study of personality disorders. *Comprehensive Psychiatry, 41*(6), 416-425.

Turner, R. M. (2000). Naturalistic evaluation of dialectic behavior therapy-oriented treatment for borderline personality disorder. *Cognitive and Behavioral Practice, 7*, 413-419.

Tyrer, P., Thompson, S., Schmidt, U., Jones, V., Knapp, M., Davidson, K., *et al*. (2003). Randomized controlled trial of brief cognitive behaviour therapy versus treatment as usual in recurrent deliberate self-harm: the POPMACT study. *Psychological Medicine, 33*, 969-976.

van den Bosch, L. M. C., Verheul, R., Schipper, G. M., & van den Brink, W. (2002). Dialectical behavior therapy of borderline patients with and without substance use problems: Implementation and long-term effects. *Addictive Behaviors, 27*, 911-923.

van Reekum, R., Conway, C. A., Gansler, D., White, R., & Bachman, D. L. (1993). Neurobehavioral study of borderline personality disorder. *Journal of Psychiatric Neuroscience, 18*(3), 121-129.

van Reekum, R., Links, P. S., Finlayson, M. A., Boyle, M., Boiago, I., Ostrander, L. A., *et al*. (1996). Repeat neurobehavioural study of borderline personality disorder. *Journal of Psychiatric Neuroscience, 21*(1), 13-20.

Verheul, R., van den Bosch, L. M. C., Koeter, M. W. J., de Ridder, M. A., Stijinen, T., & van den Brink, W. (2003). Dialectial behavior therapy for women with borderline personality disorder. *British Journal of Psychiatry, 182*, 135-140.

Wells, A. (1990). Panic disorder in association with relaxation-induced anxiety: An attentional training approach to treatment. *Behavior Therapy, 21*, 273-280.

Wells, A. (2000). *Emotional disorders and metacognition: Innovative cognitive therapy*. Chichester: John Wiley & Sons Ltd.

Wells, A. (2002). GAD, metacognition, and mindfulness: An information processing analysis. *Clinical Psychology: Science and Practice, 9*(1), 95-100.

Wells, A. (2006). Detached mindfulness in cognitive therapy: A metacognitive analysis and ten techniques. *Journal of Rational-Emotive and Cognitive-Behavior Therapy, 23*(4), 337-355.

Wells, A., & Matthews, G. (1994). *Attention and emotion: A clinical perspective*. Hillsdale: Lawrence Erlbaum Associates.

Wells, A., & Matthews, G. (1996). Modelling cognition in emotional disorder: The S-REF Model. *Behaviour, Research and Therapy, 34*, 881-888.

Wells, A., & Sembi, S. (2004a). Metacognitive therapy for PTSD: a preliminary investigation of a new brief treatment. *Journal of Behavior Therapy and Experimental Psychiatry, 35*, 307-318.

Wells, A., & Sembi, S. (2004b). Metacognitive therapy for PTSD: A core treatment manual. *Cognitive and Behavioral Practice, 11*, 365-377.

Widiger, T. A. (1998). Sex bias in the diagnosis of personality disorder. *Journal of Personality Disorder, 12*, 95-118.

Widiger, T. A., & Samuel, D. B. (2005). Evidence-based assessment of personality disorders. *Psychological Assessment, 17*(3), 278-287.

Williams, J. M., Duggan, D. S., Crane, C., & Fennell, M. J. V. (2006). Mindfulness-based cognitive therapy for prevention of recurrence of suicidal behavior. *Journal of Clinical Psychology: In Session, 62*(2), 201-210.

Williams, J. M., & Swales, M. (2004). The use of mindfulness-based approaches for suicidal patients. *Archives of suicide research, 8*, 315-329.

Young, J. E. (1994). *Cognitive therapy for personality disorders: A schema-focused approach*. Sarasota: Professional Resource Exchange.

Young, J. E., & Behary, W. T. (1998). Schema-focused therapy for personality disorders. In N. Tarrier, A. Wells & G. Haddock (Eds.), *Treating Complex Cases: The cognitive behavioural therapy approach* (pp. 340-376). Chichester: John Wiley & Sons Ltd.

Zanarini, M. C., Frankenburg, F. R., Dubo, E. D., Sickel, A. E., Trikha, A., Levin, A., *et al*. (1998a). Axis I comorbidity of borderline personality disorder. *American Journal of Psychiatry, 155*, 1733-1739.

Zanarini, M. C., Frankenburg, F. R., Dubo, E. D., Sickel, A. E., Trikha, A., Levin, A., *et al*. (1998b). Axis II comorbidity of borderline personality disorder. *Comprehensive Psychiatry, 39*(5), 296-302.

Zanarini, M. C., Frankenburg, F. R., Hennen, J., Reich, D. B., & Silk, K. R. (2003). The longitudinal course of borderline psychopathology: 6-year prospective follow-up of the phenomenology of borderline personality disorder. *American Journal of Psychiatry, 160*, 274-283.

Zanarini, M. C., Frankenburg, F. R., Hennen, J., Reich, D. B., & Silk, K. R. (2004). Axis I comorbidity in patients with borderline personality disorder: A follow-up and prediction of time to remission. *American Journal of Psychiatry, 161*, 2108-2114.

Zanarini, M. C., Frankenburg, F. R., Hennen, J., Reich, D. B., & Silk, K. R. (2006). Prediction of the 10-year course of borderline personality disorder. *American Journal of Psychiatry, 163*, 827-832.

Zanarini, M. C., Frankenburg, F. R., Vujanovic, A. A., Hennen, J., Reich, D. B., & Silk, K. R. (2004). Axis II comorbidity of borderline personality disorder: Description of 6-year course and prediction to time-to-remission. *Acta Psychiatrica Scandinavia, 110*, 416-420.

Zanarini, M. C., Williams, A. A., Lewis, R. E., Reich, R. B., Vera, S. C., Marino, M. F., *et al*. (1997). Reported pathological childhood experiences associated with

the development of borderline personality disorder. *American Journal of Psychiatry, 154*, 1101-1106.

Zimmerman, M. (1994). Diagnosing personality disorders. *Archives of General Psychiatry, 51*, 225-245.

Zimmerman, M., & Mattia, J. I. (1999). Axis I diagnostic comorbidity and borderline personality disorder. *Comprehensive Psychiatry, 40*, 245-252.

Zlotnick, C., Mattia, J. I., & Zimmerman, M. (2001). Clinical features of survivors of sexual abuse with major depression. *Child Abuse and Neglect, 25*, 357-367.

Appendix 1: Search strategy

Initial searches and general process

Starting from an interest in the concept of PD in general and BPD in particular the author consulted textbooks and handbooks to gain an overview of the dominant schools of thought in this field and to identify key authors and references, which were followed up. This was followed by a search for reviews also aimed at guiding subsequent, more specific searches.

An initial search of the term 'borderline personality disorder' in the PsycINFO and IBSS databases resulted in 4119 hits. It was therefore necessary to conduct several, more focused searches using terms and combinations of terms as well as limiters outlined below.

This process was repeated closer to the date of submission of this literature review with the restriction of only searching publications from the current and last year, in order to ensure that the most recent additions to the knowledge base had not been missed during the lengthy process of reading for this review which had commenced several months previously. In addition, the authors of particularly relevant dissertations were approached to gain access to (yet) unpublished research. Unfortunately the author of one particularly relevant thesis exploring the role of mindfulness in BPD features was not able to provide access to her thesis due to technical difficulties. It is hoped, though, that this will be available for the writing of this author's thesis.

Databases searched

The following databases were searched:

- PsychINFO
- IBSS
- Pubmed/MEDLINE
- Cochrane Library
- Ingenta Connect
- Blackwell Synergy

- Springer Link
- Science Direct
- SSCI
- ISI Web of Science

This was supplemented by web-based searches using 'Google' as well as accessing some selected journals (e.g. Journal of Personality Disorder) and Department of Health resources directly; in case of the latter the aim was to identify relevant government papers.

Key terms

The key terms for database searches were identified following the initial consultation of textbooks and handbooks. These included the following, also using combinations of terms, alternative spellings (e.g. in case of English vs. American spelling of aetiology) and truncation techniques (e.g. to maximise a comprehensive search of the literature addressing the issue of diagnosis of PD an asterix was placed after diagno* thus also including words with alternative endings e.g. diagnosing, diagnostic, diagnoses):

- Borderline personality disorder
- Personality disorder
- Diagnosis, Concept, Validity, Reliability
- Assessment
- Therapy, Intervention, Treatment
- Aetiology, Development, Early experience
- Co-morbidity
- Epidemiology, Prevalence
- Impairment, Functional Impairment, Neuropsychology, Neuropsychological Impairment, Neuropsychological Deficits
- Attention
- Cognitive Behaviour Therapy, Cognitive Therapy, Dialectic Behaviour Therapy, Schema Focused Therapy, Psychodynamic Therapy, Psychoanalytic Therapy
- Metacognition, cognition

- Mindfulness

The alternative term for BPD (BPD being the term used in DSM-IV), namely Emotionally Unstable Personality Borderline Type (or Emotionally Unstable Personality) as used in ICD-10, only yielded a very limited number of hits and was therefore not used in the various combinations of search terms.

Additional search procedures and limiters

As was already mentioned reference lists of key texts were searched at the start of the literature review. This was continued with obtained journal articles throughout the literature review. In addition, names of key authors were also used to identify any papers, which may have been missed.

In order to manage the large knowledge base, which has accumulated about BPD, searches were limited to papers published from 1994 onward. This decision was based on the fact that BPD only became an official diagnosis with the publication of DSM-III in 1980. Since then the diagnosis has been revised and an additional diagnostic criterion added in DSM-IV, which was published in 1994 and is still in use. In addition, later studies tend to address many of the methodological difficulties identified in earlier studies. The concepts prior to 1980 such as Borderline Personality Organisation were even more inclusive than the current BPD diagnosis and it can be argued that any studies relating to clients captured in this description are not easily comparable to later studies. However, the most important references in relation to the historical development of the concept or PD and BPD and particularly relevant articles pre-dating 1994 were followed-up from reference lists of key texts and articles.

University of Hertfordshire
Doctorate in Clinical Psychology
Year 3

THESIS

THE EFFECTIVENESS OF MINDFULNESS-BASED COGNITIVE THERAPY FOR INDIVIDUALS WITH A DIAGNOSIS OF BORDERLINE PERSONALITY DISORDER

Sandy Sachse

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THESIS CONTENTS

1. ABSTRACT

Mindfulness-based interventions have attracted growing interest and attention in the research literature (Baer, 2003). Mindfulness-based Cognitive Therapy (MBCT) was originally developed to prevent relapse into depression. Recently is has also been applied to individuals who are at high risk of suicide or currently suffer with anxiety, depression or both. Various mechanisms through which mindfulness exerts its positive effects have been proposed including changes in attentional control and reduced experiential avoidance. To date these as well as some potential additional outcomes of mindfulness such as changes in dissociation or impulsivity remain largely unexplored.

The Borderline Personality Disorder (BPD) population is characterised by high rates of Axis-I and Axis-II co-morbidity, impulsivity, experiential avoidance, dissociative behaviours and emotion dysregulation and may therefore benefit from MBCT. This study investigated the potential utility and effectiveness of an adapted version of MBCT (MBCT-a) for individuals with a diagnosis of BPD.

Clients with a BPD diagnosis were recruited and assessed pre- and post intervention. Complete data was available for 17 participants. The study did not find any significant differences from pre to post-treatment assessment for the whole sample on employed outcome measures (depression, anxiety, dissociation, impulsivity, experiential avoidance, attention). Additional analyses looked at treatment completers (n=12) and non-completers (n=5). A sub-sample of treatment completers showed improvements in mindfulness, which were accompanied by predicted changes in measures of attention. The study thus lends some tentative support to models of mindfulness. However, the study had several methodological limitations, which may have contributed to a general lack of findings and is therefore not conclusive regarding the utility of MBCT-a for individuals with a BPD diagnosis. Limitations, as well as suggestions for improvements and future research, were considered and discussed, as were the clinical implications of the study.

2. INTRODUCTION

The overall aim of the current study was to investigate the effectiveness of mindfulness-based cognitive therapy (MBCT) for individuals with a Borderline Personality Disorder (BPD) diagnosis. An additional aim was the exploration of mechanisms through which this intervention might exert its effects. The introduction section will cover the following areas to provide a rationale for the current study:

(1) A definition of BPD and the need to continue with efforts to find effective psychological treatments;
(2) An outline of Linehan's theory of BPD with a particular focus on the role of emotional dysregulation as the core problem in BPD;
(3) A review of the core neuropsychological characteristics of BPD including the impact of arousal on cognitive functioning; specifically the role of attention and executive functioning in emotional dysregulation;
(4) An overview of the psychological treatment with the largest evidence base, Dialectical Behaviour Therapy (DBT) with a focus on the role of mindfulness in DBT; this includes an elaboration on the role of experiential avoidance in BPD;
(5) An outline of the concept of mindfulness and presentation of models proposed in the literature; this is followed by a rationale regarding the relevance of mindfulness to difficulties experienced by individuals with a BPD diagnosis;
(6) A description of MBCT followed by the presentation of two models which further highlight the potential utility of mindfulness to individuals with a BPD diagnosis;
(7) A review of the available research evaluating MBCT;
(8) A rationale of the current study and selected areas of outcome to be evaluated;
(9) An outline of the research aims and hypotheses.

2.1 Borderline Personality Disorder

Borderline Personality Disorder (BPD) is defined as 'a pervasive pattern of impulsivity and instability in interpersonal relationships and self-image' (p. 1250,

DSM-IV, 1994). It is characterised by patterns of cognitive, emotional and behavioural dysregulation, including impulsivity, self-harm and substance misuse. BPD has been described as possibly the most maladaptive and extreme form of emotional instability (Widiger, Trull, Clarkin, Sanderson & Costa, 2002).

The prevalence of personality disorders (PDs) in the general population in Britain is 4.4% for PDs in general and 0.7% for BPD (Coid, Yang, Tyrer, Roberts & Ullrich, 2006). For clients accessing mental health services rates of PD have been found to be much higher, often in the region of 50%, the most prevalent PD being BPD (e.g. deGirolamo & Dotto, 2000; Moran, 2002). The financial cost of PDs to mental health services, in the East of England has been estimated to account for 38% of the total expenditure relating to service utilisation (Eastern Specialised Mental Health Commissioning Group, 2005). However, there are further societal costs in the form of severe impairment in social functioning, deliberate self-harm and accidental or intended suicide with an estimated 10% fatality rate (e.g. Linehan & Heard, 1999; Paris, 1993; Roth & Fonagy, 2005). Thus, continued efforts to explore and investigate effective treatments for clients meeting diagnostic criteria for BPD are important.

The concept of PD in general and BPD in particular, has attracted considerable debate (Roth & Fonagy, 2005). Issues highlighted in the literature were explored and discussed in the literature review contained in this volume (Sachse, 2007, unpublished). However, despite conceptual difficulties, the diagnosis of BPD has retained clinical usage with the described behaviours being well recognised by clinicians (Krawitz & Watson, 2003; Skodol, 2005). Moreover, in order to continue the important task of exploring, developing and increasing available therapeutic interventions and support for clients meeting diagnostic criteria, one cannot shy away from using such a label, particularly given the current climate of evidence-based practice which sees research and interventions inseparably tied to diagnoses (e.g. Allen, 2004; Davidson, 2008).

2.2. Theories of BPD

2.2.1 General theories

Biopsychosocial theories of PDs (e.g. Paris, 1993) hold that biological factors determine the specificity of a PD. However, psychological, environmental and social factors are the strongest determinants of whether an underlying predisposition develops into overt characteristics captured in concepts of PD. None of these factors are sufficient in themselves to develop a PD but act as risk factors or protective factors, thus reflecting a multidimensional model of aetiology.

Different theoretical models to explain the very complex clinical presentation and core psychological mechanisms underlying BPD have been put forward, including psychodynamic (e.g. Bateman & Fonagy, 2004; Stevenson & Meares, 1992; Gunderson, 2000; Gabbard, 2000) and cognitive behavioural accounts (e.g. Beck, Freeman & Davis, 2004; Davidson, 2008; Layden, Newman, Freeman & Morse, 1993;). The focus in this section will be on the one theory with the largest evidence, based on the evaluation of treatment developed from it.

2.2.2. DBT

Marsha Linehan (1993) proposed a biopsychosocial model of BPD from which she developed the current treatment of choice (being the most empirically supported; e.g. Lieb, Zanarini, Schmahl, Linehan & Bohus, 2004), Dialectical Behaviour Therapy (DBT). A review of the available evidence for DBT and other therapeutic approaches has been provided in the literature review contained in this volume (Sachse, 2007, unpublished).

At the centre of DBT lies the notion of emotion dysregulation. This is thought to arise out of early experiences in invalidating environments (characterised by various forms of abuse and neglect) in which the child's experiences are denied, punished or responded to inconsistently. This is hypothesised to lead to difficulties in understanding, tolerating and regulating emotions and unrealistic views regarding

these. However, Linehan (1993) identifies a total of five areas of dysregulation in line with difficulties experienced by clients meeting BPD criteria and symptoms specified in DSM-IV. These are outlined in Table 1 (from Swales Heard & Williams, 2000).

Table 1: Five areas of dysregulation as outlined in Swales, Heard and Williams (2000).

Affective Dysregulation	Affective instability due to marked reactivity of mood Inappropriate, intense anger and difficulties controlling anger
Behavioural Dysregulation	Impulsivity in at least two areas that are potentially self-damaging (e.g. substance abuse, binge eating) Recurrent suicidal behaviours, gestures or threats or self-mutilating behaviour
Interpersonal Dysregulation	Frantic efforts to avoid real or imagined abandonment A pattern of unstable and intense interpersonal relationships characterised by alternating between extremes of idealisation and devaluation
Self Dysregulation	Identity disturbance: markedly and persistently unstable self-image or sense of self Chronic feelings of emptiness
Cognitive Dysregulation	Transient, stress-related paranoid ideation or severe dissociative symptoms

BPD and the dysregulation of emotions

Dialectical Behaviour Therapy identifies emotional dysregulation as the core feature and problem of BPD (Linehan, 1993). Emotional dysregulation primarily refers to the affective instability experienced by individuals meeting BPD criteria. It is characterised by marked reactivity of mood and thus heightened emotional arousal. In the DBT model, it is hypothesised that individuals meeting BPD criteria have an emotional system that responds to environmental stimuli more quickly and more intensely compared to other individuals. In line with this, a growing body of evidence supports the notion that individuals meeting BPD criteria are more sensitive to

emotional stimuli, which are further experienced more intensely and longer lasting (i.e. slow return to emotional baseline; e.g. Linehan, 1993; Putnam & Silk, 2005; Rosenthal *et al.*, 2008; Yen, Zlotnick & Costello, 2002).

It has been suggested that such emotional reactivity may be the result of (1) biological vulnerabilities or (2) neurodevelopmental changes to neural structures underlying emotion regulation, due to adverse experiences during childhood, such as sexual abuse or neglect (Feigenbaum, 2007; Zanarini *et al.*, 1997). Regarding the former, affective instability and other forms of dysregulation (e.g. relating to the self or cognitive aspects) have been found to have a genetic component (Togerson *et al.,* 2000; Jang, Livesley, Vernon & Jackson, 1996). Regarding the latter, clients meeting BPD criteria often report a history of abuse (e.g. sexual, physical, emotional) and/or neglect (e.g. physical, emotional). Sexual abuse in particular seems to be reported more often compared to people with other Axis-I and II diagnoses (e.g. Zlotnik, Mattia & Zimmerman, 2001).

However, particular brain structures have been highlighted and hypothesised to underlie the behavioural, emotional, social and cognitive difficulties typically experienced by individuals meeting BPD criteria.

2.3 Neuropsychological characteristics of BPD

2.3.1 Neural deficits in BPD patients

Research into brain regions which underlie deficits in BPD has identified two particular areas of interest: prefrontal and temporo-limbic structures. It has been suggested that experiences of repeated trauma, via the associated severe and chronic stress, may have permanent effects on the limbic system (including the amygdala) and subsequently on arousal and sensitivity to emotions (e.g. Shearer, Peters, Quaytman & Ogden, 1990; Gerhardt, 2004). In line with this, neuroimaging studies have found increased activity in the amygdala when clients with a BPD diagnosis were presented with affect-inducing slides (e.g. Herpertz *et al*., 2001). This increase also took longer to subside. Bateman and Fonagy (2004) suggest that such sensitivity of sub-cortical

structures to emotional stimulus-based arousal dampens activity in frontal parts of the brain (also see Bremner, 1999; 2004).

Frontal structures are generally associated with mechanisms of self-control and attention, also captured in the notion of executive function. For example, the orbitofrontal system has been noted to play a central role in emotion regulation and impulsive behaviour (e.g. Dinn *et al*., 2004). Several neuroimaging studies have found prefrontal hypofunction in individuals with BPD (e.g. Goyer *et al*., 1994; de la Fuente *et al*., 1997; Soloff *et al*., 2000). However, in some pre-frontal areas increased functioning has been found in individuals with BPD, highlighting that the prefrontal region is not a single, unitary structure (e.g. Dinn *et al*., 2004). Similarly, there is also evidence that individuals with BPD do not necessarily respond with increased sensitivity to emotional stimuli. For example, Herpertz, Kunert, Schwenger & Sass (1999) found no difference between individuals with BPD and healthy controls in their electrophysiological reactions and self- reported emotions when presented with three classes of stimuli (pleasant, neutral and unpleasant). Putnam and Silk (2005) suggest that individuals meeting BPD criteria may not differ from other individuals in their initial reactions. Instead, differences may lie in their ability to regulate initial reactions. One process, proposed to play an important role in this, is attention (Putnam & Silk, 2005).

2.3.2 Emotional reactivity and arousal

One result of heightened emotional reactivity is that individuals experience almost chronically high levels of emotional arousal (Linehan, 1993). The relationship between emotional arousal and performance has typically been described by an inverted U-shape. At medium levels of arousal, performance is held to be optimal (e.g. Hanoch & Vitouche, 2004, Wells & Matthews, 1994). Thus, a certain amount of emotional arousal has generally been documented to facilitate performance. However, severe emotional arousal is understood to have a strong impact on individuals' functioning. For example, it may lead to difficulties with problem solving, including a reduced capacity to make judgements regarding potential consequences of behaviours,

and difficulties in recall of previously effective coping strategies (Linehan, 1993; Feigenbaum, 2007).

Extreme stress or arousal has been linked to a shift in the control of attention and behaviour from pre-frontal executive structures to posterior sub-cortical structures (e.g. Arnsten, 1998; Arnsten, Ubriani, Taylor & Li, 1999). Whereas the former are important for the use of flexible response strategies and complex problem solving, the latter are vital for survival in situations of danger where fast and automatic responding is needed. Bateman and Fonagy (2004) have described this as the pre-frontal cortex effectively being taken 'off-line' at times of high levels of arousal. This is argued to be due to the impact of emotional arousal on processes of attention. The most extreme example of this could be argued to be dissociation. Dissociation is a common phenomenon in individuals with a BPD diagnosis and is one of the defining criteria in the DSM-IV (APA, 1994).

According to Holmes *et al.* (2005) the term dissociation has been used to refer to different phenomena in different contexts. The DSM-IV (APA, 1994) broadly defines it as a 'disruption of the usually integrated functions of consciousness, memory, identity or perception of the environment'. The authors propose a distinction between two concepts of dissociation: (1) *detachment* which incorporates phenomena such as de-realisation and depersonalisation whereby the individual experiences an altered state of consciousness characterised by a sense of separation from their experiences (e.g. body, self, or external world) primarily on a cognitive level; and (2) *compartmentalisation* which incorporates phenomena of somatoform dissociation including dissociative amnesia, conversion paralysis, sensory loss etc. A full discussion of the concept of dissociation is beyond the scope of this thesis. However, according to Ebner-Priemer *et al.* (2004) dissociative behaviour is primarily viewed as a coping mechanism in the face of intense emotional experiences.

2.3.3 The relevance of attentional control in BPD

Linehan (1993) points out the importance of the ability to control attention as a way to regulate emotional experiences, for example by allowing the individual to shift it

away from negative emotional stimuli (also see Damasio, 2000). Thus, an inability to do this may play an important part in the emotional dysregulation found in clients diagnosed with BPD. She further highlights the distinction between having control over attention focus and attention shifting, which are both needed for effective emotion regulation. Linehan (1993) states that various investigators have found that attention narrows as a result of emotional arousal, making emotionally relevant stimuli even more salient (see also Wells & Matthews, 1994). Similarly, the phenomenon of such intense emotional experiences further being 'longer lasting' in BPD clients has been linked to effects on cognitive processes that prolong emotion activation and reactivation. These include selective bias in the recall of emotional material and enhanced learning of mood-congruent information. Other processes involve biases in interpretation and judgements of social situations congruent with current mood, and biases in selective attention to the environment (i.e. attendance to factors in line with current mood state at the expense of other aspects; Linehan, 1993; Wells & Matthews, 1994).

Given the important role which attention seems to play in emotional regulation, it could be expected that individuals meeting BPD criteria would perform more poorly on measures of attention. In particular, this should be evident on tests held to tap into processes associated with executive or frontal lobe functioning (e.g. Trail Making Test, STROOP, Attention Network Test).

2.3.4 Executive dysfunction and attention difficulties in BPD

In terms of executive dysfunction and other cognitive problems, studies report equivocal results. For example, van Reekum *et al*., (1993, 1996) assessed participants with a BPD diagnosis and found a strong association between brain insults and neurodevelopmental injuries. This was further linked to poorer performance on neuropsychological tests associated with executive or frontal lobe functioning (e.g. Trail Making Test) when compared to a traumatic brain injury control group. Posner *et al*. (2002) used the Attention Network Test (ANT), which assess three aspect of attention: alerting, orienting and conflict resolution. Thus the ANT provides a measure of selective attention. Participants with BPD were compared to two control groups,

one selected for high emotionality and one selected for average emotionality (based on scores on the Adult Temperatment Questionnaire). Participants meeting BPD criteria were found to be less able to resolve conflict between competing stimuli compared to the other groups. The authors suggest that dysfunction is likely to involve a distributed network, including the prefrontal cortex.

Bateman and Fonagy (2004), however, point out that executive dysfunction may only apply to a small subgroup with other studies not having replicated such findings (e.g. Sprock, Rader, Kendall & Yoder, 2000). For example, Kunert, Druecke, Sass and Herpertz (2003) used a large battery of cognitive tests (including computer and pencil-and-paper tests) comparing participants with BPD to 'normal controls'. They did not find any differences in performance on different measures of attention or frontal lobe functioning (e.g. STROOP tasks). Only a limited number of studies have utilised the STROOP with individuals meeting BPD criteria to examine performance (e.g. Judd & Ruff, 1993; Swirsky-Sacchetti *et al*., 1993; Kunert, *et al*., 2003; Monarch, Saykin & Flashman, 2004). These have generally found participants with BPD to perform more poorly, but some show performance comparable to controls (e.g. Kunert *et al*., 2003).

Nonetheless, in a recent meta-analytic review of neuropsychological deficits Ruocco (2005) concludes that compared to 'normal controls' clients meeting BPD criteria show deficits in attention and cognitive flexibility (see also Rogers & Kirkpatrick, 2005). Thus, it remains possible that impulsivity and emotional reactivity or dysregulation are mediated by attentional mechanisms associated with frontal lobe functioning. Thus far, studies do not appear to have investigated changes in measures of attention following therapeutic intervention in this client group.

2.4 Psychological treatment of BPD

As noted previously, a well-researched and widely used treatment for individuals meeting BPD criteria is DBT. An overview of other treatments with some evidence regarding effectiveness is provided in the literature review contained in this volume (Sachse, 2007, unpublished).

DBT is a very comprehensive treatment package, including weekly individual therapy sessions and group-based skills training. The latter are psychoeducational in nature and aim to enhance clients' capabilities in areas of interpersonal effectiveness, distress tolerance, emotion regulation and mindfulness. The former aims to relate skills learned as part of the group to the client's specific difficulties and goals (Feigenbaum, 2007). Underpinning the skills is the core skill of mindfulness (Linehan, 1993). A full definition of mindfulness and its origins is provided below.

Mindfulness as part of DBT involves manipulating the focus of attention on to the present moment, thus increasing awareness of aspects of the self and environmental context, which are often ignored. This facilitates the client's ability to identify what coping is effective for them at any given moment and to deploy those helpful strategies and behaviours over more impulsive and potentially damaging responses. Thus, the goal is for clients to develop the ability to control their attention. As noted above, an inability to direct attention is hypothesised to lead to a number of problems; an inability to stop thinking about current difficulties, the past or future, and difficulties in concentrating on important tasks (Baer & Krietemeyer, 2006).

Another important aspect of mindfulness in DBT is its role in emotion regulation and distress tolerance. According to Linehan (1993), BPD clients learn to avoid negative emotions and thus may fail to learn that they can tolerate such experiences. This would appear similar to findings in trauma survivors who have been found to avoid situations, thoughts and the emotions associated with these. However such avoidance often has the now well-documented paradoxical effect of intensifying intrusive thoughts and negative emotional experiences (e.g. Follette, Palm & Pearson, 2006; Wenzlaff & Wegner, 2000). The tendency to avoid negative emotions has been captured under the term experiential avoidance.

2.3.5 The role of experiential avoidance in BPD

Hayes defines experiential avoidance as 'the phenomenon that occurs when a person is unwilling to remain in contact with particular private experiences (e.g. bodily sensations, emotions, thoughts, memories, behavioural predispositions) and takes

steps to alter the form or frequency of these events and the contexts that occasion them' (p.58; Hayes, Strohsal & Wilson, 1999). This phenomenon is understood to be used as a mechanism to cope with unpleasant emotions or experiences.

In line with this, Hayes, Wilson, Gifford, Follette and Strohsal (1996) note that clients meeting BPD criteria engage in a range of behaviours (e.g. self-harm, drug and alcohol use, suicide attempts), which share features with the experiential avoidance properties of addictive behaviour. That is, they provide individuals relief from negative arousal or allow the individual to escape from their emotions (Chiles & Strohsal, 1995). This is supported by studies showing that individuals meeting BPD criteria have a tendency to avoid unpleasant thoughts, emotions, sensations and situations likely to elicit these (e.g. Bijttebier & Vertommen, 1999; Kruedelbach, McCormick, Schulz & Grueneich, 1993; Rosenthal, Cheavans, Lejuezb & Lynch, 2005; Yen, Zlotnick & Constello, 2002). Thought suppression has further been found to mediate the relationship between negative affect reactivity/intensity and BPD features in clinical and nonclinical samples (Rosenthal, Cheavans, Lejuez & Lynch, 2005; Lynch, Robins, Mendelson & Krause, 2001). Moreover, Chapman, Specht & Celluci (2005) have been able to link the tendency to avoid unpleasant experiences to the severity of BPD features and experiences of anxiety and distress more generally. The concept of experiential avoidance may therefore be particularly relevant in this client population. Thus, it would seem important to explore changes in experiential avoidance, following treatment.

As part of DBT, mindfulness of current emotions is taught as a way of reducing suffering associated with the experience of negative emotions. The careful observation and acceptance of emotions is argued to reduce secondary reactions to them (e.g. guilt, shame, anger, panic), as well as exposing individuals to normally avoided experiences.

2.5 The concept of Mindfulness

Mindfulness has its origins in Eastern meditation traditions, primarily Buddhism (Kabat-Zinn, 1990; Linehan, 1993). The method of mindfulness meditation has been

described as generally being available to reduce suffering, rather than being tied to particular Buddhist traditions or religious belief systems (e.g. Kabat-Zinn, 2003). This has made mindfulness available to Western medical and mental health settings. Mindfulness has been incorporated in a number of interventions including DBT, Mindfulness-based Stress Reduction (MBSR; Kabat-Zinn, 1990), Mindfulness-based Cognitive Therapy (MBCT; Segal, Williams & Teasdale, 2002) and Acceptance and Commitment Therapy (ACT, Hayes, Strohsal & Wilson, 1999).

The formal practice of mindfulness meditation involves focusing attention (e.g. on the breath, sounds, thoughts, physical sensations) and bringing awareness to their moment-to-moment experiences (e.g. of thoughts, feelings) without evaluating or judging these or becoming absorbed in their content (Kabat-Zinn, 1990). Mindfulness has predominantly been described as 'paying attention in a particular way: on purpose, in the present moment, and non-judgementally' (Kabat-Zinn, 1994; p.4). Whereas this description would appear to be well established, an operational definition of the construct of mindfulness for exploration in research, remains less clear and is at the heart of ongoing debate (e.g. Baer, 2003; Dimidjian & Linehan, 2003).

2.5.1 Models of mindfulness

One definition proposed by Bishop *et al.* (2004) is based on a two-component model. Firstly, the regulation of attention allows individuals to attend to changing experiences of thoughts, feelings and sensations as they occur from moment-to-moment. Secondly, the attitudinal stance towards these experiences is characterised by acceptance, curiosity and openness. Based on this model, Bishop *et al.* (2004) provide a range of testable hypotheses. For example, changes in sustained attention skills, skills in switching attention and cognitive inhibition should occur as a result of the development of mindfulness skills.

Shapiro, Carlson, Astin and Freedman (2006) proposed a model of mindfulness highlighting potential mechanisms by which mindfulness may affect positive change. The model is made up of three main components (see diagram in Figure 1):

(1) intention, i.e. why someone is practicing, (e.g. self-regulation or self-exploration);
(2) attention, which is described as the core of mindfulness with self-regulation of attention in this model being argued to result in the enhancement of attentional abilities such as sustained attention, switching and cognitive inhibition; and
(3) attitude which addresses the mindfulness qualities of awareness such as attending without evaluation or judgment.

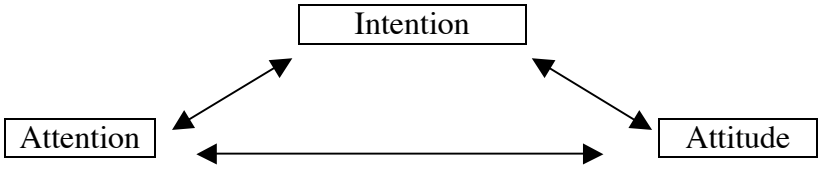

Figure 1: The three main components of mindfulness, taken from Shapiro et al. (2006).

These processes are interwoven and argued to occur simultaneously, as part of a single cycle. The moment-to-moment process of this is mindfulness.

In addition, a meta-mechanism is proposed, re-perceiving, which refers to a shift in perspective as a result of the three main components. It also encompasses additional mechanisms, which are suggested to be ones through which psychological symptom reduction may be achieved. The four additional mechanisms stated by the authors are self-regulation, values clarification, cognitive, emotional and behavioural flexibility and exposure.

Self-regulation and self-management are processes important to maintaining stability in functioning and adapting to change. They are argued to come out of the intention to cultivate a non-judgemental stance and thus pay attention to information contained in each moment. This is argued to lead to greater connection with the present moment and thus increased access to available data, which may have been avoided previously (e.g. due to associated emotional distress). Consequently, experiential avoidance is less necessary and alternative coping strategies become available. This way, automatic, habitual ways of reacting are interrupted and dysregulation (with all

subsequent difficulties) is avoided. The authors present a simple flow diagram to illustrates this:

Intention → attention → connection → regulation

The awareness that comes out of paying attention to each moment is thought to facilitate individuals' clarity regarding their values (values clarification). The authors state that automatic, habitual reactivity restricts the options available to an individual, including those more in line with their needs and values. With a reduced need for experiential avoidance comes greater exposure to previously avoided experiences.

Cognitive, emotional and behavioural flexibility result from increased attention to and awareness of each moment, achieved primarily through the process of re-perceiving. Re-perceiving is a change in consciousness whereby what is perceived subjectively becomes the object of perception with the person as observer (instead of subject) no longer being defined by these. People are able to attend to information and use it to deploy a wider range of coping skills. This may be a more adaptive response than habitual ways of responding (i.e. self-regulation and management). Brown and Ryan (2003), in their exploration of the Mindful Attention Awareness Scale (MAAS) as a measure of mindfulness in non-clinical populations, confirmed the working of this part of the model. Psychological flexibility should be facilitated by the development of a capacity to observe inner experiences in a detached fashion. The individual can step back and take perspective on the moment rather than being informed by existing, possibly biased expectations and beliefs.

2.5.2 The relevance of mindfulness to BPD

As noted previously, individuals meeting BPD criteria present with a range of difficulties captured under the notion of different forms of dysregulation, particularly emotional dysregulation. In view of the mindfulness models outlined above and the central role of attention in emotional (dys)regulation it becomes apparent how mindfulness may be particularly relevant to individuals meeting BPD criteria.

Individuals meeting BPD criteria have a heightened sensitivity to emotional stimuli and increased emotional reactivity with slower return to emotional baseline. In such states of heightened emotional arousal the effectiveness of cognitive processes, especially those controlled by frontal areas of the brain, are impaired. These include problem solving, attention and recall of alternative coping strategies. In order to regulate and decrease their emotional suffering individuals with BPD engage in impulsive, often damaging behaviours of an experientially avoidant nature (Welch, Rizvi & Dimidjian, 2006). They therefore fail to learn that they can tolerate these. In addition, beliefs and attitudes around the intolerable nature of emotions are reinforced, as are dysfunctional behaviours used to cope with emotions.

2.5.3. Mindfulness and dysregulatory problems in BPD

2.5.3.1.Emotional dysregulation

By cultivating an intention to pay attention to moment-to-moment experiences with an attitude of acceptance (i.e. non-evaluative, non-judgmental) it becomes possible for individuals to learn about the transient nature of experiences. This includes negative emotions as well as urges to act impulsively. As noted by Shapiro *et al.* (2006) automatic, habitual ways of reacting are interrupted, experiential avoidance becomes less necessary and alternative coping strategies become available.

With a reduced need for experiential avoidance, also comes greater exposure. Exposure is generally held to be therapeutic (e.g. Kutz, Borysenko & Benson, 1985a; Kutz, *et al*., 1985b) whether one follows psychoanalytic or more cognitive behavioural schools of thought. Given the high use of avoidant coping strategies, this could therefore be argued to make mindfulness meditation particularly relevant for clients meeting BPD criteria: by providing clients with a forum to explore their difficulties in a radically different way through observing and becoming familiar with particular patterns of thinking which typically serve to exacerbate distress, clients have an opportunity to learn how these as well as mood change from moment-to-moment

Similarly, by directing attention towards experiences in each moment additional data or information becomes available and the impact of cognitive biases (e.g. expectations, beliefs, selective attention to information in line with current mood) on mood and behaviour is reduced. Together, psychological flexibility is increased and greater regulation of emotions and behaviours is facilitated (Shapiro *et al.*, 2006). Given that attentional mechanisms are central in the exacerbation and maintenance of emotional distress (see above) abilities to direct and focus attention represent key skills to facilitate emotion regulation (Linehan, 1993).

2.5.3.2 Behavioural dysregulation

A major component of BPD is impulsivity. Impulsiveness has been variably defined as acting without planning or sensitivity to negative consequences, risk-taking, very quick decision making, and emotional reactivity. It has been linked to a range of high-risk behaviours (e.g. substance abuse, aggression, self-harm) and psychiatric disorders, including BPD. In a recent review Stratton (2006) notes the potential of mindfulness to treat impulsive behaviour. As outlined above in relation to the role of attention in emotion regulation, mindfulness skills should promote better control over impulsive behaviour as clients learn to maintain attention to the present moment and to tolerate intense and painful emotions without avoidance.

Following Shapiro's model, paying attention to moment-to-moment experiences allows additional information to become available. This in itself may reduce the need for impulsive behaviour. For example, catastrophic thoughts around a distressing emotional experience (e.g. inability to cope, it never ending) may be viewed as thoughts rather than a reflection of reality. Similarly, individuals may become aware of the consequences of a particular line of action (e.g. self-harm) and alternative coping strategies more in line with their values (e.g. staying alive vs. accidental death in the context of self-harm). Thus far, changes on measures of impulsivity as a result of mindfulness training do not appear to have been explored outside of DBT (e.g. Stratton, 2006).

2.5.3.3 Cognitive dysregulation

Another area of concern in clients with DBT is cognitive dysregulation, for example in the form of transient stress-related dissociation (Swales *et al*., 2000). Shapiro *et al*. (2006) have indicated that re-perceiving facilitates greater distance from experiences, however not by creating apathy or disconnectedness, instead allowing for richer, deeper experiences in each moment. Studies investigating mindfulness measures (e.g. Brown & Ryan, 2003, Baer, Smith, Hopkins, Krietemeyer & Toney, 2006) have typically included some measure of dissociation and have reported negative correlations of small to medium size. Similarly, Michal *et al*. (2007) showed a strong inverse relationship between depersonalisation and mindfulness in a clinical and non-clinical sample. However, these studies have not assessed changes in dissociation following mindfulness meditation.

It is worth noting at this point that a recent study (Wupperman, submitted) investigated whether deficits in mindfulness could account for variability in different BPD features and characteristics (e.g. emotion dysregulation, impulsivity). Wupperman found that difficulties with attention, awareness and acceptance of experiences (internal and external) explained BPD symptomatology in a non-clinical sample as well as a clinical sample of inpatients (personal communication). Research is only beginning to explore the particular value of mindfulness for this client group. For example Huss and Baer (2007) adapted MBCT and used it as an adjunct to ongoing DBT in one client diagnosed with BPD and were able to demonstrate benefits (e.g. reduction in measures of depression, self-report). Mindfulness is currently delivered to clients meeting BPD criteria as part of DBT. Although the core aspect of DBT, it only forms part of what is a very comprehensive and intensive psychosocial treatment.

2.6 Mindfulness and the 'Third Wave' Cognitive Behaviour Therapies

The central role of attention in the development and maintenance of emotional difficulties is further highlighted in models that are part of the 'third wave' in Cognitive Behaviour Therapy (CBT). This includes the Interacting Cognitive Subsystems model (ICS; Barnard & Teasdale, 1991), Relational Frame Theory (RFT;

Hayes, Barnes-Holmes & Roche, 2001; Hayes, 2004) and the Self-regulatory Executive Function (S-REF) model (Wells & Matthews, 1994; 1996). These third-wave theories are transdiagnostic in nature in that they focus on processes common to all emotional disorders (Harvey, Watkins, Mansell & Shafran, 2004). In particular they highlight the role of attention, metacognition and experiential avoidance, which have become main targets of treatment (e.g. Wells, 2000; Teasdale, 1999; Hayes *et al.*, 1999).

The most relevant of these (ICS and S-REF) will be touched upon in the following section which will outline MBCT followed by a rationale for the current study.

2.7 Mindfulness-based Cognitive Therapy

MBCT (Segal *et al*., 2002) was originally developed for clients with a history of depression who were currently in remission. It combines techniques from cognitive therapy with intensive training in mindfulness over eight weekly two-hour classes. Through group sessions as well as home practice of mindfulness meditation exercises it aims to increase clients' awareness of moment-to-moment experiences and how they relate to these. For example participants' tendencies to react to positive experiences with attachment (e.g. wanting to prolong these) and to negative experiences with aversion (e.g. wanting to avoid or stop these) is highlighted, including the impact this has on subsequent thoughts and feelings. Through extended mindfulness meditation practice, participants also have the opportunity to learn about the nature of thoughts, feelings and bodily sensations. This includes awareness of particular patterns of thinking (e.g. self-critical thinking, setting high standards) and how experiences change or stay the same. This allows clients to develop a different relationship with their thoughts and feelings so they become able to step back from vicious cycles of negative emotions and create space for more adaptive ways of coping (Williams & Swales, 2004; Williams, Duggan, Crane & Fennel, 2006). Barnhofer *et al*. (2007) state that an overarching goal of MBCT is to enhance emotion regulation and train attentional capacities. Some preliminary support regarding the former comes from experimental studies (e.g. Arch & Craske, 2006).

2.7.1 The Interacting Cognitive Subsystems Model

MBCT was developed from the Interacting Cognitive Subsystems model (ICS; Barnard & Teasdale, 1991). ICS proposes a multi-level model of cognitive processing. It distinguishes a range of different types of mental codes or information:

(1). At the most immediate or lowest level of functioning are sensory codes. These are different forms of sensory information (acoustic, visual and body state) from internal and external sources, which provide basic patterns for interpretation.
(2) At a higher level of processing there are propositional codes. They represent specific meanings and factual information regarding semantic relationships between different forms of information.
(3) At the deepest level are implicational codes. These are akin to mental models of experience, which are directly linked to emotions. This level is argued to directly influence thoughts, feelings and behaviours.

The key notion in ICS is that emotions result from the activation of emotion-related schematic models, which are maintained due to self-perpetuating processing configurations. For example, in depression this process has been termed 'depressive interlock' (see diagram in Figure 2). This is a mode of processing that sees resources being used for repetitive or ruminative processing usually in the service of unattainable goals. An example would be a stream of negative thoughts in face of low mood directed at establishing reasons. This in itself serves to maintain feelings of low mood. According to ICS such interlock can be created as a result of various forms of information (e.g. a thought, physical sensation, implicational meaning of an event).

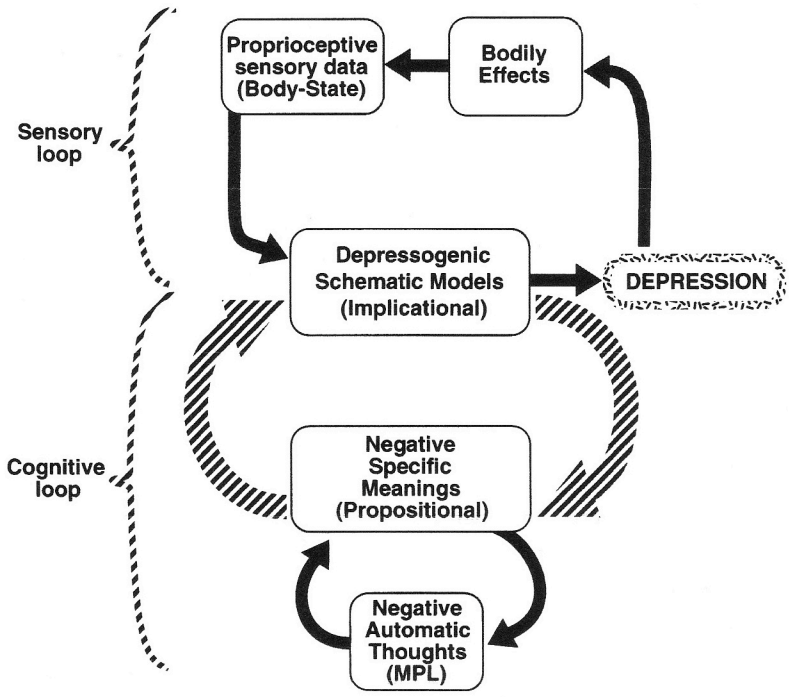

Figure 2: The depressive interlock configuration (Teasdale, 1999a).

Duff and Kinderman (2006) provide an account outlining the application of ICS to the development and maintenance of PDs. They propose a central role to the process of interlock as outlined above for depression. In addition, ICS proposes a central 'cognitive engine', which is responsible for controlled or voluntary processing and includes the notion of attention. Like attention, this central engine is characterised by limited capacity. Once interlock has set in, additional information is denied access to the implicational level, the level of information processing that is thought to influence thoughts, feelings and behaviours. This is due to the limited capacity of this central engine. Dysfunctional emotional schemata are thereby maintained, as are the current thoughts and feelings. The model implies that one approach to facilitating change lies in treatments, which reduce interlock. This would allow individuals one way of accessing information (e.g. awareness of mental processes, perceptual information normally ignored), which could alter existing schemas. The model proposes that the main process to break interlock, is the practice of mindfulness.

One criticism of ICS is that it falls short of highlighting use of attentional resources as one mechanism through which mindfulness may exert its effects and is not explicit in how maladaptive beliefs are changed (e.g. Wells, 2000).

2.7.2 The S-REF model

Wells and Matthews (1994; 1996) propose a Self-regulatory Executive Function (S-REF) model to explain emotional difficulties. Beliefs about the self are argued to govern the processing of information in the form of appraisals of internal and external events, which guide or direct subsequent thoughts and experiences (e.g. via selective attention, memory retrieval; see diagram in Figure 3). A core assumption is that self-regulatory processing occurs in a system characterised by limited capacity, which is sensitive to attentional resource demands. When clients experience intrusive thoughts (e.g. OCD), low mood (e.g. depression), hallucinations (e.g. psychosis), or flashbacks (e.g. PTSD) it is postulated that beliefs about such experiences (metacognitions) direct attention towards these or lead to behaviours which promote experiential avoidance (e.g. substance abuse, self-harm; Hayes *et al*., 1996). Thus associated emotional difficulties are perpetuated and maintained. In order to increase flexible control of attention and unlock inflexible self-focused thinking Wells (1990) developed the concept of detached mindfulness and attention training (e.g. Wells, 2006). This technique alone has been found to be effective in the treatment of panic, social phobia and recurrent MDD (Wells, 2002).

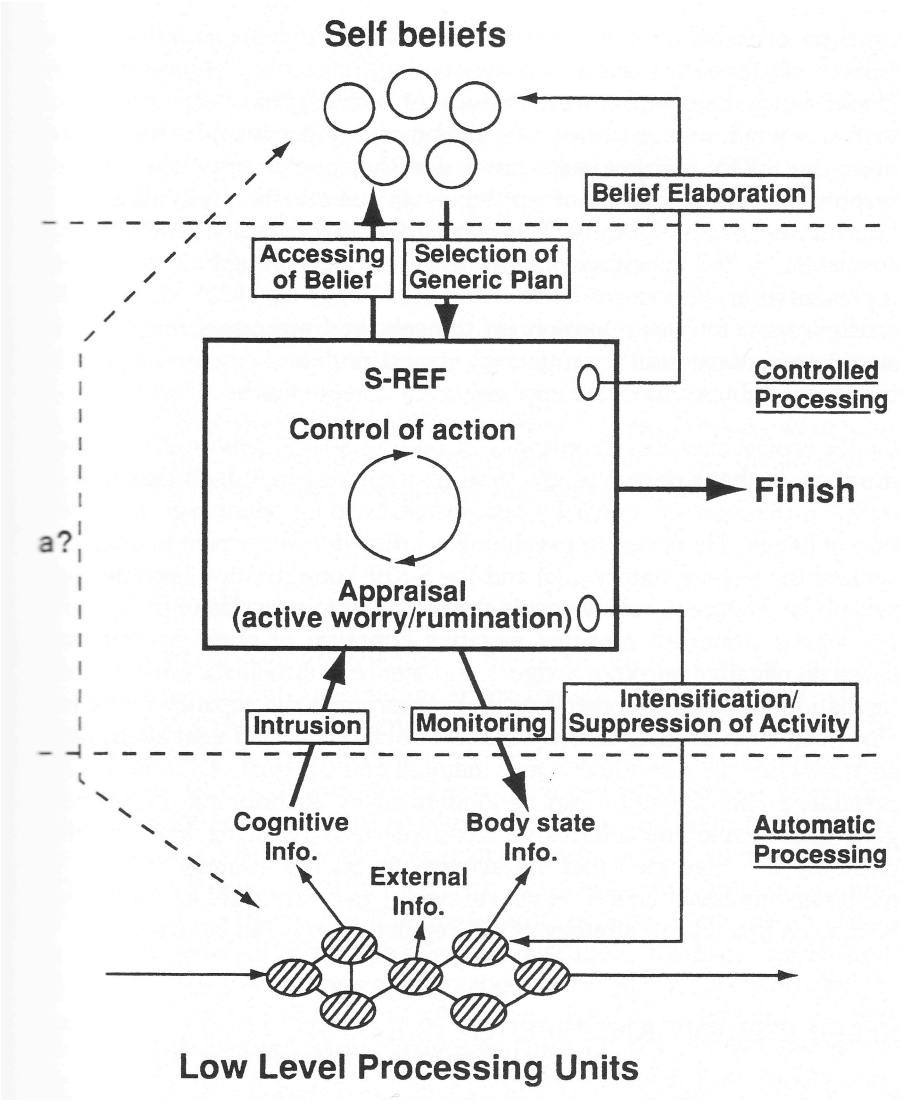

Figure 3: The S-REF model (Wells, 2000).

2.7.3 ICS and S-REF: Their relevance to BPD

Both models provide another line of argument regarding the utility of mindfulness for clients with BPD. For example, both models argue that negative emotional experiences are exacerbated and maintained by attention being directed towards these in the form of repetitive and ruminative processing. S-REF holds that the repeated and continued use of such processing is due to beliefs about these (e.g. needing to ruminate to facilitate better understanding and ward off future difficulties). ICS on the other hand proposes that this is due to self-perpetuating interlock, created every time a particular emotion-related schematic model is activated. Both can be applied to an understanding of emotional dysregulation in clients with BPD. As in depression, the

experience of a particular thought, mood or physical sensation can activate self-beliefs (S-REF) or an emotion related-schematic model (ICS). Both lead to the use of generic, habitual ways of coping, such as ruminative processing or experiential avoidance. Whereas ruminative processing will lead to the exacerbation and maintenance of emotional distress, experiential avoidance will interrupt this process temporarily. However, both will reinforce the self-beliefs (S-REF) or schematic models (ICS) which give rise to dysfunctional coping strategies.

The way mindfulness is likely to facilitate change becomes clear when considering the role of attention in these models. In S-REF rumination or inflexible self-focused processing prevents attention being drawn to information that is not congruent with current mood (i.e. selective attention bias, biased memory retrieval). This is due to the limited capacity of the system responsible for self-regulatory processing. Similarly, ICS holds that interlock is maintained due to the limited capacity of the central engine responsible for controlled and voluntary processing. Thus, by directing and focusing attention to different aspects of a situation or experience, attentional resources will be taken up by information other than what is instrumental in exacerbating and maintaining emotional distress (e.g. attentional bias to mood-congruent information, mood congruent memory retrieval). This way interlock and ruminative processing can be interrupted. Additional information becomes available and as outlined above can be used to facilitate psychological, emotional and behavioural flexibility.

2.8 Research on interventions based on mindfulness

As was already noted various interventions have incorporated mindfulness training (including DBT, ACT) with others being based on mindfulness training. The latter includes Mindfulness-based Stress Reduction (MBSR) and Mindfulness-based Cognitive Therapy for depression (MBCT). Bear (2003) reviews the available evidence regarding the effectiveness of both MBSR and MBCT and highlights numerous methodological problems with the 21 studies included. Nineteen of the included studies evaluated MBSR of which only three involved participants with mental health difficulties. Methodological problems identified by Baer include lack of adequate control groups, small sample sizes and little reporting of clinical significance

or treatment integrity. Nonetheless, Bear (2003) concludes that mindfulness based interventions may help to improve mental health and psychological functioning in various client populations.

MBSR and MBCT share many components of treatment (see Baer & Krietemeyer, 2006, for an outline). However, the fact that MBSR has largely been applied in a medical setting with a focus on stress makes related research less relevant for the purpose of this thesis. The following section will therefore focus on studies evaluating or exploring MBCT.

2.8.1 Studies evaluating MBCT

MBCT has been found to significantly reduce relapse rates in individuals who have recovered from Major Depressive Disorder (MDD) to 37% compared with 66% for those receiving treatment as usual (Teasdale *et al*., 2000; Ma and Teasdale, 2004).

However, more recently, studies have also begun to explore the effectiveness of MBCT for clients currently suffering with anxiety or depression (e.g. Kenny & Williams, 2007). For example, Ree and Craigie (2007) evaluated MBCT in a heterogeneous sample of 26 psychiatric outpatients. Participants were assessed before commencing MBCT and between 1 to 10 days following the final session. The authors found statistically and clinically significant improvements in scores on measures of depression, anxiety, stress and insomnia. These changes were maintained at 3 months follow-up. Similarly, Finucane and Mercer (2006) also showed improvements in outpatients with current depression (MDD) and/or anxiety. They assessed 13 participants before commencing MBCT and again three months after completion of the programme. They found statistically and clinically significant differences in scores on depression and anxiety at post treatment.

This, as well as emerging reports of the successful application of MBCT to clients at high risk of suicide (Barnhofer *et al*., 2007; William & Swales, 2004; Williams *et al*., 2006) and psychiatric inpatients (York, 2007) would suggest that MBCT may also prove helpful to clients meeting BPD criteria, which the current study aims to explore.

For example, Williams *et al*. (2006) provide an outline of the use of MBCT for the prevention and recurrence of suicidal behaviour and illustrate this with the example of a particular case. In the same article, they report preliminary findings from a pilot class of individuals who have experienced suicidality in the past. They found that MBCT led to significant increases in scores on the MAAS. In addition qualitative information from one client further supported the utility of MBCT in the case of past suicidality.

York (2007) reports on the implementation of a mindfulness group in an inpatient setting. This appears to primarily have focused on mindfulness techniques as part of an open group due to the difficulties of offering structured and closed programmes in an inpatient setting. Diagnoses of interviewed individuals included bipolar affective disorder, depression, paranoid schizophrenia and BPD. The qualitative exploration of 8 interviewed participants generally point to the utility and potential effectiveness of mindfulness training in an acute setting. For example, participants reported changes in thought patterns and attitudes towards their thoughts. Other reported effects included improved abilities to concentrate, greater acceptance of difficulties and exposure to difficult experiences (thoughts and feelings), which they previously tended to avoid.

2.9 Rationale for the current study

Thus far, MBCT has not been evaluated for clients with PD but has been found to be effective in a range of severe mental health difficulties. Various lines of evidence indicate the important role mindfulness and lack of mindfulness skills play in the difficulties experienced by individuals meeting BPD criteria. This includes the direct relevance of mindfulness to different forms of dysregulation described in the literature, most importantly emotional dysregulation. Models of mindfulness and BPD offer theoretical conceptualisation of how mindfulness may be helpful. In addition, third wave theories offer an explicit rationale for the relevance of mindfulness techniques to the treatment of mood disorders and PD. Moreover, one well researched, evidence based treatment for BPD, DBT, places mindfulness at the heart of intervention.

For the purpose of the current study it seems important to:
(1) explore the effectiveness of mindfulness for individuals with BPD, and
(2) to explore the mechanisms by which mindfulness might exert its effect on this client population. The processes of particular interest are attention and experiential avoidance.

2.9.1 Investigating the effectiveness of MBCT for clients with a BPD diagnosis

Given the breadth of difficulties experienced by clients meeting BPD criteria it seems important to maintain a degree of focus when investigating the potential effectiveness of mindfulness to this client group. This section provides a rationale for selected areas of interest before outlining the research questions and hypotheses.

2.9.1.1 Depression and Anxiety

High rates of co-morbidity between BPD and Axis-I mood disorder are well established in the literature. For example, Zanarini, Frankenburg, Hennen, Reich and Silk (2004) found that out of 290 patients meeting BPD criteria, 96.9% also met criteria for at least one Axis-I mood disorder. Comorbidity rates vary across studies with ranges reported between 41-83% for a history of MDD, 46-56% for PTSD, 23-47% for social phobia, 31-48% for panic disorder, and 29-53% for eating disorders, to name but a few (Lieb *et al*., 2004; Zimmerman & Mattia, 1999). Skodol *et al*. (2002) argue that studies using patient samples without a comorbid diagnosis cannot be considered representative of the BPD client population. In addition, studies investigating MBCT have thus far primarily employed measures of depression and anxiety to evaluate outcome. In the studies reported in the literature, depression and anxiety decreased as a result of MBCT in a range of client populations. Thus, in order to compare findings to previous studies of MBCT it will be important to assess changes in measures of depression and anxiety.

2.9.1.2 Impulsivity and dissociation

Impulsivity is a hallmark of BPD. Impulsive behaviours are typically employed as a way to cope with severe emotional distress and tend to be of an experientially avoidant nature. Changes in impulsivity as a result of mindfulness training have not

been explored outside of DBT. Given the centrality of impulsivity to BPD it will be important to evaluate changes in this following MBCT.

Similarly, individuals with BPD are prone to dissociation under severe stress. Changes in dissociation have not been evaluated following MBCT. Thus, it will be important to assess whether MBCT leads to changes in levels of both cognitive and somatoform dissociation in this client population. This is particularly the case as the relationship between mindfulness meditation and dissociation has not been clearly established in the literature.

2.9.1.3 Mechanisms of change: Attention and experiential avoidance

One gap in the mindfulness literature concerns the mechanisms through which mindfulness exerts its effects. With attention being at the core of mindfulness, changes in attention following MBCT are therefore worth exploring. As outlined above, models of mindfulness allow for the generation of particular hypotheses, which can be tested with the use of standardised measures. Thus far, only one study appears to have assessed changes following an 8-week MBSR programme in a non-clinical sample (Jha, Krompinger & Baime, 2007). The authors used the Attention Network Test and reported improvements in selective attention following completion of the programme. Other studies have used non-clinical samples practicing particular kinds of meditation in a religious context (e.g. transcendental meditation, Rani & Rao, 1996; concentrative meditation as part of Bhuddist practice, Valentine & Sweet, 1999). However, these differ from mindfulness meditation as part of MBCT and results can therefore not be generalised.

In addition to attention, various other mechanisms for change have been proposed. For example, it has been suggested that mindfulness practice may lead to: (1) changes in cognitive and metacognitive processes (Teasdale, 1999a, 1999b; Wells, 2002) such as changes in how individuals relate to their thoughts and emotions (e.g. viewing them as mental events rather than true reflections of reality; Kabat-Zinn, 1990; Teasdale, Segal & Williams, 1995); (2) reduction in experiential avoidance and thus (3) greater exposure to previously avoided stimuli (e.g. Roemer & Orsillo, 2002; Shapiro *et al.*,

2006); (4) enhancement of emotion regulation for example by facilitating emotional awareness and understanding (e.g. Mennin, Heimberg, Turk & Fresco, 2002; Ree & Craigie, 2007) or (5) induction of a state of relaxation (although not an aim of mindfulness meditation), thus strengthening the relaxation response to physiological arousal (e.g. Bondolfi, 2005; Borkovec & Sharpless, 2004).

The process of interest in the current study is experiential avoidance. This choice is based on the important role experiential avoidance seems to play in BPD as outlined above. In addition, a questionnaire measure has become available making it possible to assess changes following treatment.

2.10 Summary

Mindfulness-based interventions have attracted growing interest and attention in the research literature. Training in these skills has become increasingly popular (Baer, 2003). MBSR has predominantly been applied to medical patient populations but also some psychiatric conditions (e.g. GAD, panic disorder, binge eating disorder) with studies generally showing improvements on measures of anxiety and depression. MBCT which was originally developed to prevent relapse into depression has recently also been applied to individuals who are at high risk of suicide and clients currently suffering with anxiety and/or depression, with studies generally demonstrating improvements. Various mechanisms through which mindfulness exerts its positive effects have been proposed including changes in attentional control and reduced experiential avoidance. To date these as well as some potential additional outcomes of mindfulness such as a reduction in dissociation and/or impulsivity remain largely unexplored. The BPD population is characterised by high rates of Axis-I co-morbidity (particularly anxiety and depression), impulsivity, experiential avoidance, dissociative behaviours and emotion dysregulation and may therefore benefit from mindfulness-based interventions, such as MBCT, especially given emerging findings that deficits in mindfulness skills seem to explain variability in BPD symptomatology. In investigating the potential utility and effectiveness of an adapted version of MBCT the current study seeks to address several gaps in the mindfulness literature.

2.11 Aims of the study

2.11.1 Aims

1. Chambles and Hollon (1998) have argued that clinical settings differ from research settings in that results may not easily be generalised to the more variable presentations encountered by clinicians. Therefore the first aim of this study is to establish whether it is possible to run a MBCT group adapted for individuals with a BPD diagnosis in everyday clinical practice. This study will be conducted in a naturalistic setting with all the pragmatic challenges that this presents.
2. To evaluate the effectiveness of this adapted MBCT intervention (MBCT-a) in individuals with a BPD diagnosis.
3. To explore mechanisms through which this intervention may exert its effects on selected clinical outcomes and experimental variables.

2.11.2 Hypotheses

Based on the available literature on the effectiveness of mindfulness-based interventions on a variety of mental health problems it was possible to establish several hypotheses.

Primary hypotheses

1. MBCT-a will lead to an increase in mindfulness skills as measured by the FFMQ.
2. MBCT-a will lead to a decrease in experiential avoidance as measured by the AAQ (indicating that clients have gained in their ability to feel in control and manage thoughts and behaviours, thus demonstrating a decrease in experiential avoidance).

Secondary hypotheses

1. If mindfulness changes as a result of MBCT-a, it is predicted that there will be improved performance on two attentional tasks, the STROOP and TMT.

2. It is predicted that changes in mindfulness and attentional control will result in changes in measures of dissociative experiences as measured by the DES-II, and SDQ-20. The direction of change cannot be predicted from the available literature.
3. MBCT-a will lead to a decrease in impulsivity as measured by the BIS-11.
4. MBCT-a will lead to a decrease in anxiety, as measured by the STAI, and depression, as measured by the BDI.
5. Changes in scores on the selected outcome measures will be greater in participants who have completed MBCT-a[1] (treatment completers) than any changes in the comparison group (treatment non-completers).

[1] Treatment completion has been defined as having attended 4 or more sessions out of 8, in line with the minimum effective dosage defined by Teasdale *et al*. (2000); also see method section.

3. METHOD

3.1 Design

This study employed a repeated measures, nonrandomised, quasi-experimental design with within-participant and between-participant comparisons. Individuals meeting BPD criteria were recruited (see below) and offered MBCT-a. Those who were not able to attend the group or completed fewer than the minimum number of sessions to be considered treatment-completers (see below) were allocated to an uncontrolled comparison group.

The independent variables were MBCT-a and completion of MBCT-a (vs. non-completion). The dependent variables of interest were changes in: mindfulness (Five-Facet Mindfulness Questionnaire, FFMQ), experiential avoidance (Acceptance and Action Questionnaire, AAQ), depression (Beck Depression Inventory-2nd Edition, BDI-II), anxiety (State-Trait Anxiety Inventory, STAI), dissociation (Dissociative Experiences Scale-2nd Edition, DES-II; Somatoform Dissociation Questionnaire-20, SDQ-20), impulsivity (Barratt Impulsivity Scale-11, BIS-11) and attention, i.e. performance speed and errors on the STROOP and Trail Making Test. The STROOP task represented speed of processing (completion of part1 and II) and attention (STROOP interference, i.e. difference between part I and II). The Trail Making Test represented speed of processing (part A) and cognitive flexibility or divided attention (part B).

3.2 Recruitment procedure

The recruitment procedure involved the following stages:

1. Participants in this study were recruited from a specialist personality disorder service. Staff at the service were provided with an information sheet (Appendix 1) outlining the purpose of the study and what would be involved. All eligible participants who were either in assessment or therapy with the specialist service were initially identified and approached by their therapist. All therapists at this specialist personality disorder service are trained in DBT and regularly use and teach

mindfulness as part of their treatment approach. They were thus also able to judge the potential benefit to their clients of participating in this study as well as contraindications. In addition, therapists were approached and spoken to regarding any clients they identified to explore any reasons these clients should not be recruited (e.g. meeting inclusion and exclusion criteria).

2. All clients where there were no contraindications, as identified by their therapist, were initially provided with the client information sheet (Appendix 2) outlining the research project and what it will involve. The information sheet was either posted or passed on by their therapist. This provided details to contact researchers with any queries or to express their wish to participate. Potential participants, who gave permission for their contact details to be passed on to the researcher, received a follow-up telephone call a week after having been provided with the client information sheet, allowing them to ask questions and decide on their participation in the study. It was emphasised that their decision to participate or not would not affect their treatment or status within the service.

3. For those clients who following a discussion of the study agreed to participate a time and venue was arranged for the pre-intervention assessment to take place.

Participants who were referred by their therapists to participate in the study had already received a diagnosis of BPD from the specialist personality disorder service (arrived at using the SCID-II interview schedule; First, Spitzer, Gibbon & Williams, 1995a; 1995b). However, some assessments dated back to one year. The literature around PD diagnoses suggests a strong potential for remission of BPD diagnoses (Gunderson *et al*. 2003; Zanarini *et al*., 2003; 2006). Therapists were therefore asked to confirm that their clients currently still met diagnostic criteria for BPD as outlined by the DSM-IV (APA, 1994) as well as any other psychiatric diagnoses they had received. In addition, clients had to meet the following inclusion and exclusion criteria:

Inclusion criteria

1. Being between 18 and 50 years of age. This age range was chosen due to pragmatics of the service and to minimise age effects on attentional measures.
2. Meeting diagnostic criteria for BPD

Exclusion criteria

1. Clients who are not fluent in the English language.
2. Clients with a diagnosis of current psychotic disorder.
3. Clients with a diagnosis of bipolar disorder.
4. Clients with evidence of past head injury or neuropsychological deterioration.
5. Clients exceeding one or all of the following cut-offs relating to substance and alcohol misuse (as captured in the Maudsley Addiction profile used as part of the assessment process in the service): alcohol (more than 21 units per week for women and more than 30 units per week for men), cannabis (more than 5 times per week) Crack and Heroin (more than 2 times per months).

3.3 Measures

The measures used in this study can be found in Appendix 3 in the order in which they are presented here.

3.3.1 Mindfulness and Experiential Avoidance

Five-Facet Mindfulness Questionnaire (Baer *et al*., 2006): Several questionnaires to measure mindfulness have been put forward and are currently undergoing further investigation. However, Baer *et al*. (2006) recently reviewed the majority of these measures and explored their ability to capture different facets of mindfulness. The Five-Facet Mindfulness Questionnaire (FFMQ, Baer *et al*., 2006) is a 39 item self-report measure that provides 5 subscales (observing, describing, acting with awareness, accepting without judgement, non-reactivity) based on an empirically supported factor structure. The five facets can be combined to yield a total score, which reflects a global measure of mindfulness. This questionnaire is the revised version of the Kentucky Inventory of Mindfulness Skills (KIMS; Baer, Smith & Allen, 2004) which correlated strongly with other measures of mindfulness and was

able to distinguish between individuals with no experience of mindfulness meditation and those with varying levels of self-reported meditation experience. It is also noted that the FFMQ is currently employed by the Oxford Cognitive Therapy Centre in their research into mindfulness and MBCT (Williams, 2007, personal communication).

Acceptance and Action Questionnaire (AAQ; Hayes *et al.*, 2004). The AAQ is a 22-item self- report instrument designed to measure degree of experiential avoidance (e.g. attempts to control thoughts or emotions) using a 7-point Likert scale. It is useful for indicating changes in the way individuals tend to experience and deal with emotions and has been validated and utilized in research for such purposes.
Bond and Bunce (2003) report Time 1 and 2 alpha coefficients for the 16-item solution (used to generate a total score) of the AAQ, of .79 and .72, respectively. Similarly they note good convergent validity in that they found that the AAQ was significantly and negatively associated with measures assessing peoples' tendency to suppress unwanted thoughts.

3.3.2 Attention

In order to assess aspects of attention predicted to change as a result of increases in mindfulness skills the following tests were selected:

Digit Span (DS; from the Wechsler Adult Intelligence Scale 3rd-Edition; WAIS-III): The Digit Span task requires individuals to repeat orally presented sequences of numbers either in the same (DS forward) or reverse order (DS backward). DS forward is generally argued to be a measure of attentional capacity, which has been found to be resistant to practice effects and effects of many brain injuries (Lezak, Howieson & Loring, 2004). In addition, DS has not been found to correlate highly with other measures of attention ability (e.g. Lezak, *et al*., 2004). Thus, it was decided to use DS forward as an estimate of attentional capacity in order to control for individual differences in this as an alternative explanation to any changes in additional, more sensitive measures of attention.

STROOP: According to Lezak *et al.* (2004) STROOP tasks have been used extensively to investigate psychological functions. The authors recommend an unpublished version by Dodrill, which is the longest version of this test (176 items) and thus more sensitive to detect difficulties in maintaining focused attention. This version was employed in this study. It consists of one sheet containing colour names (red, orange, green, blue), which are printed randomly in these colours. The test consists of two parts: in Part I individuals are asked to read the printed colour names and in Part II to state the colour in which each word is printed. Male clients were asked about colour blindness and this test was not included for those who are colour blind. The test is argued to require selective processing of visual information whilst blocking out other aspects of the presented stimuli. As such it is regarded as a measure of the effectiveness of concentration or selective attention. Specifically, the time taken to complete both parts of the STROOP provides a measures of speeded processing, with Part II further being held to be affected by frontal lobe dysfunction (e.g. Kunert *et al.* 2003). Given reports of difficulties with executive or frontal lobe functioning in individuals with a BPD diagnosis, the latter is particularly relevant to the evaluation of changes in attention following treatment. The difference between the times taken to complete the two parts is referred to as STROOP interference, generally held to be a measure of selective attention (e.g. Kunert *et al.*, 2003, Ruocco, 2005)

There have been varying reports on practice effects with repeated administration ranging from none to substantial ones. Norms for different versions of the STROOP are published by Mitrushina, Boone, Razani and D'Elia (2005). Reliability coefficients for different versions of the STROOP are high and are reported to range from .83 to .91 (Strauss, Sherman & Spreen, 2006). The validity of the test as tapping into response inhibition or attention rather than processing speed or conceptual abilities (e.g. as captured by WAIS-III tasks such as Digit Symbol, Block Design, Similarities) is debated in the literature with inconsistent findings. Interference scores (the time difference between Part I and II) have been found to correlate moderately with other tests of attention (e.g. $R^2 = .30$).

Trail Making Test (TMT): The TMT is a complex test of attention held to capture divided attention and cognitive flexibility (i.e. the ability to switch focus in an activity and mentally follow sequences; Lezak *et al.*, 2004). Individuals are required to connect numbers spread across a sheet of paper (Trial A) as well as connecting alternating letters and numbers (Trial B). Both parts are held to tap visuospatial and motor skills. However, Part B is further held to be a measure of executive functioning as it requires the individual to hold two lines of information in working memory and alternate between them sequentially (also known as set shifting; Dinn *et al*. 2004, Ruocco, 2005).

The test has been criticised due to a lack of clear norms and care was taken to select the most appropriate set as recommended by Mitrushina *et al*. (2005). According to Lezak *et al*. (2004) reports of practice effects vary but typically some improvement is observed for both parts with repeated administration. The test is a pencil and paper test reminiscent of a connect-the-dots test.

According to Lezak *et al*. (2004) reported test-retest reliability coefficients vary, ranging from r = .60 to r = .90 but are generally regarded to be adequate, particularly for Trial B (Strauss, Sherman & Spreen, 2006). Interrater reliability has been found to be .94 for Trial A and .90 for Trial B as noted by Strauss *et al*. (2006). The test has been found to correlate with a range of difficulties (e.g. dementia, performing complex tasks of daily living) and brain damage with Part B generally being more sensitive. Construct validity for visual search was also established, via correlations with other visual search tasks (ranging from .36 to .93; Lezak *et al*., 2004), as well as cognitive flexibility, based on correlations with tasks requiring the switching of sets/rules (Strauss *et al*., 2006).

3.3.3 Anxiety

State-Trait Anxiety Inventory (STAI; Spielberger, 1983). The STAI is a 40-item self-report measure, assessing state and trait anxiety. It has been extensively used in research and is held to have good psychometric properties. Studies investigating the reliability of the STAI have recently been reviewed by Barnes, Harp and Jung (2002). They report good internal consistency between reviewed studies for the state scale

(mean Cronbach's alpha = .70) and trait scale (mean Cronbach's alpha = .89) as well as good test-retest reliability for the state scale (mean r = .70) and trait scale (r = .88). The concurrent validity of the STAI as measured via correlations with other measures of anxiety range from .52 to .84 for the trait scale (Spielberger, 1983). The manual reports studies used to investigate the validity of the state scale, in which participants completed the measure under stressful and unstressful conditions, with alpha coefficients ranging from .83 to .94.

3.3.4 Depression

Beck Depression Inventory-2nd Edition (BDI-II; Beck, Steer & Brown, 1996). The BDI is a 21-item self-report measure of symptoms of depression, which is used as a standard in clinical practice and is widely used in research. It has good psychometric properties with good internal consistency (mean Cronbach's alpha = .86) and test-retest reliability (ranging from .48 to .86, which is argued to reflect changes in the severity of depression; Beck, Steer, & Garbin, 1988). Concurrent validity, using correlations of scores with clinicians' ratings, has been found to be moderate, ranging from .62 to .66 (Foa, Riggs, Dancu, & Rothbaum, 1993) and was judged to be high for correlations with other measures of depression (Beck *et al.*, 1988). Construct validity is reported to be strong, with the BDI detecting hypothesized relationships between different indicators of depression (e.g. physical symptoms, behavioural symptoms).

3.3.5 Dissociation

Dissociative Experience Scale-2nd Edition (DES-II; Carlson & Putnam, 1993). The DES is a 28-item self-report instrument, which measures how frequently individuals experience different forms of cognitive dissociation. It is widely used in research and has been found to have good psychometric properties (Carlson & Putnam, 1993) with good test-retest reliability (ranging from .79 to .96) and good internal consistency (Cronbach's alpha = .92). Validity of the previous version (DES-1; identical to the DES-II which has a refined scoring method) was examined by Bernstein & Putnam (1986) and found to be sensitive and specific. Using the DES-1 to establish convergent validity this was found to be excellent (r = .96) by Ellason, Ross, Mayran and Stainton (1991). Concurrent and criterion-related validity was investigated by

Carlson *et al.* (1993) who found the measure to be sensitive (76% - 80%) and specific (76% - 80%) in distinguishing participants with Multiple personality disorder (argued to be at the more severe end of dissociative disorders distinguished in the DSM) from other psychiatric conditions, whereby most of those misclassified had diagnoses of either PTSD or dissociative disorders other than multiple personality disorder.

Somatoform Dissociation Questionnaire (SDQ-20; Nijenhuis *et al.*, 1996). The SDQ-20 is a 20-item instrument, which measures how frequently individuals experience symptoms of physical dissociation. It has been shown to have good psychometric properties with very good internal consistency (Cronbach's alpha 0.95) and test–retest reliability having been described as satisfactory (Sar *et al.*, 2000). Discriminant validity has been demonstrated in several studies with score differences reaching statistical significance for clients with diagnoses of dissociative disorders and other psychiatric diagnoses (e.g. Niyenhuis *et al.*, 1996, 1998; Sar *et al.*, 2000).

3.3.6 Impulsivity

Barratt Impulsiveness Scale-11 (BIS-11; Patton, Stanford & Barratt, 1995): The BIS-11 is 30-item self- report questionnaire designed to measure an individual's tendency to be impatient and impulsive using a 4-point Likert scale ranging from rarely/never to almost always. It is frequently used in research and has been shown to have good psychometric properties with very good internal consistency (Cronbach's alpha ranging from .79 to .83; Patton *et al.*, 1995). Client populations whose conditions are characterised by impulsivity (e.g. binge eating; bipolar depression) have been found to score significantly higher than non-psychiatric populations, indicating good concurrent validity (e.g. Swann, Anderson, Dougherty & Moeller, 2001; Spinella, 2007).

3.3.7 Demographic Information Questionnaire (DIQ)

A brief questionnaire to capture sociodemographic and treatment experience information about clients (e.g. age, education, occupation, ethnicity, marital status, medication, previous experience of mindfulness and other forms of meditation) was designed in order to adequately describe the sample population of the study and detect

any differences between individuals and group comparisons. As much information as possible was taken from clients' file records (with their permission). Any missing information was collected through an interview.

3.3.8 Group Evaluation Questionnaire

A questionnaire was designed to allow participants to comment on individual classes and exercises and how they experienced these. Participants were asked to complete this at the end of each group session. Ratings include (1) the helpfulness of the group (0=not helpful at all, 1=somewhat helpful, 2=quite helpful, 3=very helpful), (2) how clients felt afterwards (0=a lot worse, 1=a little worse, 2=no different, 3=a little more positive about how to cope, 4=a lot more positive about how to cope) and (3) how anxious and depressed they felt after the group (rated separately) compared to how they felt when they came to the session (0=a lot more anxious or depressed, 1=somewhat more, 2=no different, 3=somewhat less, 4=a lot less anxious or depressed). This information was collected to explore the impact of sessions on clients thus providing an indication of the acceptability of the treatment.

3.3.9 Subjective Improvement and Satisfaction Questionnaire

A questionnaire was designed to allow participants to indicate their subjective sense of improvement regarding different aspects (e.g. mindfulness skills, ability to regulate emotions, mood) and general satisfaction with the group. This involved clients estimating percentage of improvement and satisfaction (0-100) on bidirectional scales. Thus, clients were also able to indicate any worsening of, for example, well-being. There was free space for clients to note down any suggestions regarding any aspects of the group, which could be improved. This questionnaire was only administered to treatment completers at post-assessment to further gauge acceptability of the treatment and explore participants subjective sense of improvement compared to any improvement as captured in selected questionnaires.

3.4 Assessment Procedure

Assessments took place pre and post intervention. Participants were assessed individually between 5 weeks to 1 day prior to the first session and 1 day to 3 weeks after the last session.

3.4.1 Assessment rooms

The testing locations consisted of clinic rooms on two different hospital sites.

Rooms were arranged so that participants and the researcher sat at a table at a 90° angle whenever possible. This was necessary for the Trail Making Test where the administrator needs to be able to point out any mistakes for the client to correct, in line with the test instructions.

3.4.2 Procedure

Following their arrival, participants were presented with the client information sheet. This was the second time that clients' had seen the information sheet, either because they had discussed it with their therapist or because it had been forwarded to them. They were then given the opportunity to discuss the study further and ask questions. Once they expressed that they had no further questions and still wanted to participate in the study they were given a consent form (see Appendix 4) and asked to complete it.

The pre-intervention procedure took approximately two hours. However, in a few cases it took longer (e.g. three hours) due to participants requiring more breaks and assistance in completing the questionnaires. The post-intervention assessment took approximately one hour and in a few cases one-and-a-half hours.

The assessment procedure used with all participants is outlined below in the order in which it was administered (differences between pre-intervention and post-intervention procedures are highlighted):

1. Demographic information was collected with the DIQ.

2. Attention Tests: Digit Span (DS), Trail Making Test (TMT) and STROOP. These were administered in a randomised order in order to control for any order effects. For the post-intervention assessment only the TMT and STROOP were administered as the DS was included to control for any differences between groups in attention capacity.
3. The Beck Depression Inventory-2nd Edition (BDI-II).
4. The State-Trait Anxiety Inventory (STAI).
5. The Five-Facet Mindfulness Questionnaire (FFMQ).
6. The Dissociative Experiences Scale-2nd Edition (DES-II).
7. The Barratt Impulsivity Scale-11 (BIS-11).
8. The Somatoform Dissociation Questionnaire (SDQ-20).
9. The Acceptance and Action Questionnaire (AAQ).
10. Following completion of the pre-intervention assessment clients were given further details regarding how mindfulness may be helpful. This was done by outlining the MBCT model and discussing with clients how this applies to their experiences of emotional distress.
11. Following completion of the post-intervention assessment clients who had completed MBCT-a were given the opportunity to provide feedback regarding their satisfaction with the group and how much they felt they had improved in their mindfulness skills and different facets of emotional well-being.

3.5 Payment

Following completion of each assessment procedure (i.e. pre-intervention and post-intervention) participants were paid five pounds (i.e. a total of ten pounds if they attended both sessions) to reimburse them for any inconvenience and to maximise attendance to both assessment sessions. In addition, participants were offered reimbursement of travel expenses in order to maximise attendance at the assessment and group intervention sessions.

3.6 Participants

Out of 22 clients who initially agreed to participate in the study and be contacted by the researcher 4 dropped out before attending the pre-intervention assessment. Figure

4 shows the progress of participants through the study. An account of reasons for dropout can be found in Appendix 5. A total of 18 participants were assessed pre-intervention. Only one client did not agree to be reassessed after dropping out of the group and was removed from analyses. The Total sample therefore consisted of 17 participants.

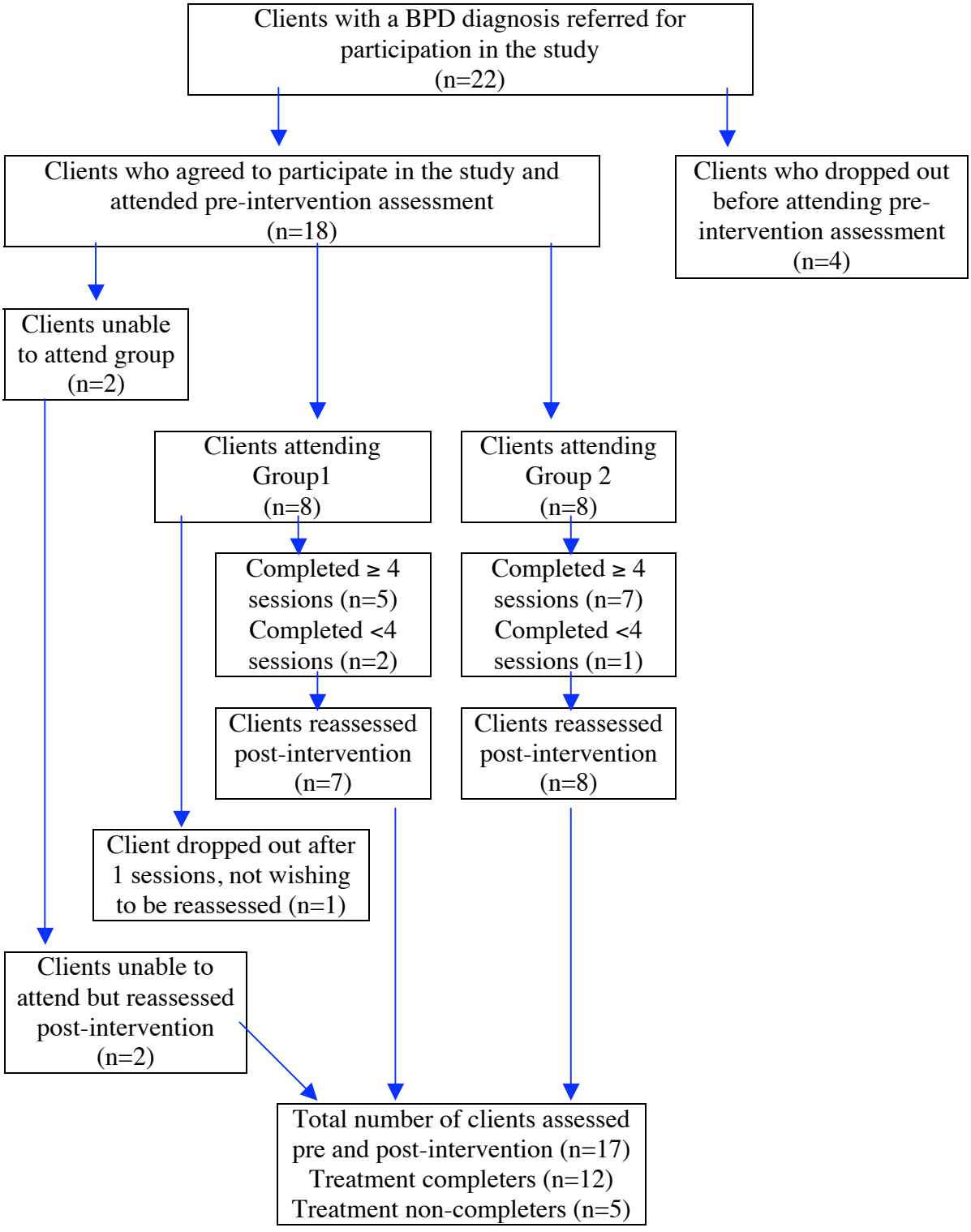

Figure 4: Progress of participants through the study.

3.7 Intervention

All participants received treatment as usual (TAU) throughout the duration of this research project. The form this took varied between participants and is outlined in the results section.

3.7.1 MBCT and adaptations

MBCT is a manualised programme, which aims to teach clients mindfulness and cognitive skills in a group setting (Segal *et al*., 2002). As outlined above, it was developed for the use with clients who are in remission from recurrent major depressive disorder and intends to teach them greater awareness of thoughts, feelings and physical sensations and ways of relating differently to these. This is meant to facilitate the development of skills which allow clients to disengage, if they choose to, from habitual patterns of thinking which are unhelpful and in the past have contributed to relapse into depression (e.g. depressive rumination; Teasdale *et al*. 2000; Segal *et al*. 2002). In the original format clients attend an individual orientation session, followed by 8 weekly 2-hour group sessions with up to 12 participants. During group sessions, clients are provided with daily homework exercises, which include guided (i.e. CD recordings) and unguided mindfulness exercises. Both are used to increase moment-by-moment awareness with additional exercises serving to integrate the application of mindfulness skills into everyday life. Clients are given a diary to record their homework practice.

The treatment manual used in this study was adapted from the original MBCT for depression manual (Segal *et al*. 2002). It closely follows the curriculum and homework as set out in the original manual, however some adaptations needed to be made, for practical and clinical reasons given the presenting difficulties of this particular client group.

The aim of each session and adaptations made are outlined in Appendix 6. In general, adaptations included session lengths (extended from 2 hours to 2 1/2 hours to allow for a break and more discussion time) and range of mindfulness CDs provided. Due to copyright restrictions the facilitator recorded mindfulness CDs herself (guided by the

original CDs used as part of MBCT). The main set as outlined in the MBCT manual was recorded, however only one out of 4 additional CDs from Series 2 of Jon Kabat-Zinn's range was also recorded and provided to participants, thus representing a more narrow range of choice in exercises[2]. Another deviation from the published manual occurred in session 4, which focuses on psychoeducation for depression. This was extended to also include experiences of anxiety and emotional distress in general. However, the main focus remained on depression (e.g. in handouts) as this tends to constitute a major difficulty for this client population. Similar, sessions discussing relapse into depression conceptualised this as a daily challenge (vs. following a period of extended remission).

Participants attended one of two consecutively run mindfulness groups with up to 8 group members. Both groups experienced a break. Group1 spanned the Christmas and New Year holidays necessitating a two-week break. In order to ensure continuity a recap session was therefore incorporated. Group2 experienced a one-week break due to illness of the principal facilitator. All adaptations and deviations from the manual were discussed with and approved by Professor Mark Williams who was one of the originators of the programme.

3.7.2 Facilitators

Segal *et al*. (2002) note the importance of facilitators having first-hand, ongoing experience of mindfulness practice next to training in cognitive therapy and running groups. Out of the two facilitators one was a trainee clinical psychologist who was trained in the facilitation and delivery of MBCT (principal facilitator). This training involved several aspect: (1) two years of personal mindfulness practice following the completion of a 10-week mindfulness group (2) attendance at the introductory workshop for MBCT facilitated by Mark Williams at the Oxford Cognitive Therapy Centre, (3) attendance at a 3-day long mindfulness retreat organised by the University

[2] It needs to be noted that 2 out of the remaining 3 CDs making up Series 2 by Jon Kabat-Zinn consist of silence with bells, which was judged to be too difficult for clients and therefore omitted. The other CD consisted of lying down meditations, which essentially replicate sitting mindfulness exercises and participants were invited to also use the CD containing sitting meditation in a lying down position.

of Hertfordshire, and (4) completion of the MBCT Teacher Development Training at the Centre of Mindfulness Research and Practice, University of Wales, Bangor.

The principal facilitator ran both groups. However co-facilitators changed from Group1 to Group2 due to practical reasons. Both were registered clinical psychologists who regularly use and teach mindfulness as part of DBT.

3.8 Ethical Issues

3.8.1 Emotional distress

All clients who expressed interest in participating in the study were seen individually for the pre-intervention assessment. It was explained that one potential risk of participating in the MBCT group was the experience of emotional distress. As outlined above, the practice of mindfulness meditation may lead to the experience of unpleasant memories or emotions, which would possibly be avoided normally, or coped with, for example, via dissociation or distraction. This exposure may lead to greater experiences of distress. However, as outlined above not due to the experiences of emotions per se but rather due to beliefs attached to these (e.g. Linehan, 1993). Mindfulness training also works on this level of intervention in that it teaches a stance of non-judgemental acceptance of such experiences, further promoting greater cognitive flexibility by teaching skills to focus and switch attention. However, several measures were put in place to reduce any risk to participants:

1. Participants were provided with detailed information regarding the aim and nature of the study in order to provide informed consent. They were informed that their participation was voluntary and that they could withdraw from the study at any time, without explanation.
2. Participants were informed that their choice to participate or withdraw from the study would not affect their care management.
3. Experienced clinical psychologists co-facilitated the group. Part of their role was to observe and attend to participants who showed sign of emotional distress (e.g. leaving the room, becoming tearful) offering support or guiding

participants through grounding techniques, commonly used during DBT for such purposes.

4. Participants were provided with contact details of researchers and facilitators, including possible routes to access support from experienced clinicians.
5. Participants who were in treatment during their participation in the study were further advised to seek support from their individual therapists should this be required. Generally, participants were advised to use existing support networks (e.g. other health care professionals involved in their care, relatives, friends).
6. Clients' GPs were informed of their participation in the research project.

3.8.2 Confidentiality

Participants who expressed an interest in the study were assigned a number to ensure anonymisation of data collected at pre- and post-intervention assessment. These numbers were used on questionnaires and tests administered and in the statistical database. The database was password protected and complied with the Data Protection Act. Participants' names were recorded in a separate, password-protected word document. Completed questionnaires and tests were stored in a locked filing cabinet at the specialist personality disorder service.

In line with professional guidelines regarding the management of risk, participants were informed that confidentiality may be broken should there be concerns around their own or others' safety. This became necessary a number of times throughout this project and related to clients expressing urges to self-harm. In these events, participants were provided with support from group facilitators. Moreover, participants' therapists were informed who provided additional support in line with agreed therapy contracts. In each instance participants consented to this.

3.8.3 Ethical review of the study

This research was reviewed by the Redbridge and Waltham Forest Local Research Ethics Committee. See Appendix 7 for the letter of approval.

3.9 Planned Analyses

Apart from one participant who did not wish to be reassessed, complete data sets were available for all participants. It was therefore decided to remove this participant from the analysis and conduct a whole sample analysis. Thus the total sample consisted of 17 participants. This is likely to be a conservative test of hypotheses as this includes pre and post-intervention data for participants who did not attend the group or did not complete the minimum effective dose (i.e. 4 out of 8 sessions) as defined by Teasdale *et al*. (2000). In order to ascertain changes in measures across time (i.e. pre-treatment and post-treatment) analyses consisted of paired samples t-tests, provided assumptions for the use of parametric tests were met (i.e. homogeneity of variance, few/no extreme scores, normal distribution of data). When assumption were violated the non-parametric alternative, i.e. Wilcoxon matched-pairs signed-rank test, was used. Given the exploratory nature of the study and small sample size it was decided not to use Bonferroni-corrected p values to enhance statistical power, despite multiple comparisons, which are known to increase Type-1 error rates (i.e. erroneous rejection of the Null-hypothesis). To further gain statistical power, it was decided to raise the α level to 10%. Treatment effect sizes were calculated using Cohen's d statistic (Cohen, 1988). Correlations between individual gain scores (for each variable) and the number of sessions completed were executed to explore dosage effects. Provided that assumptions for the use of parametric analyses were met (i.e. normality, linearity etc.) Pearson's correlations were used. When assumptions were violated the non-parametric alternative was used, i.e. Spearman's rho. Where analyses revealed statistically significant differences, clinical significance analyses were conducted, using clinical cut-off scores derived from published normative data for each variable where this was available.

Despite the small sample size it was considered worthwhile to explore the data set for trends, comparing participants who completed the minimum number of sessions to those who did not.

4. RESULTS

The results of the data analysis will be presented in the following order: (1) description of the sample including group attendance, outcome data available, demographic and clinical information; (2) results of the whole sample analyses pertaining to the main research hypotheses regarding the effects of the group on selected outcome measures; (3) correlations between individual gain scores and number of sessions attended; (4) results of analyses regarding trends or differences between treatment completers and non-completers on selected outcome measures; (5) results of additional analyses regarding treatment completers who improved in mindfulness compared to those who did not; (6) results pertaining to the acceptability of the treatment.

All statistical testing reported used an alpha level of .10 for both 1 and 2-tailed hypotheses.

4.1 Participants, Attendance and Data Set

A total of 18 participants agreed to participate in the study; 17 were included in the following analyses. Out of these, 15 attended at least two sessions, with 2 not having attended any sessions. The mean number of sessions attended by the 17 participants was 4.65 (SD=2.55). 12 participants completed the minimum number of sessions (treatment completers) and the mean number of sessions attended was 6.00 (SD=1.41). The mean number of sessions attended by treatment non-completers was 1.33 (SD=1.21). Demographic (e.g. age, gender, ethnicity) and clinical characteristic (e.g. diagnoses, type of therapy at time of intervention, medication) of participants are outlined in Tables 2 and 3.

Table 2: Frequencies, percentages (and SDs) of demographic variables for the whole sample, treatment completers and non-completers.

		Whole Sample (N=17)	Treatment Completers (N=12)	Treatment Non-Completers (N=5)
Gender	Male	3 (17.60%)	2 (16.70%)	1 (20%)
	Female	14 (82.40%)	10 (83.30%)	4 (80%)
Mean age		39.77 (7.64)	41.08 (5.96)	36.60 (10.88)
Ethnicity	White-British	14 (82.40%)	10 (83.30%)	4 (80%)
	Other	3 (17.60%)	2 (16.70%)	2 (20%)
Marital status	Single	11 (64.70%)	8 (66.70%)	3 (60%)
	Married	3 (17.60%)	2 (16.70%)	1 (20%)
	Divorced	1 (5.90%)	1 (8.30%)	0
	Other	2 (11.80%)	1 (8.30%)	1 (20%)
Education	GCSE's/O-levels	7 (41.20%)	4 (33.30%)	3 (60%)
	A-level	3 (17.60%)	2 (16.70%)	1 (20%)
	Degree	5 (29.40%)	4 (33.30%)	1 (20%)
	Other	1 (5.90%)	1 (8.30%)	0
	No qualification	1 (5.90%)	1 (8.30%)	0
Occupied time	Employed	0	0	0
	Voluntary Work	3 (17.60%)	2 (16.70%)	4 (80%)
	Education	7 (41.20%)	4 (33.30%)	3 (60%)
Current Therapy	CBT	9 (52.90%)	7 (58.30%)	2 (40%)
	DBT	7 (41.20%)	4 (33.30%)	3 (60%)
	None	1 (5.90%)	1 (8.30%)	0
Average number of months in psychological therapy		19.53 (10.36)	17.58 (11.19)	24.20 (6.76)
Medication	Yes	12 (70.60%)	8 (66.70%)	4 (80%)
	No	5 (29.40%)	4 (33.30%)	1 (20%)
Type	Antidepressant	11 (64.70%)	8 (66.70%)	3 (60%)
	Anxiolytic	4 (23.50%)	2 (16.70%)	1 (20%)
	Antipsychotic	4 (23.50%)	2 (16.70%)	2 (40%)
	Hypnotic	4 (23.50%)	4 (33.30%)	0
	Antiepileptic	2 (11.80%)	2 (16.70%)	0

As presented in Table 2, participants in this study were predominantly female (82.4%). This is representative of this client population in that findings from studies show that typically, approximately 75% of individuals meeting BPD criteria are female (e.g. DSM-IV, 1994; Lieb *et al*., 2004). Participants in this study were predominantly white (82.4%), representative of referrals received by the service. In addition, participants were predominantly single (64%) and unemployed (100%) at the time of the study. Approximately, 70% of participants were prescribed psychotropic medication, in line with reports in the literature, which note that a high proportion of BPD patients continuously take medication (e.g. Lieb *et al*., 2004; Zanarini *et al*., 2004). There did not appear to be any marked differences between treatment completers and non-completers on demographic variables.

Table 3 provides a breakdown of diagnostic information and BPD severity. BPD severity is based on the number of diagnostic criteria met out of nine listed in DSM-IV. Totals in the table refer to the number of participants meeting at least one co-morbid diagnosis in a particular category. This is followed by a breakdown of specific diagnoses within broader categories (e.g. mood disorders) as defined in DSM-IV (1994). Approximately 30% of participants had at least one co-morbid Axis-II diagnosis. This is comparable to reports in the literature, which note ranges of 14-51% (e.g. Lieb *et al*., 2004; Zanarini *et al*., 1998a). Regarding Axis-I co-morbidity, all participants met criteria for at least one Axis-I disorder with approximately 77% meeting criteria for MDD. This is also in line with reports in studies. For example, Lieb *et al*. (2004) note that rates for co-morbid major depression range from 41-83% between studies (see also Zanarini *et al*., 1998b). Treatment completers and non-completers were comparable regarding BPD severity. On average, treatment non-completers met 7 to 8 diagnostic criteria, with treatment completers meeting 6 to 7.

Table 3: Frequencies, percentages (and SDs) of psychiatric diagnoses and BPD severity for the whole sample, treatment completers and non-completers.

		Whole Sample (N=17)	**Treatment Completers (N=12)**	**Treatment Non-Completers (N=5)**
Co-morbid Axis-II diagnosis	Total	5 (29.40%)	3 (25%)	1 (20%)
	Avoidant PD	3 (17.60%)	3 (25%)	0
	Dependent PD	1 (5.90%)	0	1 (20%)
	Histrionic PD	1 (5.90%)	1 (8.30%)	0
	Narcissistic PD	1 (5.90%)	1 (8.30%)	0
	OCPD	1 (5.90%)	1 (8.30%)	0
Co-morbid Axis-I diagnosis	Total	17 (100%)	12 (100%)	5 (100%)
Mood Disorders	Total	14 (82.40%)	10 (83.30%)	4 (80%)
	MDD	13 (76.50%)	9 (75%)	4 (80%)
	Dysthymic Disorder	2 (11.80%)	1 (8.30%)	1 (20%)
Anxiety Disorders	Total	14 (82.40%)	9 (75%)	5 (100%)
	GAD	4 (23.50%)	3 (25%)	1 (20%)
	PTSD	6 (35.30%)	3 (25%)	3 (60%)
	Panic Disorder	8 (47%)	4 (33.30%)	4 (80%)
	OCD	2 (11.80%)	1 (8.30%)	1 (20%)
	Social & Specific Phobias	1 (5.90%)	1 (8.30%)	0
Substance related disorders	Total	6 (23.50%)	5 (41.70%)	1 (20%)
	Alcohol Dependence	5 (29.40%)	5 (41.70%)	0
	Alcohol & Cannabis	1 (5.90%)	0	1 (20%)
Average BPD severity (indicated by the number of BPD criteria met at diagnosis)		6.76 (1.30)	6.42 (1.24)	7.60 (1.14)

4. 2 Whole sample analysis

4.2.1 Primary Outcome Measures

Table 4 presents the results from the whole sample analysis for the FFMQ (Mindfulness) and AAQ (Experiential Avoidance). Boxplots of the distribution relating to the FFMQ and AAQ are shown in Appendix 8. Exploration of these two variables revealed that assumptions for the use of parametric tests were met.

Table 4: Primary outcome measures descriptive statistics.

Questionnaire		Mean	Minimum	Maximum	SD	Skewness	Kurtosis
FFMQ	Pre	100.41	60	131	17.87	-.40	.45
	Post	100.59	67	134	20.79	.19	-1.06
AAQ	Pre	79.53	62	105	12.46	.88	-.29
	Post	78.24	47	107	15.12	.04	.58

Mindfulness

Mindfulness was measured using the Five-Facet Mindfulness Questionnaire (FFMQ). A total score for the FFMQ was computed by adding scores for all individual items. Although the FFMQ was selected for its ability to provide information on different facets of mindfulness an analysis of each facet was abandoned due to the small sample size and problems of multiple comparisons. Higher scores on the FFMQ indicate higher levels of mindfulness. The total score ranges from 39 to 195. The FFMQ is a relatively new measure and very little has been published to date regarding the interpretation of scores or norms. Recently published data showed a mean total score of 116.9 in a community sample and 124.34 in a student sample (Baer *et al*. 2008). The data were analysed with the Paired Samples t-test and the results indicated that pre-and post-treatment scores did not differ significantly for the FFMQ ($t(16)= -.047$, $p=.482$) with participants overall achieving very similar scores at pre-treatment (mean=100.41) and post-treatment assessment (mean=100.59). These scores are lower than scores reported for students or the general population. The estimated 95% confidence interval for the estimated population mean difference was between -8.11 and 7.76.

Experiential Avoidance

Experiential avoidance was measured using the Acceptance and Action Questionnaire (AAQ). Higher scores on the AAQ reflect higher levels of experiential avoidance. Scores range from 16 to 112 using the 16-item solution. The AAQ is still a relatively new measure and there is a lack of published data regarding norms or the interpretation of scores. The data were analysed with the Paired Samples t-test and the results indicated that pre- and post-treatment scores did not differ significantly for the AAQ ($t(16)=.48$, $p=.319$) with participants achieving similar scores at pre-treatment (mean=79.53) and post-treatment assessment (mean= 78.24). The 95% confidence interval for the estimated population mean difference was between -4.42 and 7.01.

4.2.2 Secondary Outcome Measures

Table 5 shows the descriptive statistics for the secondary outcome measures: BDI, STAI, SDQ-20; DES-II, BIS-11. Descriptive statistics for measures of attention (Digit Span, TMT, STROOP) are shown in Table 6. Exploration of these variables revealed that assumptions for the use of parametric tests were met for all variables apart from the SDQ-20 and measures of attention. Boxplots of the distribution relating to the secondary outcome measures are shown in Appendix 9.

Table 5: Secondary outcome measures descriptive statistics.

Questionnaire		Mean	Minimum	Maximum	SD	Skewness	Kurtosis
BDI-II	Pre	34.94	7	50	11.77	-.79	.28
	Post	33.94	9	51	10.97	-.54	.31
STAI-state	Pre	55.82	37	79	10.91	.21	.19
	Post	55.65	29	78	13.19	-.25	-.35
STAI-trait	Pre	66.00	47	80	8.94	-.51	.057
	Post	62.53	33	76	10.16	-1.46	3.57
DES-II	Pre	32.76	6	76	18.17	.95	.85
	Post	32.82	6	74	19.40	.64	-.50
SDQ-20	Pre	30.88	22	50	6.99	1.15	2.36
	Post	29.59	20	51	8.64	1.14	.95
BIS-11	Pre	76.41	57	97	10.48	.13	-.49
	Post	77.29	58	96	10.63	-.004	-.59

Depression

Depression was measured using the BDI-II. Higher scores indicate greater levels of depressive symptomatology. Scores range from 0 to 63 and cut score guidelines are provided indicating different levels of severity, with scores of 29 to 63 typically reflecting 'severe' levels of depression. The data were analysed with the Paired Samples t-test and the results indicate that pre- and post-treatment scores did not differ significantly ($t(16)=.452$, $p=.329$) with participants achieving similar scores at pre-treatment (mean=34.94) and post-treatment assessment (mean=33.94). The 95% confidence interval for the estimated population mean difference was between –3.69 and 5.69. These scores are relatively high and fall in the 'severe' range of depressive symptomatology.

Anxiety

Anxiety (state and trait) was measured using the STAI. Higher scores indicate higher levels of anxiety. Scores range from 20 to 80 for both state and trait anxiety. Norms in the form of percentile ranks are provided for working adults as well as means for a number of clinical populations. The data were analysed with the Paired Samples t-test

and the results indicate that pre- and post-treatment scores did not differ significantly for state anxiety (t(16)=.064, p=.475) with participants achieving similar scores at pre-treatment (mean=55.82) and post-treatment assessment (mean=55.65). The 95% confidence interval for the estimated population mean difference was between –5.70 and 6.06. A score of 55 falls at the 94th percentile for males and 93rd percentile for females and is comparable to scores found in psychiatric patients diagnosed with depression (mean=54.43). There was a statistically significant difference for trait anxiety (t(16)=2.013, p=.0305) with participants achieving higher scores at pre-treatment (mean=66.00) compared to post-treatment (mean=62.53). The 95% confidence interval for the estimated population mean difference was between -.18 and 7.13.

Both scores fall at the 100th percentile for both males and females and are approximately one SD higher than mean scores reported for psychiatric patients diagnosed with depression (mean=53.43).

Dissociation

Cognitive dissociation was measured using the DES-II and somatoform dissociation was measured using the SDQ-20. For both, higher scores indicate higher rates of dissociative symptoms. Scores on the DES-II range from 0 to 100 A cut-off score of 30 is typically used in clinical practice to identify individuals likely to be severely dissociative (Carlson & Putnam, 1993; Putnam *et al*., 1996). Scores for the SDQ-20 range from 20 to 100. A cut-off score of 35 is typically used in clinical practice to identify individuals likely to be severely dissociative. The data for the DES-II were analysed with the Paired Samples t-test and the results indicate that pre- and post-treatment scores did not differ significantly for the DES-II (t(16)=.026, p=.979) with participants achieving similar scores at pre-treatment (mean=32.77) and post-treatment assessment (mean=32.82). The 95% confidence interval for the estimated population mean difference was between –4.77 and 4.65. Both scores are above the clinical cut-off, indicating high levels of dissociative symptoms, similar to ones reported for PTSD populations (e.g. means of about 30 are consistently reported, see Carlson & Putnam, 1993 and considered to reflect high levels of dissociation, Putnam *et al*., 1996). In addition, there was great variability in scores as indicated by a large

range and SD. For the SDQ-20, non-parametric analysis was conducted due to abnormalities in the distribution of data. The results indicated that pre-and post-treatment scores did not differ significantly for the SDQ-20 (Z=1.26, p=.208) with participants achieving similar scores at pre-treatment (mean rank=12.50) and post-treatment assessment (mean rank=7.92). Both scores fall below the clinical cut-off (pre-treatment mean=30.88; post-treatment mean=29.59), indicating only modest levels of dissociative symptoms.

Impulsivity

Impulsivity was measured using the BIS-11. Higher scores indicate higher levels of impulsivity. There are no norms other than scores reported in published studies for different client populations. Scores range from 30 to 120 with scores of 74 and above generally held to reflect high levels of impulsivity (e.g. Moeller *et al*. 2001). The data were analysed with the Paired Samples t-test and the results indicate that pre- and post-treatment scores did not differ significantly (t(16)=.643, p=.264) with participants achieving similar scores at pre-treatment (mean=76.41) and post-treatment assessment (mean=77.29). The scores are comparable to ones reported for individuals with a BPD diagnosis in published studies (e.g. Kruedelbach *et al*., 1993 report a mean of 78). The 95% confidence interval for the estimated population mean difference was between –3.79 and 2.03. Both scores reflect high levels of impulsivity.

Attention

Attention was measured using the Digit Span task (DS), Trail Making Test (TMT), and STROOP. Descriptive statistics for these measures are shown in Table 6. Performance on the STROOP and TMT was analysed using non-parametric tests due to abnormalities in the distribution of the data.

Table 6: Attention measures descriptive statistics.

Measure		Mean	Minimum	Maximum	SD	Skewness	Kurtosis
STROOP							
Part-I	Pre	95.65	68	222	34.93	3.27	12.02
(Reading)	Post	89.94	67	134	18.04	.89	.81
Part-II	Pre	255.35	134	600	102.35	2.58	8.38
(Colour	Post	227.00	113	345	51.65	.21	1.71
Naming)							
Interference	Pre	159.71	55	378	73.32	1.70	4.30
	Post	137.65	37	241	49.36	.19	.52
Errors	Pre	4.41	0	17	4.81	1.49	1.77
	Post	4.06	1	9	2.28	.60	-.57
TMT							
Part-A	Pre	40.65	16	72	14.45	.76	.36
	Post	37.82	21	76	13.48	1.43	2.90
Part-B	Pre	88.53	47	163	31.75	.69	.43
	Post	79.00	47	198	36.23	2.42	7.17
Errors	Pre	.88	0	4	1.21	1.43	1.43
	Post	1.18	0	4	1.07	1.32	2.03
DS							
Forward		6.47	4	9	1.13	-.22	1.38

Mean performance speeds for STROOP and TMT reported in seconds.

Digit Span

Presented DS scores represent the longest sequence of numbers repeated correctly. According to Lezak *et al*. (2004) the normal range for digits forward is 6 ± 1. The authors go on to define a span of 5 to be 'marginal to normal', 4 as 'borderline' and 3 as 'defective'. Following these clinical guideline, DS scores overall fell into the average range. However there was considerable variation in performance as indicated by a large range. Differences in DS performance will therefore need to be considered in further explorations of attention measures, in that it may provide an alternative explanation for found differences, for example between completers and non-completers.

Trail Making Test

The data were analysed with the Wilcoxon Matched-Pairs Signed-Ranks Test and the results indicate that performance speed did not differ significantly pre and post-treatment for Part A (Z=.88, p=.380) with participants achieving similar completion times at pre-treatment assessment (mean rank=9.50) and post-treatment assessment (mean rank=8.29). Results indicate that performance speed also did not differ significantly pre and post-treatment for Part B (Z=1.55, p=.121) with participants achieving similar completion times at pre-treatment assessment (mean rank=8.91) and post-treatment assessment (mean rank=7.60)

STROOP

The data were analysed with the Wilcoxon Matched-Pairs Signed-Ranks Test and the results indicate that for STROOP-I (Reading) performance speed did not differ significantly pre and post-treatment (Z=.40, p=.3435) with participants achieving similar completion times at pre-treatment assessment (mean rank=7.56) and post-treatment assessment (mean rank=10.62). Results indicate that for STROOP-II (Colour naming) performance speed also did not differ significantly pre and post-treatment (Z=1.21, p=.227) with participants achieving similar completion times at pre-treatment (mean rank=9.27) and post-treatment assessment (mean rank=8.50). Results for STROOP interference indicated that differences between STROOP-I and II did not differ significantly pre and post-treatment (Z=1.52, p=.130) with participants showing similar performance speed differences at pre-treatment (mean rank=9.86) and post-treatment assessment (mean rank=7.42).

4.2.3 Effect sizes and evaluation of experimental hypotheses

Effect sizes relating to clinical outcome measures are presented in Table 7, along with an evaluation regarding experimental hypotheses. Given that there was no significant change on clinical outcome measures, in particular mindfulness, it was decided to limit the calculation of effect sizes to clinical measures and exclude attention test.

Table 7: Effect sizes, confidence intervals and evaluation of experimental hypotheses.

Primary Outcome Measures		Cohen's d	95% CIs	Decision
Mindfulness	FFMQ	.010	-8.11 and 7 .76.	Experimental hypothesis rejected
Experiential Avoidance	AAQ	-.094	-4.42 and 7.01.	Experimental hypothesis rejected
Secondary Outcome Measures				
Depression	BDI-II	-.088	–3.69 and 5.69	Experimental hypothesis rejected
Anxiety	STAI – State	-.014	–5.70 and 6.06	Experimental hypothesis rejected
	STAI – Trait	-.363	-.18 and 7.13	Experimental hypothesis rejected (see below for rationale)
Dissociation	DES-II (cognitive)	.003	–4.77 and 4.65	Experimental hypothesis rejected
	SDQ-20 (somatoform)	-.164	N/A	Experimental hypothesis rejected
Impulsivity	BIS-11	.083	–3.79 and 2.03	Experimental hypothesis rejected

4.3 Dosage effects

In order to explore relationships between outcome measures and the number of sessions attended by participants gain scores for each outcome measure (other than attention) were calculate by subtracting pre-treatment scores from post-treatment scores (i.e. gain= post-pre). Individual gain scores where than correlated with the number of sessions attended (dosage). Scatterplots for primary and secondary outcome measures are shown in Appendix 10.

4.3.1 Primary outcome measures

Mindfulness

Pearson's r indicated that there was a weak positive relationship associated with changes in FFMQ scores and dosage (r=.318, p=.107) which reached statistical significance. However, only 10% of the variation in scores on the FFMQ could be explained by number of sessions attended. The probability of this pattern of results emerging as a result of sampling error, given that the null-hypothesis is true, is .107.

Experiential Avoidance

Pearson's r indicated that there was a weak negative relationship associated with changes in AAQ scores and dosage (r=-.348, p=.085) which was statistically significant. However, only 12% of the variation in scores on the AAQ could be explained by number of sessions attended. The probability of this pattern of results emerging as a result of sampling error, given the null-hypothesis is true, is .085.

4.3.2 Secondary outcome measures

Depression

Pearson's r indicated that there was no relationship associated with changes in BDI scores and dosage (r=-.113, p=.333)

Anxiety

Pearson's r indicated that there was a moderate negative relationship associated with changes in STAI-state scores and dosage (r=-.532, p=.014). Therefore 28% of the variation in scores on the STAI-state can be explained by number of sessions attended. The probability of this pattern of results emerging as a result of sampling error, given the null-hypothesis is true, is .014.

Pearson's r indicated that there was no relationship associated with changes in STAI-trait scores and dosage (r=.008, p=.489). This suggests that changes observed as part of the whole sample analysis are likely to represent and error, possibly due to low sample size. Alternative explanations will be explored in the discussion.

Dissociation

Pearson's r indicated that there was no relationship associated with changes in DES-II scores and dosage (r=-.101, p=.700). For the SDQ-20, Pearson's r indicated that there was a weak negative relationship associated with changes in SDQ-20 scores and dosage (r=-.358, p=.050). Therefore only 12.8% of the variation in scores on the SDQ-20 can be explained by number of sessions attended. The probability of this pattern of results emerging as a result of sampling error, given the null-hypothesis is true is .05.

Impulsivity

Pearson's r indicated that there was no relationship associated with changes in BIS-11 scores and dosage (r=-.216, p=.203).

4.4 Treatment completers vs. non-completers

Since there was evidence for dosage effects on some variables it was decided to conduct additional analyses comparing treatment completers to non-completers. The aim was to explore any effects, which may have been masked by the inclusion of participants who did not attend any sessions or less than the 'minimum effective dose' as defined by Teasdale *et al*. (2000). Thus, participants were allocated to one of two groups: treatment completers (participants who attended at least 4 sessions) and treatment non-completers (participants who attended fewer than 4 sessions).

Due to uneven N and multiple comparisons it was decided not to analyse data for statistical difference. The median was judged to be the most meaningful measure of central tendency, due to abnormalities in the data. Boxplots for the distributions of data for each group are shown in Appendix 11. Medians and SDs for the two groups on selected primary and secondary outcome measures are shown in Table 8. The presented variables are those which revealed a dosage effect. Since there was a dosage effect for scores on the FFMQ, measures of attention were also included. Table 9 shows performance for the two groups on measures of attention.

Table 8: Selected primary and secondary outcome measures descriptive statistics.

			Treatment completers (N=12)		Treatment non-completers (N=5)	
Questionnaire			**Median**	**SD**	**Median**	**SD**
Primary outcome measures	**FFMQ**	Pre	98.00	16.83	111.00	16.39
		Post	99.50	21.13	93.00	21.23
	AAQ	Pre	78.00	13.24	71.00	1.92
		Post	79.50	14.35	71.00	18.46
Secondary outcome measures	**STAI-state**	Pre	54.50	11.06	57.00	11.80
		Post	56.50	12.92	62.00	13.48
	SDQ-20	Pre	30.50	7.82	29.00	5.23
		Post	27.00	7.31	30.00	11.10

4.4.1 Primary outcome measures

As can be seen in Table 8 treatment completers scored lower on the FFMQ pre-treatment compared to non-completers. Treatment completers, overall, did not change in mindfulness with those who did not complete MBCT-a showing a decrease (see Figure 5). Similarly, treatment completers scored slightly higher on the AAQ indicating somewhat higher levels of experiential avoidance compared to non-completers. Both groups did not show any change in scores on the AAQ at post-assessment (see Figure 6).

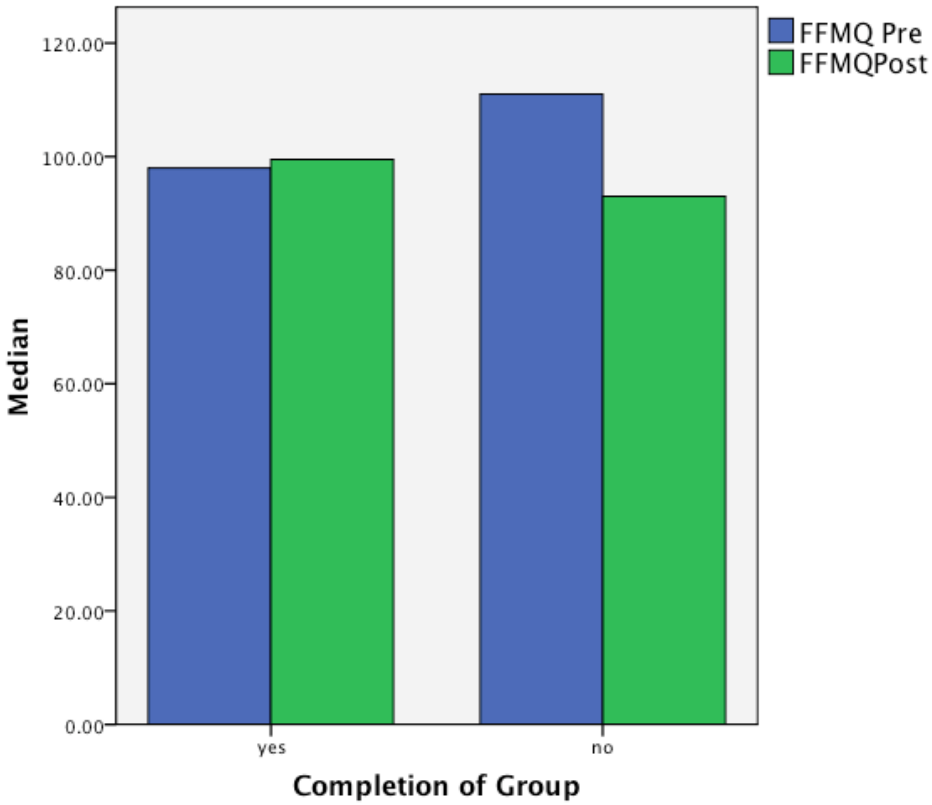

Figure 5: Bar chart showing median scores on the FFMQ, pre and post treatment, for treatment completers and non-completers.

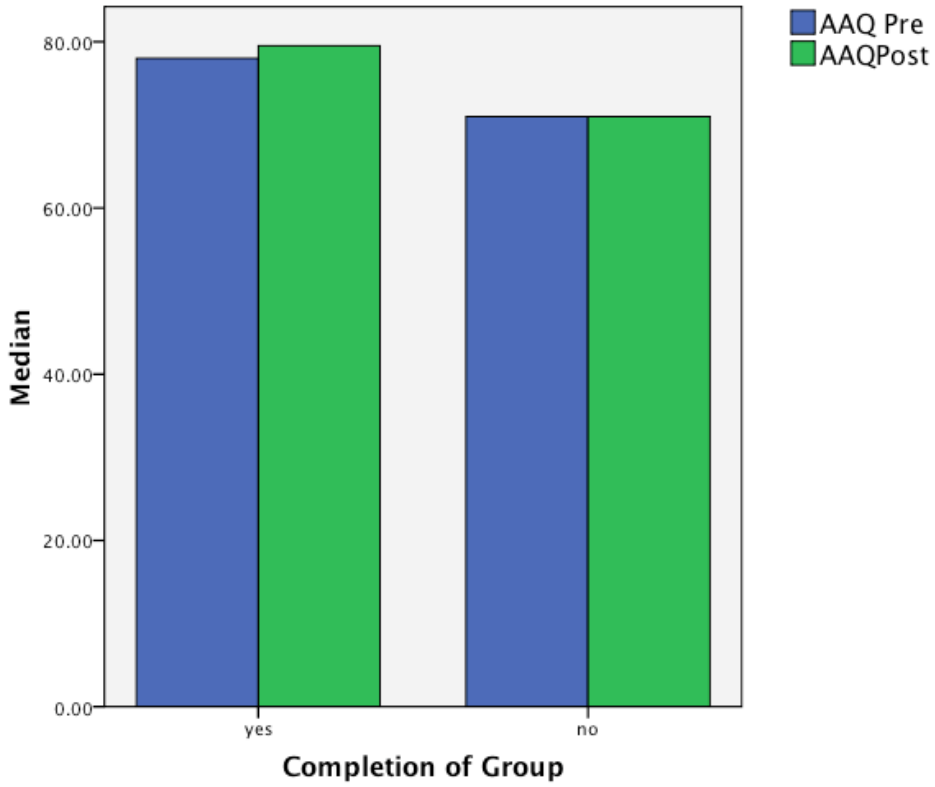

Figure 6: Bar chart showing median scores on the AAQ, pre and post treatment, for treatment completers and non-completers.

4.4.2 Secondary outcome measures

Both treatment completers and non-completers showed a small increase in state anxiety as shown in Table 8 and Figure 7. Treatment completers showed a very small decrease in somatoform dissociation (SDQ-20) whereby treatment non-completers showed no change (also see Figure 8).

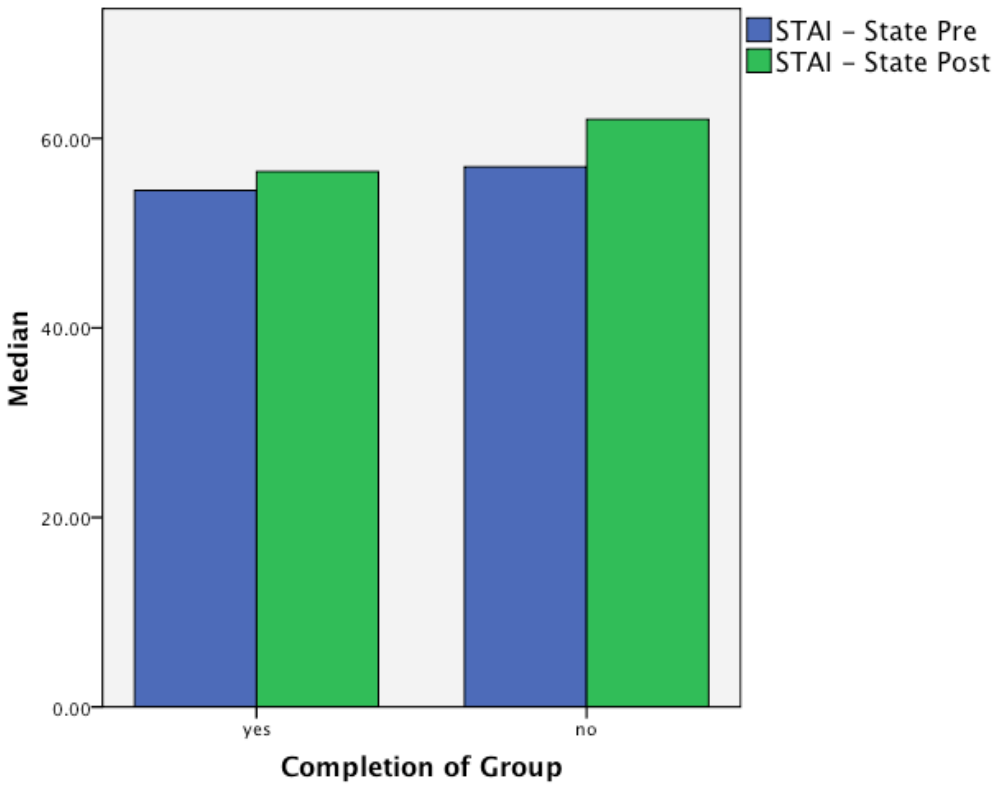

Figure 7: Bar chart showing median scores on the STAI-state, pre and post treatment, for treatment completers and non-completers.

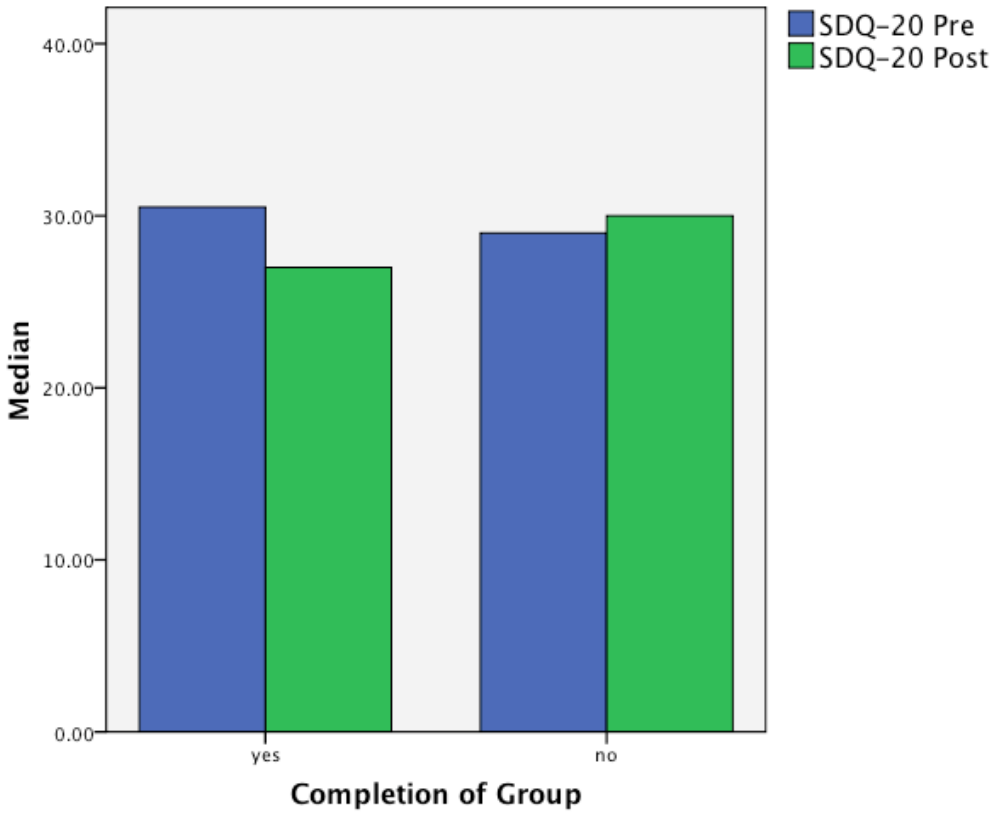

Figure 8: Bar chart showing median scores on the SDQ-20, pre and post treatment, for treatment completers and non-completers.

Regarding measures of attention the data revealed a mixed picture for both groups. Results are outlined in Table 9.

Table 9: Attention measures showing means and SDs for treatment completers and non-completers.

Measure		Treatment completers (N=12)		Treatment non-completers (N=5)	
		Median	**SD**	**Median**	**SD**
STROOP					
Part-I	Pre	93.00	39.70	79.00	6.69
(Reading)	Post	92.00	19.63	84.00	9.02
Part-II	Pre	229.00	115.23	229.00	44.72
(Colour	Post	224.00	48.40	213.00	60.66
Naming)					
Interference	Pre	145.00	81.47	147.00	44.35
	Post	141.00	45.10	128.00	63.82
Errors	Pre	3.00	4.10	2.00	4.85
	Post	3.50	2.25	3.00	2.59
TMT					
Part-A	Pre	40.00	15.95	33.00	5.12
	Post	35.50	9.05	25.00	22.32
Part-B	Pre	92.00	29.55	61.00	38.07
	Post	68.50	40.67	60.00	21.90
Errors	Pre	.50	.97	0	1.79
	Post	1.00	.75	0	1.73
DS					
Forward		6.50	1.30	7.00	.45

Mean performance speeds for STROOP and TMT reported in seconds.

Overall, treatment non-completers achieved shorter completion times for the STROOP Part-I and both parts of the TMT, with fewer errors, at both pre and post-assessment. Regarding performance on the STROOP, treatment completers did not show improvements (Part-I, II and interference) at post assessment. Treatment non-completers showed no difference in performance speed for Part I with very small improvements on Part-II and STROOP interference.

Regarding the TMT both groups showed a slight increase in performance speed on Part-A (i.e. slightly shorter completion time). However treatment completers showed a greater improvement in performance speed on Part-B compared to non-completers (see Figure 9). Treatment completers and non-completers did not differ in performance on DS forward. However, there was greater variation in treatment completers.

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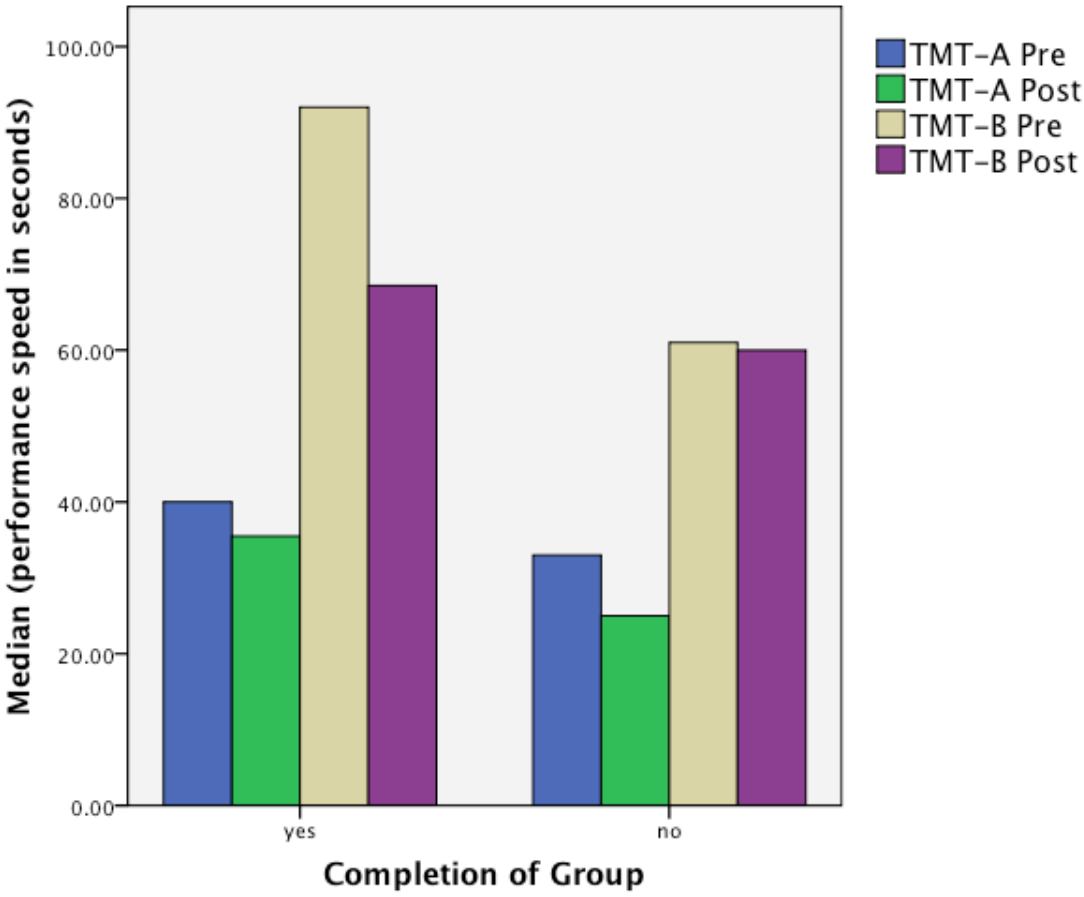


Figure 9: Bar chart showing median performance speed for the TMT, pre and post treatment, for treatment completers and non-completers.

4.5 Additional analyses – Treatment completers

With the presence of a weak dosage effect for mindfulness and no overall change in FFMQ scores from pre to post-treatment for treatment completers as a whole it was decided to conduct additional analyses. Data from treatment completers was explored for improvements on the FFMQ. The group was split into participants who gained in mindfulness and those who did not.

Out of a total of 12 treatment completers, 6 participants showed an improvement in FFMQ scores and 6 showed a decrease. Selected demographic variables (see Table 10) and pre- and post intervention scores of outcome measures (see Table 11) were explored for differences between these two groups. The aim was to investigate

whether there were any characteristics of participants, which could begin to explain observed differences.

Table 10: Descriptive statistics for participants who improved in mindfulness and participants who did not improve.

	Improved (N=6)		**Not Improved (N=6)**	
	Median	SD	Median	SD
Age	40.00	8.07	42.00	3.19
Months in psychological therapy	11.50	12.75	23.50	8.74
BPD severity index	6.00	1.64	6.50	.82
Number of sessions attended	6.50	1.47	5.50	1.47

As can be seen in Table 10 participants who improved in mindfulness did not differ in age or BPD severity compared to those who did not. However, those who did not improve had spent approximately twice as long in psychological therapy, and attended slightly fewer sessions.

Table 11 provides an overview of outcomes measures at pre- and post assessment for participants who improved in mindfulness and participants who did not improve.

Table 11: Median scores and SDs for participants who improved in mindfulness and participants who did not improve.

Measure			Improved (N=6)		Not Improved (N=6)	
			Median	**SD**	**Median**	**SD**
Primary outcome	**FFMQ**	Pre	91.50	20.66	102.00	10.02
		Post	105.50	23.78	96.50	17.61
	AAQ	Pre	83.00	12.78	78.00	14.81
		Post	79.50	14.37	80.50	14.37
Secondary outcome	**BDI-II**	Pre	34.50	10.01	41.50	10.27
		Post	36.50	9.06	38.00	8.57
	STAI-state	Pre	51.50	11.23	54.50	11.13
		Post	53.50	14.75	56.50	11.09
	STAI-trait	Pre	65.00	6.80	68.50	6.97
		Post	66.50	7.23	63.50	7.41
	DES-II	Pre	32.00	24.27	27.00	16.74
		Post	28.50	26.33	29.50	14.79
	SDQ-20	Pre	30.50	10.11	30.50	5.65
		Post	26.00	7.74	27.50	7.53
	BIS-11	Pre	74.00	7.69	85.00	12.09
		Post	75.50	7.79	85.50	11.62
Attention	DS		7.00	1.09	5.50	1.21
	TMT					
	Part-A	Pre	43.00	12.64	37.50	19.65
		Post	35.50	5.01	38.50	12.39
	Part-B	Pre	100.00	13.03	75.50	41.24
		Post	67.00	23.07	68.50	53.77
	Errors	Pre	1.00	1.09	0	.84
		Post	1.00	.41	1.00	1.03
	STROOP					
	Part-I	Pre	100.00	55.22	87.00	10.00
		Post	100.50	25.25	92.00	12.19
	Part-II	Pre	249.00	151.51	225.50	60.47
		Post	222.50	34.91	232.50	62.72
	Interference	Pre	166.00	98.78	128.50	61.18
		Post	138.00	37.58	145.00	54.58
	Errors	Pre	3.00	4.05	3.00	6.15
		Post	2.50	1.75	5.00	2.53

As can be seen in Table 11, participants who improved on the FFMQ had lower scores at pre-assessment compared to participants who did not improve (see Figure 10). The improvements equate approximately to half a standard deviation on average; those who did not improve showed the opposite pattern. There was no notable change from pre to post-intervention assessment in terms of experiential avoidance.

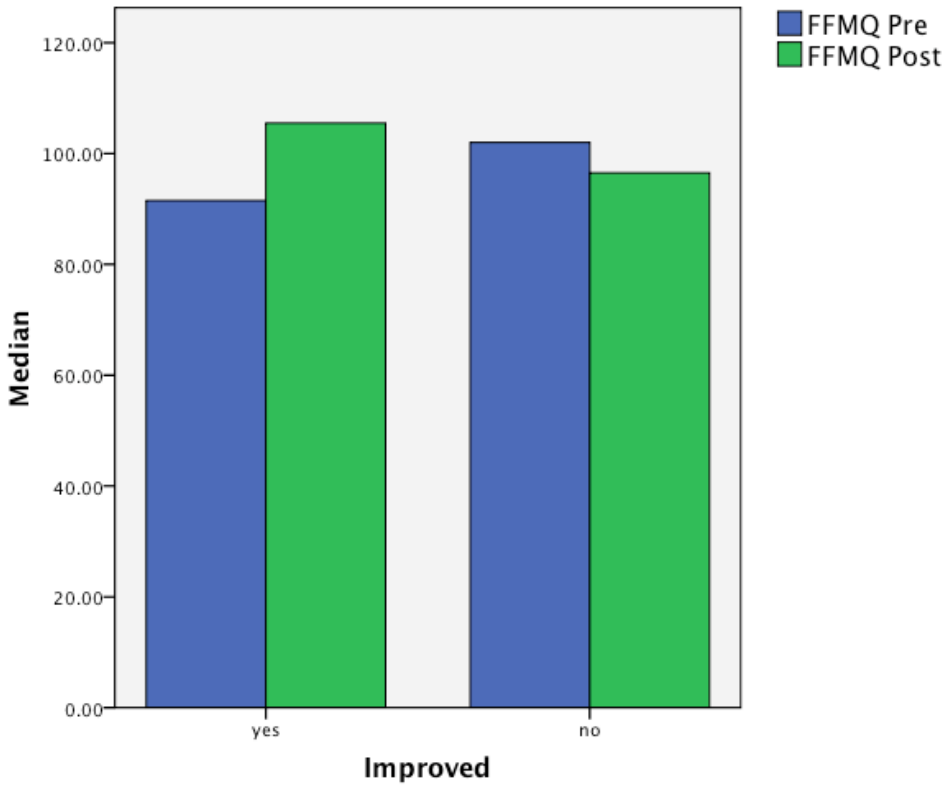


Figure 10: Bar chart showing median scores for the FFMQ, pre and post treatment, for participants who improved in mindfulness and participants who did not improve

Regarding secondary outcome measures the only notable difference appears to be in terms of depression and impulsivity. Participants who did not improve scored higher on the BDI and BIS-11 pre-intervention; in both cases this difference approximated one standard deviation. There was only very little change from pre to post-intervention assessment for both groups.

In terms of attention measures, there did not appear to be any notable differences between those who improved and those who did not on the TMT Part-A at pre and post-assessment. Similarly, there did not appear to be any notable changes from pre to post-assessment for both groups on Part-I of the STROOP, with those who did not improve generally showing better performance. Thus, there did not appear to be any changes in terms of speeded processing, captured by both tasks. However, participant who improved in mindfulness scores showed a marked improvement on TMT Part-B (cognitive flexibility, attention switching; see Figure 11) and STROOP interference (selective attention; see Figure 12). This was not the case for participants who did not improve in mindfulness scores. They showed a very small improvement on TMT Part-B and a greater interference effect on the STROOP at post assessment. It needs to be noted that participants who improved showed better performance on the DS task, with the median falling at the higher end of the normal range, compared to participants who did not improve in mindfulness, with the median falling in the marginal to normal range.

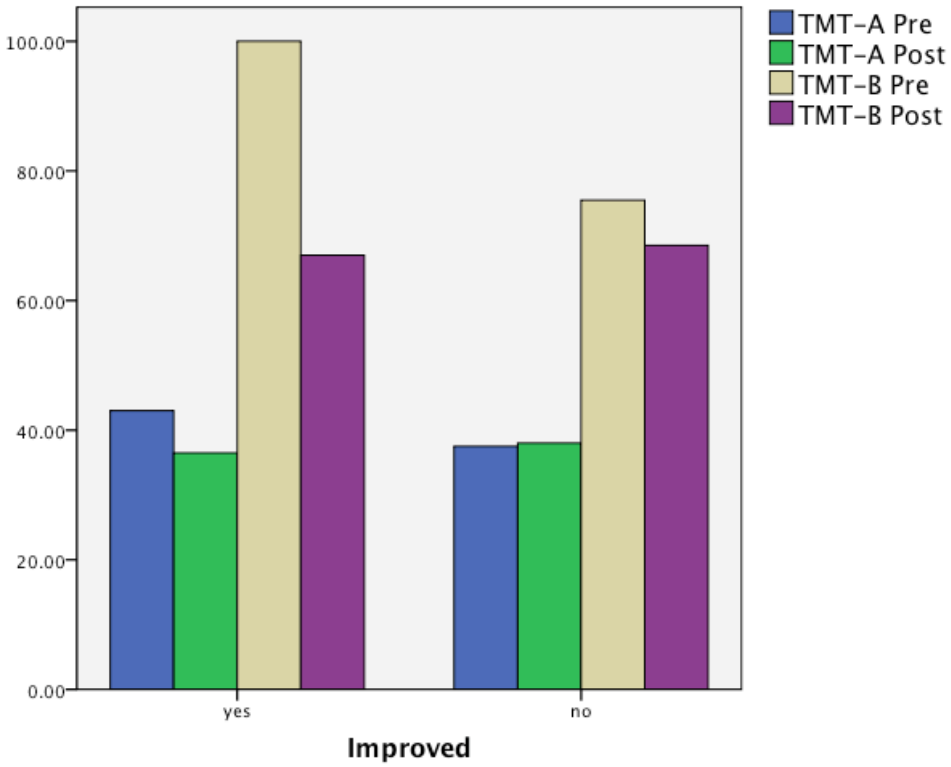


Figure 11: Bar chart showing median performance speed for the TMT, pre and post treatment, for participants who improved in mindfulness and participants who did not improve.

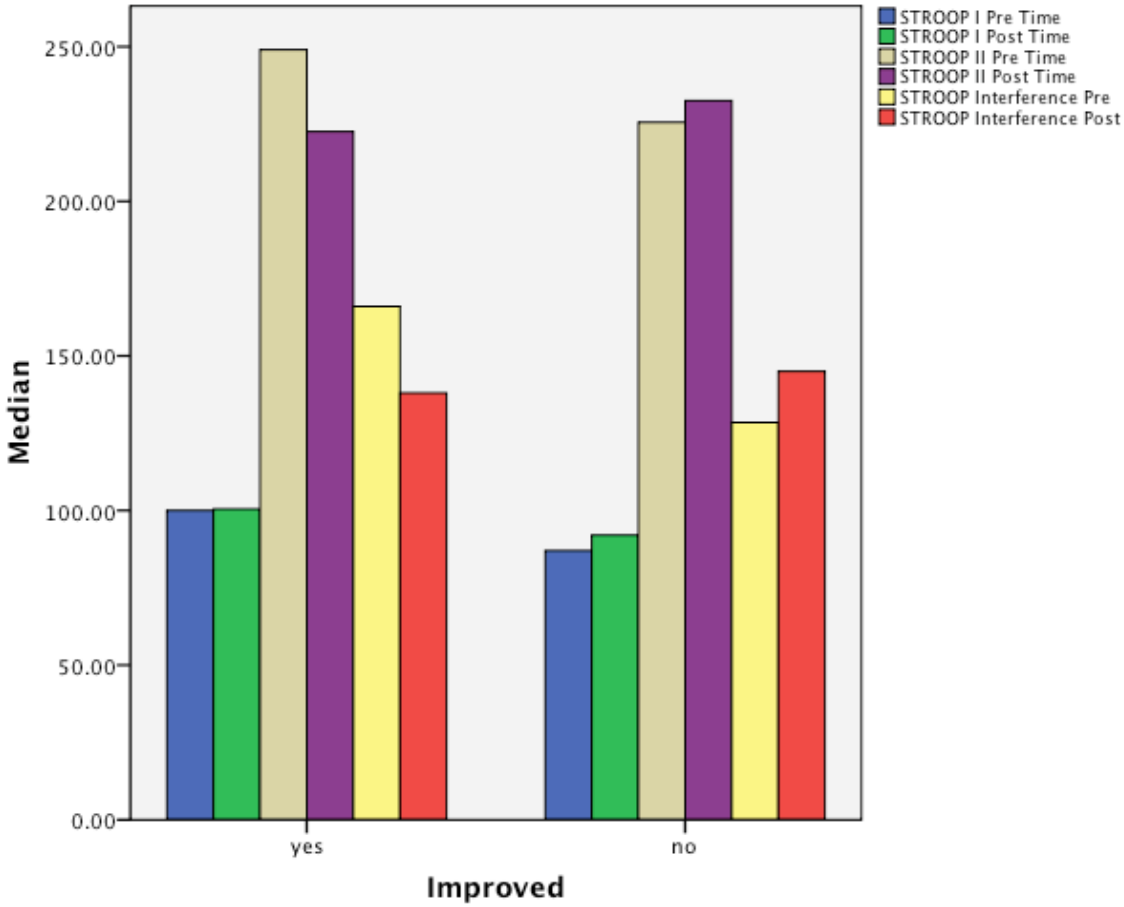


Figure 12: Bar chart showing median performance speed for the STROOP, pre and post treatment, for participants who improved in mindfulness and participants who did not improve.

Additional correlational analyses were conducted between mindfulness gain scores and gain scores of selected variables for treatment completers. The variables selected for analysis were those for which a statistically significant relationship to the number of sessions attended (i.e. dosage effect) was observed.

4.5.1 Primary outcome measures

Experiential Avoidance

Spearman's rho indicated that there was a moderate negative relationship associated with changes in AAQ scores and mindfulness gain scores (rho=-.510, n=12, p=.018) which was statistically significant. Thus, about 26% of the variation in scores on the AAQ could be explained by gains in mindfulness skills as measured by the FFMQ. The probability of this pattern of results emerging as a result of sampling error, given the null-hypothesis is true, is .018.

4.5.2 Secondary outcome measures

Anxiety

Spearman's rho indicated that there was no relationship associated with changes in STAI-state scores and mindfulness gain scores (rho=-.012, n=12, p=.485).

Dissociation

For the SDQ-20, Spearman's rho indicated that there was no relationship associated with changes in SDQ-20 scores and mindfulness gain scores (rho=.042, n=12, p=.448).

In order to ascertain the reliability of any changes observed in treatment completers at an individual level, the reliability change index (RCI) approach was used as outlined by Jacobson and Truax (1991). The variables selected for analysis were those for which a statistically significant relationship to the number of sessions attended (i.e. dosage effect) was observed.

Table 12: Reliable change index scores on selected outcome measures for treatment completers who improved in mindfulness and did not improve in mindfulness.

Participants		Primary outcome measures		Secondary outcome measures	
	(n=12)	**FFMQ**	**AAQ**	**STAI-state**	**SDQ-20**
Improved	1	.868	-1.515	-.70	-4.386
	2	1.085	.233	2.101	1.974
	3	.759	-.35	-.35	-.439
	4	3.905	-.932	.0	-.439
	5	1.736	-.583	-1.17	-.219
	6	1.844	-1.748	-3.152	-1.754
Not Improved	7	-2.495	.233	-.584	-.439
	8	-.434	-.583	-1.167	-1.316
	9	-.325	1.165	.117	-1.316
	10	-.217	-.35	-.817	.439
	11	-2.495	-1.165	1.517	-3.07
	12	-.759	-.117	-.584	2.851

As can be seen in Table 12, out of 6 participants who improved in mindfulness only one showed a reliable change, i.e. above what would be expected by error of measurement which could further be considered clinically significant (i.e. moving from below average into a range normally only observed in samples of experienced meditators), with a further two participants approaching the conventional cut-off of 1.96 (Jacobson & Truax, 1991). In participants who did not improve in mindfulness, two showed a reduction in mindfulness scores, which was above what would be expected by measurement error alone. Regarding changes in experiential avoidance none of the participants demonstrated reliable change, i.e. above what would be expected by measurement error.

RCI scores for state anxiety as measured by the STAI-state generally seem to reflect the lack of a relationship between mindfulness gain scores and changes in state anxiety. For example, out of 6 participants who improved in mindfulness, one showed an increase in state anxiety above what would be expected by measurement error with another participant showing a decrease in state anxiety above what would be expected by measurement error. Both could be considered to be clinically

significant in that the scores for the former moved from the 60th to 98th percentile with scores from the latter moving from the 94th percentile to the 34th. The same can be observed for somatoform dissociation as measured by the SDQ-20 whereby one participant who improved in mindfulness showed an increase in somatoform dissociation above what would be expected by measurement error with another participants showing a decrease. Clinical significance was problematic to establish for the SDQ-20 since the measure merely offers a clinical cut-off to identify individuals likely to be severely dissociative. In both cases scores still fell at or above this level.

4.6 Acceptability of treatment

This section provides additional information gathered from treatment completers: scores on evaluation forms completed at the end of each attended session and the subjective improvement questionnaire at post-assessment.

4.6.1 Group evaluation questionnaire

An average rating for each scale was calculated for each participant. The overall means (for all treatment completers) and SDs for each scale are shown in Table 13. Figure 13 shows a scatter diagram of average ratings for each participant on each scale.

Table 13: Group evaluation questionnaire descriptive statistics.

Scale	Mean	Minimum	Maximum	SD	Skewness	Kurtosis
Helpful (How helpful was the group)	1.89	1.40	2.83	.53	.19	-.77
Feel (How do you feel after the group)	2.45	1.40	3.33	.51	-.33	.52
Depression	2.35	2.00	2.67	.29	.22	-1.43
Anxiety	2.47	2.00	3.33	.39	1.08	1.03

N=12

As can be seen in Table 13, participants ratings indicate that the sessions overall were helpful and did not lead to changes in different aspects of mood (also see Figure13). However, on the Feel scale one participants indicated generally having felt worse after the group sessions.

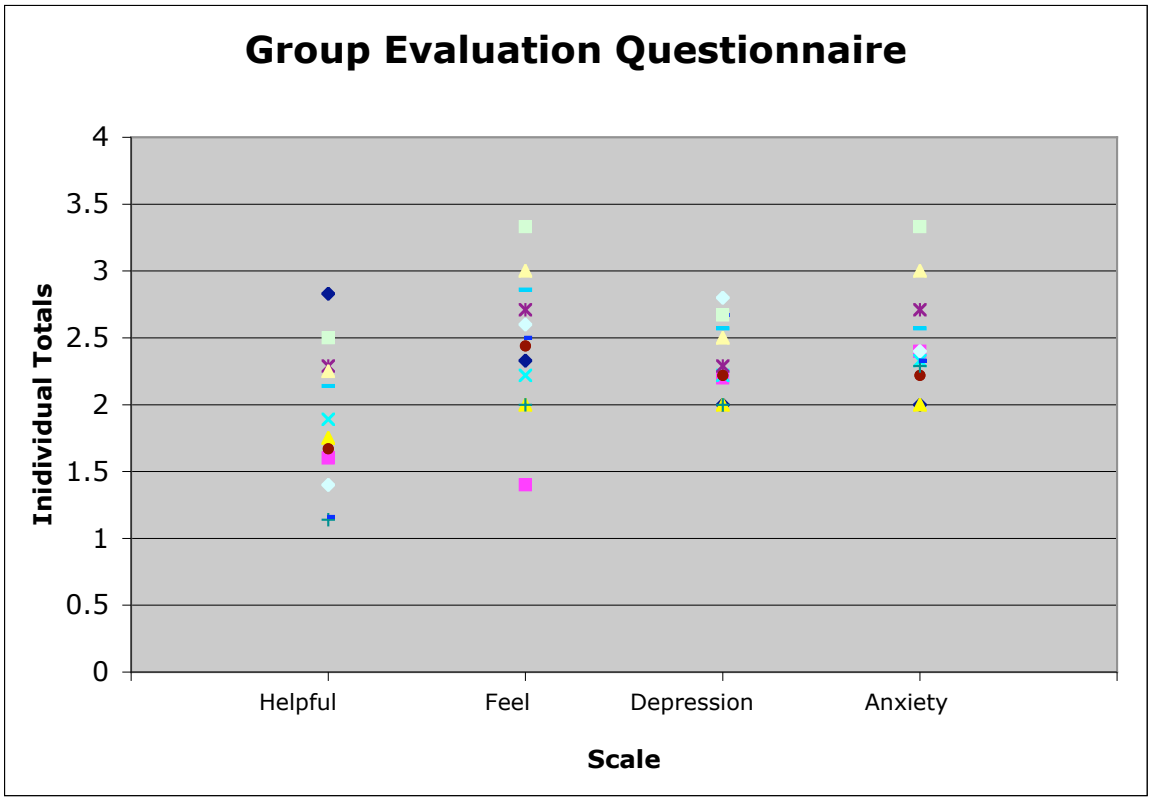


Figure 13: Scatter diagram showing average scores for each participant on different scales of the Group Evaluation Questionnaire.

4.6.2 Subjective improvement and satisfaction

Descriptive statistics for participants' ratings on different aspects of improvement and satisfaction are shown in Table 14. In terms of subjective improvement the data indicate a small positive change (mean=23%) with the largest change observed in mindfulness skills. Regarding the latter, this appears to contradict findings from the FFMQ, which generally did not change for treatment completers. Overall treatment completers indicated relatively high satisfaction with the group (mean=69%).

Table 14: Subjective improvement and satisfaction descriptive statistics.

Scale	Mean	Minimum	Maximum	SD	Skewness	Kurtosis
Improvement						
Mindfulness	39.17	10	60	18.32	-.28	-.93
Emotion Regulation	22.50	0	60	17.65	1.09	.69
Mood	12.50	-20	50	20.94	.10	-.02
Goals & Values	23.33	0	70	19.23	.99	2.47
Thoughts & Feelings	19.17	0	60	17.82	1.19	1.12
TOTAL	23.33	10	60	13.63	1.91	4.57
Satisfaction						
TOTAL	69.17	50	100	18.32	.57	-.70

N=12

5. DISCUSSION

This study had several aims: (1) to establish whether it is possible to run a MBCT group adapted for individuals with a BPD diagnosis in everyday clinical practice; (2) evaluate the effectiveness of this intervention; and, (3) to explore mechanisms through which this intervention may exert its effects on selected outcome measures.

In this section the following areas will be presented and discussed to address these aims:

(1) An overview of the main findings relating to primary and secondary outcome measures for the whole sample;
(2) An overview of tentative findings relating to primary and secondary outcome measures comparing treatment completers and non-completers;
(3) An overview of findings from additional analyses;
(4) An interpretation of findings in relation to available research and theories regarding mindfulness and individuals meeting criteria for BPD;
(5) A discussion of limitations of the study and suggestions for improvements;
(6) A discussion of the clinical implications of the findings;
(7) A discussion of potential directions of future research.

Before presenting a summary of findings from different analyses it needs to be noted that the current study generally lacked in statistical power due to small sample size. In order to enhance power it was decided to increase the alpha error to 10% and not apply Bonferroni corrected p-values. The latter is particularly problematic due to multiple comparisons, which are known to increase the probability of Type-1 errors. These issues will be discussed under limitations of the study. However, due to these methodological problems any interpretations of findings are merely tentative.

5.1 Overview of results for the whole sample

5.1.1 Sample characteristics

Participants in the current study were predominantly female (82.4%) and White British, which is representative of referrals received by the specialist PD service. The majority received therapy from the service (94.1%) and took psychotropic medication during their participation in the study (70.6%). About a third of participants had a co-morbid PD diagnosis and all participants had at least one co-morbid Axis-I diagnosis. Participants were predominantly single (64%) and unemployed (100%) at the time of the study. These rates are comparable to sample descriptions in other studies employing individuals with a BPD diagnosis (e.g. Skodol *et al*., 2002; Zanarini *et al*., 2004). On commencing MBCT-a, participants in this study had spent an average of 20 months in psychological therapy. This is in line with recommendations for longer-term therapy for individuals with BPD (NIMHE, 2003; Zanarini *et al*. 2004; Linehan, 1993). The characteristics identified thus suggest that the current sample can be considered representative of the clinical population under study.

5.1.2 Primary outcome measures: Mindfulness and experiential avoidance

Analysis of the whole sample revealed no change as a result of MBCT-a in mindfulness as measured by the FFMQ. The mean scores for the whole group were approximately one standard deviation lower than that reported for the general population in recently published data for the questionnaire (Baer *et al*., 2008). This is in line with the limited research evidence available, which has demonstrated lower levels of mindfulness skills in clients meeting BPD criteria compared to other samples (e.g. Wupperman, submitted; Brown & Ryan, 2003; Baer *et al*., 2004). Similarly, analysis of the whole sample did not reveal changes in experiential avoidance as measured by the AAQ. Only limited normative data is available for the AAQ. For example, Bond and Bunce (2003) reported mean scores of 58 for a non-clinical sample of UK employees. Comparatively, mean scores in the current study were relatively high, lending some support to theories conceptualising BPD as a disorder characterised by experiential avoidance (Hayes *et al*. 1996).

Data were explored for dose dependent effects (i.e. whether more sessions lead to improvements). This indicated that there were only weak relationships between mindfulness and number of sessions attended and experiential avoidance and number of sessions attended. In addition, these findings only reached statistical significance. Thus, there was merely a trend in the data suggesting that dosage effects are present.

5.1.3 Secondary outcome measures

Changes in secondary outcome measures were hypothesised to be contingent on changes in mindfulness (i.e. acquisition of mindfulness skills) as a result of MBCT-a. In line with this notion, secondary outcome measures did not change overall as a result of MBCT-a, apart from trait anxiety. Scores on clinical measures were generally high. For example depression (BDI-II) at pre- and post assessment fell into the severe range.

Regarding anxiety, whole sample analysis revealed no change in state anxiety but a statistically significant decrease in trait anxiety. However, there was a moderate negative relationship between changes in state anxiety and the number of sessions attended which was statistically significant; this was not the case for trait anxiety, which showed no relationship to dosage. Careful consideration of the significant finding for trait anxiety would suggest that changes in trait anxiety are not due to MBCT-a but may reflect difficulties in self-report or an error due to the small sample size. In addition, changes only reached significance at an alpha level of 10%. Had a Bonferroni adjustment been applied, as would be appropriate given multiple comparisons, this result would also not have been statistically significant.

There were no statistically significant changes on measures of dissociation. Scores for cognitive dissociation were above the clinical cut-off on average, with a generally large range. Scores for somatoform dissociation were below clinical cut-off typically used in clinical practice to identify individuals likely to be severely dissociative. There was no relationship between changes in cognitive dissociation and number of sessions attended. However, analysis revealed a moderate negative relationship between

changes in somatoform dissociation and dosage. In the absence of changes in mindfulness and experiential avoidance the meaning of this is not clear.

Impulsivity, as measured by the BIS-11, did not change as a result of MBCT-a. Mean scores at both pre and post-treatment were high, above the cut-off of 74 used in research to distinguish individuals with high and low levels of impulsivity (Moeller *et al*. 2001). There was no relationship between changes in impulsivity and number of sessions attended.

Regarding measures of attention (TMT and STROOP), analyses did not reveal any statistically significant changes as a result of MBCT-a. Performance speed for part A of the TMT placed participants at the 20th percentile according to norms published by Tombaugh (2004) both pre and post assessment. For part B mean performance speed fell at the 10th percentile at pre and post-assessment. Regarding performance on the STROOP, performance speed for both Part-I and II fell at the 25th percentile pre-treatment and at the 35th percentile post-treatment (Mitrushina *et al*., 2005). The same pattern was observed for the STROOP interference effect. These results are in line with reports of deficits in attention and cognitive flexibility in individuals meeting BPD criteria (Ruocco, 2005).

As already noted, secondary outcome measures were hypothesised to change as a result of changes in mindfulness. Given that mindfulness is generally understood to be a form of attentional control this was particularly the case for measures of attention. The lack of statistically significant changes in measures of attention could therefore be considered to be in line with expectations given the absence of changes in mindfulness. However, the low statistical power of this study means that this is merely speculative as it provides an alternative explanation for the lack of statistically significant findings.

5.2 Comparison of treatment completers and non-completers

Participants were categorised as having completed MBCT-a if they had attended at least 4 of the 8 sessions. Out of the total sample of 17, 12 participants fell into this

category; 5 had either not attended any sessions or fewer than 4 (treatment non-completers). Due to the small numbers and uneven groups it was decided to compare median scores between these two groups on a descriptive level rather than conducting tests to explore statistical significance. Only measures where there was an indication of a dosage effect were selected for analysis. These included mindfulness, experiential avoidance, state anxiety and somatoform dissociation. The aim was to explore any differences, which may have been masked by the inclusion of treatment non-completers. Given the presence of a small dosage effect for mindfulness, measures of attention where also explored.

5.2.1 Primary outcome measures

Treatment non-completers had higher pre-treatment scores than treatment completers on the FFMQ. However, treatment non-completers showed a decrease in mindfulness scores at post-treatment assessment, falling below pre-treatment scores for treatment completers. In contrast treatment completers overall showed no change in mindfulness scores post-treatment. This could be taken to suggest that attendance at the group may have had a stabilising effect on mindfulness skills. However subsequent analysis showed that half of treatment completers improved in mindfulness, and half showed a decrease. It is therefore difficult to draw any conclusions and possible explanations for these observations are considered below. Regarding experiential avoidance, treatment completers and non-completers did not show any change. Given a lack of change in mindfulness skills for treatment completers this would be in line with expectations. However, given the small sample size these are very tentative conclusions and caution is needed regarding the generalisability of findings.

5.2.2 Secondary outcome measures

Both groups showed a small increase in state anxiety. This was at odds with the finding of a moderate negative correlation between scores and number of sessions attended. One possible explanation involves the use of different measures of central tendency for the correlation (mean differences in the form of gain scores) and group differences (median). However, a very similar relationship was revealed using Spearman's rho, the non-parametric alternative to Pearson correlations. One

hypothesis may be that attending a group where one has to become aware of one's thoughts and emotions might heighten anxiety and general emotional arousal. This could further be hypothesised to be one reason why a small number of participants only attended a few sessions. Alternatively, not attending the group may have left some individuals feeling uncontained, thus also raising anxiety. Thus, there may be different explanations for the same finding. Regarding somatoform dissociation, only treatment completers showed a very small reduction, with treatment non-completers showing no change.

Regarding measures of attention (DS, TMT, STROOP), treatment non-completers generally performed better. Deficits in attention could potentially make extended mindfulness practice more difficult, which could impact on motivation to continue with the practice and to attend the group. The noted observation could therefore suggest that deficits in attention are less likely to explain likelihood of group completion. Improvements in performance were generally greater for treatment non-completers. It cannot be ruled out that observed changes in performance for treatment completers and non-completers are not due to practice effects. However, an interesting finding was the lack of improvement on Part-B of the TMT for treatment non-completers. In contrast, treatment completers showed improved performance. However, this still fell below performance by treatment non-completers at both points of assessment. Possible explanations for this will be considered below.

5.3. Additional analyses

Since there was a weak positive relationship between changes in mindfulness scores and number of sessions attended, with the absence of changes in mindfulness scores in treatment completers as a whole it was decided to conduct additional analyses. The aim was to see if there were factors, which might begin to explain the differences and inform future studies. Data from treatment completers was explored for changes on the FFMQ. This revealed that 6 participants improved in terms of mindfulness (an average of half a SD), and 6 participants showed a decrease in mindfulness. These two groups did not differ in terms of age or BPD severity. However, those who did not improve had spent approximately twice as long in psychological therapy and tended to

attend slightly fewer sessions. This suggests that it may be possible that those who had received longer years of therapy might be more chronic or severe in their presentation.

In terms of outcome measures, participants who did not improve on mindfulness scored higher on the BDI-II and BIS-11 pre-treatment. There did not appear to be any notable difference on other clinical outcome measures. However, those who improved in mindfulness also showed improvements on two measures of attention: TMT Part-B (i.e. cognitive flexibility or attention switching) and STROOP interference (selective attention). This was not the case for participants who did not improve in mindfulness. The data thus suggest that as mindfulness improves so does attention, lending tentative support to models of mindfulness and hypotheses of this study. However, it needs to be noted that participants who did not improve performed less well on DS forward. Thus it cannot be ruled out that observed changes in attention are not due to or mediated by differences in attention capacity.

Since there was evidence for weak to moderate dosage effects it was decided to conduct additional correlational analyses between mindfulness gain scores and gain scores of selected variables. Only measures where there was an indication of a dosage effect were selected for analysis. These included mindfulness, experiential avoidance, state anxiety and somatoform dissociation. This revealed that only changes in AAQ scores (experiential avoidance) showed a moderate negative relationship to mindfulness gain scores. No relationship was found for changes in state anxiety or somatoform dissociation.

In order to ascertain whether there were any reliable changes at an individual level on outcome variables which showed a dosage effect, the RCI approach was used (Jacobson & Truax, 1991). However, only two participants who improved in mindfulness (out of 6) showed a change that can be considered reliable or above what would be expected by measurement error. Two participants who did not improve in mindfulness actually showed a reliable decrease in mindfulness, i.e. above what would be expected by measurement error. None of the changes observed for experiential avoidance were above what would be expected by measurement error.

The RCI scores for state anxiety and somatoform dissociation generally reflected the lack of association between mindfulness gain scores and changes in these two variables as noted above, thus indicating a heterogeneous treatment trajectory.

5.4 Acceptability of treatment

Data from the evaluation forms completed after each session indicated that participants generally found sessions helpful but that sessions did not lead to changes in different aspect of mood (e.g. depression, anxiety). However, one participant indicated having felt consistently worse after sessions. Participants indicated high levels of satisfaction with the group and reported small positive improvements, particularly in mindfulness. The latter is at odds with a general lack of change on selected outcome measures.

5.5 Interpretation of findings

The following section will look at a number of issues, which might explain the general lack of findings as well as the trends observed as part of additional analyses.

5.5.1 Format of intervention

It is possible that the current 8-session format is not appropriate for clients meeting BPD criteria. For example, Huss and Baer (2007) reported positive findings when providing MBCT for depression as an adjunct to ongoing DBT treatment in one female client meeting BPD criteria. However, apart from having extended this to a 12-session format, MBCT was delivered individually. This is likely to have allowed much more time for individually tailored discussion of cognitive exercises, review of practice and application of mindfulness skills in everyday life. In comparison, in the group format clients are expected to draw conclusion from other people's experiences (e.g. of practicing mindfulness) as well as their own. A good example of the potential inadequacy of the current format was reflected in Session 7. Participants are invited to categorise daily activities into ones that are nurturing and draining, and later into ones that give them a sense of mastery and pleasure. This proved difficult for many participants despite the level of therapeutic input some had already received at this stage. Whatever the reasons (e.g. general lack of activities, cognitive demands of the

exercise) it was the facilitators impression that much more individual assistance was required than could be provided.

Other instances indicating the value of a more drawn-out format of delivering session contents consisted of difficulties in facilitating cognitive exercises. Participants at times appeared to get 'stuck' on details of these and were not always able to enter a mindset different from their own at the time. For example, at times participants made repeated references to incidents or situations, which played strongly on their mind during a particular session. Similarly, at such times participants were less able to imagine or entertain mood states different to ones they were experiencing at the time. This of course is in line with the notion of mentalisation and difficulties with this as outlined by Bateman and Fonagy (2004) in their conceptualisation of BPD.

5.5.2 Lack of change and ICS

The lack of change needs to be further considered from a theoretical perspective. For example, Duff and Kinderman (2006) provide an account outlining the application of ICS to the development and maintenance of PDs. In summary, they propose that the key difficulty in PD is a system that due to its way of functioning does not allow individuals to make use of new information. This is proposed to be due to two processes: (1) information not being judged as important enough to be utilised to develop or change propositional and implicational representations (non-discriminative processing) and (2) difficulties in modifying dysfunctional schemata internally due to 'interlock'.

Either process leads to information being denied access to the implicational level, the level of information processing that is held to influence thoughts, feelings and behaviours. Dysfunctional schemata are thereby maintained. Thus, treatments, which only seek to increase insight or provide information about behaviour, are less likely to be effective.

However, as was outlined earlier, the model implies that one approach to facilitating change lies in treatments, which reduce interlock. This would allow individuals one way of accessing information (e.g. awareness of mental processes, perceptual

information normally ignored), which could alter existing schemas. The authors propose mindfulness techniques as one approach that could achieve this. However, despite calling for an empirical evaluation of this, the article falls short of addressing what other treatments have long established, which is the duration of such treatment.

It remains possible that even approaches, which directly target one of the mechanisms proposed to maintain emotional and behavioural difficulties, i.e. interlock, will require more time to lead to noticeable change. This may be due to a wealth of learning experiences, which have led to the development and maintenance of dysfunctional schemas. The interesting finding of a lack of change in mindfulness in treatment completers, and the decrease in mindfulness in treatment non-completers may indicate the beginnings of change processes. For example, some clients noted during the last session, how they have noticed changes in their tendencies to react, and found themselves remembering certain catch phrases such as 'thoughts are not facts'. These, admittedly isolated, incidents appeared to help them hold back in their reactions and attend to what was happening in the situation, both internally and externally. As such, the study is far from conclusive regarding the effectiveness of MBCT-a.

5.5.3 Clinical features

Participants in this study generally scored high on selected clinical measures, particularly depression, cognitive dissociation and impulsivity. Whereas this is in line with reports of difficulties experienced by participants meeting BPD criteria, scores for depression and impulsivity were higher pre-treatment for individuals who did not improve in mindfulness compared to people who did improve. Whilst any conclusions are merely speculative, it does raise the question whether elevated levels of depression and impulsivity would warrant treatment prior to commencing a mindfulness-based intervention. For example, when MBCT was used to treat a heterogeneous sample of adult outpatients (suffering with either anxiety, depression or both), pre-intervention scores only reached a mean of about 16 on the BDI-II (Ree & Craigie, 2007). One hypothesis may therefore be that participants in this study were too unwell for an MBCT group or required more sessions. The limited statistical power of this study makes it difficult to draw conclusions regarding this. Similarly, raised levels of

dissociation may mean that participants are less likely to benefit from offered interventions (e.g. Linehan, 1993; Foertsch, Manning & Dimeff, 2003; Kennerly, 1996). For example, mindfulness is likely to increase emotional experiencing and thus lead to greater emotional arousal, which could trigger dissociation. In addition, individuals who dissociate are likely to have more avoidant coping styles, possibly making mindfulness less likely to be effective in the short term. Such difficulties might be more easily addressed in individual sessions rather than a group format.

In addition, participants who did not improve in mindfulness had spent almost twice as long in psychological therapy compared to those who did improve. Time in treatment can be argued to represent an indirect measure of severity, chronicity or both (e.g. Coryell *et al*. 1998; Endicott & Spitzer, 1978). It is therefore possible that clients who did not improve had a more chronic and/or severe clinical presentation. This would be in line with high levels of depression and impulsivity found for this small sub-group, despite having spent a considerable amount of time in treatment. Alternatively, participants who did not improve may have developed certain schemas regarding psychological interventions possibly characterised by hopelessness given the amount of time already spent in treatment. Somewhat in line with this is the finding that participants who did not improve attended slightly fewer sessions. Although speculative, if such schemas had developed, it would be necessary to address these, as they would be highly likely to interfere with the effectiveness of an intervention (Needleman, 2003).

5.5.4 Attentional capacity

There was no difference between treatment completers and non-completers in terms of attention capacity as measured by DS forwards. Performance generally fell into the average range. However, comparisons of individuals who improved in mindfulness to those who did not revealed that the former performed better. Bearing in mind that this is based on a very small sub-sample of 6 participants, it nonetheless leads to an ethically difficult question: should mindfulness-based interventions primarily be offered to individuals with at least average attention capacity? As noted, it is possible that deficits in attention may make it more difficult to practice mindfulness for

extended periods and thus less likely that participants engage in practice. A lack of practice is likely to also impact on benefits to participants (see below). Perhaps at the very least it might suggest that a change in format is warranted to maximise benefits to clients. This is particularly the case in the clinical population under study, which has been shown to have deficits in different forms of executive functioning and attention which were somewhat confirmed here (Ruocco, 2005). Finally, it cannot be ruled out that noted gains in measures of attention in participants who improved in mindfulness are not due to or mediated by higher levels of attention capacity, a confounding variable.

5.5.6 Changes in STROOP interference and TMT Part-B

An interesting finding were the improvements in STROOP interference and TMT Part-B for participants who improved in mindfulness as measure by the FFMQ. Participants who did not improve in mindfulness showed no improvement for STROOP interference and only small improvement in TMT Part-B. This could suggest that differences between treatment completers and non-completers on TMT Part-B may have been largely due to the sub-sample of individuals who improved in mindfulness. Thus, the results suggest that participants who improved in mindfulness also improved in particular forms of attention: cognitive flexibility demonstrated by attention switching as measured by TMT Part-B and selective attention as measure by STROOP interference. However, making a direct link between these improvements is highly speculative given the very small number of participants and lack of adequate comparison group. Additionally, overall, performance was generally poor. For TMT Part-B participants who improved in mindfulness performance fell at the 10th percentile pre-treatment and the 20th percentile post-treatment; for participants who did not improve performance remained at the 20th percentile (Tombaugh, 2004). Similarly, performance on STROOP interference were in the 25th percentile pre-treatment and the 35th percentile post-treatment for participants who improved in mindfulness. Results may therefore also reflect a regression to the mean (e.g. Cook & Campbell, 1979) or practice effects common on measures of attention (Lezak, *et al*., 2004). Findings nonetheless do lend some support to models of mindfulness as put forward by Shapiro *et al*. (2006). It also lends some support to the notion of

mindfulness training attention abilities (Barnhofer *et al*. 2007) and offers one justification as to why mindfulness is worth incorporating into treatments for BPD. However, further more methodologically robust research is necessary to draw firm conclusions.

5.6 Limitations of the current study and suggestions for improvements

There were several limitations making it difficult to draw firm conclusions from the findings.

5.6.1 Statistical Power

One major limitation of the study was the small sample size, especially in view of generally small effect sizes. Power for the current study was re-calculated using G*Power3 (Faul, Erdfelder, Lang & Buchner, 2007). With d set at .01 (the effect size calculated for mindfulness) power was estimated to be .10; with d set at .10 (approximate effect sizes obtained for other measures) power of this study was estimated to be .19. There was thus a less than 20% chance to find an effect that is present (Barker, Pistrang & Elliot, 2002) using the whole sample. Similarly, power analysis revealed that a total sample size of 19 would have been required to detect a medium size effect with 80% power and alpha level of 10% (1-tailed) using within group comparisons. For between group comparisons, a total sample of 74 (i.e. 37 per group) would have been required. The current study fell short of these targets (only 17 participants were in the whole sample and only 12 completed the minimum number of sessions) and did not reach the level of power required to find an effect. Recruitment of clients was slow and the time limit to complete the study contributed to participant numbers being lower than required. Thus one improvement would consist of the use of a larger sample. This could be achieved by running several groups over an extended period of time.

5.6.2 The probability of a Type-1 error

Due to the small sample size it was decided not to apply Bonferroni corrected p-values and moreover, increase the alpha error to 10%. Thus Type-1 errors (i.e. erroneous rejection of the Null-hypothesis) were increased in this study, which

involved multiple comparisons, further weakening any found effects and conclusion that can be drawn. Applying the correct statistical corrections and establishing the required sample size necessary to find an effect would therefore constitute further improvements. Alternatively, employing fewer measures would also address this problem by reducing the number of possible comparisons.

5.6.3 Lack of a treatment comparison group

Another problem relates to the use of primarily within-group comparisons to explore mechanisms through which the current treatment exerts its effects. For example, in order to draw conclusions about any changes in attention being due to mindfulness per se, it would seem important to adopt a Randomised Control Trial (RCT) design with an alternative treatment. An alternative treatment could substitute mindfulness exercises with relaxation exercises and focus on the impact of stress rather than depression or other emotional difficulties. This would control for psychoeducative and cognitive therapy components of MBCT as well as physiological changes associated with the practice of mindfulness, which typically leads to a more relaxed state. Thus, the noted improvements on the TMT Part-B and STROOP interference in participants who improved in mindfulness scores, although very interesting, cannot not be attributed to mindfulness per se. Whereas an RCT design is desirable, the client group of interest is typically difficult to recruit to such projects (e.g. Roth & Fonagy, 2005). In addition, it was not possible to execute a RCT within the timescale available for this study, despite having been an ambition of this project.

5.6.4 Quantitative research design

It could be argued that given the severe methodological limitations of the study it may have been more appropriate to employ a qualitative research design. For example, clients' experiences of attending an MBCT group could have been captured in an interview format and analysed using Interpretative Phenomenological Analysis (e.g. Smith & Osborn, 2003). This would have allowed for more subtle changes to be captured, which may have been missed in a quantitative design primarily using questionnaires. However, the available research evidence points to a quantitative exploration with positive effects having been reported in a range of clinical

populations. Similarly, clients tended to report the group to be helpful and noticed benefits which they shared during sessions as well as outside, for example with individual therapists. Although this anecdotal evidence may be supported by a systematic analysis of qualitative content, it is not a substitute for a more quantitative exploration of treatment effectiveness, which the current study aimed to achieve.

5.6.5 Lack of follow-up

The current study only reports post-treatment findings measured immediately after completion of the group. Whereas studies evaluating MBCT (and MBSR) assessed participants also immediately post-treatment and found significant changes, they also included follow-up assessments of varying lengths. The finding that treatment completers had not changed in mindfulness at post-assessment, with a drop in FFMQ scores for non-completers, may indicate that for this client population changes may take longer to emerge. This is in line with years of research showing the lack of effectiveness of short-term treatments for clients meeting PD criteria (e.g. Tyrer *et al*., 2003). More importantly, however, it makes follow-up assessments necessary to draw stronger conclusions regarding the effectiveness of MBCT in its 8-session format. The need for long follow-up periods when establishing effectiveness of psychological therapies has been particularly noted for individuals meeting PD criteria, regardless of treatment format (e.g. BPS, 2006). This would thus appear to be an important improvement to the current study.

5.6.6 Levels of mindfulness practice

It was difficult to ascertain participants' engagement with homework exercises (despite attempts to do so). Participants were asked to provide homework record forms at each session. Clients frequently did not bring folders containing sheets or, when asked to complete a blank sheet, were unable to remember frequency of practice over the past week. There is some anecdotal evidence, however, that those who were the most committed to practicing mindfulness outside of session had greater benefits. For example, a number of clients who reported having practiced daily also reported instances of having been able to apply the 3-minute breathing space during difficult situations which would normally have led to episodes of self-harm or extreme

interpersonal difficulties (e.g. verbal or physical aggression). Thus, a further improvement to the study would be in the form of ascertaining participants' level of practice between sessions, as well as between completion of the group and later follow-up. This would also provide further insight into minimum requirements for treatment effectiveness.

5.6.7 Treatment fidelity

Another explanation regarding a lack of findings lies in treatment fidelity. It was not possible to formally ascertain treatment fidelity as part of this study due to time and resource limitations. However, an evaluation could have been facilitated by the use of the MBCT adherence scale developed by Segal, Teasdale, William & Gemar (2002). Thus one improvement to the study would be to assess treatment fidelity to draw firmer conclusions.

5.6.8 Sample characteristics

Although the sample of participants in this study can be considered to be largely representative of the client population under study it needs to be acknowledged that the sample was predominantly female. Thus, there needs to be caution to extend results to men with BPD.

Similarly, the majority of participants were prescribed psychotropic medication, including antipsychotics. It remains possible that this had an impact on the effectiveness of the intervention in its current format and may represent a counterindication due to sedative effects and the potential impact on cognitive performance (e.g. Ruocco, 2005).

Concerns have been raised in the literature regarding the diagnosis of personality disorders. BPD has attracted particular criticism and diagnosis remains controversial (Roth & Fonagy, 2005; Allen, 2004). For example clinical utility has been questioned due to diagnostic criteria, which allow for 151 possible ways to incur a BPD diagnosis. Consequently, this client population is one characterised by heterogeneity (Bateman & Fonagy, 2004; Skodol, 2005) and substantial Axis-I and Axis-II

comorbidity (e.g. Zanarini *et al.*, 2004, report this to be at 96.9% for Axis-I disorders). It was not possible to explore different aspects of heterogeneity (e.g. diagnoses, medication, number of BPD criteria met) and the impact these potential moderating variables had on treatment effectiveness. This would only be possible in a study using a much larger sample size, however would constitute an improvement to the current study.

5.7 Clinical implications of the study

Given the lack of findings of this underpowered study it is difficult to draw clear conclusions regarding the effectiveness of MBCT-a and corresponding clinical implications. At present, without any follow-up data, the evidence would suggest that MBCT-a may not be recommended to clients with BPD at least in its current format. It needs to be highlighted that the treatment with its extended mindfulness practices did not lead to deterioration on outcome measures used, providing some support to the use of such practices for clients with BPD. This had been judged too difficult in the literature and had therefore not been incorporated in treatments (e.g. Linehan, 1993).

Similarly, it has been suggested that some forms of meditation may lead to dissociative experiences and may end up being used to such ends (Williams & Swales, 2004). For example, some forms of meditation have been reported to potentially lead to side-effects, including confusion, disorientation and mild dissociation in a small number of participants (e.g. Perez-De-Albeniz & Holmes, 2000; MAMIG, 2006). The relationship between mindfulness meditation and dissociation is therefore not clear. Despite not being able to draw firm conclusions, the study seems to indicate that mindfulness meditation did not have detrimental effects in this client population where dissociation is common (Ebner-Priemer *et al*., 2005). Participants in the current study showed elevated levels of cognitive dissociation as measured by the DES-II. None of the analyses (including whole sample, treatment completers vs. non-completers) revealed a change in cognitive dissociation, including participants who improved in mindfulness. In addition, a small decrease in somatoform dissociation was observed.

Similarly, session evaluation forms indicated that the treatment was generally acceptable to participants. This was also reflected in the fact that out of 16 participants who attended at least one session, only 4 dropped out (25%). Although a comparatively short treatment for this client group, it nonetheless contrasts with the 40-50% drop out rate typical for groups (e.g. Roth & Fonagy, 2005; Tyrer *et al*., 2003). The current study thus provides some evidence that it is possible to run a MBCT group with clients meeting BPD criteria, with the intervention generally being well received. The fact that the study was conducted in a naturalistic setting using a sample that appears representative of the client population under study, are particular strengths, increasing external validity (Barker *et al*., 2002).

In addition, participants reported benefits from the group informally. Whereas such anecdotal evidence needs to treated with caution, it further points to the need to employ longer follow-up periods and more powerful research designs before firm conclusions may be drawn. Mindfulness has a firm role in DBT and findings from the current study support reports of low levels of mindfulness in BPD clients. Thus, the current study does not rule out mindfulness training as potentially important or providing benefits to clients. The format and mode of delivery, however, may be crucial. The current study does not seem to support the current 8-week group format. Thus adaptations as noted previously may be necessary to maximise treatment effectiveness.

Though not an aim of this study, it does add to the existing literature regarding the role of experiential avoidance and mindfulness skills in BPD. In terms of experiential avoidance, this study is one of the first to report AAQ scores for outpatients meeting BPD criteria using the 16-item solution. With these further having been found to be high, the current study seems to supports theories, which conceptualised BPD as a diagnosis characterised by experiential avoidance (e.g. Hayes *et al*., 1996). Similarly, it adds to accumulating evidence showing that participants with BPD tend to score lower on measures of mindfulness compared to the general public (e.g. Brown & Ryan, 2003). This study is the first to report results on the FFMQ for this client population. Thus, apart from difficulties being due to dysregulated emotions, a

reduced capacity to attend to internal and external experience may also play a role in BPD (Wupperman, submitted). Accordingly one important clinical implication of the study is that it indicates the need to target experiential avoidance and mindfulness skills and incorporate these into interventions.

The current study also adds to the evidence base regarding cognitive difficulties in individuals meeting BPD criteria. Whereas participants generally had below average performance on the TMT and STROOP, the study also showed that at least a sub-sample of individuals had limited attention capacity as measured by DS forward. These participants did not improve in mindfulness. Limitations in attention may therefore need to be taken into account when considering mindfulness-based interventions for clients. However this requires further research. At the very least, clinicians need to be alert to the possibility that clients may have difficulties with attention and thus also learning, perhaps making it more difficult to benefit from therapy sessions (Ruocco, 2005). These may be exacerbated by prescribed medication especially ones with sedative effects; again clinicians will need to bear this in mind.

5.8 Directions for future research

The current study has highlighted several improvements which could be addressed in future studies, as well as areas in the literature which could be explored further. Limitations have already been discussed and will therefore be only mentioned here with some ideas regarding how improvements may be achieved.

The current study did not reach the statistical power required to find an effect. At the same time, it showed that at least a sub-sample of clients meeting BPD criteria improved in mindfulness following completion of MBCT-a. This was accompanied by changes in particular aspects of attention as predicted in models of mindfulness (Bishop *et al*., 2004; Shapiro *et al*., 2006). This would seem to warrant a repetition of the current study with a much larger sample. It is also recommended that future studies consider increasing the number of sessions constituting the minimum effective dose, for example from four to at least six. This recommendation is based on the finding that participants who improved in mindfulness attended slightly more

sessions. Similarly, Ree & Craigie (2007) defined treatment completion as having attended at least six out of eight sessions in their evaluation of MBCT. In addition, it would be important to adopt a RCT design using an alternative treatment (possibly relaxation based). This would allow a much more methodologically robust exploration of mechanisms through with mindfulness might exert its positive effects. However, such a project is likely to require considerable amount of time and resources. Generally, future research will need to include follow-up assessments, possibly up to 18 months, in order to draw conclusion regarding MBCT-a for clients meeting BPD criteria in line with recommendation by the BPS (2006).

Apart from attention, the literature has highlighted a number of mechanisms, which are all worth exploring. For example, changes in metacognition could be assessed using the Meta-Cognitions Questionnaire (Wells, 1997) or the Thought Control Questionnaire (Wells & Davies, 1994). The latter would also provide another measure of experiential avoidance.

It is possible that MBCT has a role in the treatment of BPD at certain stages in clients' treatment. For example, with the original focus of MBCT on prevention of relapse in depression, it may be that MBCT has a similar role to play in clients with a diagnosis of BPD. Future research could evaluate the effectiveness of MBCT once clients have been discharged and completed DBT, which does not directly address the issue of relapse (Linehan. 1993).

The current study suggests that one explanation for a lack of findings involves the format of the intervention. Future research could adapt the current 8-session format and extend this to for example 12 sessions (i.e. following Huss & Baer, 2007). This would increase the amount of in-session mindfulness practice participants are exposed to and could be compared to outcomes following attendance of a shorter group.

5.9 Conclusions

This study showed that it is possible to run an adapted MBCT programme with clients meeting BPD criteria. Strengths included the use of a representative sample and

naturalistic setting. In addition, the study is one of the first to explore mechanisms of mindfulness and one of the first to report data on new outcome measures, including the FFMQ and AAQ. However, the study had several limitations, which may have contributed to a general lack of findings. Limitations included a lack of power due to small sample size and multiple comparisons. The lack of a comparison group (or treatment) further did not allow conclusions to be drawn regarding observed changes in attention being due to mindfulness per se. It will be important for future research to address these methodological limitations.

As noted, the study did not find any significant differences from pre to post-treatment assessment for the whole sample and for treatment completers. However, a sub-sample of treatment completers showed improvements in mindfulness, which were accompanied by predicted changes in measures of attention (TMT Part-B and STROOP interference). Participants in this sub-sample did not show changes on other clinical measures employed. Generally it was suggested that follow-up assessments would be necessary to evaluate effectiveness, as change is likely to be slower in this client population. Similarly findings suggest that it may be necessary to adapt the current 8-session format for example by extending it. This would allow for greater exposure to mindfulness exercises and would allow more time for individual and group discussion. It was felt that the latter is necessary for clients to fully benefit from cognitive exercises and teaching points introduced during sessions. The study is therefore not conclusive regarding the utility of MBCT-a for clients with a BPD diagnosis.

6. REFERENCES

Allen, C. (2004). Borderline personality disorder: Towards a systemic formulation. *Journal of Family Therapy, 26*, 126-141.

American Psychiatric Association. (1994). *Diagnostic and Statistical Manual of Mental Disorders* (4 ed.). Washington, DC: American Psychiatric Association.

Arch, J. J., & Craske, M. G. (2006). Mechanisms of mindfulness: Emotion regulation following a focused breathing induction. *Behaviour Research and Therapy, 44*(1849-1858).

Arnsten, A. F. T. (1998). The biology of being frazzled. *Science, 280*, 1711-1712.

Arnsten, A. F. T., Ubriani, M. R., Taylor, J. R., & Li, B. M. (1999). Alpha-1 noradrenergic receptor stimulation impairs prefrontal cortical cognitive function. *Biological Psychiatry, 45*(26-31).

Baer, R. A. (2003). Mindfulness training as a clinical intervention: A conceptual and empirical review. *Clinical Psychology: Science & Practice, 10*, 125-143.

Baer, R. A., & Krietemeyer, J. (2006). Overview of mindfulness- and acceptance-based treatment approaches. In R. A. Baer (Ed.), *Mindfulness-based treatment approaches: Clinician's guide to evidence base and applications* (pp. 3-30). Burlington, M.A.: Elsevier Inc.

Baer, R. A., Smith, G. T., & Allen, K. B. (2004). Assessment of mindfulness by self-report: The Kentucky Inventory of Mindfulness Skills. *Assessment, 11*, 191-206.

Baer, R. A., Smith, G. T., Button, E. L. D., Krietemeyer, J., Sauer, S., Walsh, E., *et al.* (2008). Construct Validity of the Five Facet Mindfulness Questionnaire in Meditating and Nonmeditating Samples. *Assessment*(electronic publication ahead of print), 1-14.

Baer, R. A., Smith, G. T., Hopkins, J., Krietemeyer, J., & Toney, L. (2006). Using self-report assessment methods to explore facets of mindfulness. *Assessment, 13*(1), 27-45.

Barker, C., Pistrang, N., & Elliott, R. (2002). *Research methods in clinical psychology: An introduction for students and practitioners*. Chichester: John Wiley & Sons, Ltd.

Barnard, P. J., & Teasdale, J. D. (1991). Interacting cognitive subsystems: A systemic approach to cognitive-affective interaction and change. *Cognition and Emotion, 5*, 1-39.

Barnes, L. L. B., Harp, D., & Jung, W. S. (2002). Reliability generalization of scores on the Spielberger-state anxiety inventory. *Educational and Psychological Measurement, 62*(4), 603-618.

Barnhofer, T., Duggan, D. S., Crane, C., Hepburn, S., Fennell, M. J. V., & Williams, J. M. (2007). Effects of meditation on frontal alpha-asymmetry in previously suicidal individuals. *Neuroreport: For rapid communication of neuroscience research, 18*(7), 709-712.

Bateman, A. W., & Fonagy, P. (2001). Treatment of borderline personality disorder with psychoanalytically oriented partial hospitalization: An 18-month follow-up. *American Journal of Psychiatry, 158*(1), 36-42.

Bateman, A. W., & Fonagy, P. (2004). *Psychotherapy for borderline personality disorder: Mentalization-based treatment*. Oxford: Oxford University Press.

Beck, A. T., Freeman, A., & Davis, D. D. (2004). *Cognitive therapy of personality disorders*. New York: The Guildford Press.

Beck, A. T., Steer, R. A., & Brown, G. K. (1996). *Manual for Beck Depression Inventory II (BDI-II)*. San Antonio, TX: Psychology Corporation.

Beck, A. T., Steer, R. A., & Garbin, M. G. (1988). Psychmetric properties of the Beck Depression Inventory: Twenty-five years of evaluation. *Clinical Psychology Review, 8*, 77-100.

Bernstein, E. M., & Putnam, F. W. (1986). Development, reliability, and validity of a dissociation scale. *The Journal of Nervous and Mental Disease, 174*(12), 727-735.

Bijttebier, P., & Vertommen, H. (1999). Coping strategies in relation to personality disorders. *Personality & Individual Differences, 26*, 847-856.

Bishop, S. R., Lau, M., Shapiro, S., Carlson, L., Anderson, N. D., Carmody, J., *et al.* (2004). Mindfulness: A proposed operational definition. *Clinical Psychology: Science & Practice, 11*, 230-241.

Bond, F. W., & Bunce, D. (2003). The role of acceptance and job control in mental health, job satisfaction, and work performance. *Journal of Applied*

Psychology, 88, 1057-1067.

Bondolfi, G. (2005). Mindfulness and anxiety disorder: Possible developments. *Constructivism in the Human Sciences, 10*, 45-52.

Borkovec, T., & Sharpless, B. (2004). Generalized anxiety disorder: Bringing cognitive-behavioral therapy into the valued present. In S. C. Hayes, V. Follette & M. Linehan (Eds.), *Mindfulness and acceptance: Expanding the cognitive-behavioural tradition* (pp. 275-299). New York: The Guildford Press.

Bremner, J. D. (1999). Does Stress Damage the Brain? *Biological Psychiatry, 45*, 797–805.

Bremner, J. D. (2004). Does Stress Damage the Brain? Understanding Trauma-related Disorders from a Mind-Body Perspective. *Directions in Psychiatry, 24*(15), 167-176.

Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology, 84*, 822-848.

Carlson, E. B., & Putnam, F. W. (1993). An update on the Dissociative Experiences Scale. *Dissocation: Progress in the Dissociative Disorders, 6*(1), 16-27.

Carlson, E. B., Putnam, F. W., Colin, A. R., Torem, M., Coons, P., Dill, D. D., *et al.* (1993). Validity of the Dissociative Experiences Scale in screening for multiple personality disorder: A multicenter study. *American Journal of Psychiatry, 150*(7), 1030-1036.

Chambless, D. L., & Hollon, S. D. (1998). Defining empirically supported therapies. *Journal of Consulting and Clinical Psychology, 66*(1), 7-18.

Chapman, A. L., Specht, M. W., & Cellucci, T. (2005). Borderline personality disorder and deliberate self-harm: Does experiential avoidance play a role? *Suicide & Life-Threatening Behavior, 35*, 388-400.

Chiles, J., & Strosahl, K. (1995). *The suicidal patient: Principles of assessment, treatment and case management*. Washington, D.C.: American Psychiatric Press.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2 ed.). Hillsdale, N.J.: Erlbaum.

Coid, J., Yang, M., Tyrer, P., Roberts, A., & Ullrich, S. (2006). Prevalence and correlated of personality disorder in Great Britain. *British Journal of Psychiatry, 188*, 423-431.

Cook, T. D., & Campbell, D. T. (1979). *Quasi-experimentation: Design and analysis issues for field settings.* Chicago: Rand-McNally.

Coryell, W., Turvey, C., Endicott, J., Leon, A. C., Mueller, T., Solomon, D., *et al.* (1998). Bipolar I affective disorder: predictors of outcome after 15 years. *Journal of Affective Disorders, 50*(2), 109-116.

Damasio, A. (2000). *The feeling of what happens: Body, emotion and the making of consciousness*. London: Vintage Books.

Davidson, K. (2008). *Cognitive therapy for personality disorders: A guide for clinicians* (2 ed.). Hove: Routledge.

de Girolamo, G., & Dotto, P. (2000). Epidemiology of personality disorders. In M. G. Gelder, J. J. Lopez-Ibor & N. C. Andreasen (Eds.), *New Oxford Textbook of Psychiatry* (Vol. 1, pp. 959-964). New York: Oxford University Press.

de la Fuente, J. M., Goldman, S., Stanus, E., Vizuete, C., Morlan, I., Bobes, J., *et al.* (1997). Brain glucose metabolism in borderline personality disorder. *Journal of Psychiatric Research, 31*, 531-541.

Dimidjian, S., & Linehan, M. M. (2003). Defining an agenda for future research on the clinical application of mindfulness practice. *Clinical Psychology: Science & Practice, 10*, 166-171.

Dinn, W. M., Harris, C. L., Aycicegi, A., Greene, P. B., Kirkley, S. M., & Reilly, C. (2004). Neurocognitive function in borderline personality disorder. *Progress in Neuro-psychopharmacology and Biological Psychiatry, 28*, 329-341.

Duff, S., & Kinderman, P. (2006). An interacting cognitive subsystems approach to personality disorder. *Clinical Psychology and Psychotherapy, 13*, 233-245.

Eastern Specialised Mental Health Commissioning Group. (2005). *Personality disorder services framework*.

Ebner-Priemer, U. W., Badeck, S., Beckmann, C., Wagner, A., Feige, B., Weiss, I., *et al.* (2005). Affective dysregulation and dissociative experience in female patients with borderline personality disorder: A startle response study. *Journal of Psychiatric Research, 39*, 85-92.

Ellason, J. W., Ross, C. A., Mayran, L. W., & Sainton, K. (1991). Convergent validity of the new form of the DES. *Dissocation, 7*(2), 101-103.

Endicott, J., & Spitzer, A. L. (1978). A diagnostic interview: The schedule for affective disorders & schizophrenia. *Archives of General Psychiatry, 35*, 837-844.

Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G*Power3: A flexible statistical power analysis program for the social, behavioral and biomedical sciences. *Behavior Research Methods, 39*, 175-191.

Feigenbaum, J. (2007). Dialectical behaviour therapy: An increasing evidence base. *Journal of Mental Health, 16*(1), 51-68.

Finucane, A., & Mercer, S. W. (2006). An exploratory mixed methods study of the acceptability and effectiveness of mindfulness-based cognitive therapy for patients with active depression and anxiety in primary care. *BMC Psychiatry 2006/04/11 edition, 6*, 14.

First, M. B., Spitzer, R. L., Gibbon, M., & Williams, J. B. W. (1995a). The structured clinical interview for DSM-III-R personality disorders (SCID-II), Part I: Description. *Journal of Personality Disorder, 9*, 83-91.

First, M. B., Spitzer, R. L., Gibbon, M., & Williams, J. B. W. (1995b). The structured clinical interview for DSM-III-R personality disorders (SCID-II), Part II: Multisite test-retest reliability study. *Journal of Personality Disorder, 9*, 92-104.

Foa, E. B., Riggs, Dancu, C. V. S., & Rothbaum, B. O. (1993). Reliability and validity of a brief instrument for assessing Post Traumatic Stress Disorder. *Journal of Traumatic Stress, 6*(4), 459-473.

Foertsch, C., Manning, S. Y., & Dimeff, L. A. (2003). Difficult-to-treat patients: The approach from dialectic behavior therapy. In R. L. Leahy (Ed.), *Roadblocks in cognitive-behavioral therapy: Transforming challenges into opportunities for change* (pp. 255-273). New Tork: The Guildford Press.

Gabbard, G. O. (2000). Combining medication with psychotherapy in the treatment of personality disorders. In J. G. Gunderson & G. O. Gabbard (Eds.), *Psychotherapy for personality disorders (Review of Psychiatry Series)* (Vol. 19, pp. 65-94). Washington: American Psychiatric Press, Inc.

Gerhardt, S. (2004). *Why love matters: How affection shapes a baby's brain*. Hove: Routledge.

Goyer, P. F., Andreason, P. J., Semple, W. E., Clayton, A. H., King, A. C., Compton-Toth, B. A., *et al.* (1994). Positron emission tomography and personality disorders. *Neuropsychopharmacology, 10*, 21-28.

Gunderson, J. G. (2000). Psychodynamic psychotherapy for borderline personality disorder. In J. G. Gunderson & G. O. Gabbard (Eds.), *Psychotherapy for personality disorders (Review of Psychiatry Series)* (Vol. 19, pp. 33-64). Washington: American Psychiatric Press, Inc.

Gunderson, J. G., Bender, D. S., Sanislow, C. A., Yen, S., Bame Rettew, J., Dolan-Sewell, R., *et al.* (2003). Plausibility and possible determinants of sudden 'remission' in borderline patients. *Psychiatry, 66*(2), 111-119.

Hanoch, Y., & Vitouch, O. (2004). When less is more: Information, emotional arousal and the exological reframing of the Yerkes-Dodson Law. *Theory & Psychology, 14*(4), 427-452.

Harvey, A., Watkins, E., Mansell, W., & Shafran, R. (2004). *Cognitive behavioural processes across psychological disorders: A transdiagnostic approach to research and treatment*. Oxford: Oxford University Press.

Hayes, S. C. (2004). Acceptance and commitment therapy, relational frame theory, and the third wave of behavioral and cognitive therapies. *Behavior Therapy, 35*, 639-665.

Hayes, S. C., Barnes-Holmes, D., & Roche, B. (Eds.). (2001). *Relational Frame Theory: A Post-Skinnerian account of human language and cognition*. New York: Plenum Press.

Hayes, S. C., Strosahl, K., Wilson, K. G., Bissett, R. T., Pistorelly, J., Toarmino, D., *et al.* (2004). Measuring experiential avoidance: A preliminary test of a working model. *The Psychological Record, 54*, 553-578.

Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (1999). *Acceptance and commitment therapy: An experiential approach to behavior change*. New York: The Guildford Press.

Hayes, S. C., Wilson, K. G., Gifford, E. V., Follette, V., & Strosahl, K. (1996). Experiential avoidance and behavioral disorders: A functional dimensional

approach to diagnosis and treatment. *Journal of Consulting and Clinical Psychology, 64*(6), 1152-1168.

Herpertz, S. C., Dietrich, T. M., Wenning, B., Krings, T., Erberich, S. G., Willmes, K., *et al.* (2001). Evidence of abnormal amygdala functioning in borderline personality disorder: A functional MRI study. *Biological Psychiatry, 50*(4), 292-298.

Herpertz, S. C., Kunert, H. J., Schwenger, U. B., & Sass, H. (1999). Affective Responsiveness in Borderline Personality Disorder: A Psychophysiological Approach. *American Journal of Psychiatry, 156*, 1550–1556.

Holmes, E. A., Brown, R. J., Mansell, W., Fearon, R. P., Hunter, E. C. M., Frasquilho, F., *et al.* (2005). Are there two qualitatively distinct forms of dissociation? A review and some clinical implications. *Clinical Psychology Review, 25*, 1-23.

Huss, D. B., & Baer, R. A. (2007). Acceptance and change: The integration of mindfulness-based cognitive therapy into ongoing dialectical behavior therapy in a case of borderline personality disorder with depression. *Clinical Case Studies, 6*(1), 17-33.

Jacobson, N. S., & Truax, P. (1991). Clinical significance: A statistical approach to defining meaningful change in psychotherapy research. *Journal of Consulting and Clinical Psychology, 59*(1), 12-19.

Jang, K. L., Livesley, W. J., Vernon, P. A., & Jackson, D. N. (1996). The heritability of personality disorder traits: a twin study. *Acta Psychiatrica Scandinavia, 94*, 438-444.

Jha, A. P., Krompinger, J., & Baime, M. J. (2007). Mindfulness training modifies subsystems of attention. *Cognitive, Affective & Behavioral Neuroscience, 7*(2), 109-119.

Judd, P. H., & Ruff, R. M. (1993). Neuropsychologcial dysfunction in borderline personality disorder. *Journal of Personality Disorders, 7*, 275-284.

Kabat-Zinn, J. (1990). *Full catastrophe living: Using the wisdom of your body and mind to face stress, pain and illness*. New York: Dell Publishing.

Kabat-Zinn, J. (1994). *Wherever you go there you are: Mindfulness meditation in everyday life*. New York: Hyperion.

Kabat-Zinn, J. (2003). Mindfulness-based interventions in context: Past, present and

future. *Clinical Psychology: Science & Practice, 10*, 144-156.

Kennerly, H. (1996). Cognitive therapy of dissociative symptoms associated with trauma. *British Journal of Clinical Psychology, 35*, 325-340.

Kenny, M. A., & Williams, J. M. (2007). Treatment-resistent depressed patients show a good response to mindfulness-based cognitive therapy. *Behaviour Research and Therapy, 45*, 617-625.

Krawitz, R., & Watson, C. (2003). *Borderline personality disorder: A practical guide to treatment*. Oxford: Oxford University Press.

Kruedelbach, N., McCormick, R. A., Schulz, S. C., & Grueneich, R. (1993). Impulsivity, coping styles and triggers for cravings in substance abusers with borderline personality disorder. *Journal of Personality Disorder, 7*, 214-222.

Kunert, H. J., Druecke, H. W., Sass, H., & Herpertz, S. C. (2003). Frontal lobe dysfunction in borderline personality disorders? Neuropsychological findings. *Journal of Personality Disorders, 17*, 497-509.

Kutz, I., Borysenko, J. Z., & Benson, H. (1985a). Meditation and Psychotherapy: A rationale for the integration of dynamic psychotherapy, the relaxation response, and mindfulness meditation. *The American Journal of Psychiatry, 142*(1), 1-8.

Kutz, I., Leserman, J., Dorrington, C., Morrison, C. H., Borysenko, J. Z., & Benson, H. (1985b). Meditation as an adjunct to psychotherapy: An outcome study. *Journal of Psychotherapy and Psychosomatics, 43*, 209-218.

Layden, M. A., Newman, C. F., Freeman, A., & Morse, S. B. (1993). *Cognitive therapy of borderline personality disorder*. Boston: Allyn & Bacon.

Lezak, M. D., Howieson, D. B., & Loring, D. W. (2004). *Neuropsychological Assessment* (4 ed.). New York: Oxford University Press.

Lieb, K., Zanarini, M. C., Schmahl, C., Linehan, M., & Bohus, M. (2004). Borderline personality disorder. *Lancet, 364*, 453-461.

Linehan, M. (1993). *Cognitive-behavioral treatment of borderline personality disorder*. New York: Guildford Press.

Linehan, M., & Heard, H. L. (1999). Borderline personality disorder: Costs, course and treatment outcomes. In N. E. Miller & K. M. Magruder (Eds.), *Cost-effectiveness of psychotherapy: A guide for practitioners, researchers and*

policymakers (pp. 291-305). New York: Oxford University Press.

Lynch, T. R., Robins, C. J., Mendelson, J. O., & Krause, E. D. (2001). A mediation model relating affect intensity, emotion inhibition and psychological distress. *Behavior Therapy, 32*, 519-536.

Ma, S. H., & Teasdale, J. D. (2004). Mindfulness-based cognitive therapy for depression: replication and exploration of differential relapse prevention effects. *Journal of Consulting and Clinical Psychology, 72*(1), 31-40.

Melbourne Academic Mindfulness Interest Group. (2006). Mindfulness-based psychotherapies: A review of conceptual foundations, empirical evidence and practical considerations. *Australian and New Zealand Journal of Psychiatry, 40*, 285-294.

Mennin, D. S., Heimberg, R. G., Turk, C. L., & Fresco, D. M. (2002). Applying an emotion regulation framework to integrative approaches to generalized anxiety disorder. *Clinical Psychology: Science & Practice, 9*(1), 85-90.

Michal, M., Beutel, M. E., Jordan, J., Zimmerman, M., Wolters, S., & Heidenreich, T. (2007). Depersonalisation, mindfulness and childhood trauma. *The Journal of Nervous and Mental Disease, 195*, 693-696.

Mitrushina, M. N., Boone, K. B., Razani, J., & D'Elia, L. F. (2005). *Handbook of normative data for neuropsychological assessment.* (2 ed.). New York: Oxford University Press.

Moeller, F. G., Dougherty, D. M., Barratt, E. S., Schmitz, J. M., Swann, A. C., & Grabowski, J. (2001). The impact of impulsivity on cocaine use and retention in treatment. *Journal of Substance Abuse Treatment, 21*, 193–198.

Monarch, E. S., Saykin, A. J., & Flashman, L. A. (2004). Neuropsychological impairment in borderline personality disorder. *Psychiatric Clinics of North America, 27*, 67-82.

Moran, P. (2002). *The epidemiology of personality disorder*: Department of Health.

National Institute for Mental Health in England. (2003). *Personality disorder: No longer a diagnosis of exclusion*. London: Department of Health.

Needleman, L. D. (2003). Case conceptualisation in preventing and responding to therapeutic difficulties. In R. L. Leahy (Ed.), *Roadblocks in cognitive-behavioral therapy: Transforming challenges into opportunities for change*

(pp. 3-23). New Tork: The Guildford Press.

Nijenhuis, E. R. S., Spinhoven, P., van Dyck, R., van der Hart, O., & Vanderlinden, J. (1996). The development and pyschometric characteristics of the somatoform dissociation questionnaire (SDQ-20). *Journal of Nervous and Mental Disease, 184*(11), 688-694.

Nijenhuis, E. R. S., Spinhoven, P., van Dyck, R., van der Hart, O., & Vanderlinden, J. (1998). Psychometric characteristics of the somatoform dissociation questionnaire: A replication study. *Psychotherapy and Psychosomatics, 67*, 17-23.

Paris, J. (1993). Personality disorders: A biopsychosocial model. *Journal of Personality Disorder, 7*(3), 255-264.

Patton, J. H., Stanford, M. S., & Barratt, E. S. (1995). Factor structure of the Barratt Impulsiveness Scale. *Journal of Clinical Psychology, 51*(6), 768-774.

Perez-De-Albeniz, A., & Holmes, J. (2000). Meditation: concepts, effects and uses in therapy. *International Journal of Psychotherapy, 5*(1), 49-58.

Posner, M. I., Rothbart, M. K., Vizueta, N., Levy, K. N., Evans, D. E., Thomas, K. M., *et al.* (2002). Attentional mechanisms of borderline personality disorder. *Proceedings of the National Academy of Sciences of the United States of America, 99*, 16366-16370.

Putnam, F. W., Carlson, E. B., Ross, C. A., Anderson, G., Clark, P., Torem, M., et al. (1996). Patterns of dissociation in clinical and nonclinical samples. *The Journal of Nervous and Mental Disease, 184*(11), 673-679.

Putnam, K. M., & Silk, K. R. (2005). Emotion regulation and the development of borderline personality disorder. *Development & Psychopathology, 17*, 899-925.

Rani, N. J., & Rao, P. V. (1996). Meditation and attention regulation. *Journal of Indian Psychology, 14*, 26-30.

Ree, M. J., & Craigie, M. A. (2007). Outcomes following mindfulness-based cognitive therapy in a heterogenous sample of adult outpatients. *Behaviour Change, 24*(2), 70-86.

Roemer, L., & Orsillo, S. M. (2002). Expanding our conceptualization of and treatment for generalized anxiety disorder: Integrating

mindfulness/acceptance-based approaches with existing cognitive-behavioral models. *Clinical Psychology: Science & Practice, 9*(1), 54-68.

Rogers, R., & Kirkpatrick, T. (2005). Neuropsychology of borderline personality disorder. *Psychiaty, 4*(3), 31-35.

Rosenthal, M. Z., Cheavens, J. S., Lejuez, C. W., & Lynch, T. R. (2005). Thought suppression mediates the relationship between negative affect and borderline personality disorder symptoms. *Behaviour, Research and Therapy, 43*, 1173-1185.

Rosenthal, M. Z., Gratz, K. L., Kosson, D. S., Cheavens, J. S., Lejuez, C. W., & Lynch, T. R. (2008). Borderline personality disorder and emotional responding: A review of the research literature. *Clinical Psychology Review, 28*, 75-91.

Roth, A., & Fonagy, P. (2005). *What works for whom? A critical review of psychotherapy research* (2 ed.). New York: The Guilford Press.

Ruocco, A. (2005). The neuropsychology of borderline personality disorder: A meta-analysis and review. *Psychiatry Research, 137*, 191-202.

Sachse, S. (2007, unpublished). Borderline personality disorder and psychological treatments for clients meeting diagnostic criteria: Past, present and possible future.

Sar, V., Kundakci, T., Kiziltan, E., Bakim, B., & Bozkurt, O. (2000). Differentiating dissociative disorders from other diagnostic groups through somatoform dissociation in Turkey. *Journal of Trauma and Dissociation, 1*, 67-80.

Segal, Z. V., Teasdale, J. D., Williams, J. M., & Gemar, M. C. (2002). The MindfulnessBased Cognitive Therapy Adherence Scale: Inter-rater Reliability, Adherence to Protocol and Treatment Distinctiveness. *Clinical Psychology and Psychotherapy, 9*, 131–138.

Segal, Z. V., Williams, M., & Teasdale, J. D. (2002). *Mindfulness-based cognitive therapy for depression: A new approach to preventing relapse*. New York: Guilford.

Shapiro, S. L., Carlson, L. E., Astin, J. A., & Freedman, B. (2006). Mechanisms of Mindfulness. *Journal of Clinical Psychology*, 1-14.

Shearer, S. L., Peters, C. P., Quaytman, M. S., & Ogden, R. (1990). Frequency and

correlates of childhood physical and sexual abuse in adult borderline inpatients. *American Journal of Psychiatry, 147*, 214-216.

Skodol, A. E. (2005). The borderline diagnsois: Concept, criteria, and controversies. In J. G. Gunderson & P. D. Hoffman (Eds.), *Understanding and treating borderline personality disorder: A guide for professionals and families* (pp. 3-20). Washington: American Psychiatric Publishing, Inc.

Skodol, A. E., Gunderson, J. G., Pfohl, B., Widiger, T. A., Livesley, W. J., & Siever, L. J. (2002). The borderline diagnosis I: Psychopathology, comorbidity, and personality structure. *Biological Psychiatry, 51*, 936-950.

Smith, J. A., & Osborn, M. (2003). Interpretative phenomenological analysis. In J. A. Smith (Ed.), *Qualitative Psychology: A Practical Guide to Methods* (pp. 51-80). London: Sage.

Soloff, P. H., Metzler, C. C., Becker, C., Greer, P. J., Kelly, T. M., & Constantine, D. (2000). A fenfluramine-activated FDG-PET study of borderline personality disorder. *Psychiatric Research, 123*, 153-163.

Spielberger, C. D. (1983). *Manual for the State-Trait Anxiety Inventory (STAI)*. PaloAlto, CA: Consulting Psychologists Press.

Spinella, M. (2007). Normative data and a short form of the Barratt Impulsiveness Scale. *International Journal of Neuroscience, 117*(3), 359-368.

Sprock, J., Rader, T. J., Kendall, J. P., & Yoder, C. Y. (2000). Neuropsychological function in patients with borderline personality disorder. *Journal of Clinical Psychology, 56*, 1587-1600.

Stevenson, J., & Meares, R. (1992). An outcome study of psychotherapy for patients with borderline personality disorder. *The American Journal of Psychiatry, 149*, 358-362.

Stratton, K. J. (2006). Mindfulness-based approaches to impulsive behaviours. *The New School Psychology Bulletin, 4*(2), 49-71.

Strauss, E., Sherman, E. M., & Spreen, O. (2006). *A Compendium of Neuropsychological Tests*. Oxford: Oxford University Press.

Swales, M., Heard, H. L., & Williams, J. M. (2000). Linehan's dialectical behaviour therapy (DBT) for borderline personality disorder: Overview and adaptation. *Journal of Mental Health, 9*(1), 7-23.

Swann, A. C., Anderson, J. C., Dougherty, D. M., & Moeller, F. G. (2001). Measurement of inter-episode impulsivity in bipolar disorder. *Psychiatry Research, 101*, 195-197.

Swirsky-Sacchetti, T., Gorton, G., Samuel, S., Sobel, R., Genetta-Wadley, A., & Burleigh, B. (1993). Neuropsychological function in borderline personality disorder. *Journal of Clinical Psychology, 48*, 385-396.

Teasdale, J. D. (1999a). Emotional processing, three modes of mind and the prevention of relapse in depression. *Behaviour Research and Therapy, 37*, 53-77.

Teasdale, J. D. (1999b). Metacognition, mindfulness and the modification of mood disorder. *Clinical Psychology and Psychotherapy, 6*, 146-155.

Teasdale, J. D., Segal, Z. V., & Williams, J. M. (1995). How does cognitive therapy prevent depressive relapse and why should attentional control (mindfulness) training help? *Behaviour Research and Therapy, 33*(1), 25-39.

Teasdale, J. D., Segal, Z. V., Williams, J. M., Ridgeway, V., Soulsby, J., & Lau, M. (2000). Prevention of relapse/recurrence in major depression by mindfulness-based cognitive therapy. *Journal of Consulting and Clinical Psychology, 68*(4), 615-623.

The British Psychological Society. (2006). *Understanding personality disorder: A report by the British Psychological Society*. Leicester: The British Psychological Society.

Togersen, S., Lygren, S., Oien, P. A., Skre, I., Onstad, S., Edvardsen, J., *et al.* (2000). A twin study of personality disorders. *Comprehensive Psychiatry, 41*(6), 416-425.

Tombaugh, T. N. (2004). Trail Making Test A and B: Normative data stratified by age and education. *Archives of Clinical Neuropsychology, 19*, 203-214.

Tyrer, P., Thompson, S., Schmidt, U., Jones, V., Knapp, M., Davidson, K., *et al.* (2003). Randomized controlled trial of brief cognitive behaviour therapy versus treatment as usual in recurrent deliberate self-harm: the POPMACT study. *Psychological Medicine, 33*, 969-976.

Valentine, E. R., & Sweet, P. L. G. (1999). Meditation and attention: a comparison of the effects of concentrative and mindfulness meditaion on sustained attention.

Mental Health, Religion & Culture, 2, 59-70.

van Reekum, R., Conway, C. A., Gansler, D., White, R., & Bachman, D. L. (1993). Neurobehavioral study of borderline personality disorder. *Journal of Psychiatric Neuroscience, 18*(3), 121-129.

van Reekum, R., Links, P. S., Finlayson, M. A., Boyle, M., Boiago, I., Ostrander, L. A., *et al.* (1996). Repeat neurobehavioural study of borderline personality disorder. *Journal of Psychiatric Neuroscience, 21*(1), 13-20.

Welch, S. S., Rizvi, S., & Dimidjian, S. (2006). Mindfulness in dialectical behavior therapy (DBT) for borderline personality disorder. In R. A. Baer (Ed.), *Mindfulness-based treatment approaches: Clinician's guide to evidence base and applications* (pp. 117-142). Burlington, M.A.: Elsevier Inc.

Wells, A. (1990). Panic disorder in association with relaxation-induced anxiety: An attentional training approach to treatment. *Behavior Therapy, 21*, 273-280.

Wells, A. (1997). *Cognitive therapy of anxiety disorders: A practical manual and conceptual guide*. Chichester: John Wiley & Sons Ltd.

Wells, A. (2000). *Emotional disorders and metacognition: Innovative cognitive therapy*. Chichester: John Wiley & Sons Ltd.

Wells, A. (2002). GAD, metacognition, and mindfulness: An information processing analysis. *Clinical Psychology: Science and Practice, 9*(1), 95-100.

Wells, A. (2006). Detached mindfulness in cognitive therapy: A metacognitive analysis and ten techniques. *Journal of Rational-Emotive and Cognitive-Behavior Therapy, 23*(4), 337-355.

Wells, A., & Davies, M. (1994). The thought control questionnaire: A measure of individual differences in the control of unwanted thoughts. *Behaviour Research and Therapy, 32*, 871-878.

Wells, A., & Matthews, G. (1994). *Attention and emotion: A clinical perspective*. Hillsdale: Lawrence Erlbaum Associates.

Wells, A., & Matthews, G. (1996). Modelling cognition in emotional disorder: The S-REF Model. *Behaviour, Research and Therapy, 34*, 881-888.

Wenzlaff, R. M., & Wegner, D. M. (2000). Thought supression. *Annual Review of Psychology, 51*, 59–91.

Widiger, T. A., Trull, T. J., Clarkin, J. F., Sanderson, C., & Costa, P. T. (2002).

Description of the DSM-IV personality disorders with the five-factor model of personality. In P. T. Costa & T. A. Widiger (Eds.), *Personality disorders and the five-factor model of personality* (2 ed., pp. 89-99). Washington: American Psychological Association.

Williams, J. M., Duggan, D. S., Crane, C., & Fennell, M. J. V. (2006). Mindfulness-based cognitive therapy for prevention of recurrence of suicidal behavior. *Journal of Clinical Psychology: In Session, 62*(2), 201-210.

Williams, J. M., & Swales, M. (2004). The use of mindfulness-based approaches for suicidal patients. *Archives of suicide research, 8*, 315-329.

Wupperman, P. (submitted). Do deficits in mindfulness underlie borderline personality features and core difficulties? *Journal of Personality Disorders*.

Yen, S., Zlotnick, C., & Costello, E. (2002). Affect regulation in women with borderline personality disorder traits. *Journal of Nervous and Mental Disease, 190*, 693-696.

York, M. (2007). A qualitative study into the experience of individuals involved in a mindfulness group within an acute inpatient mental health unit. *Journal of Psychiatric and Mental Health Nursing, 14*, 603-608.

Zanarini, M. C., Frankenburg, F. R., Dubo, E. D., Sickel, A. E., Trikha, A., Levin, A., *et al.* (1998a). Axis II comorbidity of borderline personality disorder. *Comprehensive Psychiatry, 39*(5), 296-302.

Zanarini, M. C., Frankenburg, F. R., Dubo, E. D., Sickel, A. E., Trikha, A., Levin, A., *et al.* (1998b). Axis I comorbidity of borderline personality disorder. *American Journal of Psychiatry, 155*, 1733-1739.

Zanarini, M. C., Frankenburg, F. R., Hennen, J., Reich, D. B., & Silk, K. R. (2003). The longitudinal course of borderline psychopathology: 6-year prospective follow-up of the phenomenology of borderline personality disorder. *American Journal of Psychiatry, 160*, 274-283.

Zanarini, M. C., Frankenburg, F. R., Hennen, J., Reich, D. B., & Silk, K. R. (2004). Axis I comorbidity in patients with borderline personality disorder: A follow-up and prediction of time to remission. *American Journal of Psychiatry, 161*, 2108-2114.

Zanarini, M. C., Frankenburg, F. R., Hennen, J., Reich, D. B., & Silk, K. R. (2006).

Prediction of the 10-year course of borderline personality disorder. *American Journal of Psychiatry, 163*, 827-832.

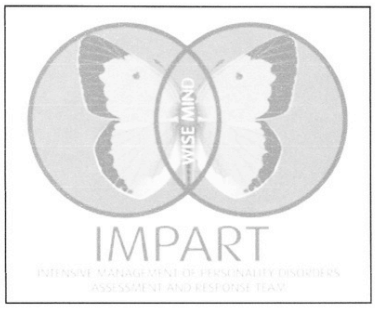
Zanarini, M. C., Williams, A. A., Lewis, R. E., Reich, R. B., Vera, S. C., Marino, M. F., *et al.* (1997). Reported pathological childhood experiences associated with the development of borderline personality disorder. *American Journal of Psychiatry, 154*, 1101-1106.

Zimmerman, M., & Mattia, J. I. (1999). Axis I diagnostic comorbidity and borderline personality disorder. *Comprehensive Psychiatry, 40*, 245-252.

Zlotnick, C., Mattia, J. I., & Zimmerman, M. (2001). Clinical features of survivors of sexual abuse with major depression. *Child Abuse and Neglect, 25*, 357-367.

7. APPENDICES

Appendix 1 Staff information sheet



North East London NHS
Mental Health NHS Trust

IMPART
Goodmayes Hospital
Barley Lane
Ilford, Essex
IG3 8XJ
Tel: 0844 600 1213

Study: Evaluating Mindfulness-Based Cognitive Therapy (MBCT) and Relaxation-Based Cognitive Therapy (RBCT) for emotional dysregulation

Researchers: Sandy Sachse, Doctorate in Clinical Psychology, University of Hertfordshire
Dr. Janet Feigenbaum, Consultant Clinical Psychologist, Head of NELMHT Personality Disorder Services

This study seeks to explore how two somewhat similar cognitive therapy interventions differ in helping clients cope with emotional distress and the mechanisms that are involved. Namely, we are interested in comparing an intervention based on Mindfulness-based cognitive therapy (MBCT) and a relaxation-based cognitive therapy (RBCT) for clients who experience emotional dysregulation.

Mindfulness-based cognitive therapy (MBCT) has been developed as a treatment for people who have suffered from severe depression many times in their lives. Depression, like other experiences of emotional distress (e.g. anxiety, anger), involves certain patterns in how we think and feel and once we have experienced these we become more likely to experience them again and again. MBCT teaches skills to help us handle differently thoughts and feelings that might normally lead to severe emotional distress. Mindfulness can often lead to a sense of relaxation. One question that has been raised is whether mindfulness itself is important, or the sense of relaxation that can come with it. Cognitive therapy is an intervention which helps people to consider the thoughts they have and how to manage these in a way that leads to less emotional distress.

In order to explore how these two interventions differ in helping people cope with emotional distress we will randomly allocate participants to a MBCT group or a RBCT group. We will run groups with up to 16 people. The groups will meet weekly for eight 2-hour sessions to learn new ways of dealing with thoughts and feelings, and to share and review experiences with other class members. **Thus this is an opportunity for clients to learn either mindfulness or relaxation skills, which could help them cope with severe emotional experiences.**

Investigating how effective these treatments are for people who experience severe emotional distress is important because it may make such treatments more widely available. Exploring how these treatments help is also important, as this will add to our understanding. This understanding will hopefully help to provide effective treatments in the future and make these available to many more people.

The groups will take place at the IMPART service either at Goodmayes hospital or at a day centre in Waltham Forest. Apart from attending the group intervention participants will also

be asked to attend an assessment session before the group as well as after the group. Each of these assessment sessions should last approximately one to one-and-a-half hours and will involve completing questionnaires and three brief tasks. Participants will be paid £5 for each of these two sessions (i.e. a total of £10 by the end) and will be reimbursed for travel expenses involved in attending all sessions.

We wish to recruit people who meet the following criteria:

- **Male or female between the ages of 18 to 50 inclusive**
- **English-speaking**
- Meeting the criteria for **Borderline Personality Disorder** diagnosis
- Who do not have a co-morbid diagnosis of a psychotic disorder, bipolar disorder, evidence of past head injury or neuropsychological deterioration.
- Who do not exceed one or all of the following cut-offs relating to substance and alcohol misuse: alcohol (more than 21 units per week for women and more than 30 units per week for men), cannabis (more than 5 times per week) Crack and Heroin (more than 2 times per months).

We would be extremely grateful if you could:

- **Identify potential participants from among your clients**
- **Talk to them about the study and offer an information sheet (attached)**
- **Obtain their consent to be approached by the researchers**
- **Pass on the names and the contact details of willing participants to us.**

We would be extremely grateful for any help you could offer us with this research. Your contribution would be acknowledged and, if you wish, we can send you any reports or publications resulting from this research. If you have any questions about this research please feel free to contact us:

Dr Janet Feigenbaum Tel: 0844 600 1213
e-mail: janet.feigenbaum@nelmht.nhs.uk

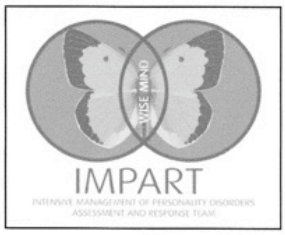
Head of IMPART Service
Goodmayes Hospital
Barley Lane, Illford, Essex, IG3 8XJ

OR

Sandy Sachse Tel: 0844 600 1213
e-mail: S.Sachse@herts.ac.uk

Doctorate in Clinical Psychology, Department of Psychology
University of Hertfordshire, College Lane
Hatfield, Hertfordshire, AL10 9AB

Appendix 2 Client information sheet



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Goodmayes Hospital
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Researchers: Sandy Sachse, Doctorate in Clinical Psychology, University of Hertfordshire
Dr. Janet Feigenbaum, Consultant Clinical Psychologist, Head of NELMHT Personality Disorder Services

You are invited to take part in a study. Before you decide it is important for you to understand why the research is being done and what it involves. Please take your time to read the following information carefully and if there is anything that is unclear or you wish to receive more information please contact us. Thank you for reading this information sheet.

What is the purpose of the study?
Mindfulness-based cognitive therapy (MBCT) has been developed as a treatment for people who have suffered from severe depression many times in their lives. Depression, like other experiences of emotional distress (e.g. anxiety, anger), involves certain patterns in how we think and feel and once we have experienced these we become more likely to experience them again and again. MBCT teaches skills to help us handle differently thoughts and feelings that might normally lead to severe emotional distress. Mindfulness can often lead to a sense of relaxation. One question that has been raised is whether mindfulness itself is important, or the sense of relaxation that can come with it. Cognitive therapy is an intervention which helps people to consider the thoughts they have and how to manage these in a way that leads to less emotional distress. This study seeks to explore how two somewhat similar cognitive therapy interventions differ in helping people cope with emotional distress and the mechanisms that are involved. For this purpose we will allocate participants to a MBCT group or a relaxation-based cognitive therapy (RBCT) group. Since there are many people who experience severe emotional distress we will run groups with up to 16 people who have similar experiences. The groups will meet for eight 2-hour sessions to learn new ways of dealing with what goes on in our minds, and to share and review experiences with other class members. **Thus this is an opportunity to learn either mindfulness or relaxation skills, which could help you cope with severe emotional experiences.**

Why have I been chosen?
In this study we are aiming to evaluate how effective an intervention based on MBCT is to help people who experience severe emotional distress, not just depression. People with emotional dysregulation often experience very difficult thoughts and emotions. Therefore we are asking people who experience emotional dysregulation if they would like to participate.

Do I have to take part?
This study and the offered treatments are not part of normal treatment. **You do not have to take part in this study if you do not want to.** If you decide to take part you may withdraw at any time without giving a reason. Your decision whether to take part or not will not affect your care and management in any way.

What will happen if I take part?
If you decide to take part you will be asked to:

1. Read this information sheet.
2. Read and sign a consent form after discussing it with the researcher.
3. Meet once before the group and once after the eight sessions to:
    a. complete questionnaires about your experiences of emotions
    b. complete three brief tasks

c. complete questionnaires about your symptoms and behaviour

The two assessment sessions (one before the group starts and one after eight weeks) will last between one to one-and-a-half hours, with a break for refreshments. The first assessment session will allow an additional half hour to discuss the groups, how they might help and to answer any questions.

4. Attend eight 2-hour classes of either MBCT or RBCT over the course of eight weeks.
5. Do homework exercises between group meetings for about one hour, six days a week, for eight weeks to maximise the effectiveness of these treatments, which involves tasks such as listening to tapes, performing brief exercises, and so on.

Participants will be paid £5 for each of the two assessment sessions (i.e. a total of £10 by the end) and will be reimbursed for travel expenses involved in attending all sessions. The study will take place at the IMPART service either at Goodmayes hospital or at a day centre in Waltham Forest. We will try to contact you about one week after having sent this information to answer any questions you may have and see if you are interested in taking part.

What are the benefits of taking part?
Investigating how effective these treatments are for people who experience severe emotional distress is important because it may make such treatments more widely available. Exploring how these treatments help is also important, as this will add to our understanding. This understanding will hopefully help to provide effective treatments in the future and make these available to many more people. For you personally this is an opportunity to learn cognitive skills and either mindfulness or relaxation skills, which could help you cope with severe emotional experiences.

Will my taking part be kept confidential?
When we meet you will be asked whether you agree for your GP to be informed about you taking part in this study. Other people who would know that you are taking part are your therapist or keyworker who thought you might be interested to take part. The data we collect will be labelled with a number and names will be removed. Group sessions will be recorded on tapes, which will be destroyed once these have been transcribed. **All data will be stored securely, in a locked filing cabinet. In accordance with client confidentiality, information obtained will not be shared with other health care professionals.**

What happens to the results of the study?
This research forms part of a Doctoral qualification in Clinical Psychology. Results will be written up for this and publication in relevant journals. All published information will be completely anonymised. You will also be offered to receive a summary of findings.

Who has reviewed the study?
All proposals are reviewed by an ethics committee before being given permission to proceed. This proposal was reviewed by Redbridge and Waltham Forest Local Research Ethics Committee.

If you would like to take part in this study, or have any questions or concerns, you can contact us directly by using one of the following contact details:

Dr Janet Feigenbaum	Head of IMPART Service Goodmayes Hospital Barley Lane, Illford, Essex, IG3 8XJ	Tel: 0844 600 1213 e-mail: janet.feigenbaum@nelmht.nhs.uk
Sandy Sachse	Doctorate in Clinical Psychology University of Hertfordshire College Lane, Hatfield, AL10 9AB	Tel: 0844 600 1213 e-mail: S.Sachse@herts.ac.uk

To receive independent advice on participating in studies you can also contact the Patient Advice and Liaison Service (PALS) Tel: 0800 783 1853 (Monday to Friday)
Maggie Lilley Office Suite, Goodmayes Hospital,
Barley Lane, Ilford, Essex, IG3 8YB

Appendix 3 Measures

Appendix 4 Consent form

North East London NHS
Mental Health NHS Trust

IMPART
Goodmayes Hospital
Barley Lane
Ilford, Essex
IG3 8XJ
Tel: 0844 600 1213

Participant Consent Form

Evaluating Mindfulness-Based Cognitive Therapy (MBCT) and Relaxation-Based Cognitive Therapy (RBCT) for emotional dysregulation

Please read through the Participant Information Sheet and then answer the following questions. If you have any questions about the research or what this requires from you as a participant, please feel free to ask the researcher before completing this form. This consent form, which has your name on it, will be kept separately from the data we collect in order to maintain confidentiality.

Name of Participant.....

Please circle the answer that applies to you:

(1)	I have read and understood the Participant Information Sheet for this study.	YES/NO
(2)	I have been given the opportunity to talk about the study with the researcher and ask any questions.	YES/NO
(3)	I understand what will be involved for me if I take part in the study.	YES/NO
(4)	I have been informed of any possible risks involved with taking part.	YES/NO
(5)	I understand that any personal information I give will be kept confidential. The only people who will have access to this information are the research team.	YES/NO
(6)	I understand that my personal information may be stored on a computer and that this will not affect the confidentiality of the information. All such storage of information must comply with the 1998 Data Protection Act.	YES/NO
(7)	I freely consent to be a Participant in the study. No one has put pressure on me to take part.	YES/NO
(8)	I know that I can choose to drop out of the study at any time.	YES/NO
(9)	I know that if I do choose to stop taking part in the study that this will not affect any treatment or services I may be receiving at present or in the future.	YES/NO
(10)	I understand that I will be randomly assigned to either the mindfulness or the relaxation group.	YES/NO
(11)	I give consent for the researcher to inform my GP that I am taking part in this study.	YES/NO
(12)	I give consent for the researcher to access my file records to collect clinical and demographic information (e.g. marital status, ethnic origin, prescribed medication).	YES/NO

Participant's Signature .....Date.....

As the Investigator responsible for this research, I confirm that I have explained to the Participant named above the nature and purpose of the research to be undertaken.

Investigator's Name.....

Investigator's Signature.....Date.....

(13)	I give consent for the group sessions I will be attending to be recorded on audiotape. I understand that the only people who will listen to these tapes will be the researchers, and that the tapes will be stored in a locked cabinet and destroyed once transcribed.	YES/NO

Participant's Signature .....Date.....

Investigator's Signature .....Date.....

Appendix 5 Reasons for drop out of study

Out of 22 clients who initially agreed to participate in the study and be contacted by the researcher 4 dropped out before attending the pre-intervention assessment.

The remaining 18 clients all attended the pre-intervention assessment session.

Two people decided not to attend the group following assessment. One person was not able to attend the group as the timing conflicted with other commitments. Another participant decided not to attend the group, as she did not feel that she had the necessary support network at the time. Both agreed to be re-assessed.

Out of 16 participants who attended the group a total of 4 'dropped out'; drop-out was defined as having completed fewer than 4 sessions, the minimum effective dosage defined by Teasdale *et al*. (2000). Reasons for this varied.

One participant dropped out after one session due to feeling too stressed generally and too upset during the session and when attempting mindfulness exercises as part of homework. The same participant later also refused to be reassessed again due to feeling too stressed.

Another participant dropped out after 2 sessions as they were struggling to fit the group and homework into a busy week, which also included attendance at individual therapy sessions and another group. She stated that she had found the group interesting and continued to use the CDs and exercises she was provided with but had not felt able to make the full commitment to the group. This participant had agreed to be reassessed.

Another participant dropped out after 3 sessions, after he gained full-time employment but stated that he would have liked to attend more sessions, also having found the group interesting and helpful. He was also reassessed.

A fourth participant dropped out after attending the first two sessions. She continued to cancel sessions until the end (possibly indicating some intention to return) and at the re-assessment explained that she was in the process of being discharged from the service and had felt too depressed to come to sessions.

The total sample thus consisted of 17 participants for whom complete data is available.

Appendix 6 Session outline and adaptations made

Sessions and aim	Mindfulness and cognitive exercises in session	Homework	Adaptations
Session 1: Automatic Pilot Introduction to the notion of automatic pilot. Mindfulness starts by recognising the tendency to be on automatic pilot and making a commitment to learning how to step out of it and becoming aware of each moment. How difficult this can be despite being simple conceptually is shown by moving attention around the body during the body scan.	Raisin exercise Body Scan	Body scan Doing one daily activity mindfully Eating one meal mindfully	The body scan was shortened to 20 minutes (vs, 40 minutes) in session.
Session 2: Dealing with Barriers Continued focus on the body scan is used to show the chatter of the mind more clearly and how this tends to involve judgements rather than descriptions of bare experiences. Participants are introduced to how this chatter (e.g. negative automatic thoughts) tends to control people's reactions to events using a cognitive exercise and outlining how emotions are the result of a situation and an individual's interpretation of this.	Body scan Thoughts and feelings exercise (walking down the street)	Body Scan Doing one daily activity mindfully Mindfulness of the breath (10 minutes) Focus on pleasant events (pleasant events calendar)	The body scan was shortened to 20 minutes (vs, 40 minutes) in session
Session 3: Mindfulness of the Breath Focusing attention on the breath increases awareness of how busy and scattered the mind can be as well as offering the possibility of helping people to be more centred and present. Mindful movement exercises are used to highlight the connection between the body and the mind and thus mood. The 3-minute breathing space (3MBS) is used to introduce more formal practice into everyday life.	Seeing/Hearing exercise followed by mindfulness of the breath and body (sitting meditation) 3-MBS Stretches Mindful Walking	Stretches and Breath focus exercise to be alternated with Mindful Yoga 3-MBS at 3 regular times Focus on unpleasant events (unpleasant events calendar)	Due to the location it was only possible to do the hearing exercise. Mindfulness of the breath and body always consisted of approxi-mately 30 minutes (the manual

			specifies 30 or 40 minutes).
Session 4: Staying Present Spending extended time in mindfulness meditation highlights how the mind is most scattered when trying to cling to some things (reacting with attachment) and avoid others (reacting with aversion). Mindfulness offers a way to stay present, take a wider perspective and relate differently to experiences. Outlining the territory of depression, emotional distress and associated thinking patterns serves to illustrate the danger of buying into thoughts or reacting with aversion. The relationship of mindfulness skills to recurrent difficulties with mood is illustrated. The 3MBS offers the first step to alternative ways of coping.	Seeing/Hearing exercise followed by full sitting mindfulness meditation (focus on breath, body, thoughts, sounds, awareness of whatever arises) 3-MBS (extended instruction) 1st half of Healing From Within Video	Sitting Meditation (alternative option: alternating Sitting Meditation with Mindful Yoga) 3-MBS at 3 regular times 3-MBS – coping instructions (whenever notice unpleasant feelings)	Due to the location it was only possible to do the hearing exercise. A focus on symptoms of depression and associated thinking was maintained but expanded to emotional distress generally.
Session 5: Allowing/Letting Be A major part of taking care of oneself and cope differently with difficult experiences is an attitude of acceptance. This involves seeing clearly what if anything needs to change. By bringing a sense of allowing things to be as they are, without judgements or attempts to change things one becomes able to relate differently to experiences. Mindfulness promotes greater awareness of habitual patterns of thinking and relating. This awareness is key in being able to disengage from unhelpful ways of thinking and relating.	Full Sitting Mindfulness Meditation - introducing a difficulty into the practice (to bring awareness to effects in the body and reactions) 3MBS – regular 2nd half of Healing from Within Video 3MBS - Coping	Sitting meditations, alternated with practice in silence 3-MBS at 3 regular times 3-MBS – coping (whenever notice unpleasant feelings)	The in-session sitting meditation was kept at 30 minutes (the manual notes 40 minutes) Instructions regarding the difficulty were specific: to only do this for up to 3 or 4 minutes at first as emotions can become over-whelming. Homework was amended:

			sitting with silence was given as an option and participants were encouraged to use the CD everyday instead.
Session 6: Thoughts are not Facts Negative views and thoughts that accompany them colour and restrict our ability to relate differently to experiences. Recognising these patterns over and over again helps to stand back from thoughts without necessarily needing to question them. Thoughts that have a strong pull on attention can be worked with cognitively (e.g. enquiring, investigating them with and attitude of curiosity and kindness). Realising that the frame of mind one brings to a situation influences subsequent thoughts and feelings provides a rationale for standing back before responding.	Full Sitting Mindfulness Meditation 3MBS – coping (using this as a first step before taking a wider view of thoughts) Moods, thoughts and alternative viewpoint exercise (an ambiguous scenario is imagined in two mood states)	40 minutes formal practice: choose exercises form selection of CDs given so far (additional CDs from series 2 are provided) 3-MBS at 3 regular times 3-MBS – coping (whenever notice unpleasant feelings)	Participants only received one additional CD (Mountain and Lake Meditation). This was due to other CDs of the series consisting of silence with bells which was judged to difficult for clients. In addition, the lying down meditations use very similar instruction to sitting meditations. Participants were encouraged to also practice lying down, if they wish to, using the sitting meditation.

Session 7: How can I best take care of myself? When depression and other difficult mood states threaten to take over there are specific things that can be done. Taking a breathing space is the first step before deciding what action, if any, needs to be taken. Awareness of the link between activity and mood can help this. Becoming aware of personal signs of relapse (developing a map of these signs) can help further deteriorating in mood and relapse.	Full Sitting Mindfulness Meditation 3MBS – coping (the first step before choosing to take mindful action) Exercise to explore links between activity and mood. Generating a list of pleasure and mastery activities. Identifying signs of relapse/mood deterioration. Identifying actions to deal with these.	Choice of exercises form selection of CDs and exercises given. Developing pattern of practice to use on a regular basis. 3-MBS at 3 regular times 3-MBS – coping (whenever notice unpleasant feelings) Continue developing early warning signs and action plan to be used when mood threatens to take over.	The notion of relapse was adapted to refer to a daily threat with a focus on mood becoming over-whelming.

Session 8: Using what has been learned and continuing practice Regular mindfulness practice supports a balance in life. Linking continued practice with positive reasons for taking care of oneself can strengthen good intentions. The session focus is on how to keep up the momentum and discipline of practice and how to apply it in the face of lowering mood.	Body Scan Review of whole course Reflecting on the course Discussion: how to keep up momentum. Concluding sitting meditation (participants are invited to choose a marble or stone as a reminder of their hard work, the people they shared this with and to continue the process they started)	N/A	The session title was adapted. The original title read: Using what has been learned to deal with future moods. This was based on participants struggling with emotions currently.

Appendix 7 Letter of ethical approval

Redbridge & Waltham Forest Local Research Ethics Committee
Board Room A
2nd Floor
Becketts House
2/14 Ilford Hill
Ilford
Essex
IG1 2QX

Telephone: 0208 9265025
Facsimile:

17 August 2007

Ms Sandy Sachse
Trainee Clinical Psychologist
University of Hertfordshire
College Lane
Hatfield
AL10 9AB

Dear Ms Sachse

Full title of study: **Is an intervention informed by mindfulness-based cognitive therapy effective for individuals with a diagnosis of borderline personality disorder: A pilot study**

REC reference number: **07/H0701/33**

Thank you for your letter of , responding to the Committee's request for further information on the above research [and submitting revised documentation].

The further information was considered by the Chair today, 17 August 2007.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation [as revised].

Ethical review of research sites

The favourable opinion applies to the research sites listed on the attached form.

Conditions of approval

The favourable opinion is given provided that you comply with the conditions set out in the attached document. You are advised to study the conditions carefully.

Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

Document	*Version*	*Date*

Application	1	28 June 2007
Investigator CV	1	24 June 2007
Protocol	1	24 June 2007
Covering Letter	1	28 June 2007
Covering Letter		06 August 2007
Statistician Comments	1	02 May 2007
Compensation Arrangements	1	01 August 2006
Interview Schedules/Topic Guides	1	24 June 2007
Questionnaire: non validatged Demographic infomation	1	24 June 2007
Questionnaire: non validated Group evaluation	1	24 June 2007
Questionnaire: DES II	1	
Questionnaire: 5-Facet M	1	
Questionnaire: STAI (Y1&Y2)	1	
GP/Consultant Information Sheets	1	24 June 2007
Participant Information Sheet	1	24 June 2007
Participant Information Sheet: STAFF		02 August 2007
Participant Information Sheet	2	02 August 2007
Participant Information Sheet	3	17 August 2007
Participant Information Sheet	3	17 August 2007
Participant Consent Form	3	17 August 2007
Participant Consent Form	2	
Participant Consent Form	1	24 June 2007
Response to Request for Further Information	1	
pages 5,7,11,16,25,26,36,37. amended application form	2	
validated questionnaire DEX (independent rater & self rating)	1	
validated questionnaire - The acceptance & Action questionnaire	1	
validated questionnaire BIS 11	1	
SDQ 20 validated questionnaire	1	
Supervisor's CV	1	24 June 2007
STROOP scoring sheet part I & II	1	
Trail making test part A*B (Task sheets)	1	
Digit Span (Ad & scoring sheet from the WAIS III)	1	
Staff information sheet	1	24 June 2007

R&D approval

All researchers and research collaborators who will be participating in the research at NHS sites should apply for R&D approval from the relevant care organisation, if they have not yet done so. R&D approval is required, whether or not the study is exempt from SSA. You should advise researchers and local collaborators accordingly.

Guidance on applying for R&D approval is available from http://www.rdforum.nhs.uk/rdform.htm.

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees (July 2001) and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

Feedback on the application process

Now that you have completed the application process you are invited to give your view of the service you received from the National Research Ethics Service. If you wish to make your views known please use the feedback form available on the NRES website at:

https://www.nresform.org.uk/AppForm/Modules/Feedback/EthicalReview.aspx

We value your views and comments and will use them to inform the operational process and further improve our service.

07/H0701/33	**Please quote this number on all correspondence**

With the Committee's best wishes for the success of this project

Yours sincerely

Janet Carter

Rev. Dr Joyce Smith
Chair

Email: janet.carter@redbridge-pct.nhs.uk

Enclosures: *Standard approval conditions [SL-AC1 for CTIMPs, SL-AC2 for other studies]*
Site approval form

Copy to: Dr Nick Wood
[R&D office for NHS care organisation at lead site]

Appendix 8 Boxplots for primary outcome measures for the whole sample

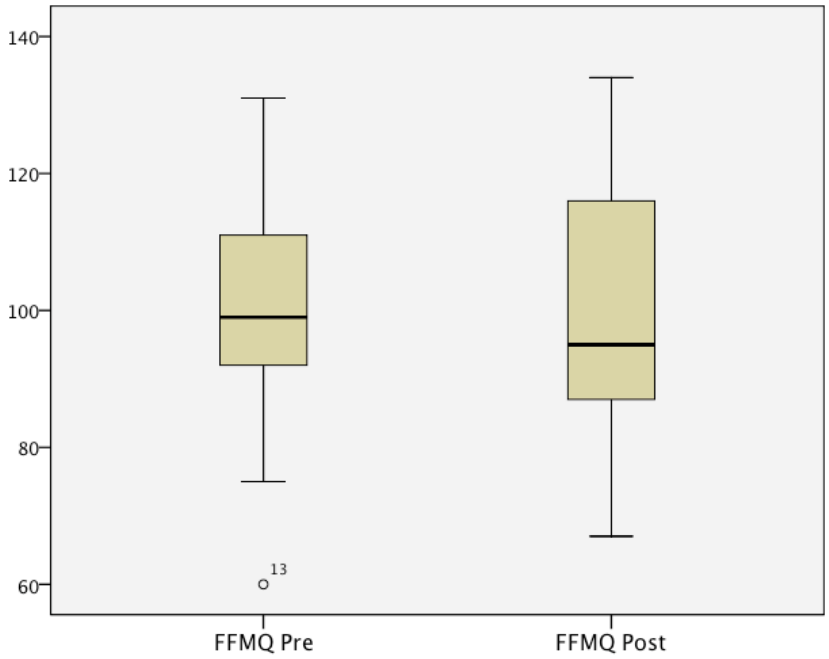

Figure 14: Boxplots showing the distribution of FFMQ scores (mindfulness) for the whole sample (n=17).

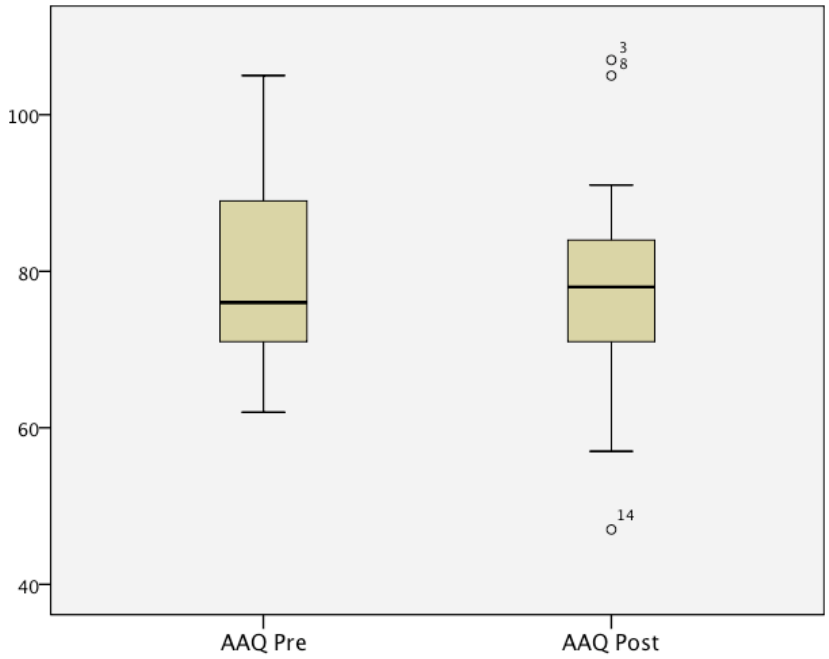

Figure 15: Boxplots showing the distribution of AAQ scores (experiential avoidance) for the whole sample (n=17).

Appendix 9 Boxplots for secondary outcome measures for the whole sample

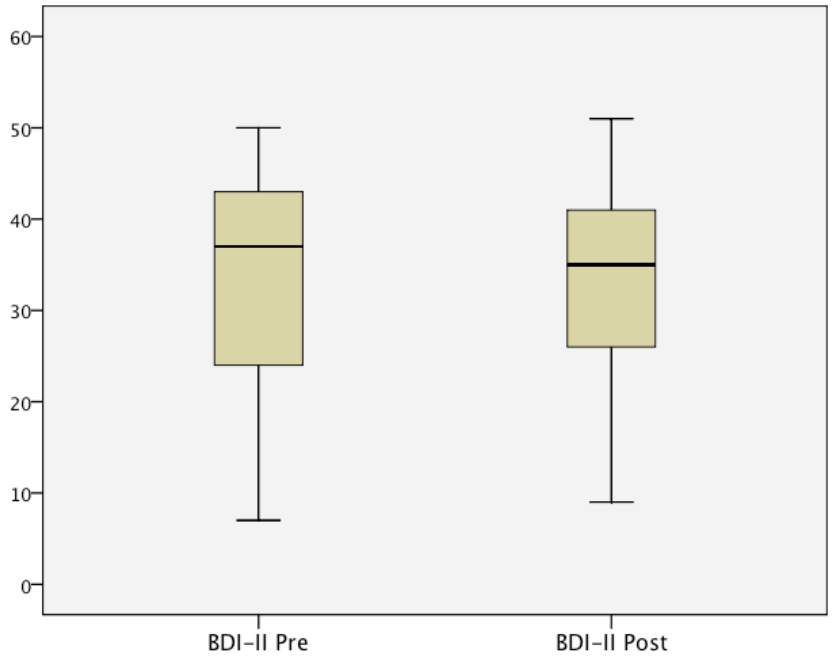

Figure 16: Boxplots showing the distribution of BDI-II scores (depression) for the whole sample (n=17).

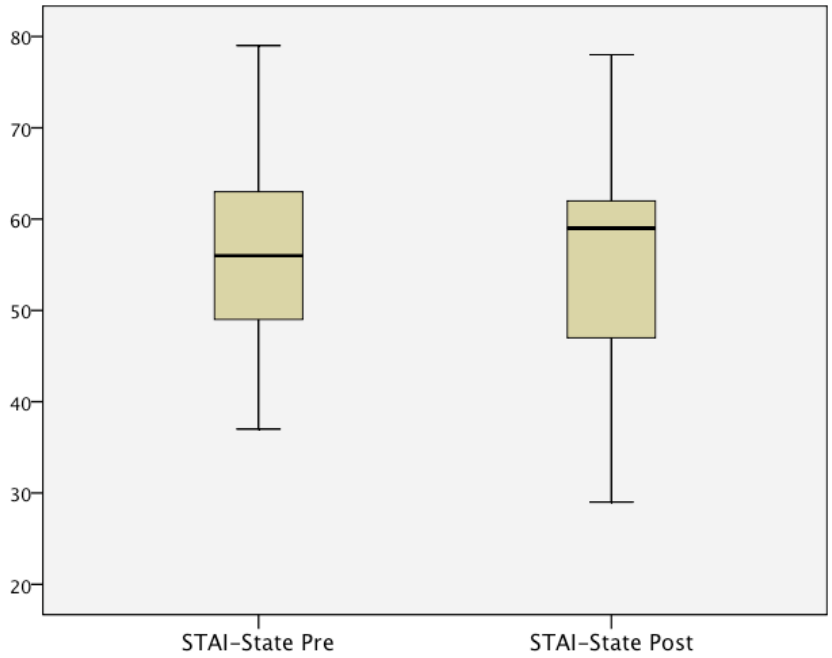

Figure 17: Boxplots showing the distribution of STAI-State scores (state anxiety) for the whole sample (n=17).

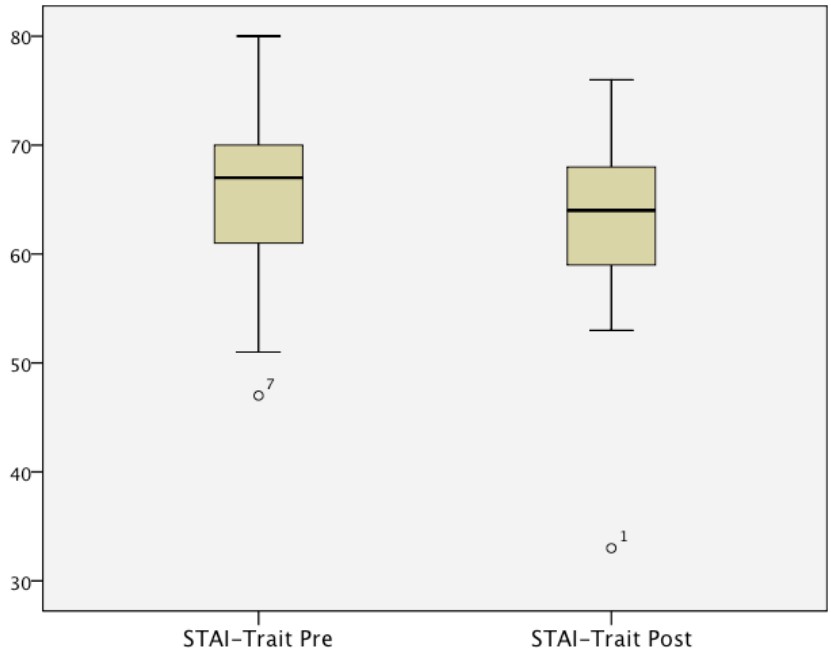

Figure 18: Boxplots showing the distribution of STAI-Trait scores (trait anxiety) for the whole sample (n=17).

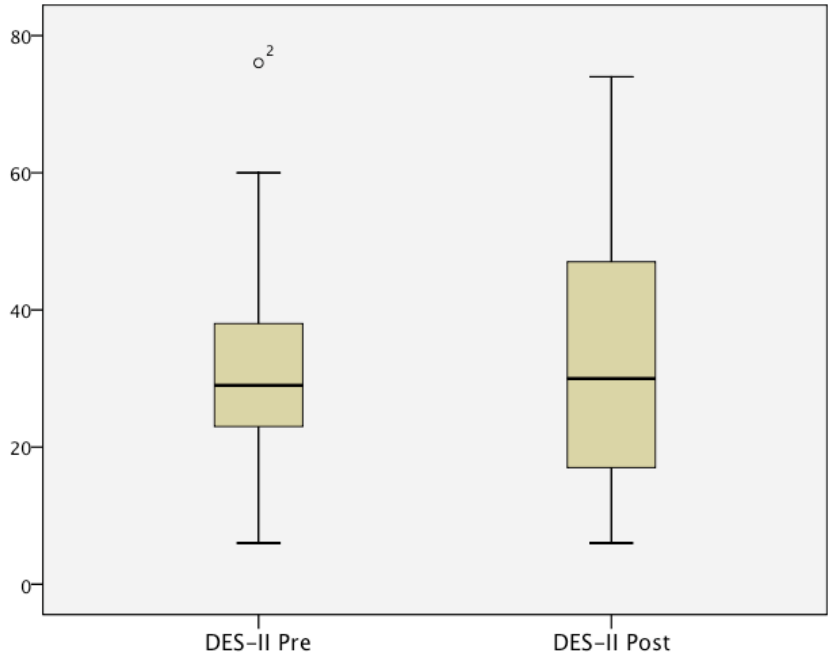

Figure 19: Boxplots showing the distribution of DES-II scores (cognitive dissociation) for the whole sample (n=17).

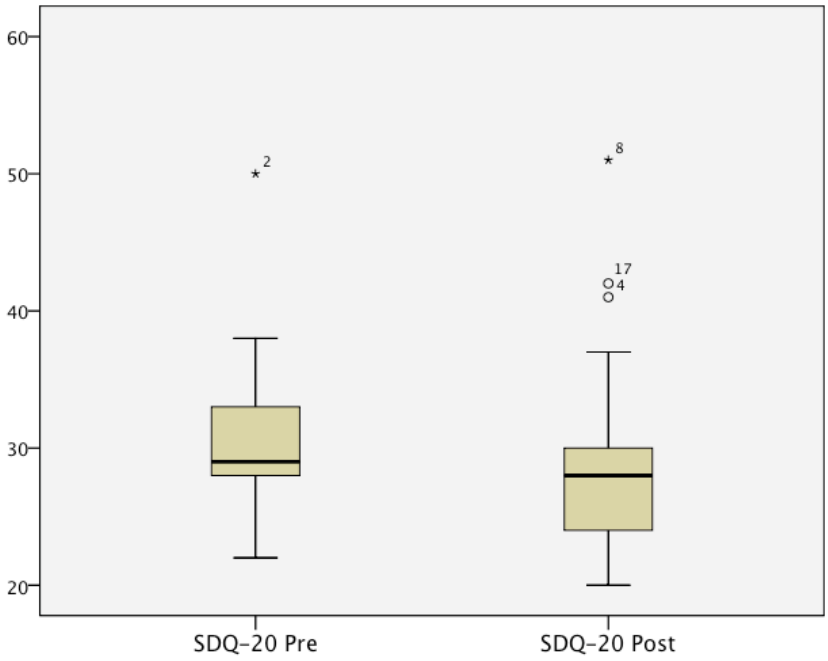

Figure 20: Boxplots showing the distribution of SDQ-20 scores (somatoform dissociation) for the whole sample (n=17).

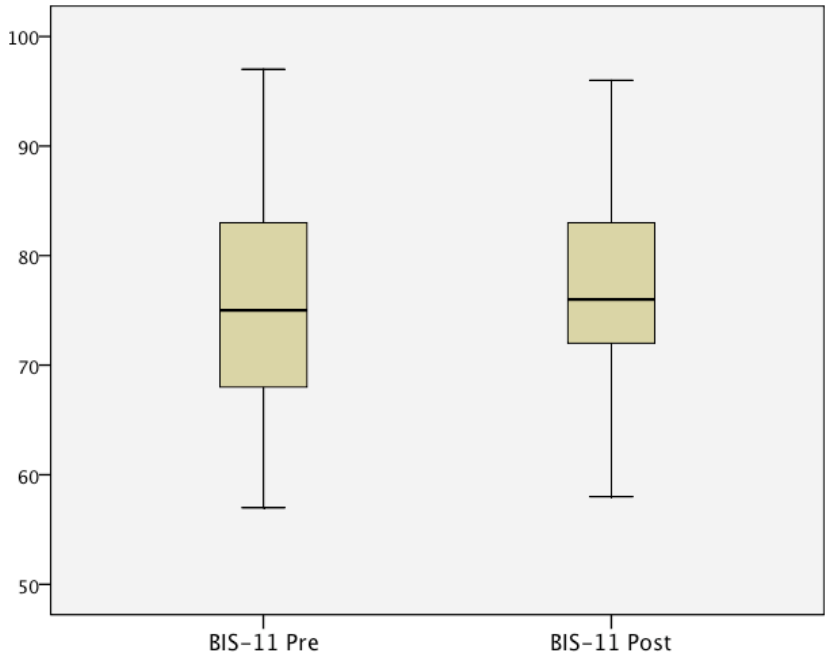

Figure 21: Boxplots showing the distribution of BIS-11 scores (impulsivity) for the whole sample (n=17).

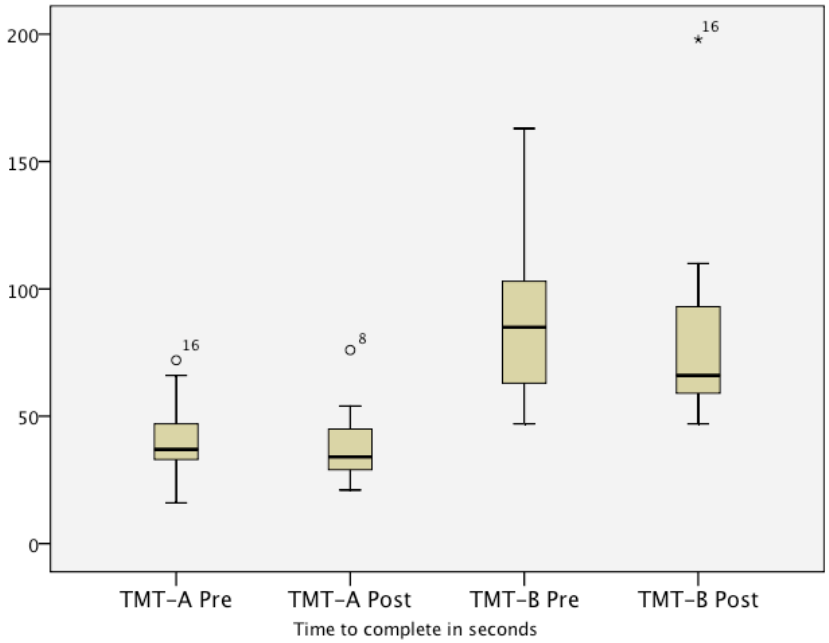

Figure 22: Boxplots showing the distribution of Trail Making Test performance times (in seconds) for the whole sample (n=17).

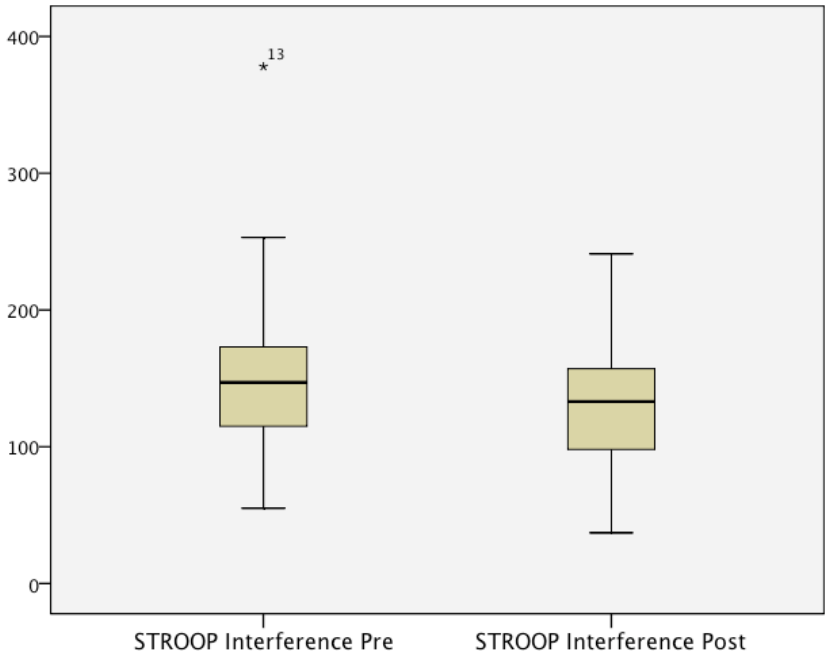

Figure 23: Boxplots showing the distribution of STROOP Interference times (in seconds) for the whole sample (n=17).

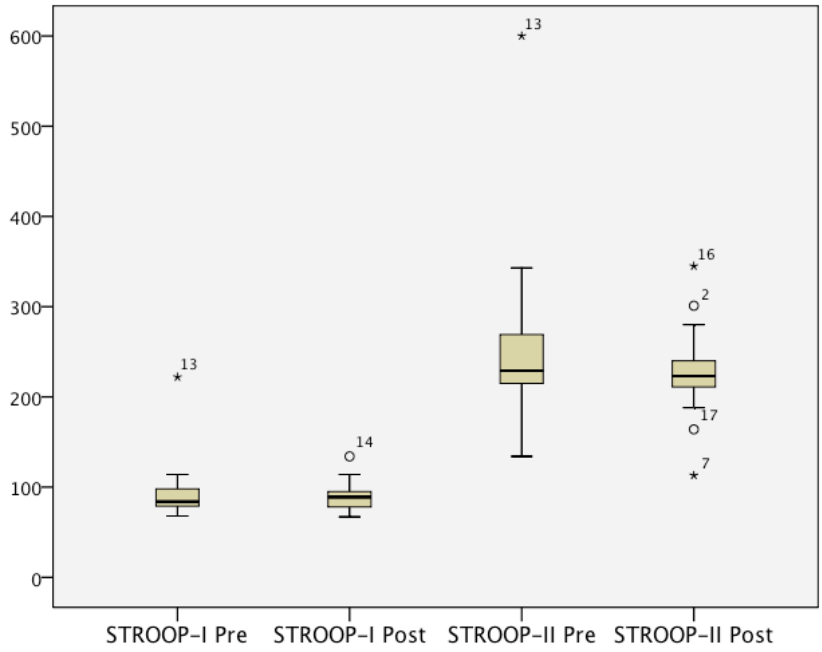

Figure 24: Boxplots showing the distribution of STROOP-I and II performance times (in seconds) for the whole sample (n=17).

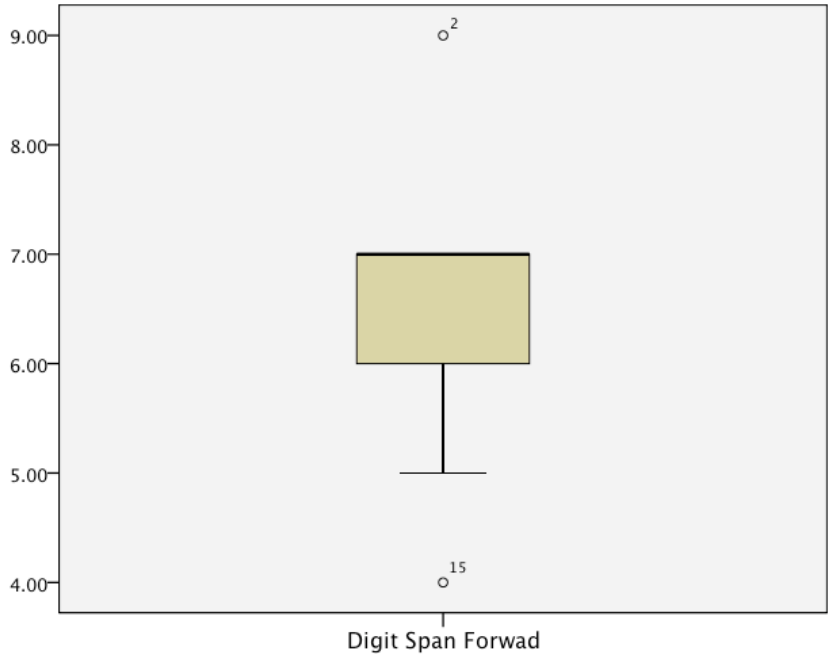

Figure 25: Boxplots showing the distribution of Digit Span Forward scores (longest correct span) for the whole sample (n=17).

Appendix 10 **Scatterplots showing the relationship between each primary and secondary outcome measure and number of sessions attended (dosage)**

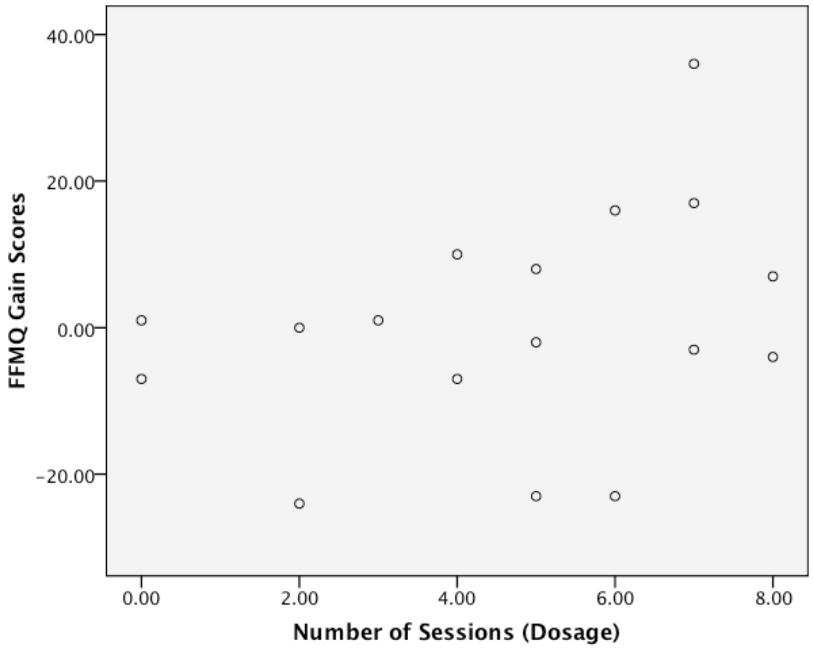

Figure 26: Scatterplot showing the relationship between FFMQ gain scores (mindfulness) and the number of sessions attended (dosage) for the whole sample (n=17).

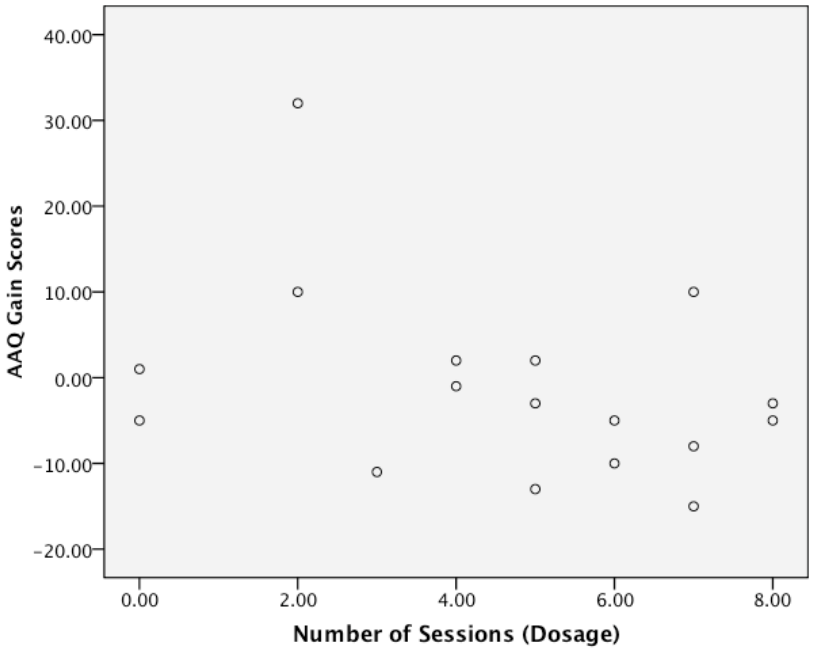

Figure 27: Scatterplot showing the relationship between AAQ gain scores (experiential avoidance) and the number of sessions attended (dosage) for the whole sample (n=17).

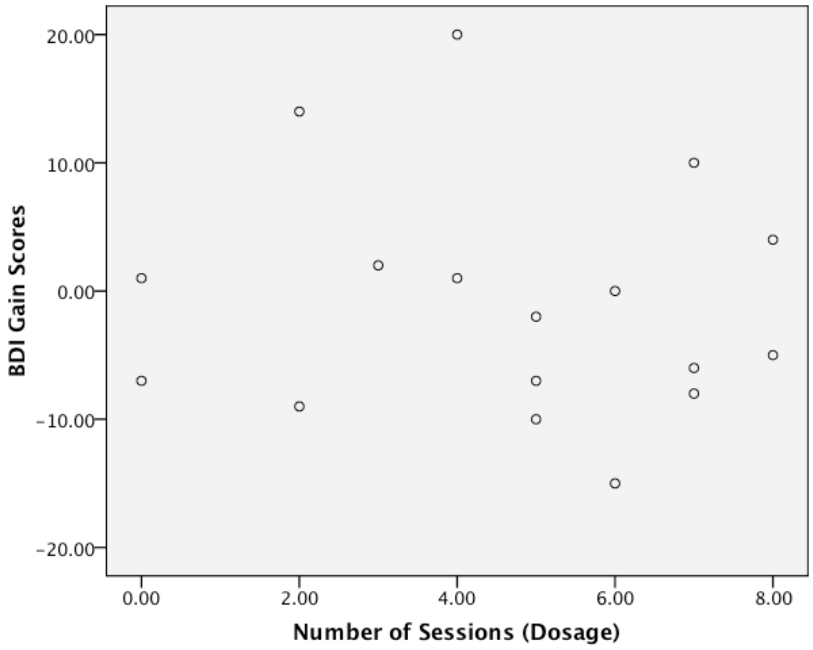

Figure 28: Scatterplot showing the relationship between BDI-II gain scores (depression) and the number of sessions attended (dosage) for the whole sample (n=17).

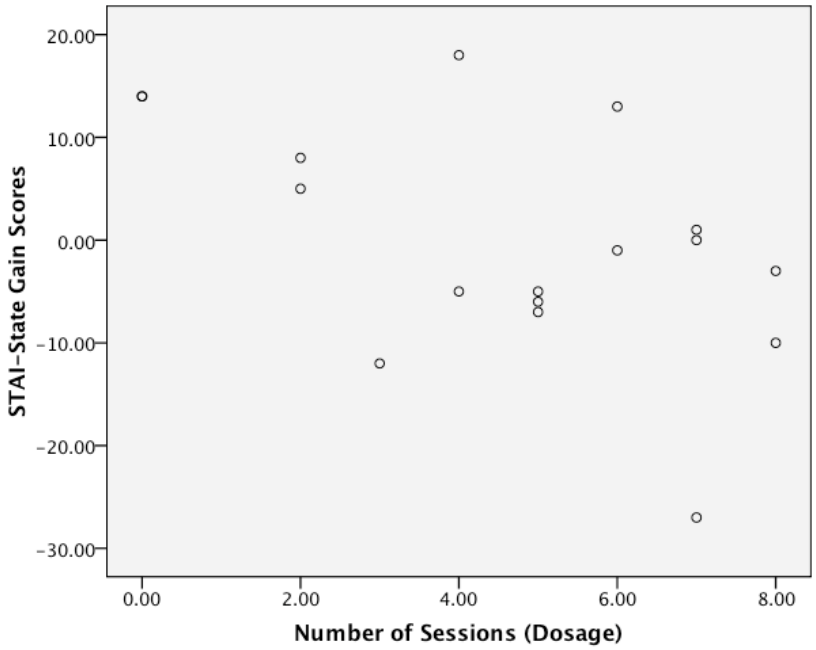

Figure 29: Scatterplot showing the relationship between STAI-State gain scores (state anxiety) and the number of sessions attended (dosage) for the whole sample (n=17).

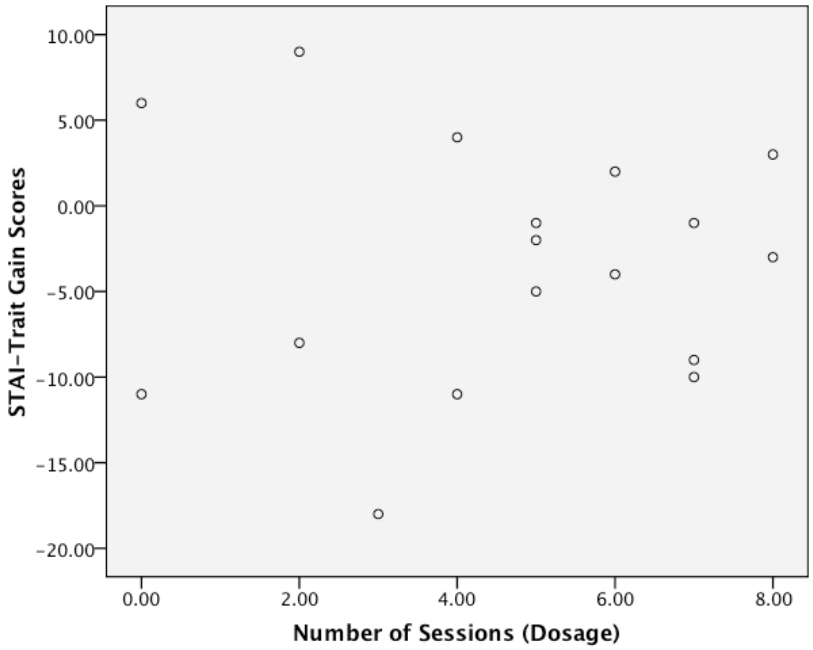

Figure 30: Scatterplot showing the relationship between STAI-Trait gain scores (trait anxiety) and the number of sessions attended (dosage) for the whole sample (n=17).

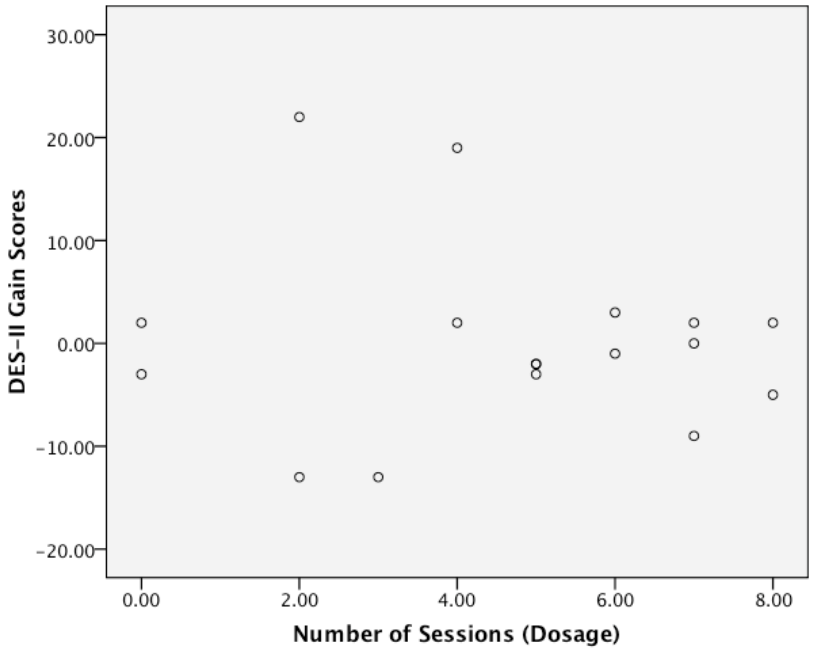

Figure 31: Scatterplot showing the relationship between DES-II gain scores (cognitive dissociation) and the number of sessions attended (dosage) for the whole sample (n=17).

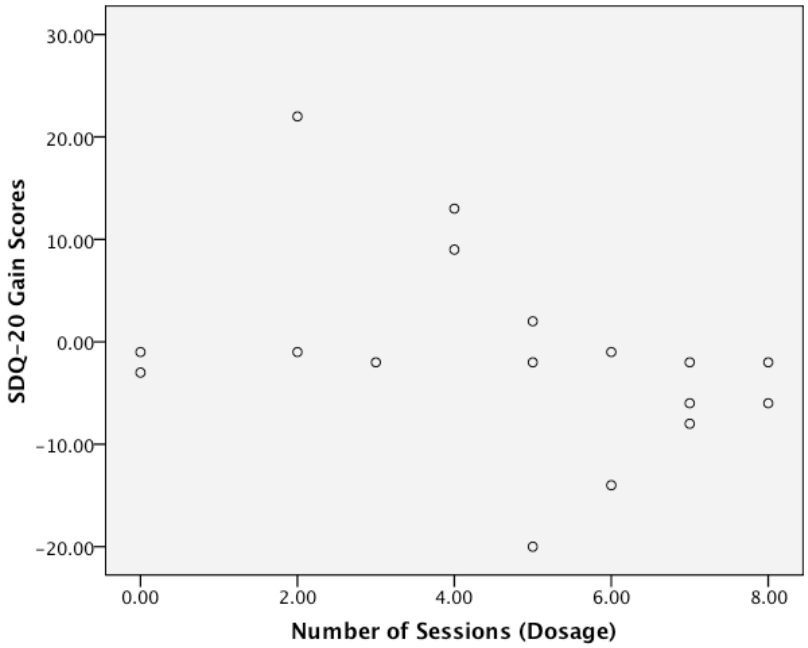

Figure 32: Scatterplot showing the relationship between SDQ-20 gain scores (somatoform dissociation) and the number of sessions attended (dosage) for the whole sample (n=17).

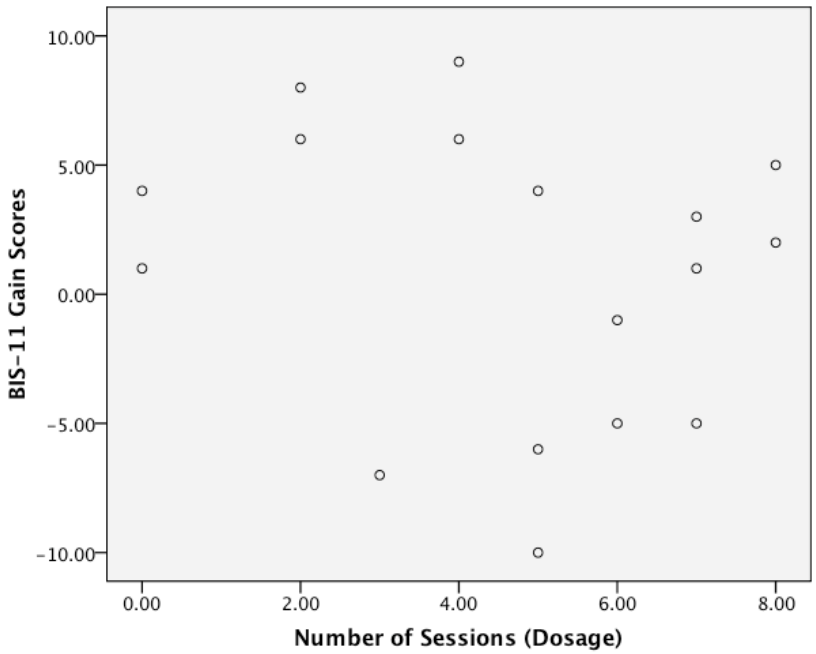

Figure 33: Scatterplot showing the relationship between BIS-11 gain scores (impulsivity) and the number of sessions attended (dosage) for the whole sample (n=17).

Appendix 11 Boxplots of selected primary and secondary outcome measures for treatment completers and non-completers

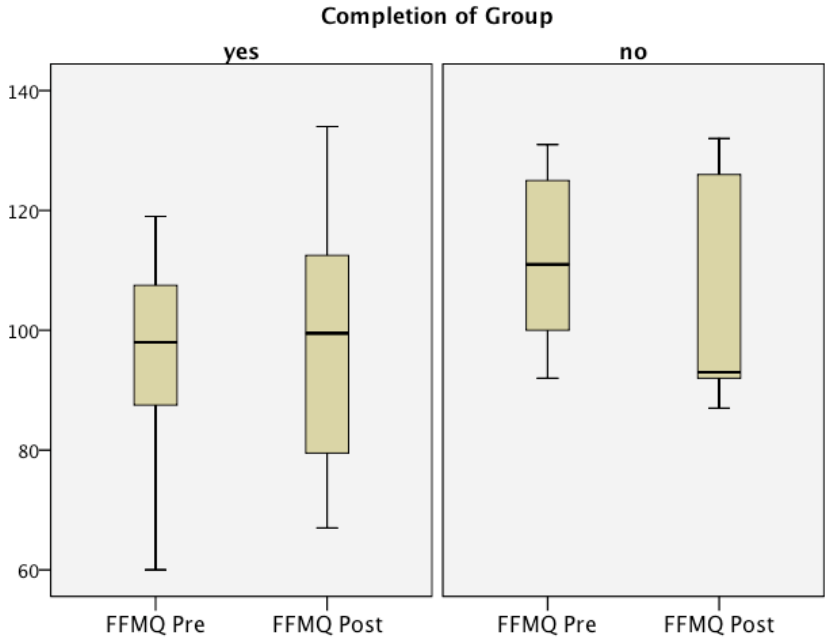

Figure 34: Boxplots showing the distribution of FFMQ scores (mindfulness) for treatment completers (n=12) and non-completers (n=5).

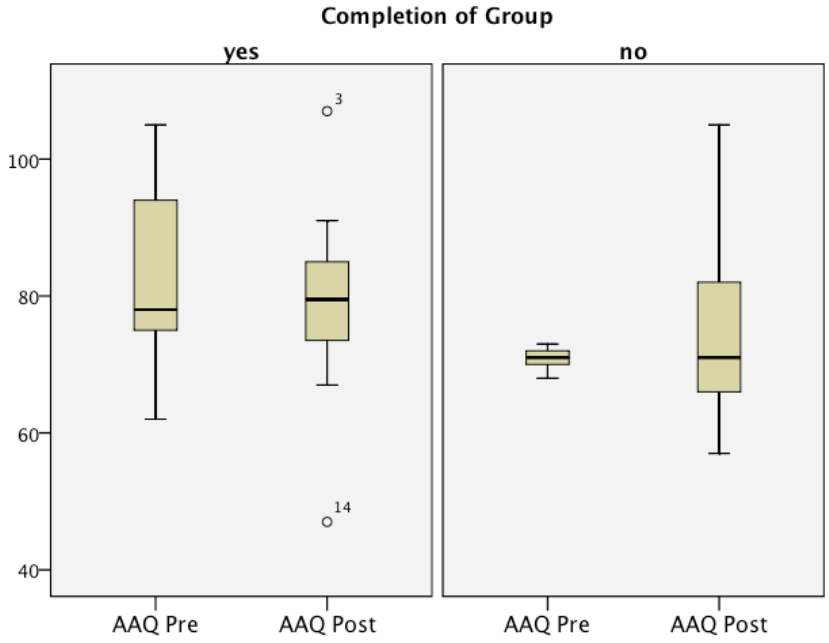

Figure 35: Boxplots showing the distribution of AAQ scores (experiential avoidance) for treatment completers (n=12) and non-completers (n=5).

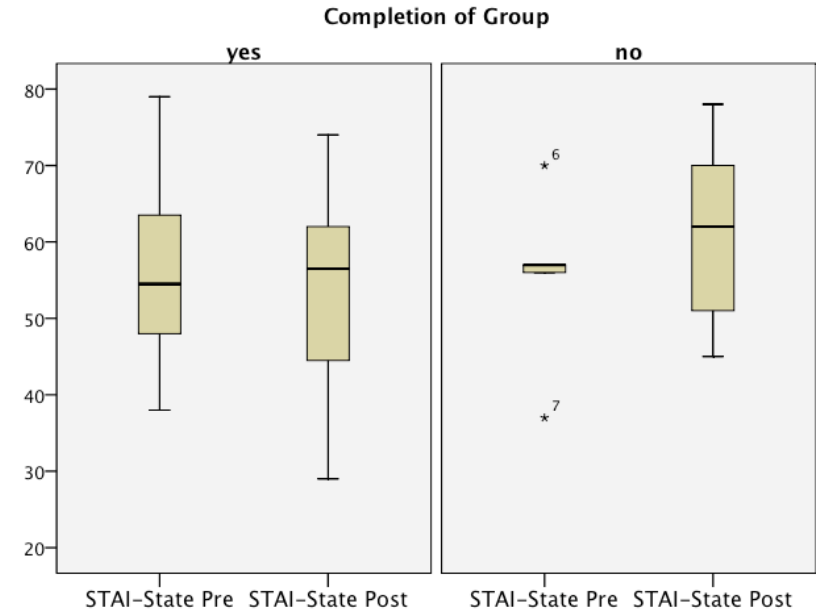

Figure 36: Boxplots showing the distribution of STAI-state scores (state anxiety) for treatment completers (n=12) and non-completers (n=5).

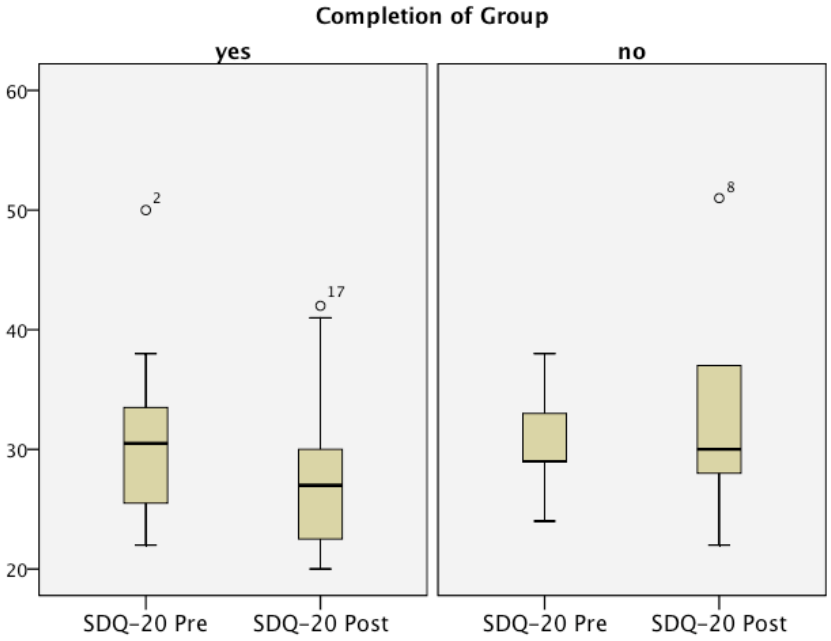

Figure 37: Boxplots showing the distribution of SDQ-20 scores (somatoform dissociation) for treatment completers (n=12) and non-completers (n=5).

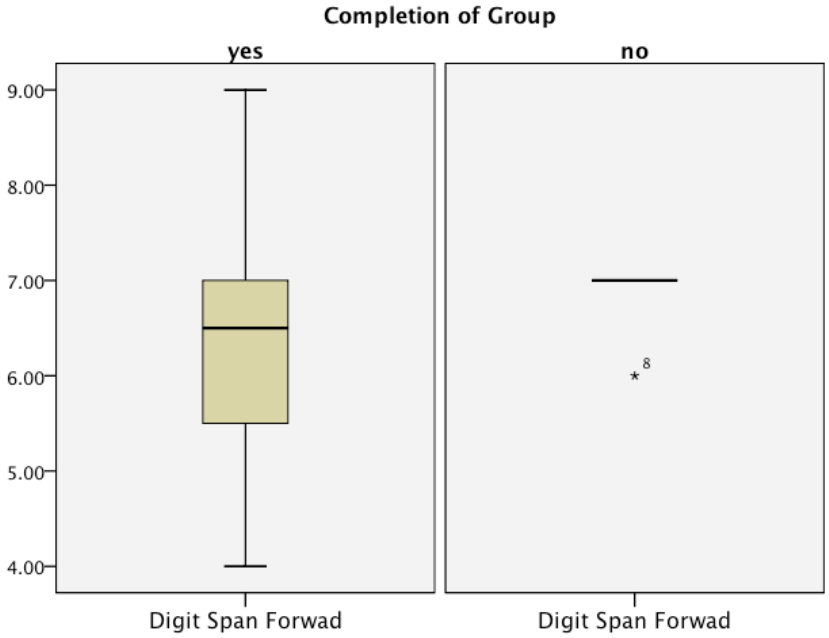

Figure 38: Boxplots showing the distribution of Digit Span (DS) forward scores (longest correct span) for treatment completers (n=12) and non-completers (n=5).

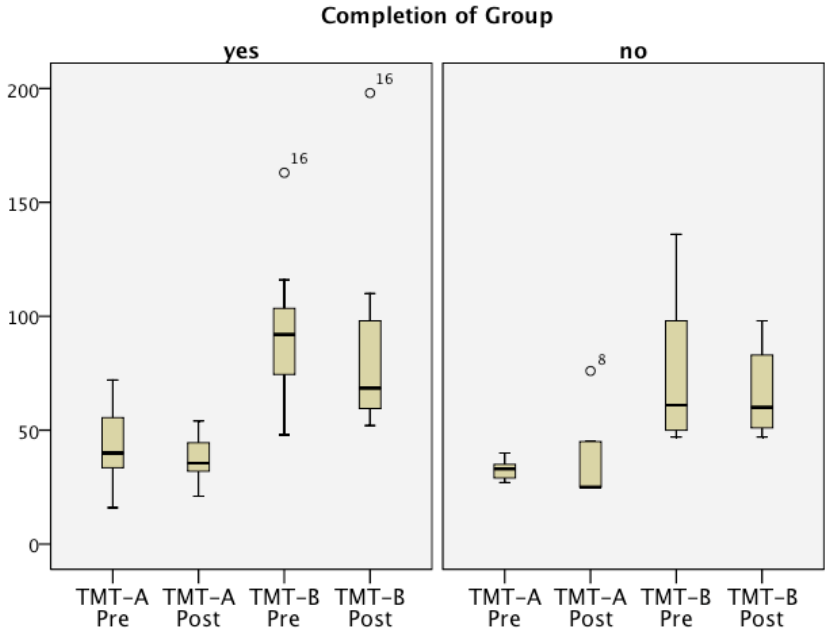

Figure 39: Boxplots showing the distribution of Trail Making Test performance times (in seconds) for treatment completers (n=12) and non-completers (n=5).

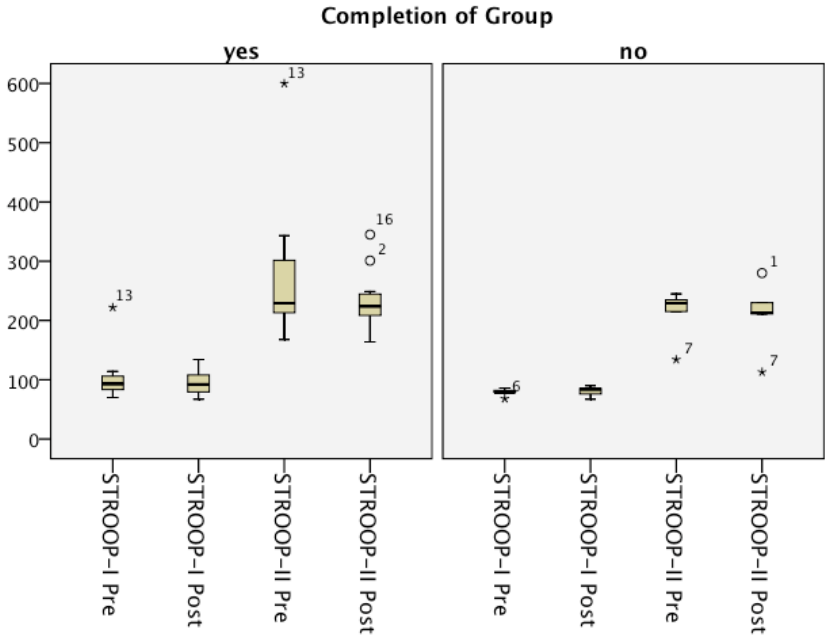

Figure 40: Boxplots showing the distribution of STROOP-I and II performance times (in seconds) for treatment completers (n=12) and non-completers (n=5).

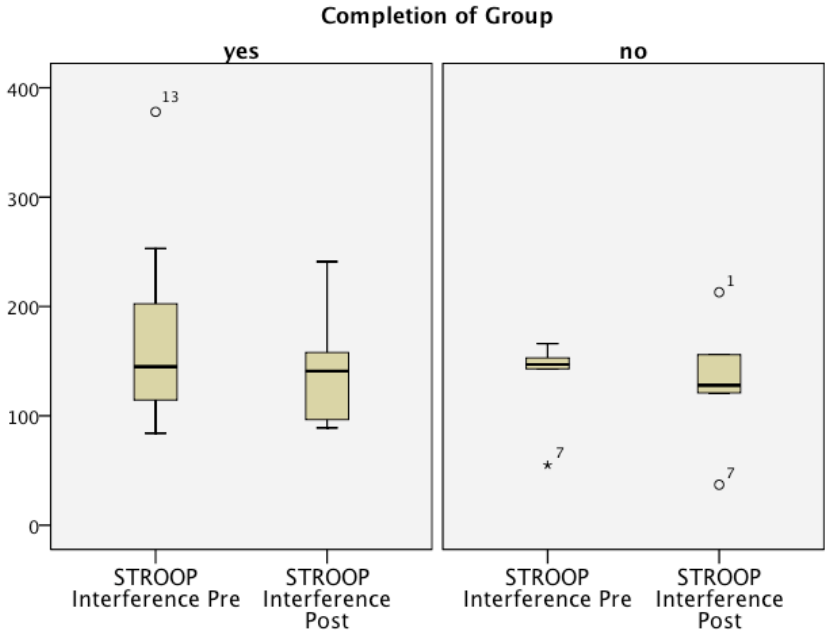

Figure 41: Boxplots showing the distribution of STROOP Interference times (in seconds) for treatment completers (n=12) and non-completers (n=5).

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MINDFULNESS-BASED COGNITIVE THERAPY FOR INDIVIDUALS WITH A DIAGNOSIS OF BORDERLINE PERSONALITY DISORDER: A PILOT STUDY

For submission to Psychology and Psychotherapy: Theory Research and Practice

Sandy Sachse

Mindfulness-based cognitive therapy for individuals with a diagnosis of borderline personality disorder: A pilot study

Sandy Sachse[1], Janet Feigenbaum[2], Steve Davies[1] and Saskia Keville[1]

[1]Department of Psychology, University of Hertfordshire, Hatfield, England
[2]Department of Psychology, University College London, London, England

Word count (exc. figures/tables): 5043

*Requests for reprints should be addressed to Sandy Sachse, UK (e-mail: S.Sachse@herts.ac.uk).

ABSTRACT

Objectives. MBCT was originally developed to prevent relapse into depression. Recently is has also been applied to individuals who are at high risk of suicide or currently suffer with anxiety or depression. Research suggests that MBCT may also be helpful to individuals with a BPD diagnosis, which has not been evaluated. The aim of this study was to evaluate the effectiveness of a MBCT group adapted for individuals with a BPD diagnosis. Another aim of the study was to explore two mechanisms by which mindfulness might exert its effects: attention and experiential avoidance.

Design. The design of the study was a repeated measures, nonrandomised, quasi-experimental design with within-participant and between-participant comparisons. Individuals meeting BPD criteria were recruited. Those who completed fewer than the minimum number of sessions were allocated to the comparison group (non-completers). Dependent variables were depression, anxiety, dissociation, impulsivity, experiential avoidance and attention.

Method. Participants were assessed pre- and post intervention. Complete data was available for 17 participants. A whole sample analysis was conducted, and dosage effects were explored. Additional analyses looked at treatment completers (n=12).

Results. The study did not find any significant differences from pre to post-treatment for the whole sample. A sub-sample of treatment completers showed improvements in mindfulness. These were accompanied by predicted changes in measures of attention.

Conclusions. The study lends some tentative support to models of mindfulness. There were several limitations and the study is therefore not conclusive regarding the utility of MBCT-a for individuals with a BPD diagnosis.

Mindfulness-based interventions have attracted growing clinical interest and attention (Baer, 2003). Mindfulness has been incorporated in a number of interventions including Dialectical Behaviour Therapy (DBT, Linehan, 1993), Mindfulness-based Stress Reduction (MBSR; Kabat-Zinn, 1990), and Mindfulness-based Cognitive Therapy (MBCT; Segal, Williams & Teasdale, 2002). MBSR has predominantly been applied to medical patient populations but also some psychiatric conditions (e.g. GAD, binge eating disorder) with studies generally showing improvements on measures of anxiety and depression (e.g. Kabat-Zinn *et al*., 1992; Kristeller & Hallett, 1999).

MBCT (Segal *et al*., 2002) was originally developed for clients with a history of depression and has been found to significantly reduce relapse rates (Teasdale *et al*., 2000; Ma & Teasdale, 2004). MBCT combines techniques from cognitive therapy with intensive training in mindfulness. Through group sessions and mindfulness meditation practice, participants learn about the nature of thoughts, feelings and bodily sensations. Clients develop a different relationship with their thoughts and feelings in order to step-back from vicious cycles of negative emotions and develop more adaptive ways of coping (Williams & Swales, 2004; Williams, Duggan, Crane & Fennel, 2006). Barnhofer *et al*. (2007) state that an overarching goal of MBCT is to enhance emotion regulation and train attentional capacities.

BPD is defined as ‘a pervasive pattern of impulsivity and instability in interpersonal relationships and self-image’ (p. 1250, DSM-IV, 1994). It is characterised by patterns of cognitive, emotional and behavioural dysregulation, including impulsivity, self-harm, substance misuse and high

rates of Axis-I comorbidity (e.g. Zanarini, Frankenburg, Hennen, Reich and Silk, 2004; Lieb *et al*., 2004).

MBCT has been applied to individuals who suffer with anxiety and/or depression (e.g. Fiuncane & Mercer, 2006; Kenny & Williams, 2007; Ree & Craigie, 2007), with demonstrable improvements. The successful application of MBCT to clients at high risk of suicide (Barnhofer *et al*., 2007; Williams *et al*., 2006) and psychiatric inpatients (York, 2007) suggests that MBCT may also prove helpful to clients meeting BPD criteria. Further evidence suggests that deficits in mindfulness skills may explain variability in different BPD features (Wupperman, submitted).

DBT is the most well researched treatment for BPD (Linehan, 1993, Lieb *et al*., 2004). DBT is a comprehensive, skills-based treatment package. Underpinning taught skills is the core skill of mindfulness (Linehan, 1993; Feigenbaum, 2007). Research is only beginning to explore the particular value of mindfulness for this client group. For example, Huss and Baer (2007) adapted MBCT and used it as an adjunct to ongoing DBT in one client and demonstrated benefits.

DBT identifies emotional dysregulation as the core problem of BPD. It is characterised by marked reactivity of mood and thus heightened emotional arousal (e.g. Linehan, 1993; Putnam & Silk, 2005; Rosenthal *et al*., 2008).

Particular brain structures have been highlighted and hypothesised to underlie the difficulties typically experienced in BPD, namely prefrontal and temporo-limbic structures. Frontal structures are generally associated with mechanisms of self-control and attention (also captured in the notion of

executive function) and have been noted to play a central role in emotion regulation and impulsive behaviour (e.g. Dinn *et al*., 2004). In line with this, Ruocco (2005), in a meta-analytic review of neuropsychological deficits, concludes that compared to 'normal controls' clients meeting BPD criteria show deficits in attention and cognitive flexibility (see also Rogers & Kirkpatrick, 2005). Thus, it remains possible that impulsivity and emotional reactivity or dysregulation are mediated by attentional mechanisms associated with frontal lobe functioning. Thus far, studies do not appear to have investigated changes in measures of attention following therapeutic intervention in this client group.

Various mechanisms through which mindfulness exerts its positive effects have been proposed including changes in attentional control (Bishop *et al*., 2004; Shapiro *et al*., 2006) and reduced experiential avoidance (Hayes, Strohsal & Wilson, 1999). The latter concept may be particularly relevant in individuals with BPD. Hayes, Wilson, Gifford, Follette and Strohsal (1996) note that clients meeting BPD criteria engage in a range of behaviours (e.g. self-harm), which share features with the experiential avoidance properties of addictive behaviour. This is supported by studies showing that individuals meeting BPD criteria have a tendency to avoid unpleasant thoughts, emotions, sensations and situations likely to elicit these (e.g. Bijttebier & Vertommen, 1999; Kruedelbach, McCormick, Schulz & Grueneich, 1993; Rosenthal, Cheavans, Lejuezb & Lynch, 2005; Yen, Zlotnick & Constello, 2002).

The purpose of the current study was to establish whether it is possible to run a MBCT group adapted (MBCT-a) for individuals with a BPD diagnosis in everyday clinical practice (Chambles & Hollon, 1998) and to explore its effectiveness by measuring changes in depression, anxiety, impulsivity and dissociation. Another aim of the study was to explore the mechanisms by which mindfulness might exert its effects on this client population in particular attention and experiential avoidance.

Method

Design

This study employed a repeated measures, nonrandomised, quasi-experimental design with within-participant and between-participant comparisons. Individuals meeting BPD criteria were recruited and offered MBCT-a. Those who completed fewer than the minimum number of sessions were allocated to the comparison group. The hypotheses were that MBCT-a would lead to an increase in mindfulness skills and a decrease in experiential avoidance as measured by the AAQ. It was further hypothesised that improved performance on two attentional tasks, the STROOP and TMT would be associated with positive changes in mindfulness. Similarly, it was hypothesised that changes in mindfulness will lead to a decrease in impulsivity, anxiety, depression and dissociation.

Participants

Participants in this study were recruited from a specialist personality disorder service. Inclusion criteria were a diagnosis of BPD, aged 18 to 50, and fluent in English. Exclusion criteria included a diagnosis of current psychotic or bipolar disorder, head injury or neuropsychological deterioration, and current substance abuse.

22 clients initially agreed to participate in the study. 4 dropped out before attending the pre-intervention assessment (see Figure 1). Thus 18 participants were assessed pre-intervention. One client did not agree to be reassessed after dropping out of the group and was removed from analyses. The Total sample therefore consisted of 17 participants, including 12 treatment completers (number of sessions attended ≥ 4; Teasdale *et al*., 2000) and 5 non-completers (number of sessions attended < 4). Assessments took place pre and post intervention. Participants attended one of two consecutively run mindfulness groups.

[Insert Figure 1 here]

MBCT adaptations

MBCT is a manualised programme, which aims to teach clients mindfulness and cognitive skills in a group setting (Segal *et al*., 2002). Clients attend an individual orientation session, followed by 8 weekly 2-hour group sessions.

Clients are provided with daily homework exercises, including guided and unguided mindfulness exercises.

The treatment manual used in this study was adapted from the original MBCT manual (Segal *et al*. 2002). Adaptations included extended session lengths (2 1/2 hours) and range of mindfulness CDs provided. The main set as outlined in the MBCT manual was provided, however only one out of 4 additional CDs from Series 2 of Jon Kabat-Zinn's range was used, thus representing a more narrow range of choice in exercises[1]. Another deviation from the published manual occurred in session 4, which focuses on psychoeducation for depression. This was extended to also include experiences of anxiety and emotional distress in general. All adaptations were discussed with and approved by Mark Williams one of the originators of the programme.

Measures

Clinical Outcome Measures

Mindfulness was measured using the Five-Facet Mindfulness Questionnaire (FFMQ; Baer *et al*, 2006). The FFMQ is a 39 item self-report measure that provides 5 subscales (observing, describing, acting with awareness, accepting

[1] It needs to be noted that 2 out of the remaining 3 CDs making up Series 2 by Jon Kabat-Zinn consist of silence with bells, which was judged to be too difficult for clients and therefore omitted. The other CD consisted of lying down mediations, which essentially replicate sitting mindfulness exercises and participants were invited to also use the CD containing sitting meditation in a lying down position.

without judgement, non-reactivity). The five facets can be combined to yield a total score, which reflects a global measure of mindfulness.

Experiential avoidance was measured using the Acceptance and Action Questionnaire (AAQ; Hayes *et al.*, 2004). The AAQ is a 22-item self- report instrument designed to measure degree of experiential avoidance (e.g. attempts to control thoughts or emotions) using a 7-point Likert scale.

Anxiety was measured using the State-Trait Anxiety Inventory (STAI; Spielberger, 1983). The STAI is a commonly used 40-item self-report measure assessing state and trait anxiety with good psychometric properties.

Depression was measured using the Beck Depression Inventory-2nd Edition (BDI-II; Beck, Steer & Brown, 1996). The BDI-II is a 21-item self-report measure of symptoms of depression, is used as a standard in clinical practice and has excellent psychometric properties.

Cognitive dissociation was measured using the Dissociative Experience Scale-2nd Edition (DES-II; Carlson & Putnam, 1993). The DES-II is a 28-item self-report instrument which measures how frequently individuals experience cognitive dissociation.

The Somatoform Dissociation Questionnaire (SDQ-20; Nijenhuis *et al*., 1996) is a 20-item instrument, which measures how frequently individuals experience symptoms of physical dissociation.

Barratt Impulsiveness Scale-11 (BIS-11; Patton, Stanford & Barratt, 1995) is 30-item self- report questionnaire designed to measure an individual's tendency to be impatient and impulsive.

Tests of Attention

The Digit Span task requires individuals to repeat orally presented sequences of numbers either in the same (DS forward) or reverse order (DS backward). DS forward is generally argued to be a measure of attentional capacity, which has been found to be resistant to practice effects and effects of many brain injuries (Lezak, Howieson & Loring, 2004).

The STROOP version employed in this study consists of two parts: in Part I individuals are asked to read the printed colour names and in Part II to state the colour in which each word is printed. The time taken to complete both parts of the STROOP provides a measure of speeded processing (e.g. Kunert *et al*. 2003). The difference between the times taken to complete the two parts is referred to as STROOP interference, providing a measure of selective attention (e.g. Kunert *et al*., 2003, Ruocco, 2005).

The Trail Making Test is a complex test of attention (Lezak *et al.*, 2004). Individuals are required to connect numbers spread across a sheet of paper (Trial A) as well as connecting alternating letters and numbers (Trial B). Both parts are held to tap visuospatial and motor skills. Part B is further held to be a measure of executive functioning requiring the individual to hold two lines of information in working memory and alternate between them sequentially (also known as set shifting; Dinn *et al*. 2004, Ruocco, 2005).

Statistical Analyses

Complete data sets were available for 17 participants. This is likely to be a conservative test of hypotheses as this includes pre and post-intervention data for participants who did not attend the group or did not complete the minimum effective dose (i.e. 4 out of 8 sessions) as defined by Teasdale *et al.* (2000). In order to ascertain changes in measures across time analyses consisted of parametric or non-parametric paired samples tests. Given the exploratory nature of the study and small sample size it was decided not to use Bonferroni-corrected p values to enhance statistical power. To further gain statistical power, it was decided to raise the α level to 10%. Treatment effect sizes were calculated using Cohen's d statistic (Cohen, 1988). Correlations between individual gain scores (for each variable) and the number of sessions completed were executed to explore dosage effects. Appropriate parametric or non-parametric correlations were conducted.

Results

The mean number of sessions attended was 4.65 (SD=2.55). 12 Participants completed the minimum number of sessions (treatment completers) and the mean number of sessions attended was 6.00 (SD=1.41). The mean number of sessions attended by treatment non-completers was 1.33 (SD=1.21). Demographic and clinical characteristic of participants are shown in Tables 1 and 2.

[Insert Table 1 here]

Participants were predominantly female (82.4%) and white (82.4%). This is representative of this client population (e.g. Lieb *et al*., 2004) and referrals received by the service. Approximately 70% of participants were prescribed psychotropic medication, in line with reports in the literature (e.g. Lieb, 2004; Zanarini *et al*., 2004). There were no significant differences between treatment completers and non-completers on demographic variables.

Table 2 provides a breakdown of diagnostic information and BPD severity. BPD severity is based on the number of diagnostic criteria from DSM-IV. Totals in the table refer to the number of participants meeting at least one co-morbid diagnosis in a particular category. Approximately 30% of participants had at least one co-morbid Axis-II diagnosis. All participants met criteria for at least one Axis-I disorder with approximately 77% meeting criteria for MDD. Treatment completers and non-completers were comparable for BPD severity.

[Insert Table 2 here]

Whole sample analysis

Primary Outcome Measures

Table 3 presents the results from the whole sample analysis for the FFMQ (Mindfulness) and AAQ (Experiential Avoidance).

[Insert Table 3 here]

FFMQ

Higher scores on the FFMQ indicate higher levels of mindfulness. The total score ranged from 39 to 195. Recently published data showed a mean total score of 116.9 in a community sample and 124.34 in a student sample (Baer *et al*. 2008). Based on a pairwise t-test, no significant difference was observed in scores from pre-to post-treatment (t(16)= -.047, p=.482).

AAQ

Experiential avoidance was measured using the AAQ. Higher scores on the AAQ reflect higher levels of experiential avoidance. Scores range from 16 to 112 using the 16-item solution. The AAQ is a relatively new measure and there is a lack of published data regarding norms or the interpretation of scores. Based on a pairwise t-test, no significant difference was observed in scores from pre-to post-treatment (t(16)=.48, p=.319).

Secondary Outcome Measures

Table 4 shows the descriptive statistics for the secondary clinical outcome measures. Descriptive statistics for measures of attention are shown in Table 5.

[Insert Table 4 here]

BDI

Higher scores on the BDI-II indicate greater levels of depressive symptomatology. The mean pre-treatment scores were 34.94 and post-treatment 33.94, indicating 'severe' depressive symptomatology. Based on a pairwise t-test, no significant difference was observed in scores from pre-to post-treatment ($t(16)=.452$, $p=.329$).

Anxiety

Higher scores on the STAI indicate higher levels of anxiety. Based on a pairwise t-test, no significant difference was observed pre- to post-treatment for state anxiety ($t(16)=.064$, $p=.475$). Scores fell at the 94th percentile for males and 93rd percentile for females and are comparable to scores found in psychiatric patients diagnosed with depression. There was a statistically significant decrease for scores on trait anxiety ($t(16)=2.013$, $p=.0305$). Scores were at the 100th percentile for both males and females, approximately one SD higher than mean scores for psychiatric patients diagnosed with depression (mean=53.43).

Dissociation

On the DES-II and SDQ-20 higher scores indicate higher rates of dissociative symptoms. A cut-off score of 30 for the DES-II and 35 for SDQ-20 is typically used in clinical practice to identify individuals likely to be severely dissociative (Carlson & Putnam, 1993; Putnam *et al*., 1996). Based on a pairwise t-test, no significant difference was observed in scores from pre-to post-treatment

(t(16)=.026, p=.979). For the SDQ-20, non-parametric analysis was conducted due to abnormalities in the distribution of data. No significant difference was observed in scores from pre-to post-treatment (Z=1.26, p=.208).

Impulsivity

Higher scores on the BIS-11 indicate higher levels of impulsivity. There are no norms available, however scores of 74 and above are generally held to reflect high levels of impulsivity (e.g. Moeller *et al*. 2001). Based on a pairwise t-test, no significant difference was observed in scores from pre-to post-treatment (t(16)=.643, p=.264).

Attention

Descriptive statistics for the attentional measures are shown in Table 5. Performance on the STROOP and TMT was analysed using non-parametric tests due to abnormalities in the distribution of the data.

[Insert Table 5 here]

Digit Span

DS scores represent the longest sequence of numbers repeated correctly. Following clinical guidelines (Lezak *et al.*, 2004), DS scores overall fell within the average range. However there was considerable variation in performance as indicated by a large range.

Trail Making Test

The data were analysed with the Wilcoxon Matched-Pairs Signed-Ranks Test. No significant difference was observed in performance speed from pre-to post-treatment for Part A (Z=.88, p=.380) or Part B (Z=1.55, p=.121).

STROOP

The data were analysed with the Wilcoxon Matched-Pairs Signed-Ranks Test. No significant difference was observed in performance speed from pre-to post-treatment (Z=.40, p=.3435) for STROOP-I (Reading), STROOP-II (Colour naming) (Z=1.21, p=.227) or STROOP interference (Z=1.52, p=.130)

Effect sizes and evaluation of experimental hypotheses

Effect sizes relating to clinical outcome measures are presented in Table 6. Given that there was no significant change on clinical outcome measures, in particular mindfulness, it was decided to limit the calculation of effect sizes to clinical measures.

[Insert Table 6 here]

Dosage effects

In order to explore relationships between outcome measures and the number of sessions attended by participants, gain scores for each clinical outcome measure were calculate by subtracting pre-treatment scores from post-

treatment scores. Individual gain scores where than correlated with the number of sessions attended (dosage).

Mindfulness

Pearson's r indicated a weak but significant positive association between FFMQ scores and dosage (r=.318, p=.107).

Experiential Avoidance

Pearson's r indicated a weak but significant negative association with changes in AAQ scores and dosage (r=-.348, p=.085).

Depression

Pearson's r indicated no association with changes in BDI-II scores and dosage (r=-.113, p=.333).

Anxiety

Pearson's r indicated a moderate negative association with changes in STAI-state scores and dosage (r=-.532, p=.014). Pearson's r indicated no association with changes in STAI-trait scores and dosage (r=.008, p=.489).

Dissociation

Pearson's r indicated no association with changes in DES-II scores and dosage (r=-.101, p=.700). On the SDQ-20, Pearson's r indicated a weak but

significant negative association with changes in SDQ-20 scores and dosage (r=-.358, p=.050).

Impulsivity

Pearson's r indicated no association with changes in BIS-11 scores and dosage (r=-.216, p=.203).

Additional analyses – Treatment completers

With the presence of a weak dosage effect for mindfulness it was decided to conduct additional analyses.

Primary Outcome Measures

Out of a total of 12 treatment completers, 6 participants showed an improvement in FFMQ scores and 6 did not. Selected demographic variables (see Table 7) and pre- and post intervention scores of outcome measures (see Table 8) were explored for differences between these two groups. The aim was to investigate whether there were any characteristics of participants, which could help identify individuals more likely to benefit from MBCT-a.

[Insert Table 7 here]

Participants who improved in mindfulness did not differ in age or BPD severity compared to those who did not. However, those who did not improve had

spent approximately twice as long in psychological therapy, and attended slightly fewer sessions (Table 7).

[Insert Table 8 here]

Participants who improved on the FFMQ had lower scores at pre-assessment compared to participants who did not improve (Table 10; Figure 2). The improvements equate approximately to half a standard deviation on average; those who did not improve showed the opposite pattern. There was no notable change from pre to post-intervention assessment in terms of experiential avoidance.

[Insert Figure 2 here]

Secondary Outcome measures

Participants who did not improve scored higher on the BDI and BIS-11 pre-intervention; in both cases this difference approximated one standard deviation. There was little change following treatment for both groups.

Attentional Measures

In terms of attention measures, there were no differences between those who improved and those who did not on the TMT Part-A and Part-I of the STROOP. Thus, there did not appear to be any changes in terms of speeded processing, captured by both tasks.

However, participant who improved in mindfulness scores showed a marked improvement on TMT Part-B (Figure 3) and STROOP interference (Figure 4).

Participants who did not improve showed a very small improvement on TMT Part-B and a greater interference effect on the STROOP at post assessment.

It needs to be noted that participants who improved showed better performance on the DS task, with the median falling at the higher end of normal range, compared to participants who did not.

[Insert Figure 3 & 4 here]

Discussion

This study showed that it is possible to run an adapted MBCT programme with clients meeting BPD criteria in a naturalistic setting. Demographic and clinical characteristics of participants in the current study were comparable to ones reported in other studies (e.g. Skodol *et al.*, 2002; Zanarini *et al.*, 2004). This suggests that the current sample can be considered representative.

The study found no significant differences from pre to post-treatment for the whole sample for mindfulness and experiential avoidance. This study is one of the first to report AAQ scores (experiential avoidance) for BPD outpatients using the 16-item solution. Participants scored high on experiential avoidance, supporting theories which conceptualise BPD as a diagnosis

characterised by experiential avoidance (e.g. Hayes *et al.*, 1996). Regarding mindfulness, mean scores for the whole group were approximately one standard deviation lower than that reported for the general population (Baer *et al.*, 2008). This finding adds to accumulating evidence showing that participants with BPD tend to score lower on measures of mindfulness compared to the general public (e.g. Brown & Ryan, 2003). Accordingly, one important clinical implication concerns the need to target experiential avoidance and mindfulness skills and incorporate these into interventions.

Changes in secondary outcome measures were hypothesised to be contingent on the acquisition of mindfulness skills. In line with this, secondary outcome measures did not change overall, apart from trait anxiety. However, the study was low in statistical power, which provides an alternative explanation for the lack of findings.

Data were explored for dose dependent effects. This indicated that there were only weak relationships for mindfulness and experiential avoidance. These findings only reached statistical significance and are merely suggestive of a trend. There was a moderate negative relationship between changes in state anxiety and dosage, which was statistically significant; this was not the case for trait anxiety. Careful consideration of this significant finding would suggest that changes in trait anxiety are not due to MBCT-a but may reflect difficulties in self-report or an error due to small sample size. Analysis also revealed a moderate negative association between changes in somatoform dissociation and dosage. In the absence of changes in mindfulness and experiential avoidance the meaning of this is not clear.

Regarding measures of attention (TMT, STROOP), analyses reveal no statistically significant changes as a result of MBCT-a. Performance speed for part A of the TMT placed participants at the 20th percentile (Tombaugh, 2004) both pre- and post-assessment. For part B mean performance speed fell at the 10th percentile at pre and post-assessment. Regarding the STROOP, performance speed for Part-I and II fell at the 25th percentile pre-treatment and at the 35th percentile post-treatment (Mitrushina, Boone, Razani, D'Elia, 2005). The same pattern was observed for STROOP interference. These results are in line with reports of deficits in attention and cognitive flexibility in individuals meeting BPD criteria (Ruocco, 2005).

Since there was a weak positive relationship between changes in mindfulness scores and dosage, data from treatment completers was explored for changes on the FFMQ. This revealed that 6 participants improved in terms of mindfulness and 6 participants showed a decrease in mindfulness. Those who did not improve had spent approximately twice as long in psychological therapy and tended to attend slightly fewer sessions. This suggests that it may be possible that those who had received longer years of therapy were more chronic or severe in their presentation (e.g. Coryell *et al.* 1998; Endicott & Spitzer, 1978). This would be in line with somewhat higher levels of depression and impulsivity found for this small sub-group.

Participants who did not improve on mindfulness scored higher on the BDI-II and BIS-11 pre-treatment. Whilst any conclusions are merely speculative, it raises the question whether elevated levels of depression and impulsivity would warrant treatment prior to commencing a mindfulness-based

intervention. For example, when MBCT was used to treat a heterogeneous sample of adult outpatients, pre-intervention BDI-II scores only reached a mean of about 16 (Ree & Craigie, 2007). One hypothesis may therefore be that participants in this study were too unwell for an MBCT group or required more sessions. Similarly, raised levels of dissociation found in this study may mean that participants were less likely to benefit from offered interventions (e.g. Linehan, 1993; Foertsch, Manning & Dimeff, 2003; Kennerly, 1996).

It is possible that the current 8-session format is not appropriate for clients meeting BPD criteria. For example, Huss and Baer (2007) reported positive findings when MBCT was provided as an adjunct to ongoing DBT treatment in one female client. However, apart from having extended this to12-sessions, MBCT was delivered individually. This is likely to have allowed much more time for individually tailored discussion of cognitive exercises, review of practice and application of mindfulness skills in everyday life. It was the facilitators impression that much more individual assistance was required by clients than could be provided.

Participants who improved in mindfulness showed improvements on two measures of attention: TMT Part-B (cognitive flexibility/attention switching) and STROOP interference (selective attention). This was not the case for participants who did not improve in mindfulness. The data thus suggest that as mindfulness improves so does attention. However, making a direct link between these improvements is highly speculative given the very small sample size and lack of adequate comparison group. Additionally, overall, performance was generally poor. Results may therefore also reflect a

regression to the mean (Cook & Campbell, 1979) or practice effects common on measures of attention (Lezak, *et al.*, 2004). Findings nonetheless do lend some support to models of mindfulness (e.g. Shapiro *et al.,* 2006). It also lends some support to the notion of mindfulness training attention abilities (Barnhofer *et al.* 2007) and offers one justification as to why mindfulness is worth incorporating into treatments for BPD. However, further more methodologically robust research is necessary to draw firm conclusions.

It needs to be noted that participants who did not improve performed less well on DS forward. Thus it cannot be ruled out that observed changes in attention are not due to or mediated by differences in attention capacity, a confounding variable. It is also possible that deficits in attention make it more difficult to practice mindfulness for extended periods and thus less likely that participants engage in practice, thereby reducing potential benefits. Perhaps at the very least it might suggest that a change in format is warranted.

Limitations

One major limitation of the study was the small sample size. Power analysis revealed that a total sample size of 19 would have been required to detect a medium size effect with 80% power and alpha level of 10% (1-tailed) using within group comparisons. Thus, the current study did not reach the level of power required to find an effect. To enhance power it was decided not to apply Bonferroni corrected p-values and increase the alpha error to 10%. Thus Type-1 errors were increased in this study, which involved multiple

comparisons, further weakening any found effects and conclusion that can be drawn.

Another problem relates to the use of within-group comparisons to explore mechanisms through which mindfulness exerts its effects. To draw conclusions about any changes in attention being due to mindfulness per se, it would seem important to adopt a RCT design with an alternative treatment. An alternative treatment could substitute mindfulness exercises with relaxation exercises and focus on the impact of stress rather than depression. This would control for psychoeducative and cognitive therapy components of MBCT as well as physiological changes associated with the practice of mindfulness, which typically leads to a more relaxed state.

The current study only reports post-treatment findings measured immediately after group completion. It is possible that changes may take longer to emerge. This is in line with years of research showing the lack of effectiveness of short-term treatments for clients meeting personality disorder criteria (e.g. Tyrer *et al.*, 2003). Thus, follow-up assessments are necessary to draw stronger conclusions regarding the effectiveness of MBCT in its 8-session format.

It is possible that MBCT has a role in the treatment of BPD at certain stages in treatment. For example, with the original focus of MCBT on relapse prevention in depression, it may be that MBCT has a similar role to play in clients with BPD. Future research could evaluate the effectiveness of MBCT once clients have been discharged and completed DBT, which does not directly address the issue of relapse (Linehan. 1993).

Lastly, the majority of participants were prescribed psychotropic medication, including antipsychotics. It remains possible that this had an impact on the effectiveness of the intervention in its current format and may represent a counterindication due to sedative effects and the potential impact on cognitive performance (e.g. Ruocco, 2005).

Conclusion

The current study did not reach the statistical power required to find an effect. However, it showed that at least a sub-sample of clients meeting BPD criteria improved in mindfulness following completion of MBCT-a. This was accompanied by changes in particular aspects of attention as predicted in models of mindfulness (Bishop *et al.*, 2004; Shapiro *et al.*, 2006). This would seem to warrant a repetition of the current study with a much larger sample. In addition, it would be important to adopt a RCT design using an alternative treatment (possibly relaxation based). This would allow a more methodologically robust exploration of mechanisms through with mindfulness exert its effects.

References

American Psychiatric Association. (1994). *Diagnostic and Statistical Manual of Mental Disorders* (4 ed.). Washington, DC: American Psychiatric Association.

Baer, R. A. (2003). Mindfulness training as a clinical intervention: A conceptual and empirical review. *Clinical Psychology: Science & Practice, 10*, 125-143.

Baer, R. A., Smith, G. T., Button, E. L. D., Krietemeyer, J., Sauer, S., Walsh, E., et al. (2008). Construct Validity of the Five Facet Mindfulness Questionnaire in Meditating and Nonmeditating Samples. *Assessment*(electronic publication ahead of print), 1-14.

Baer, R. A., Smith, G. T., Hopkins, J., Krietemeyer, J., & Toney, L. (2006). Using self-report assessment methods to explore facets of mindfulness. *Assessment, 13*(1), 27-45.

Barnhofer, T., Duggan, D. S., Crane, C., Hepburn, S., Fennell, M. J. V., & Williams, J. M. (2007). Effects of meditation on frontal alpha-asymmetry in previously suicidal individuals. *Neuroreport: For rapid communication of neuroscience research, 18*(7), 709-712.

Beck, A. T., Steer, R. A., & Brown, G. K. (1996). *Manual for Beck Depression Inventory II (BDI-II)*. San Antonio, TX: Psychology Corporation.

Bijttebier, P., & Vertommen, H. (1999). Coping strategies in relation to personality disorders. *Personality & Individual Differences, 26*, 847-856.

Bishop, S. R., Lau, M., Shapiro, S., Carlson, L., Anderson, N. D., Carmody, J., et al. (2004). Mindfulness: A proposed operational definition. *Clinical Psychology: Science & Practice, 11*, 230-241.

Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology, 84*, 822-848.

Carlson, E. B., & Putnam, F. W. (1993). An update on the Dissociative Experiences Scale. *Dissocation: Progress in the Dissociative Disorders, 6*(1), 16-27.

Chambless, D. L., & Hollon, S. D. (1998). Defining empirically supported therapies. *Journal of Consulting and Clinical Psychology, 66*(1), 7-18.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2 ed.). Hillsdale, N.J.: Erlbaum.

Cook, T. D., & Campbell, D. T. (1979). *Quasi-experimentation: Design and analysis issues for field settings.* Chicago: Rand-McNally.

Coryell, W., Turvey, C., Endicott, J., Leon, A. C., Mueller, T., Solomon, D., et al. (1998). Bipolar I affective disorder: predictors of outcome after 15 years. *Journal of Affective Disorders, 50*(2), 109-116.

Dinn, W. M., Harris, C. L., Aycicegi, A., Greene, P. B., Kirkley, S. M., & Reilly, C. (2004). Neurocognitive function in borderline personality disorder. *Progress in Neuro-psychopharmacology and Biological Psychiatry, 28*, 329-341.

Endicott, J., & Spitzer, A. L. (1978). A diagnostic interview: The schedule for

affective disorders & schizophrenia. *Archives of General Psychiatry, 35*, 837-844.

Feigenbaum, J. (2007). Dialectical behaviour therapy: An increasing evidence base. *Journal of Mental Health, 16*(1), 51-68.

Finucane, A., & Mercer, S. W. (2006). An exploratory mixed methods study of the acceptability and effectiveness of mindfulness-based cognitive therapy for patients with active depression and anxiety in primary care. *BMC Psychiatry 2006/04/11 edition, 6*, 14.

Foertsch, C., Manning, S. Y., & Dimeff, L. A. (2003). Difficult-to-treat patients: The approach from dialectic behavior therapy. In R. L. Leahy (Ed.), *Roadblocks in cognitive-behavioral therapy: Transforming challenges into opportunities for change* (pp. 255-273). New Tork: The Guildford Press.

Hayes, S. C., Strosahl, K., Wilson, K. G., Bissett, R. T., Pistorelly, J., Toarmino, D., et al. (2004). Measuring experiential avoidance: A preliminary test of a working model. *The Psychological Record, 54*, 553-578.

Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (1999). *Acceptance and commitment therapy: An experiential approach to behavior change*. New York: The Guildford Press.

Hayes, S. C., Wilson, K. G., Gifford, E. V., Follette, V., & Strosahl, K. (1996). Experiential avoidance and behavioral disorders: A functional dimensional approach to diagnosis and treatment. *Journal of Consulting and Clinical Psychology, 64*(6), 1152-1168.

Huss, D. B., & Baer, R. A. (2007). Acceptance and change: The integration of mindfulness-based cognitive therapy into ongoing dialectical behavior therapy in a case of borderline personality disorder with depression. *Clinical Case Studies, 6*(1), 17-33.

Kabat-Zinn, J. (1990). *Full catastrophe living: Using the wisdom of your body and mind to face stress, pain and illness*. New York: Dell Publishing.

Kabat-Zinn, J., Massion, M. D., Kristeller, J., Peterson, L. G., Fletcher, K. E., Pbert, L., et al. (1992). Effectiveness of a meditation-based stress reduction program in the treatment of anxiety disorders. *American Journal of Psychiatry, 149*, 936-943.

Kennerly, H. (1996). Cognitive therapy of dissociative symptoms associated with trauma. *British Journal of Clinical Psychology, 35*, 325-340.

Kenny, M. A., & Williams, J. M. (2007). Treatment-resistent depressed patients show a good response to mindfulness-based cognitive therapy. *Behaviour Research and Therapy, 45*, 617-625.

Kristeller, J., & Hallett, C. B. (1999). An exploratory study of a meditation-based intervention for binge eating disorder. *Behavior Therapy, 32*, 371-390.

Kruedelbach, N., McCormick, R. A., Schulz, S. C., & Grueneich, R. (1993). Impulsivity, coping styles and triggers for cravings in substance abusers with borderline personality disorder. *Journal of Personality Disorder, 7*, 214-222.

Kunert, H. J., Druecke, H. W., Sass, H., & Herpertz, S. C. (2003). Frontal lobe dysfunction in borderline personality disorders? Neuropsychological

findings. *Journal of Personality Disorders, 17*, 497-509.

Lezak, M. D., Howieson, D. B., & Loring, D. W. (2004). *Neuropsychological Assessment* (4 ed.). New York: Oxford University Press.

Lieb, K., Zanarini, M. C., Schmahl, C., Linehan, M., & Bohus, M. (2004). Borderline personality disorder. *Lancet, 364*, 453-461.

Linehan, M. (1993). *Cognitive-behavioral treatment of borderline personality disorder*. New York: Guildford Press.

Ma, S. H., & Teasdale, J. D. (2004). Mindfulness-based cognitive therapy for depression: replication and exploration of differential relapse prevention effects. *Journal of Consulting and Clinical Psychology, 72*(1), 31-40.

Mitrushina, M. N., Boone, K. B., Razani, J., & D'Elia, L. F. (2005). *Handbook of normative data for neuropsychological assessment.* (2 ed.). New York: Oxford University Press.

Moeller, F. G., Dougherty, D. M., Barratt, E. S., Schmitz, J. M., Swann, A. C., & Grabowski, J. (2001). The impact of impulsivity on cocaine use and retention in treatment. *Journal of Substance Abuse Treatment, 21*, 193–198.

Nijenhuis, E. R. S., Spinhoven, P., van Dyck, R., van der Hart, O., & Vanderlinden, J. (1996). The development and pyschometric characteristics of the somatoform dissociation questionnaire (SDQ-20). *Journal of Nervous and Mental Disease, 184*(11), 688-694.

Putnam, F. W., Carlson, E. B., Ross, C. A., Anderson, G., Clark, P., Torem, M., et al. (1996). Patterns of dissociation in clinical and nonclinical

samples. *The Journal of Nervous and Mental Disease, 184*(11), 673-679.

Putnam, K. M., & Silk, K. R. (2005). Emotion regulation and the development of borderline personality disorder. *Development & Psychopathology, 17*, 899-925.

Ree, M. J., & Craigie, M. A. (2007). Outcomes following mindfulness-based cognitive therapy in a heterogenous sample of adult outpatients. *Behaviour Change, 24*(2), 70-86.

Rogers, R., & Kirkpatrick, T. (2005). Neuropsychology of borderline personality disorder. *Psychiaty, 4*(3), 31-35.

Rosenthal, M. Z., Cheavens, J. S., Lejuez, C. W., & Lynch, T. R. (2005). Thought suppression mediates the relationship between negative affect and borderline personality disorder symptoms. *Behaviour, Research and Therapy, 43*, 1173-1185.

Rosenthal, M. Z., Gratz, K. L., Kosson, D. S., Cheavens, J. S., Lejuez, C. W., & Lynch, T. R. (2008). Borderline personality disorder and emotional responding: A review of the research literature. *Clinical Psychology Review, 28*, 75-91.

Ruocco, A. (2005). The neuropsychology of borderline personality disorder: A meta-analysis and review. *Psychiatry Research, 137*, 191-202.

Segal, Z. V., Williams, M., & Teasdale, J. D. (2002). *Mindfulness-based cognitive therapy for depression: A new approach to preventing relapse*. New York: Guilford.

Shapiro, S. L., Carlson, L. E., Astin, J. A., & Freedman, B. (2006).

Mechanisms of Mindfulness. *Journal of Clinical Psychology*, 1-14.

Skodol, A. E., Gunderson, J. G., Pfohl, B., Widiger, T. A., Livesley, W. J., & Siever, L. J. (2002). The borderline diagnosis I: Psychopathology, comorbidity, and personality structure. *Biological Psychiatry, 51*, 936-950.

Spielberger, C. D. (1983). *Manual for the State-Trait Anxiety Inventory (STAI)*. PaloAlto, CA: Consulting Psychologists Press.

Teasdale, J. D., Segal, Z. V., Williams, J. M., Ridgeway, V., Soulsby, J., & Lau, M. (2000). Prevention of relapse/recurrence in major depression by mindfulness-based cognitive therapy. *Journal of Consulting and Clinical Psychology, 68*(4), 615-623.

Tombaugh, T. N. (2004). Trail Making Test A and B: Normative data stratified by age and education. *Archives of Clinical Neuropsychology, 19*, 203-214.

Tyrer, P., Thompson, S., Schmidt, U., Jones, V., Knapp, M., Davidson, K., et al. (2003). Randomized controlled trial of brief cognitive behaviour therapy versus treatment as usual in recurrent deliberate self-harm: the POPMACT study. *Psychological Medicine, 33*, 969-976.

Williams, J. M., Duggan, D. S., Crane, C., & Fennell, M. J. V. (2006). Mindfulness-based cognitive therapy for prevention of recurrence of suicidal behavior. *Journal of Clinical Psychology: In Session, 62*(2), 201-210.

Williams, J. M., & Swales, M. (2004). The use of mindfulness-based approaches for suicidal patients. *Archives of suicide research, 8*,

315-329.

Wupperman, P. (submitted). Do deficits in mindfulness underlie borderline personality features and core difficulties? *Journal of Personality Disorders*.

Yen, S., Zlotnick, C., & Costello, E. (2002). Affect regulation in women with borderline personality disorder traits. *Journal of Nervous and Mental Disease, 190*, 693-696.

York, M. (2007). A qualitative study into the experience of individuals involved in a mindfulness group within an acute inpatient mental health unit. *Journal of Psychiatric and Mental Health Nursing, 14*, 603-608.

Zanarini, M. C., Frankenburg, F. R., Hennen, J., Reich, D. B., & Silk, K. R. (2004). Axis I comorbidity in patients with borderline personality disorder: A follow-up and prediction of time to remission. *American Journal of Psychiatry, 161*, 2108-2114.

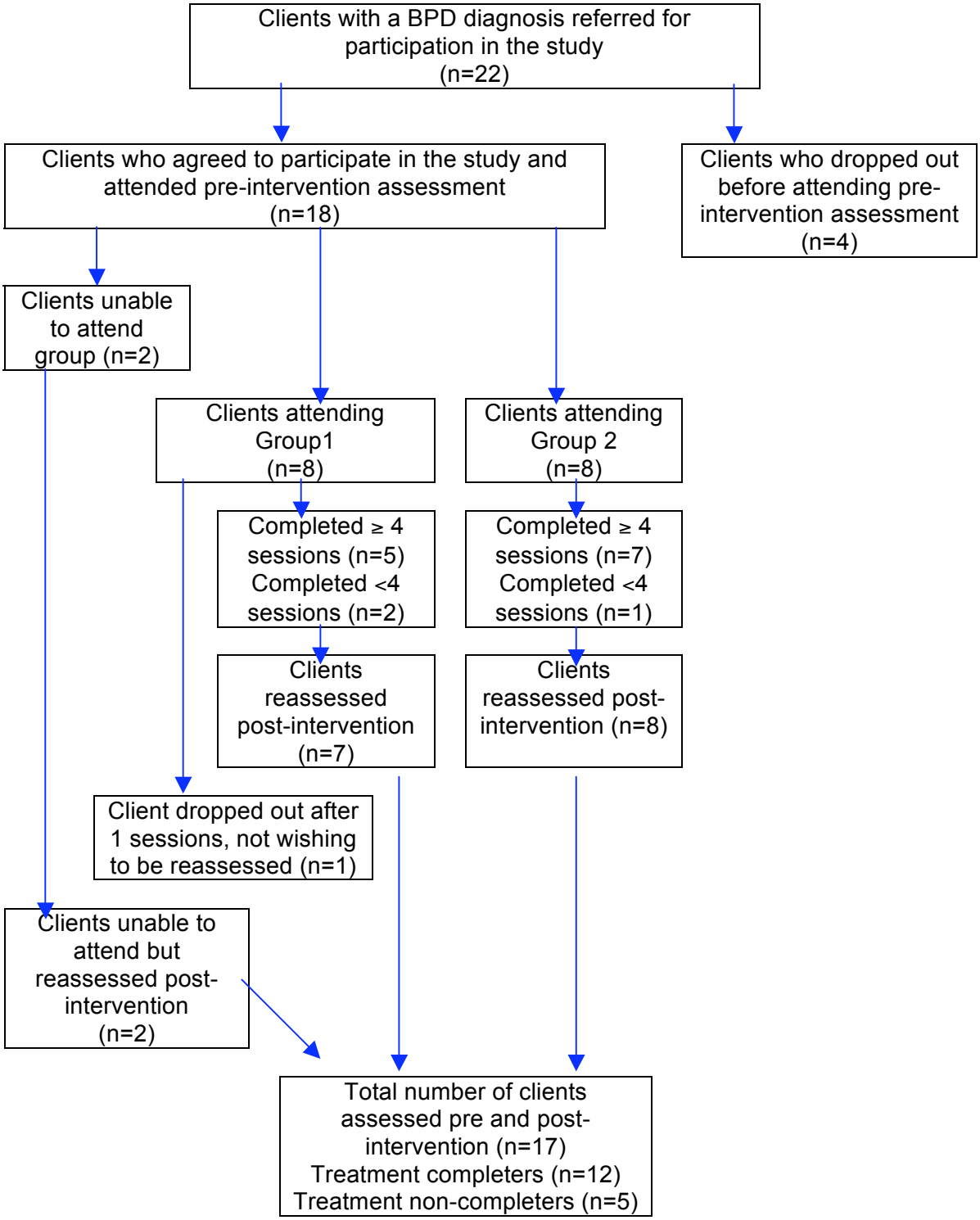

Figure 1: Progress of participants through the study.

Table 1: Frequencies, percentages (and SDs) of demographic variables for the whole sample, treatment completers and non-conpleters

		Whole Sample (N=17)	Treatment Completers (N=12)	Treatment Non-Completers (N=5)
Gender	Male	3 (17.6%)	2 (16.7%)	1 (20%)
	Female	14 (82.4%)	10 (83.3%)	4 (80%)
Mean age		39.77 (7.64)	41.08 (5.96)	36.60 (10.88)
Ethnicity	White-British	14 (82.4%)	10 (83.3%)	4 (80%)
	Other	3 (17.6%)	2 (16.7%)	2 (20%)
Marital status	Single	11 (64.7%)	8 (66.7%)	3 (60%)
	Married	3 (17.6%)	2 (16.7%)	1 (20%)
	Divorced	1 (5.9%)	1 (8.3%)	0
	Other	2 (11.8%)	1 (8.3%)	1 (20%)
Education	GCSE's/O-levels	7 (41.2%)	4 (33.3%)	3 (60%)
	A-level	3 (17.6%)	2 (16.7%)	1 (20%)
	Degree	5 (29.4%)	4 (33.3%)	1 (20%)
	Other	1 (5.9%)	1 (8.3%)	0
	No qualification	1 (5.9%)	1 (8.3%)	0
Occupied time	Employed	0	0	0
	Voluntary Work	3 (17.6%)	2 (16.7%)	4 (80%)
	Education	7 (41.2%)	4 (33.3%)	3 (60%)
Current Therapy	CBT	9 (52.9%)	7 (58.3%)	2 (40%)
	DBT	7 (41.2%)	4 (33.3%)	3 (60%)
	None	1 (5.9%)	1 (8.3%)	0
Average number of months in psychological therapy		19.53 (10.36)	17.58 (11.19)	24.20 (6.76)
Medication	Yes	12 (70.6%)	8 (66.7%)	4 (80%)
	No	5 (29.4%)	4 (33.3%)	1 (20%)
Type	Antidepressant	11 (64.7%)	8 (66.7%)	3 (60%)
	Anxiolytic	4 (23.5%)	2 (16.7%)	1 (20%)
	Antipsychotic	4 (23.5%)	2 (16.7%)	2 (40%)
	Hypnotic	4 (23.5%)	4 (33.3%)	0
	Antiepileptic	2 (11.8%)	2 (16.7%)	0

Table 2: Frequencies, percentages (and SDs) of psychiatric diagnoses and BPD severity for the whole sample, treatment completers and non-completers

		Whole Sample (N=17)	**Treatment Completers (N=12)**	**Treatment Non-Completers (N=5)**
Co-morbid Axis-II diagnosis	Total	5 (29.4%)	3 (25%)	1 (20%)
	Avoidant PD	3 (17.6%)	3 (25%)	0
	Dependent PD	1 (5.9%)	0	1 (20%)
	Histrionic PD	1 (5.9%)	1 (8.3%)	0
	Narcissistic PD	1 (5.9%)	1 (8.3%)	0
	OCPD	1 (5.9%)	1 (8.3%)	0
Co-morbid Axis-I diagnosis	Total	17 (100%)	12 (100%)	5 (100%)
Mood Disorders	Total	14 (82.4%)	10 (83.3%)	4 (80%)
	MDD	13 (76.5%)	9 (75%)	4 (80%)
	Dysthymic Disorder	2 (11.8%)	1 (8.3%)	1 (20%)
Anxiety Disorders	Total	14 (82.4%)	9 (75%)	5 (100%)
	GAD	4 (23.5%)	3 (25%)	1 (20%)
	PTSD	6 (35.3%)	3 (25%)	3 (60%)
	Panic Disorder	8 (47%)	4 (33.3%)	4 (80%)
	OCD	2 (11.8%)	1 (8.3%)	1 (20%)
	Social & Specific Phobias	1 (5.9%)	1 (8.3%)	0
Substance related disorders	Total	6 (23.5%)	5 (41.7%)	1 (20%)
	Alcohol Dependence	5 (29.4%)	5 (41.7%)	0
	Alcohol & Cannabis	1 (5.9%)	0	1 (20%)
Average BPD severity (indicated by the number of BPD criteria met at diagnosis)		6.76 (1.30)	6.42 (1.24)	7.60 (1.14)

Table 3: Primary outcome measures descriptive statistics.

Questionnaire		Mean	Minimum	Maximum	SD	Skewness	Kurtosis
FFMQ	Pre	100.41	60	131	17.87	-.40	.45
	Post	100.59	67	134	20.79	.19	-1.06
AAQ	Pre	79.53	62	105	12.46	.88	-.29
	Post	78.24	47	107	15.12	.04	.58

Table 4: Secondary outcome measures descriptive statistics.

Questionnaire		Mean	Minimum	Maximum	SD	Skewness	Kurtosis
BDI-II	Pre	34.94	7	50	11.77	-.79	.28
	Post	33.94	9	51	10.97	-.54	.31
STAI-state	Pre	55.82	37	79	10.91	.21	.19
	Post	55.65	29	78	13.19	-.25	-.35
STAI-trait	Pre	66.00	47	80	8.94	-.51	.057
	Post	62.53	33	76	10.16	-1.46	3.57
DES-II	Pre	32.76	6	76	18.17	.95	.85
	Post	32.82	6	74	19.40	.64	-.50
SDQ-20	Pre	30.88	22	50	6.99	1.15	2.36
	Post	29.59	20	51	8.64	1.14	.95
BIS-11	Pre	76.41	57	97	10.48	.13	-.49
	Post	77.29	58	96	10.63	-.004	-.59

Table 5: Attention measures descriptive statistics.

Measure		Mean	Minimum	Maximum	SD	Skewness	Kurtosis
STROOP							
Part-I	Pre	95.65	68	222	34.93	3.27	12.02
(Reading)	Post	89.94	67	134	18.04	.89	.81
Part-II	Pre	255.35	134	600	102.35	2.58	8.38
(Colour	Post	227.00	113	345	51.65	.21	1.71
Naming)							
Interference	Pre	159.71	55	378	73.32	1.70	4.30
	Post	137.65	37	241	49.36	.19	.52
Errors	Pre	4.41	0	17	4.81	1.49	1.77
	Post	4.06	1	9	2.28	.60	-.57
TMT							
Part-A	Pre	40.65	16	72	14.45	.76	.36
	Post	37.82	21	76	13.48	1.43	2.90
Part-B	Pre	88.53	47	163	31.75	.69	.43
	Post	79.00	47	198	36.23	2.42	7.17
Errors	Pre	.88	0	4	1.21	1.43	1.43
	Post	1.18	0	4	1.07	1.32	2.03
DS							
Forward		6.47	4	9	1.13	-.22	1.38

Mean performance speeds for STROOP and TMT reported in seconds.

Table 6: Effect sizes, confidence intervals and evaluation of experimental hypotheses.

Primary Outcome Measures		Cohen's d	95% CIs	Decision
Mindfulness	FFMQ	.010	-8.11 and 7 .76.	Experimental hypothesis rejected
Experiential Avoidance	AAQ	-.094	-4.42 and 7.01.	Experimental hypothesis rejected
Secondary Outcome Measures				
Depression	BDI-II	-.088	–3.69 and 5.69	Experimental hypothesis rejected
Anxiety	STAI – State	-.014	–5.70 and 6.06	Experimental hypothesis rejected
	STAI – Trait	-.363	-.18 and 7.13	Experimental hypothesis rejected (see discussion for rationale)
Dissociation	DES-II (cognitive)	.003	–4.77 and 4.65	Experimental hypothesis rejected
	SDQ-20 (somatoform)	-.164	N/A	Experimental hypothesis rejected
Impulsivity	BIS-11	.083	–3.79 and 2.03	Experimental hypothesis rejected

Table 7: Descriptive statistics for participants who improved in mindfulness and participants who did not improve.

	Improved (N=6)		**Not Improved (N=6)**	
	Median	SD	Median	SD
Age	40	8.07	42	3.19
Months in psychological therapy	11.5	12.75	23.5	8.74
BPD severity index	6	1.64	6.5	.82
Number of sessions attended	6.5	1.47	5.5	1.47

Table 8: Median scores and SDs for treatment completers on outcome measures.

Measure			Improved (N=6)		Not Improved (N=6)	
			Median	SD	Median	SD
Primary outcome	**FFMQ**	Pre	91.5	20.66	102.0	10.02
		Post	105.5	23.78	96.5	17.61
	AAQ	Pre	83.0	12.78	78.0	14.81
		Post	79.5	14.37	80.5	14.37
Secondary outcome	**BDI-II**	Pre	34.5	10.01	41.5	10.27
		Post	36.5	9.06	38.0	8.57
	STAI-state	Pre	51.5	11.23	54.5	11.13
		Post	53.5	14.75	56.5	11.09
	STAI-trait	Pre	65.0	6.80	68.5	6.97
		Post	66.5	7.23	63.5	7.41
	DES-II	Pre	32.0	24.27	27.0	16.74
		Post	28.5	26.33	29.5	14.79
	SDQ-20	Pre	30.5	10.11	30.5	5.65
		Post	26.0	7.74	27.5	7.53
	BIS-11	Pre	74.0	7.69	85.0	12.09
		Post	75.5	7.79	85.5	11.62
Attention	DS		7.0	1.09	5.5	1.21
	TMT					
	Part-A	Pre	43.0	12.64	37.5	19.65
		Post	35.5	5.01	38.5	12.39
	Part-B	Pre	100.0	13.03	75.5	41.24
		Post	67.0	23.07	68.5	53.77
	Errors	Pre	1	1.09	0	.84
		Post	1	.41	1	1.03
	STROOP					
	Part-I	Pre	100.0	55.22	87.0	10.0
		Post	100.5	25.25	92.0	12.19
	Part-II	Pre	249.0	151.51	225.5	60.47
		Post	222.5	34.91	232.5	62.72
	Interference	Pre	166.0	98.78	128.5	61.18
		Post	138.0	37.58	145.0	54.58
	Errors	Pre	3	4.05	3	6.15
		Post	2.5	1.75	5	2.53

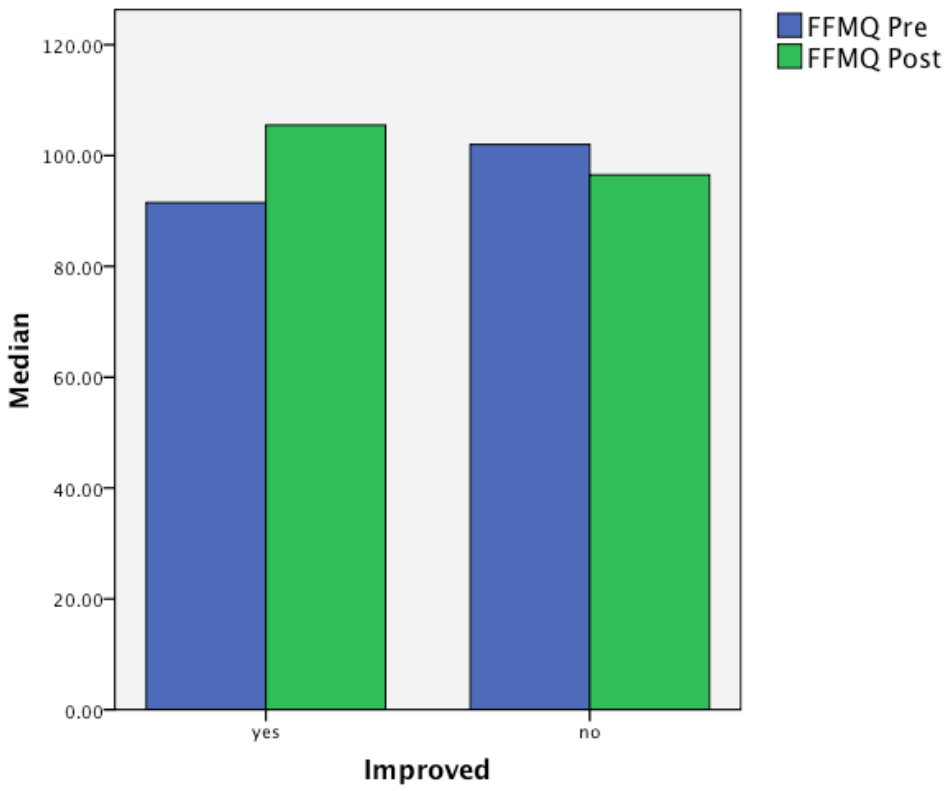

Figure 2: Bar chart showing median scores for the FFMQ, pre and post treatment, for participants who improved in mindfulness and participants who did not improve

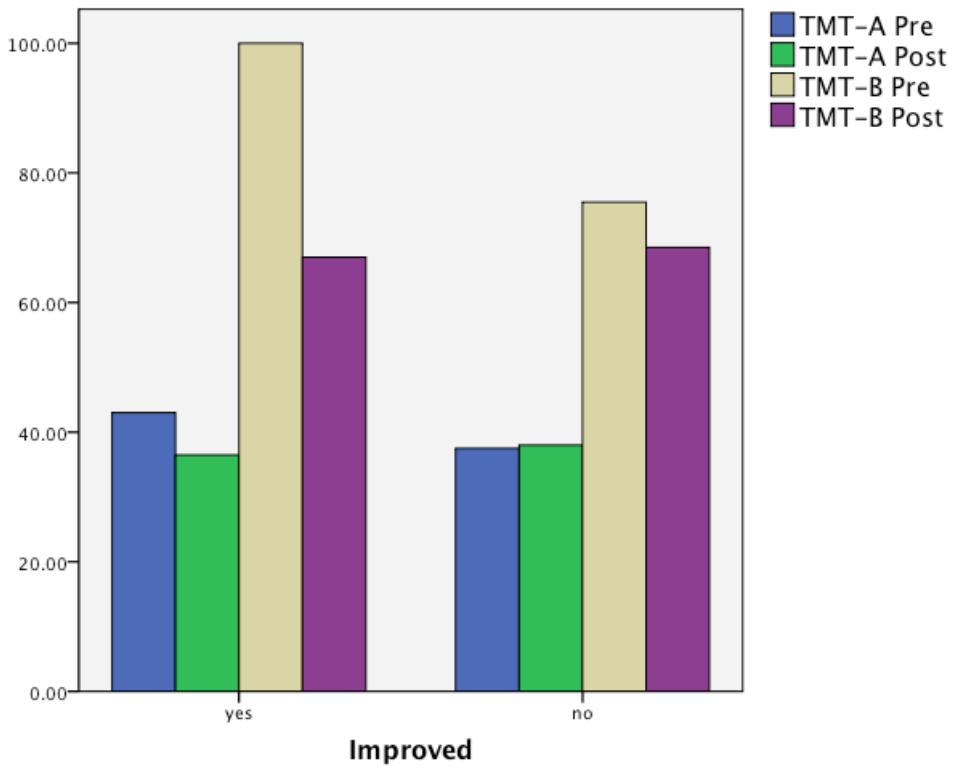

Figure 3: Bar chart showing median performance speed for the TMT, pre and post treatment, for participants who improved in mindfulness and participants who did not improve.

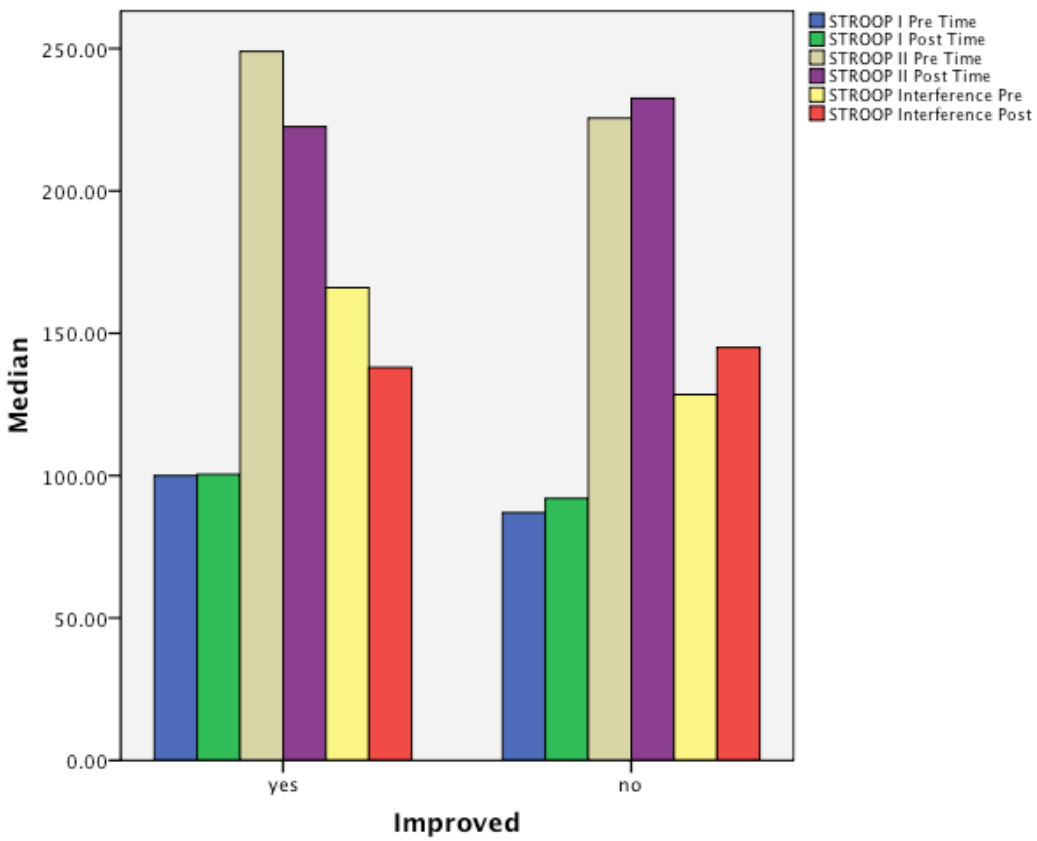

Figure 4: Bar chart showing median performance speed for the STROOP, pre and post treatment, for participants who improved in mindfulness and participants who did not improve.