

Eating Disorder Symptomatology and Mindfulness: are they related and what is their
influence on Body Image, Identity, Personality and Quality of Life?

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B Science (Hons)

Submitted to the Department of Psychology,
The University of Newcastle, November 2011, in
fulfilment of the requirements for the degree
of Doctorate of Clinical Psychology.

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PUBLICATIONS

Chapter 2 of this thesis is in the form of a journal article which has been submitted and accepted for review by the journal *Eating Disorders*:

(Under Review). Eating Disorder Symptomatology and Mindfulness: are they related, what is their influence on Body Image, Identity, Personality and Quality of Life, and what does this mean for Clinical Intervention? *Eating Disorders*.

Portions of this research were presented at the following conference:

Prowse, E., Bore, M., & Dyer, S. (2010). The Relationship between Eating Disorder Symptoms and Mindfulness and their Influence on Body Image, Identity, Personality and Quality of Life. Society for Psychotherapy Research Conference, 9-10 December, 2010.

Prowse, E., Bore, M., & Dyer, S. (2011). The relationship between eating disorder symptoms and mindfulness and their influence on body image in 1st year psychology students. 46th APS Annual Conference, Canberra, 4-8 October 2011

ACKNOWLEDGMENTS

I would like to express my gratitude towards Dr Miles Bore for this supervision of my thesis, his good humour, patience, wisdom and encouragement from the beginning till the end. I would also like to thank Ms Stella Dyer for her supervision of this thesis, as well as her knowledge, assistance with recruitment, support and reassurance.

My appreciation also goes to the team at the Centre for Psychotherapy for assisting with recruitment and providing diagnostic information from assessments conducted with the consent of participants. I would like to thank Aurora Sacchetti and Laura Sacchetti for their help with proof reading and formatting, as well as of their ongoing support.

ABSTRACT

Scope: The current study was designed to investigate the relationship between mindfulness and eating disordered symptom to inform treatment. Additionally, underlying factors including body image, self control, sense of self, identity, negative affect and distress, personality and quality of life, were also investigated in order to increase understanding about eating disorders and the interaction of these factors with the individuals' capacity to be mindful.

Purpose: There has been increasing interest in the use of mindfulness and acceptance based therapies in treating various disorders and conditions, however evidence to support the application of mindfulness-based treatments for eating disorders is limited. The theoretical underpinnings of mindfulness-based approaches focus on underlying issues rather than eating behaviour itself. The importance of the research included in this thesis is highlighted by the serious health risks associated with eating disorders, as well as the inadequacies recognised with CBT as a psychological intervention for eating disorders.

Methodology: This research consisted of two studies. In Study 1 a battery of questionnaires including: the Eating Disorder Examination – Questionnaire, Kentucky Mindfulness Inventory, the Body Image Acceptance and Action Questionnaire, the Ego Identity Processes Questionnaire, Sense of Self Inventory and a measure of the Big 5 traits of personality; was administered online to first year psychology students at an Australian University (N=411). In Study 2 people diagnosed with an eating disorder presenting to a specialist service in NSW, Australia for treatment (N=10) completed the battery.

Results: Study 1 results in the student sample indicated a strong negative relationship between eating disorder symptoms and acceptance of body image. Observing alone as a

mindfulness skill was related to higher reported eating disorder symptoms, however the mindfulness skills acceptance without judgment and action with awareness were related to lower eating disorder symptoms. Body image Study 2 results also provided further evidence for this relationship, with the clinical population producing a lower than average capacity for Mindfulness. Further, findings in Studies 1 and 2 provided evidence of an association between eating disorder symptomatology and additional factors including body image, sense of self, self compassion, personality, self control and quality of life, as well as high co-morbidity with other Axis I and Axis II mental health disorders.

General Conclusions and Implications: These findings are consistent with theory that certain aspects of Mindfulness (especially acceptance without judgment and action with awareness) play a role in reducing distress, providing some support for a possible role of mindfulness based interventions in treating Eating Disorders and additional evidence for the application of Mindfulness based treatment approaches in this population. Moreover, relationships with additional factors as well as high levels of co-morbidity highlight the need for thorough assessment and support the holistic psychological treatment approaches, focusing on the whole person rather than specifically targeting eating disordered thoughts and behaviour.

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CHAPTER 1

Critical Review

The relationship between eating disorder symptomatology and mindfulness, as well as body image, identity, sense of self, self compassion, psychological distress and quality of life were examined in the current research. Firstly a critical review of the literature leading to general aims of the current research will be outlined in this chapter. Study1, which examines these relationships in a student sample, follows in Chapter 2 which is written in a journal format and was submitted to a journal for peer review (see Appendix 1). The third chapter gives the details of a second study, which compares the trends on the above measures in a clinical sample diagnosed with an eating disorder with the norm and student sample. The fourth and final chapter summarises and reflects upon the current research in a General Discussion.

The current research aimed to investigate whether a relationship between mindfulness and eating disorder symptomatology exists to provide additional evidence for mindfulness based interventions in treating eating disorder presentations in order to inform clinical practice. The importance of this is highlighted by the potential health risks associated with eating disorders, the recognition of the inadequacies of the dominant psychological treatments for eating disorders and increasing application of mindfulness based interventions in clinical practice. As such, a review and analysis of the existing literature exploring mindfulness and eating disorders to provide direction for the current research is given here. Other factors relating to eating disorder symptomatology are also examined to increase understanding about the contributors to eating disorder symptomatology, including body image, personality, identity and quality of life, and how increasing mindfulness in the individual through mindfulness based

interventions could assist in reducing vulnerability to eating disorders by addressing some of these factors.

Eating Disorders

Eating Disorders are a serious concern due to the severity of potential health risks and rising prevalence (e.g. Polivy & Herman, 2002). Eating Disorders are classified under Axis I of the Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association. & American Psychiatric Association. Task Force on DSM-IV., 2000). The DSM-IV (2000) includes 3 specific diagnoses Anorexia Nervosa and Bulimia Nervosa, as well as Eating Disorders not Otherwise Specified (EDNOS), which includes Binge Eating Disorder. Anorexia Nervosa can be described as a refusal to maintain a normal body weight, associated with a fear of weight gain and disturbed perception of body image (DSM-IV-TR, 2000). Women with Anorexia Nervosa also experience amenorrhea, or the loss of menstrual cycles due to weight loss (DSM-IV-TR, 2000). Anorexia Nervosa has a prevalence rate of 0.5% (DSM-IV-TR, 2000) and is more common in adolescent girls (1 in 100) (Eating Disorders Foundation of Victoria, (EDV), 2011). The serious nature of Anorexia Nervosa is highlighted by the associated risks of renal damage, cardiovascular problems including hypotension and cardiac arrhythmias, reduced fertility, decreased bone density leading to risk of osteoporosis, as well as organ failure and electrolyte imbalances that can lead to death (Heffner, Sperry, Eifert, & Detweiler, 2002; Rome & Ammerman, 2003; Treasure, Claudino, & Zucker, 2010). Anorexia nervosa holds the highest mortality rate for any psychiatric illness, with approximately 18% of cases resulting in premature death (Hetherington, 2000; Vitiello & Lederhendler, 2000).

Bulimia Nervosa is characterised by recurrent episodes of dieting or fasting, binge eating and purging. Binge eating is defined as an uncontrollable intake of larger

than normal quantities of food in a short period of time. This is often followed by compensatory behaviours, such as self-induced vomiting, laxative abuse and excessive exercise, which are resorted to in order to remove the impact of the calories ingested during the binge-eating episode (DSM-IV-TR, 2000; Hales & Yudofsky, 2003).

Bulimia Nervosa has prevalence rate of 3-6% in Australia (EDV, 2011). The illness has been linked to numerous physiological consequences including; erosion of tooth enamel, scars and abrasion to the knuckles, swollen salivary glands and electrolyte imbalances, resulting in kidney, bowel and cardiac problems, as well as mortality rates of approximately 3% (Victorian Centre of Excellence in Eating Disorders (CEED), 2007; Hales & Yudofsky, 2003; Polivy & Herman, 2002; Walker, 2005).

Eating Disorders Not Otherwise Specified (EDNOS) are characterised by similar symptoms to either anorexia nervosa or bulimia nervosa, but do not meet the full diagnostic criteria. EDNOS currently includes Binge Eating Disorder, which is characterised binge eating in an absence of compensatory behaviour and has a recorded prevalence rate of 4% in the Australian population (EDV, 2011; DSM-IV TR, 2000; Kristeller, Baer, & Quillian-Wolever, 2006). EDNOS is the most common diagnosis of people presenting for treatment of eating disorders in a community setting (approximately 60% of eating disorder presentations). The severity of EDNOS is believed to be comparable to that of Bulimia Nervosa and associated with long term eating difficulties (Fairburn et al., 2007). However it is difficult to determine the actual prevalence of eating disorders in mainstream society due to the secretive nature of eating disorders, as well as people with eating disorder pathology frequently denying or minimising symptoms (Polivy & Herman, 2002).

Individuals with Anorexia Nervosa and Bulimia Nervosa are excessively concerned about their body image and weight (Kristeller, Baer, & Quillian-Wolever,

2006). All eating disorders, including subthreshold cases, cause significant levels of psychological distress, functional impairment and reduced quality of life and can become chronic without treatment (Hepworth, 2011; J. L. Kristeller, et al., 2006; Stice, Ng, & Shaw, 2010). Subthreshold eating disorders are relatively common in university students (Kurth, Krahn, Nairn, & Drewnowski, 1995). This is relevant, as subthreshold eating disorder symptoms (including dieting behaviours and body image concerns), are believed to increase the risk of developing subsequent eating disorder pathology (Stice, et al., 2010).

Treatment for Eating Disorders

For some time, one of the dominant clinical treatment for Eating Disorders has been Cognitive Behaviour Therapy (CBT, Baer, Fischer, & Huss, 2005; J. L. Kristeller, et al., 2006). While CBT has the most empirical evidence for treating eating disorders, many eating disordered individuals do not seem to benefit (Hepworth, 2011). The inadequacies of dominant eating disorder interventions are reflected in relatively low recovery rates and high relapse rates, with 33% of people diagnosed with Anorexia Nervosa making a full recovery and relapse rates of 40-50%. Recovery rates for Bulimia Nervosa have been estimated at 50% (Vitiello & Lederhendler, 2000).

There has been increasing interest in the use of mindfulness and acceptance based therapies in treating various disorders and conditions (e.g. Baer, et al., 2005; Kabat-Zinn, 2003), which has been described as a paradigm shift, with mindfulness being identified as one of the most rapidly growing areas of research, with an increase in the application of mindfulness based interventions in clinical practice (DeSole, 2011; Masuda & Wendell, 2010). There is currently limited but promising evidence to support the application of mindfulness-based treatments such as Acceptance and Commitment Therapy (ACT, Hayes, Strosahl, & Wilson, 1999), Dialectical Behaviour Therapy

(DBT, Linehan, 1993a, 1993b) and Mindfulness-based Cognitive Therapy (MCBT, Segal, Williams, & Teasdale, 2002), for binge eating disorder, anorexia nervosa and bulimia nervosa, resulting in reductions of eating disorder symptoms. However, most studies had low sample sizes, no control group and participants were not randomly assigned. As a result, further empirical evidence is required (Baer, et al., 2005; Kristeller & Wolever, 2011; Reibel, Greeson, Brainard, & Rosenzweig, 2001; Wanden-Berghe, Sanz-Valero, & Wanden-Berghe, 2011). Furthermore, it is believed that those with higher levels of naturally occurring or dispositional mindfulness are less likely to present with eating disordered behaviours, however this needs investigation (Wanden-Berghe, et al., 2011). Due to reports of clinical efficacy of mindfulness based treatments (Kabat-Zinn, 2003), the serious nature and possible health consequences associated with eating disorders (e.g. Hales & Yudofsky, 2003; Heffner, et al., 2002), as well as the limited but promising empirical evidence for mindfulness based interventions for treating eating disorders (Baer, et al., 2005), more research is required to further investigate whether there is a relationship between mindfulness and eating disorders in order to inform therapy.

Mindfulness

Mindfulness is an “awareness that emerges through paying attention on purpose, in the present moment, and non-judgmentally to the unfolding experience moment by moment” (Kabat-Zinn, 2003, p.145). Theoretically, mindfulness is useful for treating eating disordered symptoms as it encourages alternative coping strategies when faced with aversive emotions and distress. By being taught to “observe, accept and experience emotions without trying to change them” (Baer, et al., 2005, p. 288) people are able to choose to respond differently to distress, rather than eating or restricting eating as an “impulsive, maladaptive behavioural response” (Baer, et al., 2005, p. 288). Mindfulness

is believed to be well suited to treating eating disorders, as individuals with eating disorders are usually unwilling to experience negative thoughts, emotions and physical sensations (such as feelings of fullness) and experience difficulties tolerating distress (Hepworth, 2011). Mindfulness based therapies focus on these underlying emotional and cognitive processes. This in turn has positive benefits in influencing behaviour (Kristeller, 2006), such as decreases in binge eating and purging behaviours and restrictive eating due to reduced concern about eating and reduced distress (Hepworth, 2011).

Self Control

The desire for control over one's life is a factor that is associated with the development and perpetuation of eating disorder symptoms (Dalglish et al., 2001; Sassaroli, Gallucci, & Ruggiero, 2008). As individuals with eating disorders generally experience difficulties coping with negative affect and distress in their lives (Baer, et al., 2005), they often develop eating disorders as a means of regaining a sense of control over their body and emotions, gaining a perceived sense of control over their eating, whereas a sense of control in other areas of their life does not feel possible (Polivy & Herman, 2002). However, in reality these individuals do not have control over their eating or the destructive thoughts and emotions that maintain disordered eating (Latner, Hildebrandt, Rosewall, Chisholm, & Hayashi, 2007; Stewart, 2004). In fact, loss of control or impulsivity, is diagnostic of bulimia nervosa and binge eating subtypes of anorexia nervosa and ENDOS (Polivy & Herman, 2002). Accordingly, mindfulness is highly appropriate for these clients as it “enables individuals to increase perceived control in context of healthy and adaptive thoughts and behaviours” (Stewart, 2004, p. 792). Greater sense of self control is believed to be achieved through mindfulness training, which builds on the individual's capacity to bring their cognitive processes

under voluntary control (Carmody, Reed, Kristeller, & Merriam, 2008). The need for perceived control over their body is one of the reasons that eating disordered clients may resist traditional treatments that aim to change eating behaviours (Stewart, 2004). As mindfulness based approaches focus on the underlying issues rather than the eating behaviour itself, it is logical that these interventions will be effective in treating eating disorders (Kristeller, 2006).

Psychological Distress and Negative Affect

Eating disorder symptomatology is associated with high amounts of negative affect or psychological distress, including anxiety and depression, with the inability to adequately regulate emotions identified as a risk factor for eating disorder pathology (Lavender, Jardin, & Anderson, 2009). The relationship between eating disorder pathology and psychological distress is believed to be bidirectional. Eating disorder pathology can result from high amounts of psychological distress and feelings of loss of control over stress, as well as low mood and body dissatisfaction (Polivy & Herman, 2002; Stice & Shaw, 2002). Increases in levels of mindfulness through mindfulness-based interventions have been demonstrated to result in decreases in distress, anxiety and low mood, as well as increased personal wellbeing or quality of life (Carmody, et al., 2008; Giluk, 2009; Weinstein, Brown, & Ryan, 2009).

Body Image

Body image disturbance has been identified as a core symptom and key contributor to eating disorder behaviours, and is often a remaining concern post eating disorder treatment (Luethcke, McDaniel, & Becker, 2011; Polivy & Herman, 2002; Stice & Shaw, 2002). Body image is defined as the “experience of one’s physical self” (Sandoz, 2010, p.1), with cognitive and attitudinal disturbances, which incorporate body dissatisfaction, or a “negative evaluation of one’s body,” (Stice & Shaw, 2002,

p.985) and body image distortion, which is an inaccurate perception of weight and shape (Bergstrom & Neighbors, 2006; Sandoz, 2010; Stice & Shaw, 2002). In today's society, there is an overemphasis on body appearance, with constant exposure to unachievable and unrealistic body types portrayed as "thin ideal" images in western media creating pressures to be thin (Baer, et al., 2005; Bergstrom & Neighbors, 2006; Juarascio, Perone, & Timko, 2011; Stice & Shaw, 2002). Sociocultural pressures are greater on women, with research finding that up to 63% of women in the general public report dissatisfaction with their body (Hetherington, 2000). However, the few studies on body image in men demonstrate that body image concerns are also rising in men with an emphasis on being lean and muscular (Bergstrom & Neighbors, 2006; Tiggemann, 2004). Literature suggests that eating disordered cognitions (e.g. dissatisfaction with appearance) and behaviours (e.g. dieting) are endorsed and even encouraged by today's society (Masuda & Wendell, 2010; Stice & Shaw, 2002). Individuals are seen to be responsible for their weight and shape, with a growing negative stigma associated with obesity. Body shape and weight is seen to be a measure of achievement and personal character, with overweight individuals being considered to be "unintelligent, lazy and greedy" (Bergstrom & Neighbors, 2006, p.987).

In this sense, it might be difficult to convince eating disordered clients that body image is not important. Mindfulness offers a gentle and compassionate alternative approach to perceiving body image that does not go against the unrealistic expectations that today's society places on both women and men. Mindfulness promotes a different relationship to body image, by neutrally observing body schemas rather than accepting and integrating body dissatisfaction into the self concept (Proulx, 2008; Stewart, 2004). This involves viewing the body non-judgmentally and distancing from the belief that the body should be changed. The theoretical underpinning of mindfulness in relation to

body image suggests that alterations of attention should lead to modification in self perception and this in turn leads to behaviour change (Stewart, 2004). A mindful approach to treating disturbances in body image is thought to increase insight and quality of life. It is important to note that while Stewart (2004) outlines the theory behind the application of mindfulness to body image, this concept has yet to be investigated empirically.

Eating disordered individuals with a distorted body image usually define their entire self-concept on their appearance. In this sense, body appearance becomes central to the person's identity and sense of self, with their emotional status becoming dependent on their body image (Hrabosky et al., 2009; Neumark-Sztainer, Paxton, Hannan, Haines, & Story, 2006; Polivy & Herman, 2002; Stice & Shaw, 2002). This causes extreme distress and contributes to their focus on weight loss. Increasing mindfulness, through mindfulness-based interventions, is thought to provide acceptance and appreciation for the self as an individual, a more complete self-definition and improvements in self-worth, sense of self, identity and self compassion (Kristeller & Wolever, 2011; Proulx, 2008; Stewart, 2004). It is suggested that this occurs through encouraging the individual to investigate their values and strive to lead a more meaningful life. This in turn improves the individual's quality of life (Stewart, 2004).

Self Compassion

Self compassion is described as an “open(ness) to and (being) moved by one's own suffering, experiencing feelings of caring and kindness towards oneself, taking an understanding, nonjudgmental attitude towards one's inadequacies and failures, and recognising one's own experience is part of the common human experience,” which involves taking a warm and accepting stance towards “acknowledging that suffering, failure and inadequacies are part of the human condition” (Neff, 2003, p.244). Self

compassion has been found to be related to personal well being, resilience, lower levels of depression, anxiety and psychological distress (Neff, Rude, & Kirkpatrick, 2007; Raes, 2010), as well as eating disorder pathology (Gilbert & Proctor, 2006). While research on self compassion is a relatively new area for investigation, the small amount of research conducted in this area has identified an increase in self compassion following mindfulness based interventions (Neff, Kirkpatrick, & Rude, 2007). As research interest in self compassion is relatively recent, a small amount of mindfulness practice is believed to encourage self compassion or viewing the self with kindness through increasing awareness of aspects of the self that may otherwise be ignored (e.g. Fennell, 2004).

Sense of Self and Identity

Sense of self can be defined as a subjective reflective awareness of one's self as a person (Basten, 2007). It is theorised that the development of a healthy sense of self requires the capacity for 'self reflective awareness' or mindfulness. So far no studies have explored the sense of self in eating disorders or the relationship between sense of self and the capacity for mindfulness. Therefore it is important to find evidence to support this theory.

Similarly, previous studies have indicated that eating disorders have been thought to arise from disturbances in the development of identity. Stein and Corte (2007; 2008) found that individuals with impaired overall identity are at risk of developing eating disorders and that eating disordered individuals have more negative self-schemas. While the authors aimed to empirically investigate the long-standing theoretical assumption that there is a relationship between impaired identity formation and eating disorder symptomatology, their definition of identity encompasses the person's self-definition and self-concept. This definition needs clarification.

Identity, according to Erikson (1950, 1968), is a definition of the individuals' self, values and direction or purpose in life. Marcia (1966; 1980) outlined identity formation in terms of identity exploration which leads to commitment to identity. Marcia (1966; 1980) operationalised identity formation in terms of 4 identity statuses: identity achievement (commitment to clear values, beliefs and goals), identity moratorium (in the process of exploration, looking to discover values, beliefs and goals), identity foreclosure (commitment to values, beliefs and goals without exploration), and identity diffusion (no exploration of, or commitment to, an identity). Marcia's (1966; 1980) conceptualisation of identity is thought to encompass occupation, religion, politics, sexual behaviours, dating, and gender roles (Balistreri, Busch-Rossnagel, & Geisinger, 1995). Tan, Hope and Stewart (2003) discussed the theoretical link between Anorexia Nervosa and Marcia's (1966; 1980) moratorium stage of identity formation, which is associated with "anxiety, struggle and fluctuation" (Tan, et al., 2003, p. 544). However, the association between Marcia's (1966; 1980) identity formation and eating disorder symptomatology has only been empirically investigated by Wheeler, Adams and Keeting (Wheeler, Adams, & Keating, 2001). These researchers assessed identity formation in Bulimia Nervosa finding that these individuals seem to have a diffused identity, however more research is needed to confirm this (Wheeler, et al., 2001).

Personality

Furthermore, Clancy and Dollinger (1993) established the existence of a relationship between Marcia's stages of identity formation and Goldberg's (1999) five factor model of personality. The big five personality traits consist of extraversion, conscientiousness, agreeableness, openness to experience and neuroticism. Clancy and Dollinger (1993) found that individuals without a clear sense of identity, either in the

moratorium and diffusion stages of identity formation, were high in neuroticism and low in conscientiousness. However, while eating disordered individuals are asserted to be either in the moratorium (Tan, et al., 2003) or diffusion (Wheeler, et al., 2001) stages of identity formation, the personality profile described by Clancy and Dollinger (1993) is not consistent with the personality profiles found by Claes and colleagues (2006a).

Claes and colleagues (2006a) identified 3 clusters of personality types in eating disordered individuals: over-control (or constricted), under-control (or dysregulation) and resilient (or high functioning). The over-control type was found to have higher levels of neuroticism and lower levels of extraversion than the resilient type and higher levels of conscientiousness than the under-control type. The under-control type was found to have higher levels of neuroticism and lower levels of conscientiousness and agreeableness than both the over-control and resilient types. A greater percentage of individuals diagnosed with Anorexia Nervosa had a personality profile consistent with the over-control type and greater percentage of individuals diagnosed with Bulimia Nervosa had a personality profile consistent with the under-control type. The resilient or high functioning type showed no clinical elevations on the big five personality inventory and had lower eating disorder symptoms (Claes, Vandereycken, et al., 2006a). As this study was the first to look at the big five measure of personality in an eating disordered population, further research could consolidate these findings (Claes, Vandereycken, et al., 2006a). Additionally, these findings indicate that the theme of control in the development and maintenance of eating disordered symptoms may be more complex and multifaceted than Stewart's (2004) and Baer, Fischer & Huss' (2005) theories suggest. This is consistent with Dalgeish and colleagues' (2001) finding that individuals with eating disorder symptoms perceive themselves as having less control over the events around them.

Interestingly, research regarding personality profiles in eating disorder presentations is in line with Malouff, Thornstein and Schuttes' (2005) finding that people with clinical mental health disorders often have high levels of neuroticism and low levels of agreeableness, extraversion and conscientiousness. Personality factors have also been found to be related to factors associated with eating disorders including quality of life. For example, low neuroticism and high extraversion, and high conscientiousness are associated with higher levels of quality of life (Masthoff, Trompenaars, Van Heck, Hodiament, & De Vries, 2007). Links between neuroticism and body image concerns have also been established (Roberts & Good, 2010; Swami, Hadji-Michael, & Furnham, 2008).

Of further interest, Mindfulness has been identified as having a relationship with personality variables. Mindfulness can be described as either a state, that increased with mindfulness practise, such as that taught during mindfulness based interventions, as well as a trait, with some individuals possessing higher levels of naturally occurring mindfulness than others (Giluk, 2009). This theoretical distinction led to the investigation of relationships between big five personality variables and mindfulness. Giluk (2009) conducted a meta-analysis and found that those who possess high levels of mindfulness had low levels of neuroticism and negative affect, but higher levels of openness to experience or intellect (which by definition is associated with the openness towards inner experiences and curiosity involved in mindfulness). They also scored higher levels of agreeableness (which is linked to cooperation, concern for others, empathy, trust and belief in the good intent of others. This is in line with the mindfulness concept of the "beginners mind" that involves approaching all experiences as if they are occurring the first time) and conscientiousness (defined as being responsible and rule abiding, and is associated with self control, which is required for

deliberate action). A weak positive relationship was also identified between mindfulness and extraversion. However, conflicting results exist in the literature due to a link to positive emotionality, as well as increased need for stimulation (Giluk, 2009). Further research is required as this study did not investigate mindfulness skills on a facet level.

Personality Disorders in Eating Disordered Population

Empirical evidence is emerging suggesting a co-morbidity between eating disorders and personality disorders as high as 44% (De Bolle et al., 2011), with Cluster C personality disorders, such as Obsessive Compulsive Personality Disorder (OCPD) and Avoidant Personality Disorder, being more prevalent in Anorexia Nervosa, which is characterised by attempts to control ones environment, as well as hyper-vigilance, compulsive and perfectionist tendencies, and attempts to avoid or reduce anxiety. Cluster B personality disorders, such as Borderline Personality Disorder (BPD), are more prevalent in individuals diagnosed with Bulimia Nervosa, which is characterised by low frustration tolerance and impulsivity, risk taking and attempts to seek gratification (Bruce & Steiger, 2005; Claes, Nederkoorn, Vandereycken, Guerrieri, & Vertommen, 2006; Connan et al., 2009; Goldner, Srikameswaran, Schroeder, Livesley, & Birmingham, 1999; Thompson-Brenner, Eddy, Satir, Boisseau, & Westen, 2008). De Bolle and colleagues (2011) reported higher levels of neuroticism and lower levels of extraversion in people diagnosed with personality disorders. This is consistent with Claes and colleagues' (2006a) research, suggesting higher levels of neuroticism and lower levels of extraversion in eating disordered individuals, as well as Goldner and colleagues' (1999) finding that neuroticism is a key feature of both eating disorders and personality disorders pathology.

Research into the relationships between personality pathology and eating disorders is of interest as personality factors are thought to exacerbate the outcome of eating disorders, with more severe symptoms and poorer overall functioning (Bruce & Steiger, 2005; Chen, McCloskey, Michelson, Gordon, & Coccaro, 2011; Lilienfeld, Wonderlich, Riso, Crosby, & Mitchell, 2006). This is based on the concept that personality pathology remains fairly consistent, whereas eating disorder pathology tends to change overtime (Thompson-Brenner, et al., 2008). Co-morbid personality disorders are also believed to interfere with eating disorder treatment (Bruce & Steiger, 2005; Connan, et al., 2009). However other studies (e.g. Grilo et al., 2007) have found that the probability of remission of eating disorder symptoms was not affected by personality co-morbidity. It would be clinically useful to replicate findings on eating disorders and co-morbid personality disorders in order to gain an increased understanding of the factors associated with co-morbidities.

General Aims and Hypotheses

Two studies were conducted with the primary aim of investigating the relationship between mindfulness and eating disorder symptoms, given the increasing use of mindfulness-based interventions in treating the eating disordered population. These studies were presented in the following two chapters of this thesis, with Study 1 presented in the next chapter in the format of a journal article and Study 2 detailed in Chapter 3.

Study 1 aimed to investigate the aforementioned relationship in a student population. University students were selected as a sample population due to the typical age of eating disorder pathology either presenting in adolescence or young or emerging adulthood (18 to 24 years of age). Additionally, university students have been identified as a population at risk of mental illness including subthreshold eating disorder

symptomatology (Arnett, 2000; Hetherington, 2000; Kurth, et al., 1995; Stallman, 2010). Based on the above literature, it was expected that individuals with higher levels of mindfulness would report lower levels of eating disordered symptoms and be less accepting of their body image.

Further aims of Study 1 were to investigate other factors identified in the literature as being related to eating disorder symptomatology. It was also hypothesised that those who were high in sense of self and self-compassion would score higher on mindfulness measures, have less body image disturbance and have fewer eating disorder symptoms. Conversely, it was expected that individuals with more severe eating disordered symptoms would not have formed identities but would be in the exploration or Marcia's (1966; 1980) moratorium or diffusion stage of identity formation. Additionally, it was hypothesised that no extremes in personality traits would be found in line with Claes and colleagues' (2006) finding and that those scoring higher in eating disorder symptomatology would also score lower in self control. Finally, it was expected that those reporting a greater capacity for mindfulness would have lower levels of distress, anxiety and depression, and report higher quality of life. It was also expected that those with more severe eating disorder symptoms would report poorer quality of life.

The main aim of Study 2 was to explore the factors involved in eating disorder pathology and to examine trends in an eating disordered sample in comparison to non-clinical samples (the norm and university students). Based on the review of the literature, it was hypothesised that those diagnosed with an eating disorder would be less accepting of their body image, and have a lower capacity for mindfulness, than the student sample and the norm. It was also expected that the eating disordered sample would report higher levels of pathology in sense of self and distress, lower levels of self

compassion, self control and personal quality of life. It was hypothesised that the identity of those diagnosed with an eating disorder would not be fully formed, meaning they would score higher in identity exploration.

Finally, an additional aim of Study 2 was to investigate the personality profiles of people diagnosed with eating disorders. One of two personality profiles was expected in the eating disordered sample depending on the diagnosis, with those diagnosed Anorexia Nervosa expected to report higher levels of neuroticism and conscientiousness and lower levels of extraversion. On the other hand, those diagnosed with Bulimia Nervosa were expected to report higher levels of neuroticism and lower levels of conscientiousness and agreeableness. Due to high levels of co-morbidity in Eating disordered populations (De Bolle, et al., 2011), co-morbid personality disorders were also explored in the clinical sample.

CHAPTER 2

Study 1

Eating Disorder Symptomatology and Mindfulness: are they related, what is their influence on Body Image, Identity, Personality and Quality of Life, and what does this mean for Clinical Intervention?

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Abstract

Despite increasing interest in the use of mindfulness based interventions, evidence supporting their application for eating disorders is limited. The current study investigated the relationship between mindfulness and eating disordered symptoms to inform treatment. Additional factors including body image, sense of self, identity, personality and quality of life were also investigated in order to increase understanding about eating disorders. Mindfulness skills, particularly ‘Acceptance without Judgment’ and ‘Action with Awareness’, were found to be linked to lower eating disorder symptoms. These findings provide some support for a possible role of mindfulness based interventions in treating eating disorders.

Eating Disorder Symptomatology and Mindfulness: are they related and what is their influence on Body Image, Identity, Personality and Quality of Life?

Eating Disorders are a serious concern due to the severity of potential health risks and rising prevalence. Eating Disorders are classified under Axis I of the Diagnostic and Statistical Manual of Mental Disorders (APA, 2000) consisting of Anorexia Nervosa, Bulimia Nervosa and Eating Disorders not Otherwise Specified, which includes Binge Eating Disorder. The serious nature of eating disorders is highlighted by numerous physiological consequences including kidney damage, bowel and cardiovascular problems, as well as organ failure and electrolyte imbalances, that can lead to death (Hales & Yudofsky, 2003; Heffner, et al., 2002). Individuals with eating disorders are excessively concerned about their body image and weight, and even subthreshold cases (which are relatively common in university students, e.g. Kurth, et al., 1995) cause significant distress and reduced quality of life (Kristeller, et al., 2006).

While Cognitive Behaviour Therapy (CBT) has been the dominant clinical treatment for some time and has the most empirical evidence for treating eating disorders, there has been increasing interest in the use of mindfulness and acceptance based therapies in treating various disorders and conditions (e.g. Baer, et al., 2005; Kabat-Zinn, 2003). Although current evidence to support the application of mindfulness-based treatments for eating disorders is limited, the existing evidence has been promising (Baer, et al., 2005). Due to reports the limited but promising empirical evidence for mindfulness based interventions for treating eating disorders in the context of the serious nature and possible health consequences associated with eating disorders, the relationship between mindfulness and eating disorders warrants further investigation.

Mindfulness is an “awareness that emerges through paying attention on purpose, in the present moment, and non-judgmentally to the unfolding experience moment by moment” (Kabat-Zinn, 2003). Mindfulness based therapies are thought to result in improvements in eating disorder symptoms through allowing people to choose to respond differently to distress, rather than eating or restricting eating as an “impulsive, maladaptive behavioural response” (Baer, et al., 2005, p. 288).

The desire for control over one’s life is a factor that is associated with the development and perpetuation of eating disorder symptoms (J. L. Kristeller, et al., 2006). As individuals with eating disorders generally experience difficulties coping with negative affect and distress in their lives (Baer, et al., 2005), they often develop eating disorders as a means of regaining a sense of control over their body and emotions. However, in reality these individuals do not have control over their destructive thoughts and emotions that maintain disordered eating (Stewart, 2004). Accordingly, mindfulness is highly appropriate for these clients as it “enables individuals to increase perceived control in context of healthy and adaptive thoughts and behaviours” (Stewart, 2004, p. 792).

Mindfulness offers an alternative approach to perceiving body image that does not go against the unrealistic expectations that today’s society places on both women and men. Mindfulness promotes a different relationship to body image, through neutrally observing the body non judgmentally and distancing from the belief that the body should be changed rather than accepting and integrating body dissatisfaction into the self concept (Stewart, 2004). It is important to note that while Stewart (2004) outlines the theory behind the application of mindfulness to body image, this concept has yet to be investigated empirically.

Eating disordered individuals with a distorted body image usually define their entire self-concept or sense of self on their appearance. This causes extreme distress and contributes to their focus on weight loss. Increasing mindfulness, through mindfulness-based interventions, is thought to provide acceptance and appreciation for the self as an individual, a more complete self-definition and improvements in self self-worth and self compassion (Stewart, 2004). It is suggested that this occurs through encouraging the individual to investigate their values and strive to lead a more meaningful life. This in turn improves the individual's quality of life (Stewart, 2004).

Similarly, previous studies have indicated that eating disorders have been thought to arise from disturbances in the development of identity (Stein & Corte, 2007; 2008). Identity, according to Erikson (1950, 1968), is a definition of the individuals' self, values and direction or purpose in life, however confusion is caused by alternative definitions of identity encompassing the person's self-definition and self-concept (Stein & Corte, 2007; 2008). Other authors (e.g. Tan, et al., 2003; Wheeler, et al., 2001) have linked eating disorder pathology to Marcia's (1966; 1980) moratorium stage of identity formation, the process of exploration or diffused identity (the absence of identity exploration or commitment to identity). Research is needed to clarify this.

Furthermore, Clancy and Dollinger (1993) established the existence of a relationship between Marcia's stages of identity formation and Goldberg's (1999) five factor model of personality, consisting of the personality traits extraversion, contentiousness, agreeableness, openness to experience and neuroticism. Clancy and Dollinger (1993) found that individuals without a clear sense of identity, either in the moratorium and diffusion stages of identity formation, were high in neuroticism and low in contentiousness.

Aims and Hypotheses

The aim of this study was to investigate the relationship between mindfulness and eating disordered symptoms given the increasing use of mindfulness-based interventions in treating the eating disordered population. It was expected that individuals with higher levels of mindfulness would report lower levels of eating disordered symptoms. The relationship between mindfulness and body image was also investigated, with the hypothesis that individuals scoring higher on mindfulness measures will be more accepting of their body image.

Additionally, the relationships between mindfulness, eating disorder symptoms and body image with self-concept and self-identity were investigated. It was hypothesised that individuals with more severe eating disordered symptoms would not have formed identities, but would be in the exploration or moratorium stage or in the diffusion stage of identity formation. It was also expected that lower scores on sense of self and self compassion would be related to more severe eating disordered symptoms.

Another aim of the proposed study was to investigate the relationships between personality variables and eating disordered symptoms. Claes and colleagues (2006) found that individuals with lower eating disorder symptoms showed no extremes in personality scores and it was expected that this finding would be replicated in the current study. The relationship between self control and eating disorder symptoms was also examined, with the hypothesis that those scoring higher in measures of eating disordered symptoms would score lower in self control.

Finally, relationships between mindfulness, stress, anxiety, depression and quality of life were considered. It was expected that individuals who have a greater capacity for mindfulness would have lower levels of distress, anxiety and depression, and report higher quality of life.

Method

Participants

The sample consisted of 411 first year psychology students from an Australian university. Three hundred and nine females and 98 males participated (4 unidentified), with an age range of 17 to 57 years, a mean age of 22.5 years and a median age of 19 years. One point seven percent of participants reported fulltime employment, 24% reported part time employment and 2% reported being unemployed or engaging in home duties; 68% of participants were fulltime students, 4.1 % were part time students. Eighty-six percent of participants were of Anglo-Saxon, 2% identified as being of Aboriginal or Torres Strait Islander descent and 12 % identified as being from another cultural background.

The students participated voluntarily in exchange for course credit and were recruited online via a research participation website used by the university to recruit participants for research projects. They selected the current study from series of research projects operating concurrently.

Instruments

Behavioural Measure of Eating Disorder Symptoms. The Eating Disorders Examination Questionnaire (EDE-Q, Fairburn & Beglin, 1994) was administered in order to identify the eating disorder symptomatology of the participants. The EDE-Q is an adapted version of the Eating Disorders Examination (Fairburn & Cooper, 1993) a structured clinical interview used in clinical practise to provide diagnostic information (Luce & Crowther, 1999). The EDE-Q is composed of 31 self report items, including a combination of items rated on a 7 point likert scale (0-6) and free form short answer questions.

The EDE-Q consists of 4 subscales: restraint, shape concern, weight concern and eating concern, and can be used to make tentative diagnoses of Anorexia Nervosa and Bulimia Nervosa (Luce & Crowther, 1999). For example, the question “have you been deliberately trying to limit the amount of food you eat to influence your shape or weight (whether or not you have succeeded)?” investigates *Restricted Eating*. The question “has thinking about food, eating or calories made it very difficult to concentrate on things you are interested in (for example, working, following a conversation or reading)?” assesses *Concern about Eating*. The question “has your weight (number on the scale) influenced how you think about (judge) yourself as a person?” assesses *Concern about Weight* and the question “have you had a definite desire to have a totally flat stomach?” investigates *Concern about Shape*.

The EDE-Q has good internal consistency ($\alpha = .78 - .92$) and test- retest reliability ($r = .81 - .94$, Luce & Crowther, 1999). The measure also has adequate construct validity, good concurrent validity and divergent validity and acceptable criterion validity (Mond, Hay, Rodgers, Owen, & Beumont, 2004).

Mindfulness Measure. The Kentucky Inventory of Mindfulness Skills (KIMS, Baer, Smith, & Allen, 2004) was administered to measure the participants’ self-reported capacity to be mindful. The questionnaire is composed of 39 self report items assessed on a 5 point likert scale (1– 5). The questionnaire measures mindfulness across 4 scales *Observe* (e.g. “I notice changes in my body, such as whether my breathing slows down or speeds up”), *Describe* (e.g. “I can easily put my beliefs, opinions, and expectations into words”), *Act with Awareness* (e.g. “When I’m doing something, I’m only focused on what I’m doing, nothing else”) and *Accept without Judgment* (e.g. “I tend to evaluate whether my perceptions are right or wrong”). The KIMS has adequate

internal consistency ($\alpha = .76 - .91$) and good test-retest validity and adequate construct validity (Baer, et al., 2004).

Body Image. The Body Image Acceptance and Action Questionnaire (BI-AAQ, Sandoz & Wilson, 2006) was utilised to assess body image. This 12 item self report scale measure acceptance of body image on a 7 item likert scale (1-7) producing a total acceptance of body image score. The questionnaire assesses the individual's relationship with their body image through questions such as "worrying about my weight makes it difficult for me to live a life that I value." The BI-AAQ has good internal consistency ($r = .92$) and good construct validity (Sandoz, 2010; Sandoz & Wilson, 2006).

Stress, Anxiety and Depression. The 21-item version of the Depression, Anxiety and Stress Scale (DASS-21, Lovibond & Lovibond, 1995) was administered in order to assess levels of distress and mood. The DASS- 21 consists of 3 scales: *Depression* (e.g. "I couldn't seem to experience any positive feeling at all"), *Anxiety* (e.g. "I experienced breathing difficulty e.g., excessively rapid breathing, breathlessness in the absence of physical exertion") and *Stress* (e.g. "I found it hard to wind down"); measured on a 4 item likert scale (0-3). The DASS-21 has high overall reliability ($r = .93$) and adequate convergent and divergent validity (Henry & Crawford, 2005).

Identity, self-concept and self-compassion. The Ego Identity Processes Questionnaire (EIPQ, Balistreri, et al., 1995) is a 32 item questionnaire which was utilised to assess the stage of identity formation reached by the participants. The EIPQ consists of 2 scales: a *Commitment* scale (e.g. "I have definitely decided on the occupation I wish to pursue") and an *Exploration* scale (e.g. "I have tried to learn about different occupational fields to find the best one for me"), measured using a 6 point likert scale (1– 6). The internal consistency and reliability of this measure is adequate

(Commitment, $\alpha = .80$, $r = .90$; Exploration, $\alpha = .86$, $r = .76$) and the measure also has adequate construct validity (Balistreri, et al., 1995).

Self-concept was assessed with the Sense of Self Inventory (SOSI, Basten, 2007). The SOSI is a 21 item questionnaire, using a 4 point likert scale (1 - 4). The SOSI produces a single total score. An example of a questionnaire item is “I don’t know where or how I belong in the world.” The validity and reliability of this measure are currently being investigated.

The Self Compassion Scale (Neff, 2003) was also administered in order to measure the individuals’ compassion towards themselves, through questions such as “when I’m going through a very hard time, I give myself the caring and tenderness I need”. The Self Compassion Scale is a 26 item questionnaire producing 6 subscales; Self Kindness, Self Judgment, Common Humanity, Isolation, Mindfulness and Over Identification, as well as a total score. The self compassion scale possesses high test-retest reliability ($r = .93$) as well as acceptable convergent and divergent validity (Neff, 2003).

Personality. A short version of the Goldberg’s (1999) IPIP Big 5 personality measure was applied in order to obtain the personality profile of the participants. The Mini-IPIP (Donnellan, Oswald, Baird, & Lucas, 2006) is a 20 item version of Goldberg’s 50 item IPIP inventory, measured on a 5 point likert scale (1– 5). The IPIP produces 5 scales: *Extraversion* (e.g. “I am the life of the party”), *Agreeableness* (e.g. “I sympathize with others’ feelings”), *Conscientiousness* (e.g. “I get chores done right away”), *Neuroticism* (e.g. “I have frequent mood swings”) and *Intellect/Imagination* (e.g. “I have a vivid imagination”).

The Mini-IPIP has adequate reliability ($\alpha = .65 - .77$) and high test-retest reliability ($r = .68 - .86$). It has reasonable convergent validity with the original measure

and with other measures, and good divergent validity (Donnellan, et al., 2006). While the reliability of this measure is reduced in comparison to the original measure, this is to be expected with shorter scales and does not detract from its usefulness (Donnellan, et al., 2006). The shorter version was selected in order to reduce the burden to the participants.

Control. Self-control was assessed with the Self-Control Scale (Tangney, Baumeister, & Boone, 2004). The Self-Control scale is a 36 item questionnaire measured on a 5 point likert scale (1– 5), producing a total Self-Control score. An example of a question assessing self-control is “I am good at resisting temptation.” The self control scale has high internal consistency ($\alpha = .89$) and test-retest reliability ($r = .89$). This measure also possesses adequate convergent and divergent validity (Tangney, et al., 2004).

Quality of Life. The Personal Wellbeing Index (PWI 4th Ed) was utilised to assess personal well-being or quality of life (International Wellbeing Group, 2006). The PWI is measured on a 10 point likert scale (0–10) and includes a single item (Thinking about your own life and personal circumstances, how satisfied are you with your life as a whole?”), and a multi-item (8 item) questionnaire (e.g. “How satisfied are you with what you are achieving in life?”). The multi-item scale produces a total score and has adequate convergent and divergent validity, alpha reliably ranging from .70 - .85 and good test-retest reliability ($r = .84$).

Demographics. Demographic information was collected, including age, gender, employment status, occupation and culture. Additional questions, about whether the participants have ever had counselling (and for what) and their ideal weight, in order to compare this to reported weight and to assess weight dissatisfaction, were also included.

Procedure

Ethics approval was acquired from the university human research ethics committee. First year psychology students completed the battery of 10 self-report questionnaires, ranging from 14-36 items, designed to take approximately 1 hour to complete. The questionnaires were completed online via the research participation website used. Students were able to participate at any time of the day and take as long as they liked to complete the questionnaires. Once completed, participants were unable to re-access the questionnaires. Data was saved to the university server.

Data Analysis

Descriptive statistics, correlations, regressions and ANOVAs were performed on the data. ANOVAs were performed in order to determine the differences between the student sample and the norm. Correlations and regressions were performed to assess the hypothesised relationships. Data analysis was conducted using Minitab version 16.

Results

Descriptive Statistics

Prior to statistical analysis, data was scored as per authors' instructions and examined for omissions. Initially, the participants' weight, BMI, satisfaction with their current weight, exercise behaviours, and past treatment for an eating disorder or other mental illness were examined. Forty percent of females reported being happy with their current weight, and 60% being unhappy with their current weight. This pattern was reversed for males, with 59% reporting being happy with their current weight and 41% reporting being unhappy with their current weight.

The ideal weight reported by females was significantly lower ($M = 57.57$) than their actual weight ($M = 65.66$, $t = 12.56$, $p < .01$). The ideal weight reported by males

was also significantly lower ($M = 76.33$) than their actual weight ($M = 79.81$, $t = 2.84$, $p < .01$). Females reported a significantly larger difference between their reported actual and ideal weight ($M = -8.15$) than males ($M = -3.43$, $t = 3.36$, $p < .01$). The mean BMI calculated for female participants ($M = 23.41$) and male ($M = 24.77$) participants were in the healthy weight range. Sixteen percent of female participants were in the underweight range, 59% in the healthy weight range, 16% in the overweight range and 8% in the obese range. Four percent of male participants were in the underweight range, 54% in the healthy weight range, 33% in the overweight range and 9% in the obese range.

Twenty three female participants (6%) reported having ever been treated for an eating disorder, with a mean age of 19 at the time of receiving treatment (range 12-25 years old). No male participants reported past treatment for an eating disorder. Seventy-five participants (18%), 63 females (20%) and 12 males (12%), reported having past treatment for a mental illness with a mean age of 19.5 at the time of receiving treatment (range 4-51 years old).

The internal consistencies were assessed via Cronbach's alpha coefficients. High Cronbach's alpha coefficients were obtained for all measures included in analysis (see Tables 1 and 2).

Comparisons to norms.

To determine whether the sample was equivalent to the normal population, comparisons between sample means and norm means were conducted. The means obtained from the sample were compared to the norm means for eating disorder symptoms (see Table 1). Only female norms have been published for the EDE-Q. Only total norms were published for the BI-AAQ.

Table 1.

Sample Means and Standard Deviations, Norm Means and Standard Deviations, and Cronbach's Alpha Coefficients for Eating Disorder Measures.

	Sample mean total (SD)	Female sample mean (SD)	Male sample mean (SD)	Norm mean (SD)	Female norm mean (SD)	Male norm mean (SD)	Alpha
Restraint	1.50** (1.39)	1.60** (0.08)	1.20 (1.31)	-	1.21 (1.33)	-	.81
Eating Concern	1.12** (1.25)	1.26** (1.31)	0.66 (0.92)	-	0.62 (0.86)	-	.78
Weight Concern	2.19** (1.69)	2.41** (1.70)	1.48 (1.46)	-	1.59 (1.37)	-	.88
Shape Concern	2.60**	2.79** (1.64)	2.01 (1.71)	-	2.15 (1.60)	-	.91
EDE-Q total	1.86** (1.34)	2.02** (1.35)	1.34 (1.19)	-	1.55 (1.21)	-	.89
BI-AAQ	59.30** (17.63)	57.69 (17.86)	64.71 (15.78)	63.99 (16.10)	-	-	.94

Note: *P < .05 **P<.01

As a group, the female participants scored significantly higher on all measures (restraint, eating concern, weight concern, shape concern and EDE-Q total) of eating disorder symptoms than the norm. Thirty two percent of female participants scored over one standard deviation from the norm means indicating the existence of a subclinical group in the sample of university students. This is demonstrated in the distribution of total EDE-Q scores for females in Figure 1.

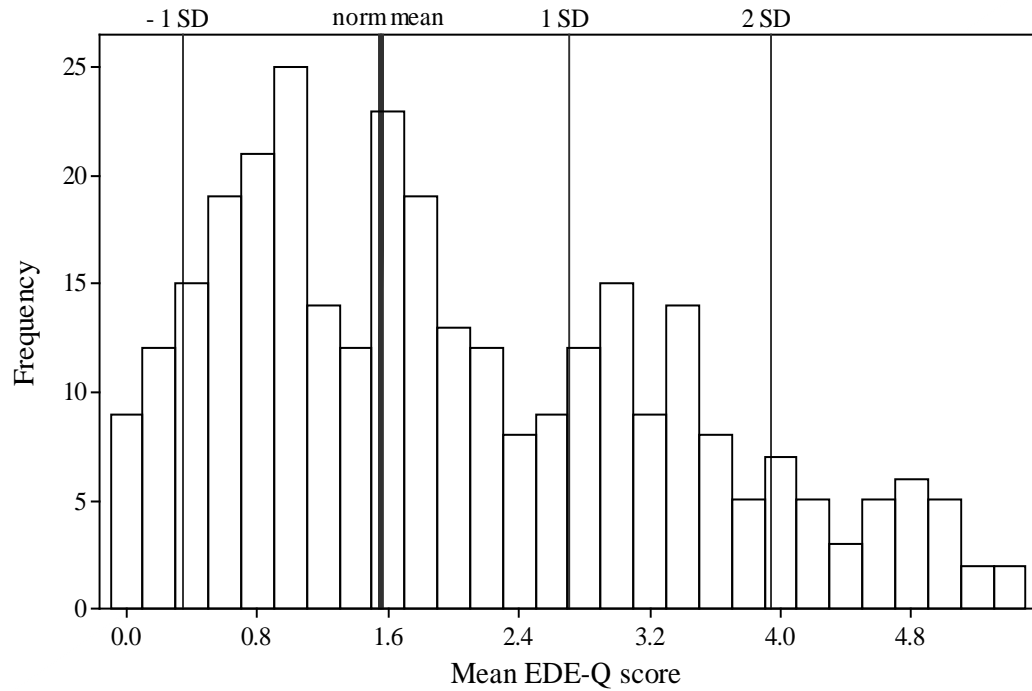


Figure 1. Histogram of EDE-Q scores of female participants.

Males scored significantly lower than females on all measures of eating disorder symptoms: EDE-Q [$t(183) = -4.75, p < .01$], Restraint [$t(175) = -2.57, p < .05$], Eating Concern [$t(230) = -5.00, p < .01$], Shape Concern [$t(158) = -4.00, p < .01$] and Weight Concern [$t(186) = -5.26, p < .01$], indicating less eating disorder pathology in males compared to females.

The distribution of total EDE-Q scores, a measure of eating disorder symptoms, for male participants is shown in Figure 2.

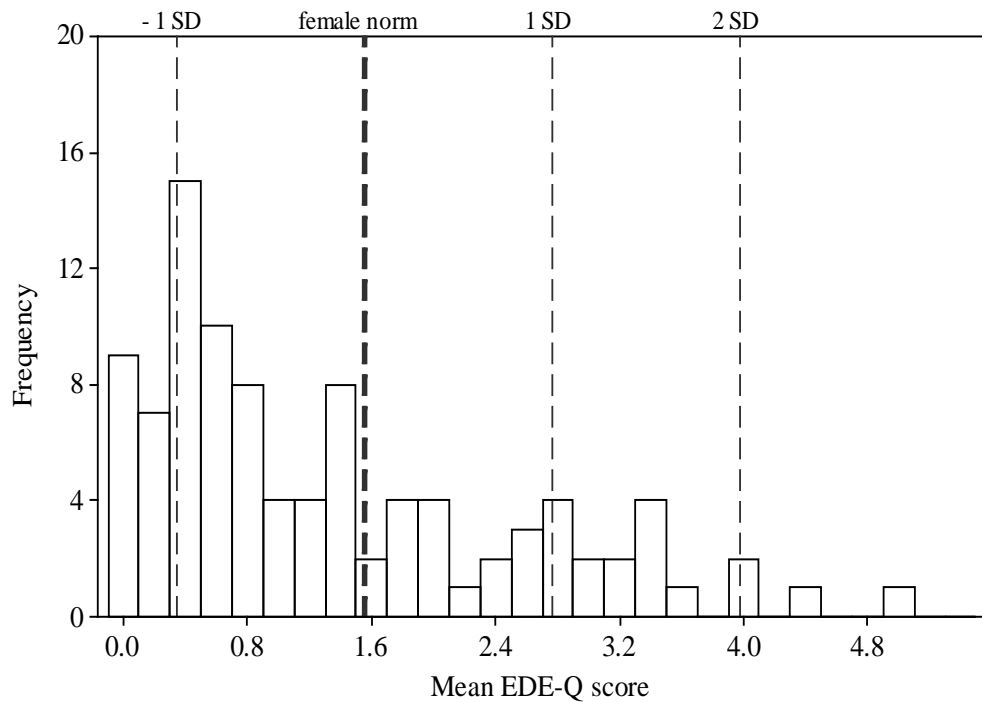


Figure 2. Histogram of EDE-Q scores of male participants.

The sample mean in acceptance of body image scores was significantly lower than the norm mean, with lower scores indicating the participants were less accepting of their body image. Females scored significantly lower than males in acceptance of body image [$t(179) = 3.70, p < .01$].

Means obtained for mindfulness were also compared to the norms (see Table 2), with higher scores reflecting higher levels of mindfulness skills. No significant differences were identified between the sample means and the norm mean for mindfulness measures of observe and describe. However, obtained means for the mindfulness measures, acting with awareness and acceptance without judgment, were significantly lower than the norm, meaning that the student sample were less inclined to act with awareness and accept without judgment than the norm. No norms differentiating between genders were available. No significant gender differences were identified on measures of mindfulness.

The reliability of all other measures administered ranged from $\alpha = .69 - .95$.

While some differences between obtained means and norm means were found, they were not meaningful in terms of the current research.

Table 2.

Sample Means and Standard Deviations, Norm Means and Standard Deviations, and Cronbach's Alpha Coefficients for Mindfulness Scale.

	Sample mean total (SD)	Female sample mean (SD)	Male sample mean (SD)	Norm mean (SD)	Alpha
Mindfulness- observe	37.23 (8.34)	37.67 (8.51)	35.97 (7.77)	37.62 (7.36)	.86
Mindfulness- describe	27.89 (6.03)	27.90 (6.10)	27.95 (5.87)	27.91 (5.63)	.87
Mindfulness- Acting with awareness	28.36* (5.56)	28.41 (10.00)	28.09 (14.00)	29.06 (5.39)	.74
Mindfulness- Acceptance without judgment	27.98** (7.85)	27.92 (7.88)	28.07 (7.86)	29.86 (6.26)	.90

Note: *P < .05 **P < .01

Relationships between variables

Correlations were performed to examine the relationships between eating disorder symptoms, acceptance of body image and mindfulness with all other measures.

The correlation matrix representing the Pearson's r values is presented in Table 3.

Table 3.

Correlations between Eating Disorder Symptoms, Body Image, Mindfulness, Identity, Personality, Psychological Distress and Quality of Life.

	Restraint	Eating Concern	Shape Concern	Weight Concern	EDEQ Total	BIAAQ	Observing	Describing	Acting	Accepting
Eating Concern	.59**									
Shape Concern	.64**	.73**								
Weight Concern	.65**	.76**	.92**							
EDEQ Total	.80**	.86**	.94**	.95**						
BIAAQ	-.55**	-.74**	-.80**	-.79**	-.81**					
Observing	.22**	.17**	.21**	.18**	.23**	-.25**				
Describing	-.00	-.10*	-.12*	-.09	-.09	.17**	.34**			
Acting	-.06	-.22**	-.24**	-.21**	-.21**	.21**	-.05	.20**		
Accepting	-.24**	-.33**	-.36**	-.33**	-.35**	.46**	-.45**	.14**	.35**	
Identity Commitment	.01	-.04	-.02	.02	-.01	.06	.11*	.26**	.19**	.14**
Identity Exploration	.03	.06	.09	.10	.08	-.11*	.40**	.21**	-.09	-.32**
Extraversion	-.01	-.03	-.03	-.03	-.03	.12*	.07	.31**	.05	.15**
Agreeableness	.07	-.01	.08	.07	.06	-.04	.29**	.24**	-.03	-.16**
Conscientiousness	.10*	-.04	-.01	.04	.03	-.01	.10*	.14**	.31**	.18**
Neuroticism	.14**	.29**	.32**	.33**	.31**	-.36**	.10	-.18**	-.27**	-.49**
Intellect	-.06	-.13*	-.05	-.06	-.08	-.01	.27**	.38**	.03	-.03

Personal Wellbeing	-.13*	-.28**	-.27**	-.25**	-.26**	.31**	.03	.24**	.25**	.31**
Depression	.19**	.37**	.35**	.31**	.34**	-.42**	.07	-.24**	-.39**	-.51**
Anxiety	.23**	.36**	.29**	.27**	.32**	-.38**	.21**	-.11*	-.33**	-.47**
Stress	.21**	.37**	.32**	.32**	.34**	-.42**	.21**	-.12*	-.38**	-.53**
DASS total	.23**	.42**	.36**	.34**	.38**	-.48**	.18**	-.18**	-.41**	-.57**
Self Control	-.04	-.26**	-.24**	-.20**	-.21**	.24**	-.01	.16**	.51**	.34**
Sense of Self	.17**	.35**	.32**	.30**	.38**	-.43**	.14**	-.25**	-.32**	-.58**
Self Compassion	-.20**	-.41**	-.41**	-.38**	-.40**	.48**	-.09	.19**	.36**	.55**
Gender	.12*	.20**	.20**	.24**	.22**	-.17**	.09	-.00	.03	-.01
Age	.05	-.06	.03	.04	.02	.08	.15**	.11*	.17**	.02

Note. ** $p < .01$; * $p < .05$.

The pattern of significant relationships indicated that individuals with higher levels of eating disorder symptoms were less accepting of their body image, reported higher pathology of sense of self, neuroticism, depression, stress and anxiety scores. Those with higher eating disorder symptoms also scored lower in self compassion, self control and personal wellbeing or quality of life. The reverse relationships were found for acceptance of body image, with those reporting higher acceptance of their body image reporting higher self compassion, self control and personal wellbeing, and lower pathology of sense of self, neuroticism, depression, stress and anxiety scores. Additionally, people who were more accepting of their body image also reported higher levels of extraversion and were more likely to explore their identities.

People with high levels of eating disorder symptoms were more likely to observe their surroundings. However, those with more eating disorder symptoms were less likely to act with awareness and accept without judgement. The reverse relationship was found between acceptance of body image and mindfulness skills, with those who accepted their body image reporting lower levels of observing and describing skills, as well as being more likely to act with awareness and accept without judgment.

Similar relationships were found between mindfulness and other measures. Those with higher levels of pathology of sense of self rated themselves more able to observe but less able to describe, act with awareness and accept without judgment. Individuals who were more committed to their identity reflected higher mindfulness skills than those who were not as committed to their identities. However, individuals who are currently exploring their identities scored higher in the mindfulness skills observing and describing, but were less likely to accept without judgment. Those with higher scores in self compassion rated their abilities to describe, act with awareness and accept without judgment as high. Furthermore, people reporting higher levels of

anxiety, stress and overall psychopathology tended to rate themselves as performing well on observing, but rated themselves poorly in describing, acting with awareness and accepting without judgment. The reverse relationship was found between mindfulness skills and personal wellbeing.

Predictors of eating disorder symptoms and acceptance of body image

In order to determine the strongest predictors of eating disorder symptoms, a linear regression analysis was conducted for EDE-Q scores, shown in Table 4. First, all predictors, including body image, were entered into a regression equation against EDE-Q scores as a measure of eating disorder symptoms. Five significant predictors were identified, accounting for 72.8% of the variance. Given the strong correlation between body image and eating disorder symptoms, a second regression model was conducted excluding body image as a predictor. Seven significant predictors were identified in this model, accounting for 45.4% of the variance.

Table 4.
Regression Model for Eating Disorder Symptoms (EDE-Q).

Model	Predictors	β	p	R ² (%)
1	Body Image	-.74	<.01	72.8
	BMI	.17	<.01	
	Sense of Self	-.12	.02	
	Gender	.09	.01	
	Extraversion	.09	.02	
2	BMI	.41	<.01	45.4
	Gender	.26	<.01	
	Self compassion	-.28	<.01	
	Mindfulness - observe	.17	<.01	
	Depression	.17	.03	
	Contentiousness	.15	<.01	
	Extraversion	.12	.01	

A linear regression analysis was also conducted for Body Image, shown in Table 5. In the first model, all predictors, including body image, were entered into a regression equation against BIAAQ scores as a measure of acceptance of body image. Seven significant predictors were identified, accounting for 75.8% of the variance. Given the strong correlation between body image and eating disorder symptoms, a second regression model was run excluding eating disorder symptoms as predictors. Six significant predictors were identified in this model, accounting for 49.3% of the variance.

Table 5.
Regression Model for Body Image (BI-AAQ).

Model	Predictors	β	p	R ² (%)
1	Shape concern	-.36	<.01	75.8
	Eating concern	-.19	<.01	
	Weight concern	-.19	.01	
	Sense of Self	-.12	.01	
	Mindfulness - accepting	.10	.02	
	Age	.09	.01	
	Conscientiousness	-.08	.02	
2	BMI	-.32	<.01	49.3
	Self compassion	.26	<.01	
	Gender	-.23	<.01	
	Conscientiousness	-.19	<.01	
	Mindfulness - observe	-.16	<.01	
	Age	.16	<.01	

Discussion

Eating Disorders, Body Image and Mindfulness

It was expected that individuals with higher levels of mindfulness (or self awareness) would report lower levels of eating disordered symptoms. Results indicated that the mindfulness skill observing was linked to higher reported eating disorder symptoms, however, the mindfulness skills acceptance without judgment (taking a neutral approach) and acting with awareness (focussing the mind on the present) were linked to lower eating disorder symptoms. This reveals that those with more eating disorder symptoms were less likely to act with awareness and accept without judgement. The reverse relationship was also found between mindfulness skills and acceptance of body image. Those who were more accepting of their body image performed better on all mindfulness skills, except observing. While this is consistent with theoretical literature asserting that certain aspects of mindfulness play a role in reducing distress and dysfunctional beliefs (e.g. Baer, et al., 2005; Kabat-Zinn, 2003), the relationship found in this study was more complicated than expected.

However, results were consistent with Baer and colleagues' (2006) finding that those with higher scores in psychopathology reported lower levels of mindfulness skills with the exception of observing skills. The authors attributed this pattern to the items included in the observe subscale assessing internal (e.g. cognitions and emotions) and external (e.g. perceptions) experiences, whereas other subscales only investigate internal experiences. It would also seem that being good at frequently observing both your internal experiences and your external environment would not be helpful if you are prone to misjudge the experience.

The results suggest that the skills of acting with awareness and acceptance without judgement are associated with greater resiliency against eating disorder

pathology. As such, it may be wise for mindfulness-based teaching to provide more of a focus on these skills. It may also be that people score lower on acting with awareness and acceptance without judgment because they are difficult skills to learn and may require more time to practice. Future studies could explore the most effective methods for teaching these specific mindfulness skills and whether these skills require more time to practice.

Sense of Self, Identity and Self Compassion

A relationship existed between mindfulness skills and sense of self, as hypothesised. Those higher in mindfulness skills (except observing) had a more complete sense of self or less pathology of sense of self, providing some evidence for Basten's (2007) theoretical assertion that sense of self requires the capacity for 'self reflective awareness' or mindfulness. Further, those who reported higher levels of eating disorder symptoms also reported higher levels of pathology of sense of self, and those who were more accepting of their body image had lower levels of pathology in sense of self.

While sense of self was identified as a predictor of eating disorder symptoms, identity was not. This was inconsistent with literature providing a link between eating disorder pathology and impaired identity (e.g. Stein & Corte, 2007; 2008). It may be that having a stronger sense of self is more of a resiliency factor than having a strong self identity. These differing relationships with eating disorder symptoms provide support for the separation of sense of self as an awareness of self, distinct from identity. This is an interesting area for further research to ensure that these relationships are not an artefact of the instruments utilised to measure the constructs.

The expected relationships between self compassion and eating disorders, mindfulness and sense of self were found, providing some experimental evidence for

theoretical relationships that are associated with enhanced resiliency, as proposed by the authors.

Personality and Self Control

Those with higher eating disorder symptoms also showed elevated levels of neuroticism, but no other elevations in personality factors. These findings are consistent with Claes and colleagues' (2006) finding that elevations in neuroticism were found across different eating disorder presentations (i.e. anorexia nervosa and bulimia nervosa).

Results of this study found an association between higher levels of eating disorder symptoms and lower levels of self control. This provides support for Sassaroli, Gallucci and Ruggieros' (2008) statement that eating disorders are associated with low levels of perceived internal control, resulting in a desire for increased control.

Mental Health and Personal Well-being

Relationships between mindfulness (describing, acceptance without judgement and acting with awareness) and overall psychopathology including stress, anxiety and depression, as well as personal wellbeing, were found in the expected directions. This provides further empirical support for the notion that mindfulness skills are linked to personal wellbeing and positive mental health status, highlighting the overall benefits of mindfulness (e.g. Brown & Ryan, 2003).

The sample reflected elevated levels of stress, anxiety and depression and lower levels of personal well being or quality of life when compared to the norm. These finding replicate existing studies on mental health in university students, indicating that students experience higher levels of distress and mental illness in comparison to census data of the Australian population (Stallman, 2010). University students are thought to experience increased levels of distress, be at risk of mental ill health and poor

psychological wellbeing, as university often marks an adjustment period, associated with increased stressors, during the transition from childhood to adulthood (Burris, Brechting, Salsman, & Carlson, 2009).

Clinical Implications

The identification of a relationship between mindfulness skills and eating disorder symptoms provides additional evidence for the use of Mindfulness based therapies such as Acceptance and Commitment Therapy (ACT, Hayes, et al., 1999), Dialectical Behaviour Therapy (DBT, Linehan, 1993a, 1993b) and Mindfulness-based Cognitive Therapy (MCBT, Segal, et al., 2002). As acting with awareness and acceptance without judgment are most strongly related to eating disorder symptoms, it is important that more of a focus is given to teaching these skills in interventions targeting eating disorder pathology.

Additionally, the variety of factors relating to eating disorder pathology provides evidence for therapeutic intervention, treating the whole person, as opposed to focussing on eating behaviours and related thoughts. Mindfulness based treatments are therefore appropriate as they focus on underlying emotional and cognitive processes which in turn should have positive benefits in influencing eating behaviours as well as depressive symptoms, anxiety and quality of life.

The strong relationship between body image and eating disorders symptoms, as well as the identification of body image, sense of self and self compassion, as significant predictors of eating disorder symptoms, support existing research indicating that body image disturbance and excessive investment of appearance in definition of sense of self are involved in the development and maintenance of eating disorders (e.g. Stice & Shaw, 2002). Evidence exists for preventative interventions, such as health promotion or social literacy, aimed at building resilience to reducing sociocultural

pressures associated with weight and shape, which are either presented to large audiences or targeted groups of people at risk of developing eating disorders including high schools, universities and ballet schools (e.g. Levine & Piran, 2004; Stice & Shaw, 2002). Future research could investigate the efficacy of screening for sense of self and self compassion in addition to body image concerns and incorporating these into early intervention to determine whether treating these symptoms can prevent eating disorder pathology.

Limitations and areas for further research

We note that this study was based on self report questionnaires. This is of interest as denial of some, if not all symptoms, is often characteristic of eating disorders pathology (e.g. Hales & Yudofsky, 2003). Additionally, the current results provide some evidence for a relationship between mindfulness and eating disorder symptoms but this study cannot determine causality. Findings from the current cross sectional research provide good reason to consider investigating longitudinal study in the future to determine causality and whether there are specific elements of mindfulness that may play a key role in change.

The current study was conducted on a subclinical sample of Australian university students. It would be interesting to investigate whether similar results are found in a clinical sample of individuals diagnosed with an eating disorder. Given the relationships with personality, sense of self and eating disorder symptoms it would also be interesting to investigate the role of factors investigated in this study and differences in individuals with co-morbid Axis II pathology.

Conclusions

While interest in the use of mindfulness based therapies is increasing in clinical practice, limited empirical evidence for mindfulness based interventions for treating

eating disorders exists (Baer, et al., 2005). In order to employ mindfulness based interventions to improve eating disorder symptoms, initially a relationship between eating disorder symptoms and mindfulness skills needs to be identified. The current study has provided evidence for a relationship between eating disorder symptoms and mindfulness skills. This provides some support for a possible role of mindfulness based interventions in treating eating disorders. However, further research is required in order to provide evidence for a causal relationship and the effectiveness of mindfulness based therapies.

This study also provided evidence for a possible role of sense of self, self compassion, perceived level of self control and personality factors, especially neuroticism, as well as levels of co-morbid symptoms of depression, anxiety, levels of distress and quality of life with eating disorder pathology and mindfulness skills. This supports a holistic approach to treatment of eating disorders, such as mindfulness based interventions, which aim to treat the whole person, not simply focussing on the eating disorder symptoms.

CHAPTER 3

Study 2

The Identification of a relationship between eating disorder symptomatology and Mindfulness, as well as sense of self, self compassion, personality, self control, psychological distress and personal wellbeing, in a student sample in Study1, highlights the need to investigate whether similar results are found in a clinical sample of individuals diagnosed with an eating disorder. It should be noted that recruitment of individuals diagnosed with mental health disorders such as eating disorders presents as a methodological barrier to conducting empirical research in clinical samples. Sample sizes are often small as the most common source of participants are local mental health services, which have limited numbers of clients, who are also vulnerable and not always willing or able to participate in clinical studies (e.g. Heinssen, Cuthbert, Breiling, Colpe, & Dolan-Sewell, 2003).

Additionally, due to the relationship between identity formation and personality, as well as personality factors being thought to exacerbate the outcome of eating disorders (Lilenfeld, et al., 2006), it would be useful to investigate the relationship between eating disorders and personality profiles. Empirical evidence is emerging suggesting co-morbidity between eating disorders and personality disorders as high as 44% (De Bolle, et al., 2011), with Obsessive Compulsive Personality Disorder (OCPD) being more prevalent in Anorexia Nervosa and Borderline Personality Disorder (BPD) being more prevalent in individuals diagnosed with Bulimia Nervosa.

De Bolle and colleagues (2011) reported higher levels of neuroticism and lower levels of extraversion in people diagnosed with personality disorders. This is consistent with Claes and colleagues' (2006) research suggesting higher levels of neuroticism and lower levels of extraversion in eating disordered individuals which the authors classed as the over-control type, which is more common in individuals with anorexia nervosa.

This was contrasted with the under-control type which was characterised by higher levels of neuroticism and lower levels of conscientiousness and agreeableness and more common in individuals with Bulimia Nervosa. It would be interesting to replicate these findings through investigating personality profiles of eating disordered individuals in comparison to eating disordered individuals with co-morbid personality disorders.

Aims and Hypotheses

The aim of this study was to explore the factors involved in eating disorder pathology and examine trends in an eating disordered sample in comparison to non-clinical samples (the norm and university students). It was expected that individuals diagnosed with eating disorders would report higher levels of eating disorder symptoms, be less accepting of their body image and perform lower in mindfulness than the student population and the norm. It was also expected that eating disordered participants would show higher levels of pathology in sense of self, lower levels of self compassion and self control and would not have formed identities. Further, it was expected that the clinical populations would show higher levels of distress and report poorer quality of life.

Another aim of the proposed study was to investigate the personality profiles of individuals in an eating disordered sample in comparison to non-clinical samples. Depending on diagnosis, it was hypothesised that clinical participants would either report higher levels of neuroticism and conscientiousness and lower levels of extraversion (if symptoms are consistent with Anorexia Nervosa), or higher levels of neuroticism and lower levels of conscientiousness and agreeableness (if symptoms are consistent with Bulimia Nervosa), when compared to the non-clinical population. Axis II co-morbidities were also examined as a factor involved in eating disordered

pathology, with the expectation that individuals with co-morbid personality disorders would report higher levels of pathology across all measures.

Method

Participants

The clinical group (n =10) consisted of clients presenting to a service in New South Wales, Australia which provides specialist psychological outpatient assessment and treatment for people with Eating Disorders. Participants were recruited over a 6 month period, with 7 clients declining participation in the study. Participants in the clinical sample were reimbursed \$20 for travel expenses.

All participants were female and of Anglo-Saxon cultural background, with an age range of 20 to 56 years, and a mean age of 28.4 years: 8 of the 10 participants being under the age of 26. Three of the 10 participants reported working full time and 1 working part time, 4 were enrolled in fulltime study and 1 participant was unemployed or performing domestic duties. One participant listed school years 7 - 9 as their highest level of education, 2 listed a TAFE course, 2 listed themselves as university graduates and 7 reported completing some university studies. Eight out of 10 participants were single and 2 in de facto relationships. Eight out of 10 had received past treatment for an eating disorder.

Instruments

The battery of questionnaires from Study 1 was replicated in this study (please refer to Study 1 for psychometric information). Additional diagnostic information from a longitudinal study conducted concurrently at the Eating Disorders Service was also obtained with the consent of participants. De-identified diagnostic information was collected through clinicians administering the Structured Clinical Interview for DSM Disorders – Axis I (SCID-I, First, Spitzer, Gibbon, & Williams, 1996) and Structured

Clinical Interview for DSM Disorders – Axis II (SCID-II, First, Spitzer, Gibbon, & Williams, 1997) designed to assist mental health clinicians to objectively perform diagnostic assessments. The SCID-I and SCID- II have fair to good reliability ($\kappa = .60 - .83$; $.60 - .95$, Lobbestael, Leurgans, & Arntz, 2011). While there are challenges associated with determining validity of structured clinical interviews of mental health diagnoses in comparison to unstructured clinical interviews, the SCID has been considered to be valid in determining clinical diagnoses (e.g. Steiner, Tebes, Sledge, & Walker, 1995).

Procedure

Ethics approval was acquired from the local area health ethics committee. Upon arrival for an initial assessment, people presenting with an eating disorder were invited to participate in this study (as well as a longitudinal study being conducted at the Eating Disorders Service by Dyer and Neville, to be reported elsewhere). Participants completed the questionnaires for the current study online on the one occasion. The questionnaires were estimated to take 1.5 hours to complete in total and were facilitated by an experimenter and were completed at the Eating Disorders service. Clinicians were available onsite to provide debriefing if required.

Data Analysis

Due to small sample size, data from clinical participants was standardised by multiplying each score by the norm mean and then dividing by the standard deviation for that measure to give z scores. Female and male norms were used where available. The standardised means for the clinical sample were profiled against the norm means and means obtained from the student population in study 1. Because the clinical sample was small, testing for significant differences compared to the norm or to the student sample from Study 1 was not meaningful. Instead, profiles of standardised z scores were

generated and examined. For our purposes, differences of at least 1 unit (i.e., 1 standard deviation) were considered noteworthy.

Results

Diagnostic information

All participants met criteria for either Bulimia Nervosa (n = 5) or an Eating Disorder not Otherwise Specified (EDNOS, n = 5). Of those meeting criteria for EDNOS, n = 2 were of restricting and bingeing subtype, n = 1 of restricting and binge/purging subtype and n = 2 binge purging subtype.

Five participants met criteria for co-morbid Axis II disorders, with 5 meeting criteria for Borderline Personality Disorder (BPD) and 2 meeting criteria for Avoidant and Depressive Personality disorder. Seven participants met diagnostic criteria for Axis I disorders, including Generalised Anxiety Disorder (n = 4), Anxiety Disorder NOS (n = 2), Body Dysmorphic Disorder (n = 2), Dysthymic Disorder (n = 2), Substance dependence (n = 2), Panic Disorder (n = 2) and PTSD (n = 1).

Profiles of variance from norm means

Figures 3 to 6 demonstrate the variation from the norm for each participant in comparison to the standardised mean from the student sample in Study 1. These tables demonstrate that there was a variance on scores between participants in comparison to each other, the norm mean and the student population. Additional norm means are included in Appendix 2.

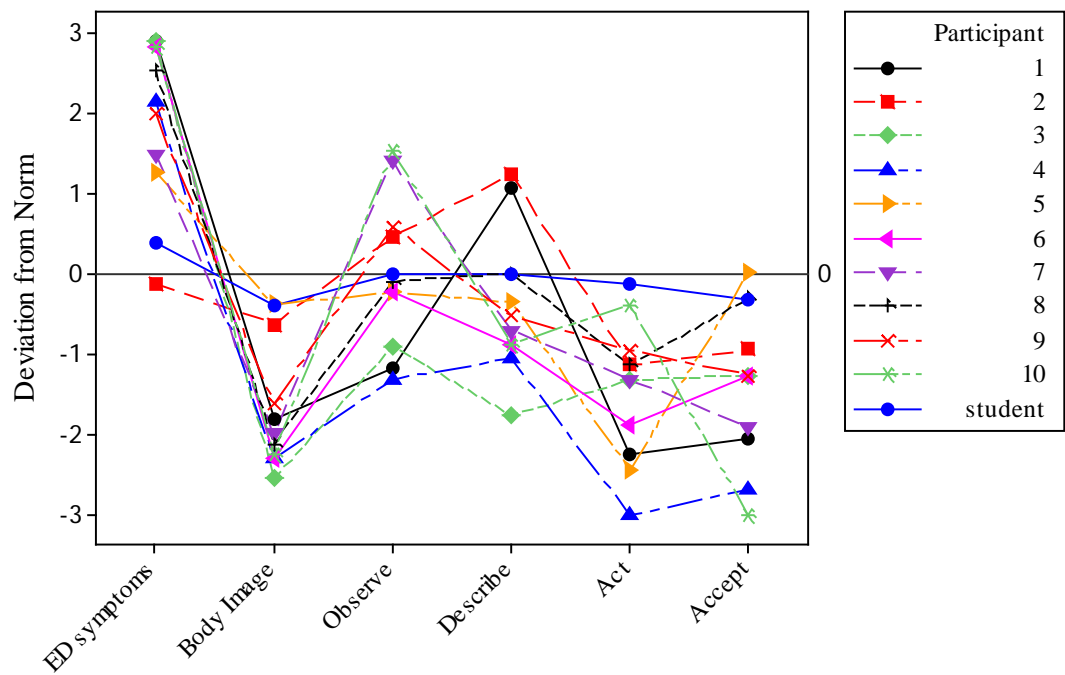


Figure 3. Line plot of each participant's score for Eating Disorder, Body Image and Mindfulness compared to the norm and the mean of the student sample scores from Study 1.

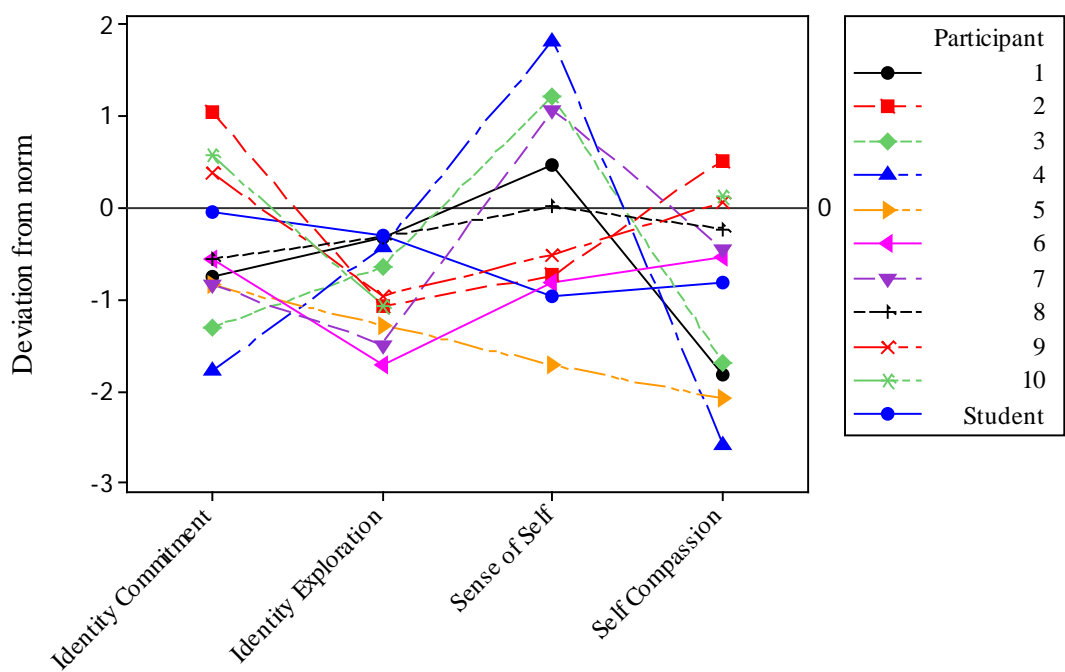


Figure 4. Line plot of each participant's score for Identity, Sense of Self and Self Compassion compared to the norm and the mean of the student sample scores from Study 1.

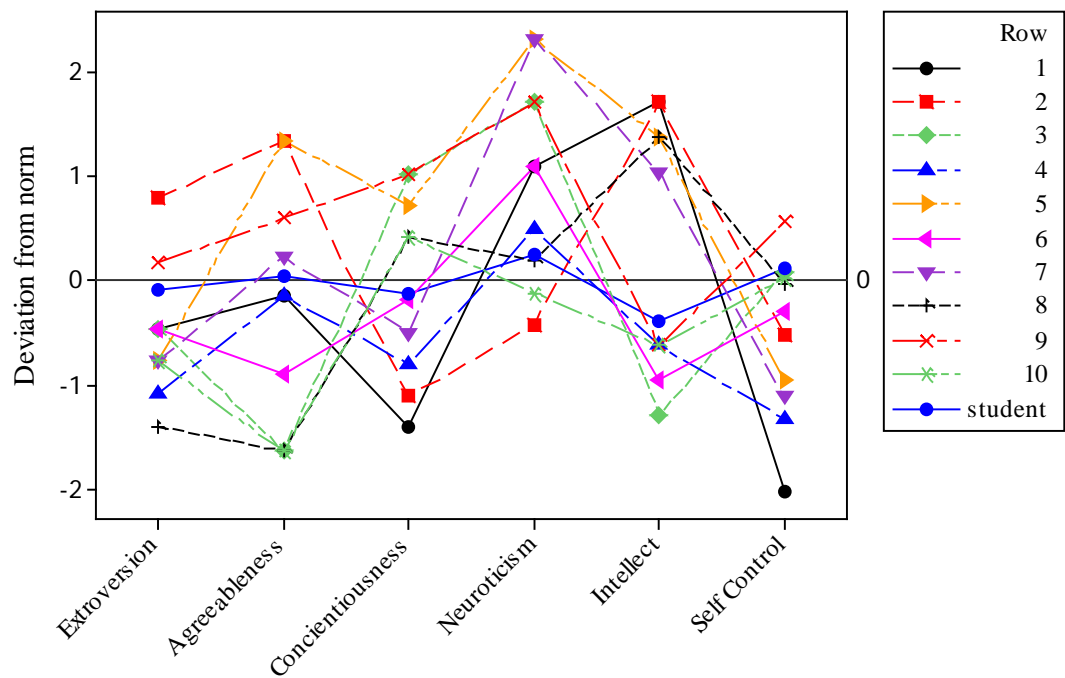


Figure 5. Line plot of each participant's score for Personality and Self Control compared to the norm and the mean of the student sample scores from Study 1.

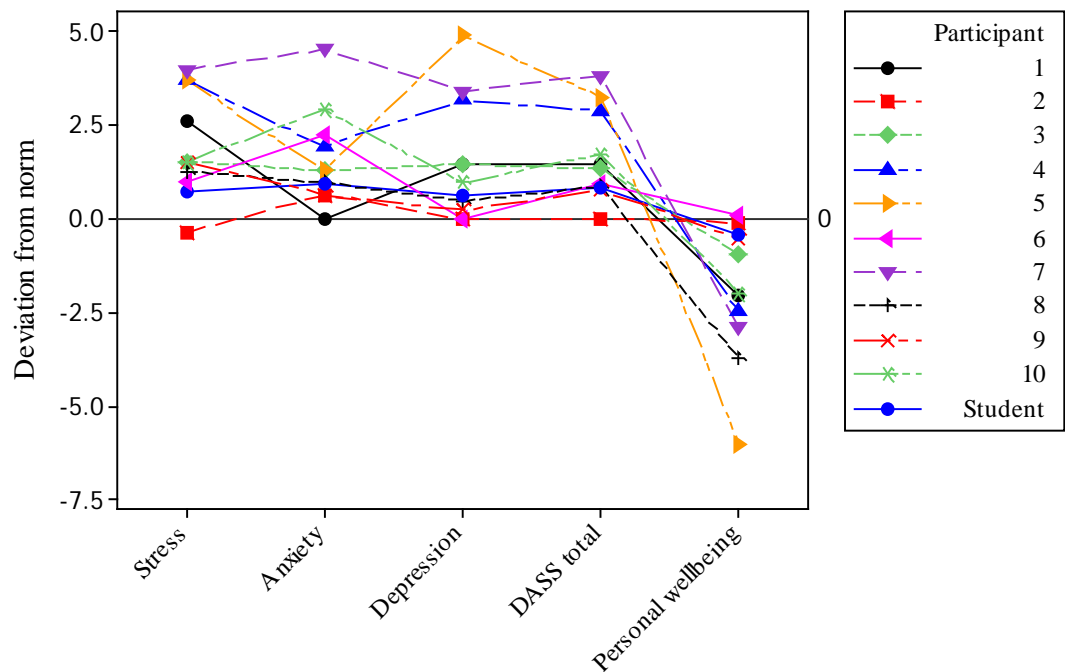


Figure 6. Line plot of each participant's score for Stress, Anxiety, Depression and Personal Wellbeing compared to the norm and the mean of the student sample scores from study 1.

Comparative profile of deviation from the norm mean between Clinical and Student Populations

Profiles of the mean scores obtained for clinical participants (participants meeting diagnostic criteria for eating disorder) and student sample from Study 1 were compared to the norm mean in Figures 7 to 10.

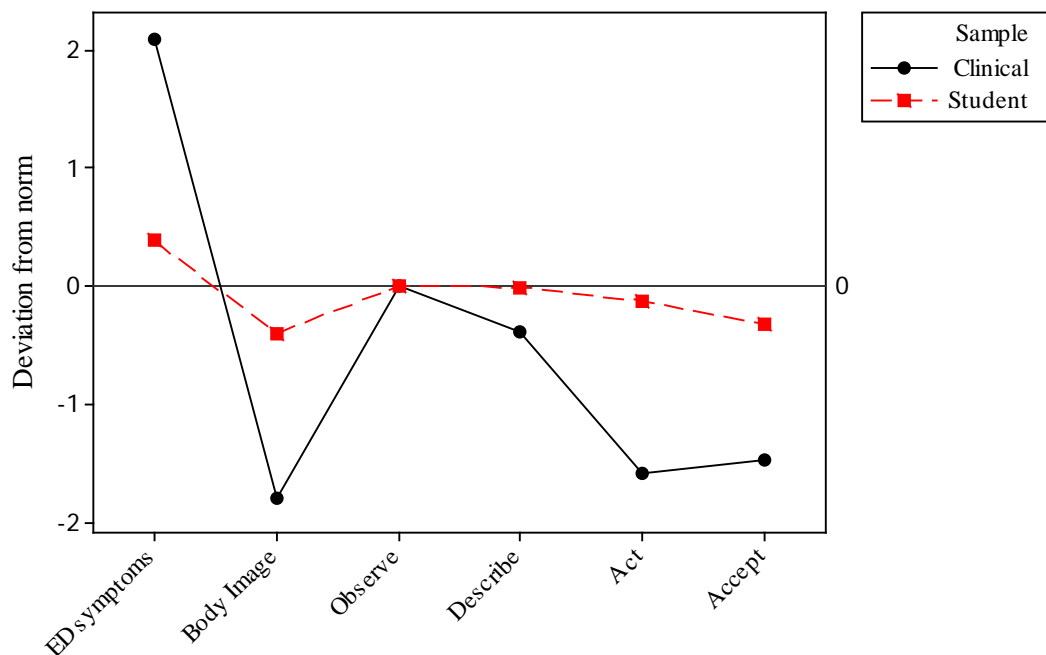


Figure 7. Profile of clinical and student samples for Eating Disorder Symptoms, Body Image and Mindfulness in comparison to norm mean for each scale.

Clinical and student participants scored higher in eating disorder symptoms and lower in acceptance of body image in comparison to the norm mean. As for mindfulness skills, no differences between clinical or student populations and the norm mean were detected for observing. While there was no difference between the student population and the norm mean for describing, the clinical population reported lower describing skills in comparison to the norm mean. Both clinical and student populations obtained lower scores in acting with awareness and acceptance without judgment compared to

the norm mean, with clinical participants reporting poorer performance in these mindfulness skills compared to the student population.

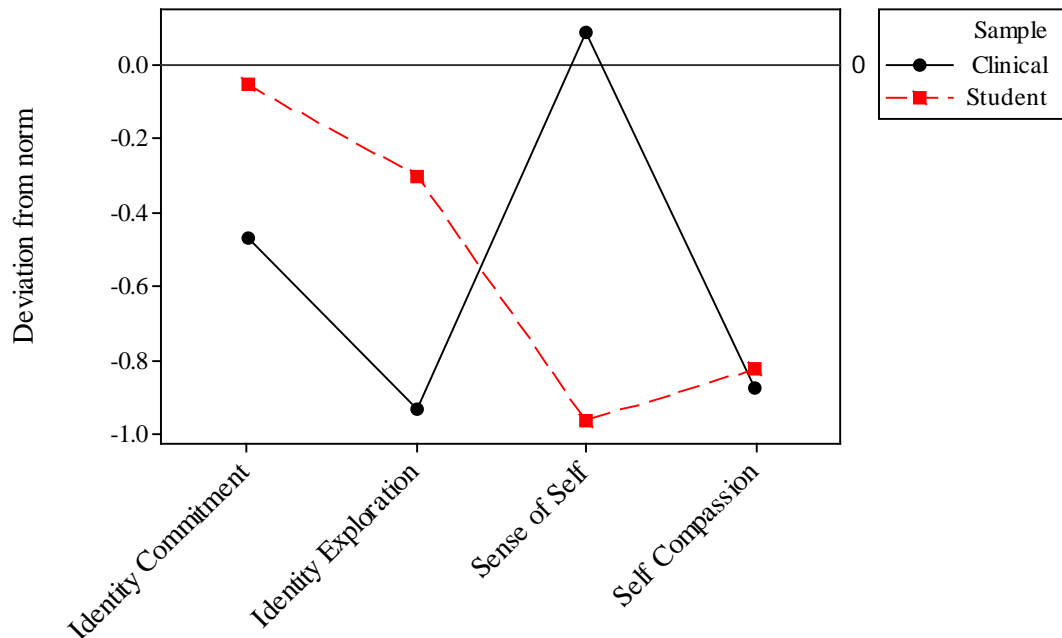


Figure 8. Profile of clinical and student samples for Identity, Sense of Self and Self Compassion in comparison to norm mean.

Student and clinical participants scored lower in identity commitment and identity exploration compared to the norm, meaning that both eating disordered and student participants were less committed to their identities and were less likely to explore their identities than the norm. Students scored lower in pathology of sense of self than the norm, whereas clinical participants scored higher pathology of sense of self when compared to the norm. Both clinical and student participants scored almost 1 standard deviation below the mean in self compassion, indicating that both samples reported low compassion towards themselves.

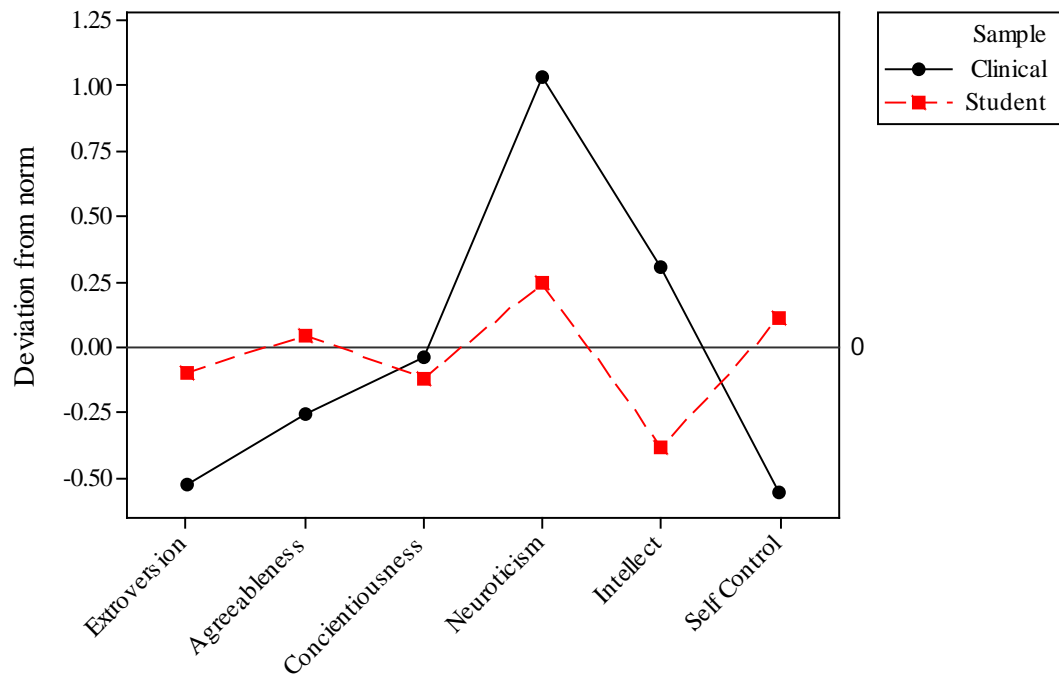


Figure 9. Profile of clinical and student samples for Personality and Self Control in comparison to norm mean.

Both clinical and student populations reported lower extraversion scores than the norm mean, indicating both populations were more introverted than the norm, with clinical participants reporting lower extraversion scores than students. Clinical participants were less agreeable than the norm, whereas students reported being slightly more agreeable than the norm. Both student and clinical participants reported higher scores in neuroticism than the norm, with clinical participants reporting higher levels of neuroticism than student participants. Clinical participants reported higher levels of intellect or imagination when compared to the norm mean, whereas students reported lower levels of intellect or imagination compared to the norm. The reverse relationship was found for self control, with students reporting higher self control compared to the norm, and eating disordered participants reported lower self control than the norm.

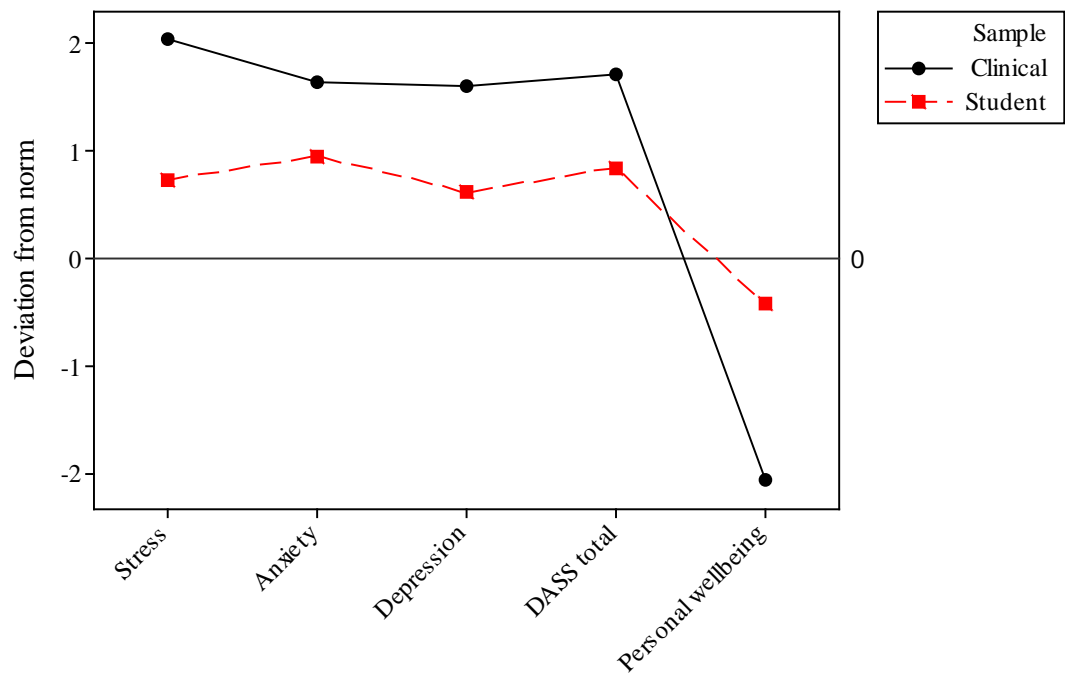


Figure 10. Profile of clinical and student samples for Stress, Anxiety, Depression and Personal Wellbeing in comparison to norm mean for each scale.

Both clinical and student populations obtained higher scores in stress, anxiety and depression when compared to the norm, with the clinical population reporting higher levels of stress, anxiety and depression than the student population. Clinical and student populations reported lower personal wellbeing than the norm, with the clinical population reporting lower personal wellbeing than the student population.

Comparative profile of deviation from the norm mean between Eating Disorder, Co-morbid Axis II and Student Populations

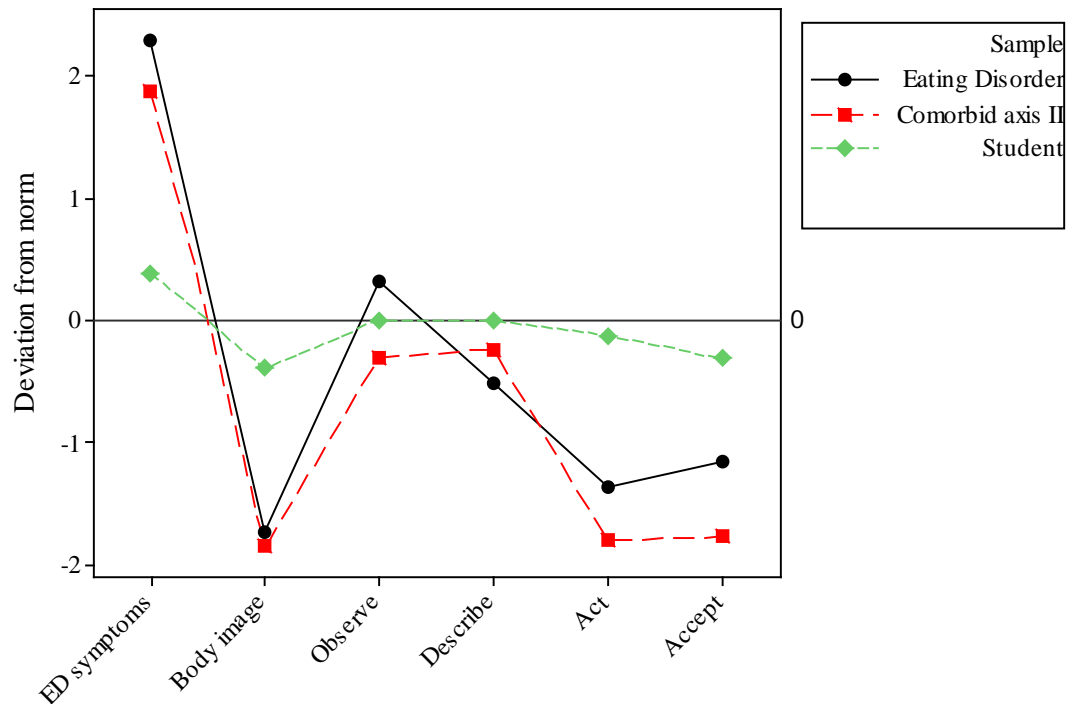


Figure 11. Profile of eating disorder, co-morbid Axis II and student samples for Eating Disorder Symptoms, Acceptance of Body Image and Mindfulness skills in comparison to the norm mean.

While there were only slight differences between eating disordered participants (n=5) and those with co-morbid personality disorders (n=5), differences in mindfulness skills were identified. Participants with eating disorder pathology reported greater observing skills than the norm, where as those with co-morbid personality disorders reported lower ability to observe than the norm. Both eating disordered and co-morbid personality disordered participants reported lower abilities to describe than the norm, but those with co-morbid personality disorders performed slightly higher in this subscale, indicating improved abilities to describe. Both groups of participants (eating disorder and co-morbid personality disorder) reported poor skills in acting with awareness and acceptance without judgement than the norm and student populations,

with those with co-morbid personality disorders reporting slightly poorer abilities to act with awareness and accept without judgement.

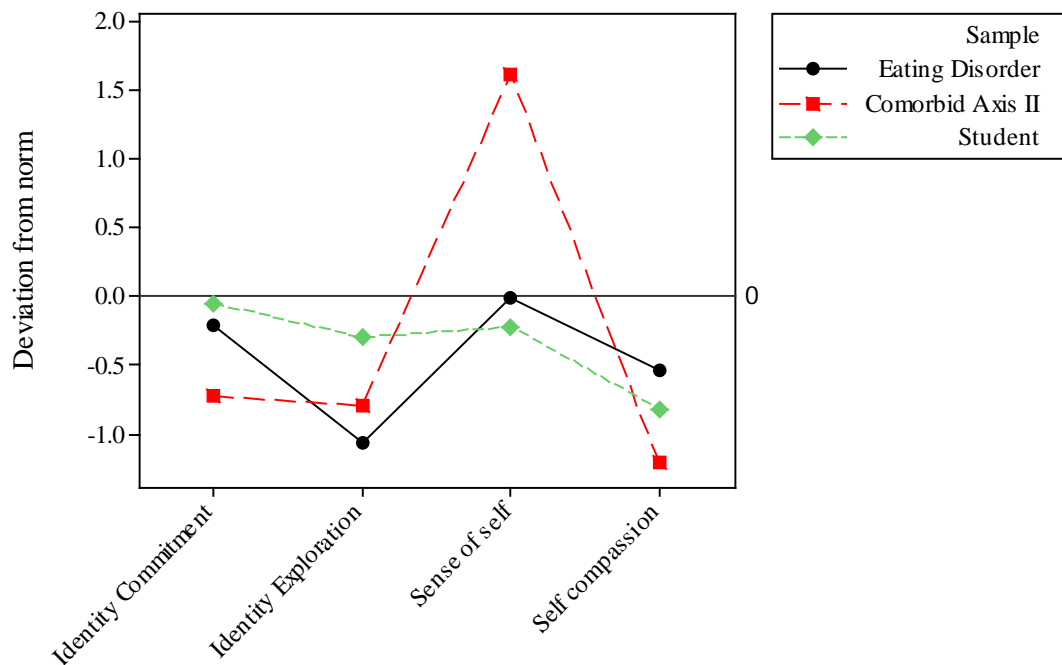


Figure 12. Profile of Eating Disorder, Co-morbid Axis II and Student samples for Identity, Sense of Self and Self Compassion in comparison to the norm mean.

Both eating disorder and co-morbid personality disordered participants scored lower in identity commitment than the norm and student population, with eating disordered participants scoring higher in identity commitment than participants meeting with co-morbid personality disorders. This implies that individuals with eating disorders and co-morbid personality disorders are less likely to be committed to their identities than those without co-morbid personality disorders. Participants diagnosed with eating disorders, as well as those with co-morbid personality disorders, scored lower in identity exploration than the norm and student population, with participants with co-morbid personality disorders reporting slightly higher levels of identity exploration than eating disordered participants without co-morbid eating disorders. This implies that

people with co-morbid personality disorders are more likely to be open to exploring their identities than eating disordered individuals without a personality disorder.

Interestingly, clinical participants with co-morbid personality disorders reported pathology of sense of self that was over 1 standard deviation higher than the norm, whereas no difference between eating disordered without personality pathology participants and the norm was found. While both eating disordered and those with co-morbid personality disorders reported lower self compassion than the norm, those with co-morbid personality disorders reported the lowest levels of self compassion. Eating disordered individuals reported higher self compassion than university students.

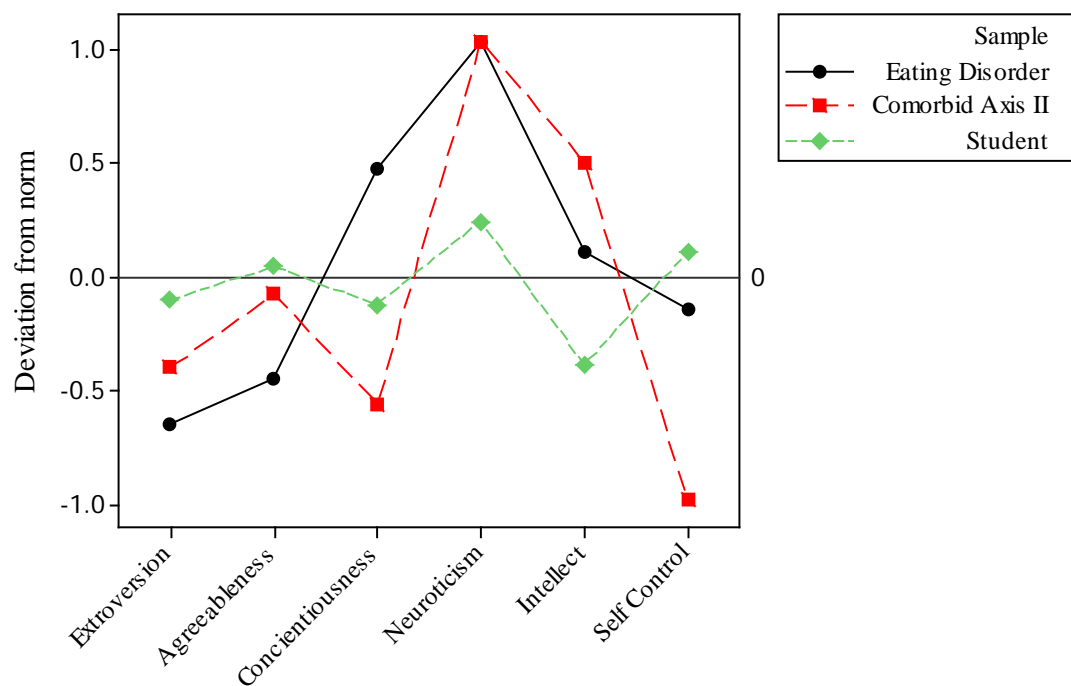


Figure 13. Profile of eating disorder, co-morbid Axis II and student samples for Personality and Self Control in comparison to the norm mean.

Participants meeting diagnostic criteria for an eating disorder as well as those meeting criteria for co-morbid personality disorders reported lower levels of extraversion and agreeableness than the norm and student population, with those without co-morbid personality disorders reporting lower levels of extraversion and

agreeableness, indicating that they are more introverted and less agreeable than those with co-morbid personality disorders. While eating disordered participants with co-morbid personality disorders reported lower levels of conscientiousness than the norm and student means, those without personality pathology reported higher levels of conscientiousness. Eating disordered participants and those with co-morbid personality disorders reported clinically significant levels of neuroticism, 1 SD above the norm. Although clinical participants with and without personality pathology reported higher levels of intellect or imagination than the norm, those with co-morbid personality pathology reported being more imaginative than those without Axis II pathology.

Eating disordered participants with and without co-morbid Axis II disorders reported lower levels of perceived self control than the norm and student populations. However, those with co-morbid personality disorders reported lower levels of self control than those without co-morbid personality disorders.

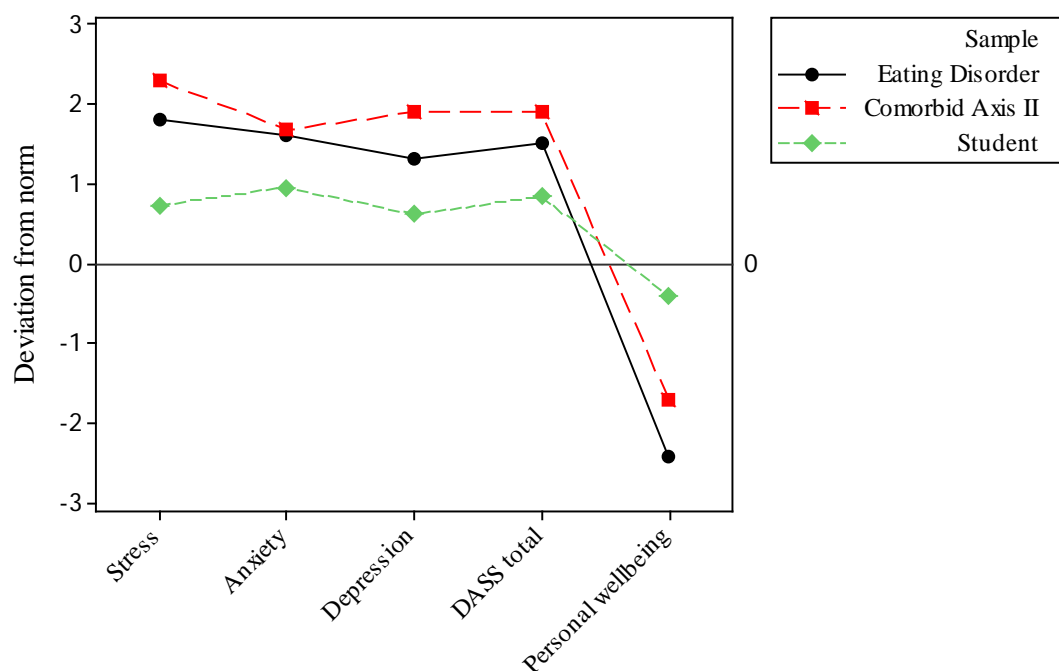


Figure 14. Profile of eating disorder, co-morbid Axis II and student samples for Stress, Anxiety, Depression and Personal Wellbeing in comparison to the norm mean for each scale.

Clinical participants with and without co-morbid axis II disorders scored higher levels of stress, anxiety, depression and overall distress (total DASS score). This difference was clinically significant (1 - 2 SD above the norm mean). Those with co-morbid personality disorders reported higher levels of stress, depression, and total distress; however no difference between eating disordered individuals with and without co-morbid personality pathology was found for levels of anxiety.

Eating disordered participants with and without co-morbid personality disorders reported lower levels of personal wellbeing or quality of life in comparison to the norm and student population (approximately 2 SD from the norm). Those with co-morbid personality disorders reported slightly higher personal wellbeing than those without personality co-morbidity.

Discussion

Profiles indicated that Mindfulness skills (except observing), were lower than average in the clinical population, with eating disordered individuals performing the poorest in acting with awareness and acceptance without judgment skills. This indicates that a lack of mindfulness may be implicated in eating disorders and provides further evidence for focussing on these skills in mindfulness based interventions. Interestingly, clinical participants with co-morbid Axis II disorders reported poorer mindfulness skills than those without. Bear and colleagues (2004; 2006) found that individuals diagnosed with personality disorders scored lower in mindfulness than student samples. The role of mindfulness in personality disorders is recognised through the inclusion of mindfulness as a core component of Dialectical Behaviour Therapy (DBT) and the efficacy of DBT in treating Borderline Personality Disorder (BPD, e.g. Linehan, 1993a; Linehan et al., 2006). However, the author is unaware of any previous research enquiring into Mindfulness in people with co-morbid eating disorders and personality

disorders. This study provides some evidence of the role of mindfulness in those with eating disorders and co-morbid personality disorders. This is important due to high co-morbidity rates between eating disorders and Axis II disorders (e.g. De Bolle et al, 2011), which is demonstrated in this study.

As predicted, the clinical population showed significantly elevated levels of eating disordered symptoms and lower levels of acceptance of body image. Clinical participants with co-morbid personality disorders reported slightly lower eating disorder symptoms than individuals without co-morbid personality disorders. This is contrary to research indicating increased severity of symptoms in people diagnosed with co-morbid eating disorders and personality disorders (e.g. Chen, 2011). The pattern in the current study could be due to clinical participants with co-morbid Axis II disorders focusing less on difficulties associated with eating due to a greater number of problems. People with co-morbid personality disorders and eating disorders have shown a greater number of problems, higher illness burden and poorer global functioning (Chen, 2011).

It is noteworthy that the student population reported similar patterns in eating disorder and acceptance of body image as the clinical population. However these symptoms were not as severe. This is suggestive of the student population being classified as subclinical or reflecting sub-threshold eating disorder symptoms, consistent with study 1 and Dyer's (2004) finding that subclinical eating disorder symptoms are common in student populations.

Expected patterns of identity, sense of self and self compassion were demonstrated in the clinical population, with eating disordered individuals reporting that they were not committed to their identities, and were even less likely to explore their identities. They also reported elevated levels of pathology of sense of self, indicating poor sense of self, as well as low levels of self compassion and perceived self control.

Furthermore, participants meeting criteria for eating disorders reported high levels of depression, anxiety and stress and poor personal wellbeing. These results indicate a role of identity, sense of self, self compassion, personality and perceived self control in eating disorder pathology, providing further evidence for the study 1 conclusion encouraging a holistic approach to the treatment of eating disorders.

Additionally, clinical participants also reported being less extroverted, less agreeable and highly neurotic, which was consistent with Claes and colleagues' (2006) finding that eating disordered individuals are high in neuroticism and are likely to display either lower levels of extraversion (over-control type) or agreeableness (under-control type). However the results of this study were mixed, as the participants fit aspects of the over-control and the under-control types of personality in eating disordered populations. While the under-control type were found to have low levels of conscientious in Claes and colleagues (2006) study, this was not found in the current study. As the over-control type was more strongly associated with anorexia nervosa and the under-control type with bulimia nervosa, it is possible that the mixed results obtained in this study were influenced by 5 of the 10 participants meeting diagnostic criteria for EDNOS, with a range of different types (restricting and binge, and binge/purging).

Moreover, half of the clinical population met diagnostic criteria for co-morbid eating disorders. This is important to note as those with co-morbid personality disorders reported elevated pathology of sense of self or poor sense of self. However, this trend was removed when Axis II co-morbidities were accounted for, as no difference between those with eating disorders without co-morbid personality disorders and the norm was identified. Moreover, individuals diagnosed with eating disorders and co-morbid personality disorders described lower self compassion and slightly lower perceived self

control than those without axis II co-morbidities. This could be explained by the high representation of BPD in those with Axis II co-morbidity, with 4 of the 5 participants meeting criteria for BPD. This is meaningful as instability of sense of self and impulsivity are diagnostic features of BPD (DSM IV TR, 2000). Differing profiles dependent on Axis II co-morbidity in the eating disordered sample highlights the need for thorough assessment to detect personality co-morbidities. These results also raise the question about a possible need for different therapeutic approach for individuals with eating disorders and co morbid Axis II psychopathology.

The results of the current study should be interpreted with caution due to small sample size. Considerable variation between individual clinical participant scores should also be acknowledged. It is important to mention that the clinical population is comprised of individuals diagnosed with Bulimia Nervosa and EDNOS, with no participants meeting diagnostic criteria for Anorexia Nervosa. Therefore, results in this study cannot be extended to eating disordered participants with Anorexia Nervosa. High levels of axis I and axis II co-morbidity is noted, and could also limit the interpretability of the results obtained. As a consequence, future researchers could replicate the findings in this study, endeavouring to obtain a larger sample size to include the Anorexia Nervosa diagnostic group to ensure enhanced statistical power and allow for additional statistical analyses.

In spite of limitations, the current study provides further evidence for a holistic approach to the treatment of eating disorders and additional support for mindfulness based interventions in treating eating disorder by demonstrating a relationship between mindfulness and eating disorder symptomatology in a clinical and subclinical population. It is important for future researchers to conduct a longitudinal study to

demonstrate the effectiveness of mindfulness based interventions in treating eating disorders.

CHAPTER 4

General Discussion

The main aims of Studies 1 and 2 were to investigate the relationship between mindfulness and eating disorder symptomatology and to compare mindfulness skills in eating disordered and non eating disordered samples. Results of correlational analyses in a student population in Study 1 indicated that *observing* as a mindfulness skill is linked to higher reported eating disorder symptoms, but the mindfulness skills *acceptance without judgment* and *acting with awareness* were linked to lower eating disorder symptoms. This provided support for literature suggesting that a lack of certain mindfulness skills may be implicated in eating disorder symptomatology. Study 2 data provides further evidence for this relationship; as Mindfulness skills (except observing) were lower than average in the clinical population. Eating disordered individuals performed the poorest in acting with awareness and acceptance without judgment skills.

These results partially support the general hypothesis that higher levels of mindfulness would be related to lower eating disorder symptomatology. However as discussed in Study 1, the results were more complex than expected. Two of the aspects of mindfulness (acting with awareness and acceptance without judgment), were the most strongly related to eating disorder symptomatology. These findings are congruent with literature suggesting a possible relationship between mindfulness and eating disorder symptomatology (e.g. Kristeller, et al., 2006), as well as research indicating that the mindfulness skills acting with awareness and acceptance without judgment are the most strongly related to psychopathology (Baer, et al., 2006; Mitmansgruber, Beck, Hofer, & SchuBler, 2009). While this provides evidence for mindfulness based interventions, it also suggests specific mindfulness skills that therapists could focus on in clinical practice.

The relationships found between mindfulness and eating disorder symptomatology were reversed for acceptance of body image, with Study 1 results demonstrating that those reporting higher mindfulness skills also reflecting that they were more accepting of their body. In support of this, the clinical population in Study 2 reported the lowest levels of acceptance of body image. This supported the hypotheses and provided some empirical support for Stewart's (2004) theoretical assertions about the relationships between body image disturbance and mindfulness and provides some evidence for the application of mindfulness based interventions for body image disturbances. Further, the above results, along with a strong correlation between eating disorder symptomatology and low acceptance of body image and the finding that body image was the strongest predictor of eating disorder symptoms, supported the hypothesised link between eating disorders and body image. Support was also provided for the notion that body image disturbance is a core symptom and could play a key role in the development and maintenance of eating disordered cognitions and behaviours (Polivy & Herman, 2002; Stice & Shaw, 2002). These results provide additional evidence for the application of preventative interventions targeting body image disturbance.

Moreover, those who were more accepting of their body image had lower levels of pathology in sense of self, as well as sense of self being identified as a predictor of body image. This could suggest a role of sense of self in body image and eating disorder pathology. Although this study cannot determine causality, given that both factors are associated, it raises the question of whether treatments that focus on enhancing the sense of self might also enhance body image and reduce eating disorder symptomatology, as suggested by Hrabosky and colleagues (2009) and Stice and Shaw (2002).

Relationships with other factors - sense of self, identity, self compassion, personality, self control, mental health and quality of life - and their impact on eating disorder presentations were also examined to increase understanding about eating disorders in order to inform therapy. Results from Study 1 indicate that eating disorder symptomatology is related to higher levels of neuroticism, pathology of sense of self (or poor sense of self), depression, anxiety and stress, as well as lower levels of personal wellbeing and self compassion. These results were corroborated by trends identified in the eating disordered population in Study 2. Those diagnosed with eating disorders reported lower levels of identify commitment and exploration, higher pathology of sense of self, lower self compassion, higher levels of depression, anxiety, stress and lower levels of personal well being. In terms of personality, individuals with eating disorders also reported low levels of extraversion and agreeableness and higher levels of neuroticism and intellect. As discussed in Studies 1 and 2, the above results for the relationships between eating disorder symptomatology in the student population and those diagnosed with eating disorders was in the expected direction, and in line with existing literature suggesting high levels of pathology in sense of self and psychological distress (such as depression, anxiety and stress) and low levels of quality of life, self control and self compassion in eating disordered individuals (e.g. Kristeller & Wolever, 2011; Sassaroli, et al., 2008; Stewart, 2004; Weinstein, et al., 2009).

While no relationship between eating disorder symptomatology and identity was found in Study 1, the trends shown by the clinical population in Study 2 indicated that eating disordered participants were not committed to their identities and were even less likely to explore their identities. This is consistent with the hypothesis that eating disordered individuals have not reached identity achievement and that identity

formation could play a role in eating disorder pathology as suggested by Stein and Corte (2007; 2008).

In terms of mindfulness, those who were more committed to their identities reported lower mindfulness skills. This can be interpreted as being overly attached to an identity or self concept, which does not necessarily imply a sense of self or self awareness. Those exploring their identities scored higher in mindfulness skills observing and describing, but were less likely to accept without judgment. The identification of a relationship between mindfulness and identity substantiates this relationship, which was asserted by Kristeller and Wolever (2011). As discussed in Study 1, this relationship differs from that with sense of self, further distinguishing the constructs. It is worth noting that the lack of significant findings in relation to identity in Study 1 could be due to a possible problem with the validity of the measure of identity utilised. As a result, future researchers should consider investigating these constructs using a different measure.

The relationship between personality and eating disorder symptomatology was another area in which findings were mixed. Study 2 results indicated that those diagnosed with eating disorders had higher levels of neuroticism, low levels of extraversion and low levels of agreeableness. These results were mixed as these personality profiles were congruent with both the over-control and under-control subtypes of personality profiles formulated by Claes and colleagues (2006), rather than one subtype. This was attributed to 50% of the clinical sample consisting of EDNOS diagnoses with mixed symptoms.

While there is some disagreement about personality variables in eating disordered individuals, there is agreement in the literature that high neuroticism is implicated in eating disorder pathology regardless of diagnosis (e.g. Claes,

Vandereycken, et al., 2006; Goldner, et al., 1999). The Study 1 finding that elevated neuroticism was the only personality variable related to eating disorder symptomatology in the student population supported neuroticism as a common symptom of eating disorder symptomatology. It should also be noted that high neuroticism is common in university populations who tend to not only report subthreshold eating disorder symptoms, but also score higher on psychopathology in general (e.g. Dyer, 2004). Additionally, high levels of neuroticism have been linked to a range of clinical mental health disorders (Malouff, et al., 2005).

It is also interesting to note that those who were more accepting of their body image reported lower levels of neuroticism and were more extroverted. However correlations with extraversion were weak. Further, neuroticism was negatively correlated with mindfulness skills (except observing), indicating that those who are more mindful may be less neurotic. Exploring whether mindfulness plays a role in preventing this tendency is an interesting area for future research. This provides an extension on Giluk's (2009) finding that a relationship between mindfulness and personality variables exists through breaking down the relationship into mindfulness skills. The finding that those who are more neurotic are less mindful is consistent with Giluk's (2009) findings. Moreover, conflicting results exist in the literature about levels of extraversion, with some researchers identifying higher levels of extraversion and some suggesting lower levels of extraversion are associated with mindfulness (Giluk, 2009). The positive but weak relationship found between extraversion and mindfulness in the current study provides some clarification. However, no significant relationships between mindfulness and conscientious, agreeable or intellect were found in this study. The differing results suggest that further investigation is required.

Co-morbidity

Axis I. In terms of co-occurring Axis I disorders, it is interesting to note that 7 of the 10 clinical participants presented with Axis I co-morbidity, with a high percentage (60%) meeting diagnostic criteria for co-morbid anxiety disorders (Generalised Anxiety Disorder (GAD), Anxiety disorder not otherwise specified, panic disorder and Post Traumatic Stress Disorder (PTSD)). This is consistent with the relationship between stress and anxiety with eating disorder symptomatology in Study 1, as well as elevated levels of anxiety and stress in the eating disordered sample in Study 2. Similarly, 2 out of 10 of the clinical participants also met criteria for co-morbid Dysthymic Disorder, consistent with those reporting higher eating disorder symptomatology also reporting higher levels of depressive symptoms. This supports literature indicating high levels of co-morbidity with anxiety and mood disorders in individuals with eating disorders (e.g. McLaren, Gauvin, & Steiger, 2001; Stice, et al., 2010). However, some research has found higher co-morbid anxiety disorders in Anorexia Nervosa and higher incidence of co-morbid mood disorders in Bulimia Nervosa (Treasure, et al., 2010). High co-morbidity with anxiety disorders was identified in the current research, yet no clinical participants were diagnosed with Anorexia Nervosa. A possible explanation for differing results is that 50% of the clinical participants were diagnosed with EDNOS with differing subtypes. Little research has been conducted into the EDNOS population. Accordingly, this could be further investigated in future research.

Interestingly, high correlations between anxiety, stress and depression indicates that eating disorder symptoms are more complex than the diagnostic criteria associated with eating behaviours and body weight. As such, it is important that specific treatments for EDs also include thorough assessments & treatment for these co-morbid symptoms. Higher levels of distress could also be attributed to an over representation of female

participants as female students tend to report higher levels of distress and lower well being in comparison to males (Burris, et al., 2009).

Further, 2 of the 10 participants were diagnosed with co-morbid Body Dysmorphic Disorder. While co-morbidity with Body Dysmorphic Disorder was not documented in the literature to the author's knowledge, logically, this would be expected in a population with high body image disturbances. Additionally, 2 of the 10 participants also met diagnostic criteria for co-morbid substance dependence. This is consistent with research identifying high levels of co-morbid substance abuse in Bulimia Nervosa (comprising 50% of the sample), as these disorders are associated with high levels of impulsivity (McLaren, et al., 2001; Treasure, et al., 2010). Due to high levels of impulsivity, Bulimia Nervosa is also associated with co-occurring sexual promiscuity, suicide attempts and frequent stealing, similar to Axis II diagnoses.

Axis II. The 50% Axis II co-morbidity is consistent with De Bolle and colleagues' (2011) finding of high personality disorder co-morbidity in eating disorders. Four out of 10 of the clinical participants diagnosed with eating disorder also met criteria for BPD. This finding is congruent with research indicating high rates of co occurrence of BPD in individuals diagnosed with Bulimia Nervosa (Bruce & Steiger, 2005; Chen, et al., 2011; Connan, et al., 2009). While no participants met diagnostic criteria for Anorexia Nervosa, which was associated with high rates of Avoidant Personality Disorder (Bruce & Steiger, 2005; Chen, et al., 2011), the finding that 2 participants meeting criteria for Avoidant and Depressive Personality Disorders could be explained by half the eating disorder sample being diagnosed with EDNOS including some restrictive symptoms. Despite high co-morbidity being referenced widely in eating disorder literature, it is worth noting that results from Study 2 should still be interpreted with caution as a consequence of the high rates of co-morbidity in the clinical

population. It is worthwhile assessing for co-morbid personality disorders in the eating disordered population, as Axis II co-morbidity complicates eating disorder presentation and symptoms of both disorders should be addressed in therapeutic intervention (Bruce & Steiger, 2005; Connan, et al., 2009).

Additional Areas of Importance yet to be Discussed.

Predictors of Eating Disorders and Body Image Disturbance. Identifying the predictors of eating disorder symptoms can be useful in order to determine areas to focus on in treatment of eating disorders. Acceptance of body image, depression, sense of self, self compassion and the mindfulness skill observing could be worked on therapeutically. It is interesting that high scores on observing were related to eating disorder symptoms. This can be explained by Bear and Colleagues (2006), who claim that observing is based on internal and external sensations. People with and without eating disorder symptoms could report high observing skills, however you would expect people with eating disorders to observe feelings of fullness, bodily sensations and anxiety about weight and shape with greater attention and attributed meaning than unrelated internal and external observations. Results indicating that mindfulness skills predict eating disorder symptoms and acceptance of body image provide further evidence for the involvement of mindfulness in eating disorder pathology and hence evidence for mindfulness based treatments.

Body Image Dissatisfaction as an Additional Measure of Body Image Disturbance. Hrabosky and colleagues (2009) outlined that body image is a multidimensional construct, and as such, multiple measures of body image should be examined. The current research enquired into acceptance of body image and body dissatisfaction. Body dissatisfaction, measured in this study through the questioning of how happy the participant was with their current weight, was shown to be a noteworthy

concern as 60% of females and 40% of males in the population reported dissatisfaction with their current weight. Additionally, both males and females reported their ideal weight as being lower than their current weight. This provides corroborative evidence for the low levels of acceptance of body image found in the student population in Study 1. These results are concerning as body dissatisfaction has been linked to dieting behaviours, unhealthy weight control and lower levels of physical activity (Neumark-Sztainer, et al., 2006)

Body Mass Index and Obesity. Despite significant body dissatisfaction and low acceptance of body image, the average body mass index of the students in Study 1 was in the healthy weight range. This suggests that the student sample may have internalised the unrealistic ideal images portrayed in the media. It could also be attributed to growing negative stigma associated with obesity (Bergstrom & Neighbors, 2006). However, it is also worth noting that BMI does not predict body dissatisfaction or eating disorder pathology, as suggested by Polivy and Herman (2002). Additionally, eating disorder symptomatology, particularly binge and purge symptoms, has been related to the onset of obesity and associated negative health outcomes (Stice, et al., 2010).

Gender. Eating disorder symptomatology and body images disturbance was of greater concern for females in comparison to males; however it is worth noting that 4% of the male sample reported eating disorder symptomatology considered by the authors to be in the clinical range (2 standard deviations above the norm mean). While males did not report significantly low levels of acceptance of body image, a substantial number (40%) reported dissatisfaction with their current weight. Further, while most women consistently reported wishing to lose weight, the results for men were mixed, with a majority reporting a desire to lose weight, but a substantial number also wanting to gain weight. This is consistent with literature reporting a recent rise in body

dissatisfaction in men and boys, with associated negative psychological outcomes. The increase in men reporting body dissatisfaction is believed to be due to media images portraying a lean muscular ideal, explaining why some men express a desire to gain weight and others express a desire to lose weight depending on their current weight and shape, in order to fit this ideal (McFarland & Kaminski, 2009; Oehlhof, Musher-Eizenman, Neufeld, & Hauser, 2009).

Culture. The clinical sample and the majority of the student sample (86%) reported an Anglo-Saxon cultural background. This is not likely to affect the interpretability of the results as most literature suggests that no significant relationship exists between eating disorder prevalence and symptomatology and only slight differences in body image dissatisfaction exist between cultures (Ball & Kenardy, 2002; Feinson, 2011; Polivy & Herman, 2002). Although eating disorders are more prevalent in affluent Westernised countries where the thin ideal is encouraged, pressures are increasing worldwide due to increased exposure to and integration of Western cultures into others countries, such as Japan and Hong Kong (Soh, Touyz, & Surgenor, 2006). It is worth noting that whilst these results indicate a greater prevalence in the Anglo-Saxon culture, this is more likely to be attributable to sampling. The finding that all clinical participants presenting for treatment for an eating disorder identified as being from an Anglo-Saxon cultural background may raise the question about access to mental health care for people from different cultural backgrounds experiencing eating disorder symptomatology.

Emerging Adulthood. Arnett (2000) outlined emerging adulthood as a distinctive developmental period between adolescence and adulthood in describing people aged 18-25 in Westernised societies. This stage is defined as a transitional period in which identity exploration and formation is the key developmental goal (Arnett, 2000). This is

of relevance to the current study as the majority of participants in this research were in the age range characterised as emerging adulthood. Accordingly, relationships identified between identity exploration, sense of self and eating disorder symptomatology would be expected. Further, transitional periods, such as that of emerging adulthood, have been identified as a period of increased distress and higher risk of psychopathology (Burris, et al., 2009). While this age group has been identified as having increased vulnerability to mental health disorders, including eating disorders, they are often not provided with effective care by mental health services, as their needs are often not adequately addressed by adolescent or adult services (Yong, 2011). This is another important area for further investigation.

Proposed Changes for DSM V and Implications. The current study was conducted in reference to DSM-IV TR (2000) diagnostic criteria. While proposed changes to diagnostic criteria for the DSM-V (American Psychiatric Association, 2010) will not discount the current research, it is worth noting that considerable changes have been proposed to the EDNOS diagnostic criteria, with Binge Eating Disorder intended to be a separate disorder. Additionally, other problems of clinical significance which do not meet diagnostic criteria for a formal eating disorder, now known as EDNOS, are proposed to be renamed as Feeding and Eating Conditions not elsewhere specified (American Psychiatric Association, 2010).

Two clinical participants in Study 2 were diagnosed with Depressive personality disorder. The author acknowledges that the inclusion of this disorder is an artefact of the SCID-II utilised in this study and notes that this Axis II disorder was not included in the DSM- IV TR and is not proposed to be included in the DSM-V (American Psychiatric Association, 2010). It should also be noted that Borderline and Avoidant personality disorders are proposed to remain in the DSM-V. However, changes are still in draft

format and the current research will contribute to the area regardless of changes to diagnostic labels.

Additional Limitations of the Current Research

It should be noted that question 9 was omitted from the EDE-Q and question 8 from the PWI due to experimenter and programming error. While this does not invalidate the results of these questionnaires, the results should be interpreted with caution as a consequence. Further, the self report format of the current study only accesses the attitudes and behaviours that participants are aware of and willing to report (Ahern & Hetherington, 2006). However, there is no other practical way to assess the constructs measured apart from clinical interview, which has the same limitations, perhaps even more so, as anonymity would be removed in a clinical interview. Moreover, the reliability of the EDE-Q was found to be comparable to the clinical EDE interview (Luce & Crowther, 1999).

It is also worth mentioning that Study 2 included treatment seeking participants diagnosed with an eating disorder. None of the participants in the current study were diagnosed with Anorexia Nervosa and this could be because people with Bulimia Nervosa and EDNOS with binge/purge symptoms are more likely to present for treatment as the binge purge cycle is experienced as very distressing (Polivy & Herman, 2002).

Contributions of the Current Research and Clinical Implications

The current research provides empirical evidence of a relationship existing between mindfulness and eating disorder symptomatology as well as low levels of mindfulness skills existing in eating disorder presentation, supporting limited existing research and suggesting that certain aspects of mindfulness are likely to play a role in reducing distress and dysfunctional beliefs associated with eating disorder pathology.

Additionally, the current research provides some direction for therapists, specifying that they could focus on assisting clients to act with awareness and accept without judgment when applying mindfulness based interventions. The identification of the relationship between mindfulness and eating disorder symptomatology informs mindfulness based interventions, providing additional evidence to existing research supporting the application of mindfulness based therapies, such as Mindfulness-based Cognitive Therapy (MBCT), Acceptance and Commitment Therapy (ACT), and Dialectical Behaviour Therapy (DBT), as well as to the growing utilisation of mindfulness in clinical practise. These findings are relevant as increases in mindfulness skills, particularly non judgmental awareness (i.e. acting with awareness and acceptance without judgment), have been found to result from mindfulness training as a component of mindfulness based interventions (Kristeller & Wolever, 2011).

The involvement of body image disturbance, sense of self, identity, self compassion, personality, self control, anxiety, stress, depression and personal well being or quality of life through relationships, and comparative levels of these factors in the eating disordered sample supports research suggesting that eating disorder symptomatology is complex and multifaceted (McLaren, et al., 2001). This also provides evidence for holistic therapeutic approaches to treatment of eating disorders, treating the whole person, not just the eating disordered related thoughts and behaviours. Additional support for holistic treatments is provided through the recognition of high rates of co-morbidity with Axis I mental health disorders, including anxiety and mood disorders, as well as Axis II personality disorders, while also highlighting the importance of thorough assessment.

The identification of body image, sense of self and self compassion as predictors of eating disorder symptomatology suggests that preventative interventions focusing on

enhancing these areas could be helpful in reducing the prevalence of eating disorders. The importance of preventative interventions is highlighted by the health risks associated with eating disorders, as well as eating disorders being recognised as challenging to treat (Hales & Yudofsky, 2003; Heffner, et al., 2002; Vitiello & Lederhendler, 2000). There are mixed findings about the benefits of existing interventions which focus solely on improvements in body image, with some suggesting such interventions reduce dieting behaviours and improve body image hence resulting in decreased risk of subsequent eating disorder pathology, and others suggesting that the focus on dieting and body image do more harm than good (Polivy & Herman, 2002; Stice, et al., 2010). This, as well as the findings in the current study about relationships between mindfulness and body image, supports Wanden-Berge and colleagues' (2011) suggestion that teaching mindfulness skills could be applied as preventative interventions. Further, the research ascertaining high levels of subthreshold eating disorder pathology in student populations (e.g. Kurth, et al., 1995) is in line with the current research identifying high levels of eating disorder symptomatology in the student sample and suggests that university students could be a targeted population for preventative interventions.

Areas for Future Research

Replication of the results of the current research would be useful, as, to our knowledge, this is the first study examining the relationships between mindfulness, eating disorder symptomatology, body image, sense of self, identity, personality, self compassion, self control, mental health and quality of life. If this research was to be replicated, a larger clinical sample size, with a wider diagnostic sample which includes participants presenting for treatment for Anorexia Nervosa, would be recommended in order to increase the interpretability of results. Moreover, the author is unaware of

previous research into mindfulness in clinical samples with eating disorder and axis II co-morbidity. Due to increasing applications of mindfulness based interventions in both diagnoses (e.g. Baer, et al., 2005; Linehan, 1993a) and high rates of co-morbidity (e.g. De Bolle, et al., 2011) this would be an interesting area for further research to elaborate upon. Additionally, it would be interesting to know why some people scored higher on mindfulness than others, for example, had they had past mindfulness training. This was not examined in the current research. A longitudinal study assessing eating disorder symptomatology in relation to increases in mindfulness skills following a mindfulness based therapeutic intervention would provide information about causality.

Future researchers could also consider investigating relationship between mindfulness and eating disorder symptomatology at a more in depth level, for example, enquiring into whether mindfulness factors are the main ingredients for reducing vulnerability to eating disorders and whether specific mindfulness interventions lead to recovery from eating disorders. Clarification of relationships between mindfulness, eating disorder symptomatology, sense of self and identity is warranted. Also, the distinction between state and trait mindfulness in relationship to eating disorder symptomatology could be investigated by future researchers. The present research examined state mindfulness as this is the form of mindfulness that can be taught and enhanced through mindfulness based interventions. However, enquiry into trait mindfulness would help inform clinicians as a consideration when delivering mindfulness based therapies.

Finally, the involvement of sense of self and self compassion in eating disorder symptomatology and body image disturbance, as well as relationships with mindfulness skills, suggest that mindfulness based interventions could be associated with enhanced resiliency. This could be examined in relation to eating disorder symptomatology, but

also psychopathology in general. Future researchers should consider introducing and evaluating the effectiveness of mindfulness based preventative interventions.

Improvements in body image, sense of self and self compassion and resiliency in at risk populations, such as university students should also be considered.

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APPENDICES

Appendix 1

Evidence that Journal Manuscript (Chapter 2) is currently under review for the Journal of Eating Disorders: Treatment and Prevention in the format of an email from the Editor.

From : Leigh Cohn [leigh@gurze.net]

To: Emma Prowse

Tuesday, 18 October 2011 5:17 AM

Emma,

Thanks for submitting this article. I'll send it for peer review and hope to have feedback within a couple of months. If the time drags on, do not hesitate to contact me at this email address.

Best wishes,

Leigh

Leigh Cohn, MAT, CEDS
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Journal's Scope:

"As the incidence and awareness of eating disorders continues to rise, it has become apparent that there is a need for a comprehensive source detailing the multidisciplinary approaches to the treatment and education of this growing problem. *Eating Disorders* places itself in the epicenter of this innovative work.

Now in its fifteenth year, *Eating Disorders* is contemporary and wide ranging, and takes a fundamentally practical, humanistic, compassionate view of clients and their presenting problems. You'll find a multidisciplinary perspective that considers the essential cultural, social, familial, and personal elements that not only foster eating-

related problems, but also furnish clues that facilitate the most effective possible therapies and treatment approaches.

A distinguished international editorial board ensures that *Eating Disorders* will continuously reflect the variety of current theories and treatment approaches in the eating disorders arena. From anorexia nervosa to bingeing to yo-yo dieting, editors and contributors explore eating disorders from a number of exciting, sometimes unexpected, and always thought-provoking angles."

See website for additional information:

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Appendix 2

Study 1: Additional Results

Missing data. Prior to statistical analysis, data was scored as per authors' instructions and examined for omissions. A small number of participants did not complete all items in all tests. Of these 57 item responses were missing for the EDE-Q, 40 item responses were missing for the BIAAQ, 43 item responses were missing for the KIMS, 50 item responses were missing for the EIPQ, 13 item responses were missing for the PWI, 27 item responses were missing for the DASS, 14 item responses for the IPIP, 44 item responses were missing for the Self Control scale, 26 items responses were missing for the SOSI and 42 missing responses for the Self Compassion scale. Missing data was accounted for depending on the wording of the questionnaires. The number 0 was entered to replace missing data for the EDE-Q and DASS and the number 1 to replace missing data from the KIMS, the wording of the questionnaires indicated that those items did not apply. The midpoints were entered for the PWI, IPIP, Self Control Scale and Self Compassion Scale as these were neutral responses. As such, the number 5 was entered for missing data from the PWI and the number 3 was entered for missing data from the IPIP, Self Control Scale and Self Compassion Scale. The midpoint scores were not neutral for the remaining scale. As a consequence, the mean item score was entered for missing data from the BIAAQ, EIPQ and SOSI.

Additionally 3 participants' data was omitted from the SOSI, as per scoring instructions provided by author, as each participant had missed 2 or more item responses (N = 404). The data from 4 participants was omitted from the PWI due to scoring top or bottom scores on all items, as per scoring instructions provided by author (N = 403). Furthermore, question 9 was omitted from the EDE-Q due to researcher error and question 8 was omitted from the PWI due to programming error.

Additional descriptive statistics

Exercise. 39% of females and 19% of males ranked weight control as their primary reason, staying fit was rated first by 28% of females and 35% of males, 17% females and 22% of males listed competitive, 21% females and 24% males listed relaxation or fun and 5% females and 6% males listed other (percentages sum to more than 100 as some participants provided more than one primary reason).

Additional comparisons to the norm

The means obtained for all other measures administered were also compared to the norms (Table 3). No norms were available for the Ego Identity and process questionnaire, however norm median scores were listed. The sample scored significantly lower in Identity Commitment and Identity Exploration than the norm. Males scores significantly lower in Identity Commitment than females ($t = -3.46, p < .01$). No significant gender differences in Identity Exploration were obtained.

Based on Marcia's (1996, 1980) model, identity commitment and identity exploration scores were divided into 4 identity types using a median split (as per Balistrer, Busch-Rossnagel & Geisinger, 1995). Mean EDE-Q scores for each identity type (identity achievement; identity moratorium, identity foreclosure and identity diffusion; were subjected to a 2(identity commitment low, high) x 2(identity exploration low, high) ANOVA. Neither of the main effects or interaction was significant. No significant difference existed between the mean scores of the 4 identity types.

No significant differences between obtained means for personality variables extroversion and agreeableness scores and the norms were found. The sample scored significantly lower in conscientiousness than the norm, and significantly higher in neuroticism and intellect than the norm. No gender norms were available. No significant gender difference was found on extroversion, however female scored significantly

higher means on agreeableness ($t = -2.23, p < .05$), conscientiousness ($t = -4.27, p < .01$), neuroticism ($t = -3.88, p < .01$), than males, and males scored significantly higher means on intellect ($t = 3.59, p < .05$), than females.

Table 3.

Sample means and standard deviations, norm means and norm standard deviations and Cronbach's alpha coefficients for remaining scales included in analyses

	Sample mean Total (SD)	Female sample mean (SD)	Male sample mean (SD)	Norm Mean (SD)	Female norm Mean (SD)	Male norm mean (SD)	Alpha
Identity Commitment	60.67* (10.65)	61.48 (11.01)	57.72 (8.74)	62.00	-	-	.76
Identity Exploration	63.27** (9.38)	63.23 (9.68)	63.55 (8.40)	66.50	-	-	.69
IPIP- Extroversion	3.29 (0.90)	3.29 (0.93)	3.31 (0.85)	3.37 (0.90)	-	-	.82
IPIP- Agreeableness	4.08 (0.69)	4.13 (0.68)	3.95 (0.71)	4.10 (0.67)	-	-	.76
IPIP- Conscientiousness	3.22** (0.82)	3.31 (0.83)	2.94 (0.71)	3.41 (0.82)	-	-	.74
IPIP- Neuroticism	2.97** (0.85)	3.05 (0.86)	2.69 (0.78)	2.58 (0.82)	-	-	.71
IPIP- Intellect/ Imagination	3.83** (0.70)	3.43 (0.49)	3.57 (0.46)	3.72 (0.75)	-	-	.69
PWI total	68.72** (19.36)	70.09** (15.79)	64.20** (16.50)	75.02 (12.21)	75.70 (12.06)	74.23 (12.34)	.89
PWI life as whole	67.00** (19.36)	68.73 (18.66)	61.44 (20.82)	77.63 (17.39)	-	-	-

DASS- Depression	11.91** (10.58)	11.15** (10.48)	14.37** (10.65)	5.66 (7.74)	6.10 (8.14)	4.90 (6.55)	.92
DASS- Anxiety	10.47** (9.11)	10.68** (9.56)	9.90 ** (7.71)	3.76 (5.90)	4.00 (6.17)	3.00 (4.23)	.83
DASS – Stress	15.28** (10.58)	15.70** (10.30)	14.12** (8.12)	9.46 (8.40)	8.70 (7.35)	9.80 (8.56)	.86
DASS- Total	37.65** (26.26)	37.52** (27.31)	38.39** (23.16)	18.86 (19.32)	19.90 (20.82)	16.60 (15.95)	.94
Self Control	109.01 (18.49)	110.66 (19.04)	103.92 (15.70)	108.57 (18.50)	-	-	.89
Sense of Self	45.97** (14.37)	45.09 (14.39)	48.68 (13.91)	57.86, 47.88 (13.28, 12.50)	-	-	.95
Self Compassion - Total	14.62** (3.94)	14.65** (4.06)	14.50** (3.62)	18.25 (3.75)	17.72 (3.74)	18.25 (3.75)	.93
Self Compassion - Self kindness	2.85** (0.80)	2.89* (0.83)	2.71** (0.67)	3.05 (0.75)	3.00 (0.75)	3.12 (0.75)	.85
Self Compassion - Self judgment	3.21 (0.87)	3.18 (0.88)	3.31** (0.82)	3.14 (0.79)	3.24 (0.77)	3.00 (0.81)	.82
Self Compassion - Common humanity	3.19** (0.86)	3.21** (0.87)	3.14* (0.82)	2.99 (0.79)	3.03 (0.76)	2.95 (0.83)	.80
Self Compassion - Isolation	3.15** (0.91)	3.13 (0.92)	3.23 ** (0.89)	3.01 (0.92)	3.09 (0.90)	2.90 (0.94)	.83
Self Compassion - Mindfulness	3.16** (0.74)	3.15** (0.76)	3.21** (0.69)	3.39 (0.76)	3.27 (0.79)	3.57 (0.72)	.73
Self Compassion - over identified	3.22** (0.89)	3.29 (0.88)	3.02** (0.86)	3.05 (0.96)	3.25 (0.90)	2.78 (0.97)	.79

Note 1: No norms available for EIPQ. Median scores listed instead.

Note 2: PWI norms based on structured interview. No questionnaire norms available

Note 3: DASS norm doubled as per scoring instructions. Gender norms reported for DASS are based on full DASS scores as gender patterns on DASS- 21 scores “mirrored” full DASS scores (Crawford & Henry, 2003)

Note 4: Sense of self inventory provided 2 norms – population norm and norm for university students (Listed respectively).

Note 5: Differences between the scoring instruction and scoring in the original article for the total self compassion score were noted. To account for scoring differences, the total self compassion score was calculated by reverse scoring negatively worded subscales and summing the subscale scores

Note 6: * $P < .05$ ** $P < .01$

Participants scored significantly higher scores on all DASS scores (DASS total, Depression, Anxiety and Stress) compared to the norm. This was true for both male and female participants when compared to male and female DASS score norms. Male participants reported significantly higher scores in depression ($t = 2.6, p < .05$) than females, and females reported significantly higher levels of anxiety ($t = 2.61, p < .05$) than males. No significant gender differences on stress and total DASS scores were identified.

The obtained personal wellbeing mean was significantly lower than the norm, indicating lower levels of personal wellbeing or quality of life. This was also true for the obtained male and female means compared to gender norms. Females scored significantly higher scores in personal wellbeing than males ($t = -3.10, p < .01$).

No significant difference existed between obtained self control scores and the norm. No gender norms were provided. Females scored significantly higher in self control than males ($t = -3.50, p < .01$).

Participants scored significantly lower sense of self than the norm and the norm for student populations, with lower scores indicating lower pathology of sense of self. No gender norms were reported. Males scored significantly higher levels of pathology sense of self than females ($t = 2.19, p < .05$).

The sample mean scored significantly lower in self compassion (total) than the norm, with lower scores indicating less compassion towards themselves. The sample means for subscales self kindness and mindfulness were lower than the norms and sample means for subscales common humanity, isolation and over identification were higher than the norms. Both males and female means were significantly lower than the gender norms in self compassion and mindfulness, and higher than the gender norms in common humanity. The obtained male mean was significantly higher than the norm male mean in self judgment, over identified and isolation, however no significant difference between the obtained female and norm female means existed for these subscales.

No significant gender differences were found between total self compassion, self judgment, common humanity, isolation, and mindfulness scores. Females reported significantly higher levels of self kindness ($t = -2.63, p < .05$) and over identifying ($t = -2.16, p < .05$) than males.

Additional Relationships

No significant relationships existed between participation in exercise and body image or eating disorder symptoms except for a weak relationship identified with those higher in restraint being more likely to participate in exercise. Weak negative correlations between eating disorder symptoms and past treatment for eating disorders and other mental illnesses indicate that those with past treatment for eating disorders or other mental illnesses were more likely to report higher current eating disorder symptoms. Weak positive correlations between acceptance of body image and past treatment for eating disorders and other mental illnesses indicate that those who have received past treatment for eating disorders or other mental illnesses are less likely to accept their body image.

Additionally, of interest correlations indicate a weak positive relationship between those who has received treatment for mental illnesses and scores in depression, anxiety, stress and total DASS scores. Weak negative correlations existed between increased BMI and quality of life and happiness with current weight. Greater differences between current and ideal weight were also weakly correlated with depression, stress and total DASS scores.

A moderate negative relationship between personality variable neuroticism and Personal wellbeing was found. Moderate positive correlations between neuroticism and depression, stress and anxiety were present. A moderate negative relationship between neuroticism self control and strong negative relationship between neuroticism and self compassion were found. A strong positive relationship between sense of self and neuroticism was identified.

Strong negative relationships between depression and stress scores and personal wellbeing were found. A moderate negative relationship between anxiety and personal well being was identified. A strong negative relationship between personal well being and sense of self was existed. Moderate positive relationships between personal well being self control and self compassion were also found. As expected a strong positive relationship between contentiousness and self control was identified.

Also a weak positive relationship existed between those who had received treatment for an eating disorder in the past and describing and a weak negative relationship with acceptance without judgment were found. A weak positive relationship existed between those who had received treatment for a mental illness in the past and describing, weak negative relationship with acceptance without judgment and a moderate relationship with acting with awareness were identified. A weak negative correlation between the difference between current and ideal weight and

describe and a weak positive correlation with acceptance without judgment existed indicating that with greater differences between their current and ideal weight have reporter higher levels of the mindfulness skill describing but lower levels of accepting without judgment.

Appendix 3

Battery of Questionnaire administered to participants

Participant Number: _____

Thank you for agreeing to participate in this research project. Please answer the following questionnaires as accurately as possible but remember there are no right or wrong answers.

1. Age: _____

2. Gender: Male/ Female

3. Employment Status: Employed Full Time
(Please Circle) Employed Part time
 Currently unemployed/ Domestic Duties
 Fulltime Student
 Part-time Student

4. Cultural Background: Anglo Saxon
(Please Circle) Aboriginal or Torres Straight Islander
 Other: _____

5. Are you happy with your current weight?
(Please tick)

☐ Yes ☐ No

6. What weight would you ideally like to be? _____ (kg)

7. What is your main reason for exercising?
(Rank as many boxes as you want in order of priority e.g. 1, 2, 3 etc).

___ To control my weight
___ To stay fit
___ For relaxation/ fun
___ Competitive or professional sport
___ Other (Please specify): _____

8. Have you ever been treated for an eating disorder?

☐ Yes ☐ No

If your answer was yes, how old were you? _____

9. Have you received treatment for any other mental illness?

☐ Yes ☐ No

If your answer was yes, please specify the mental illness: _____
How old were you? _____

Eating Questionnaire (Fairburn and Beglin, 1994)

Instructions: the following questions are concerned with the past 4 weeks (28 days) only. Please read each question carefully. Please answer all the questions. Thank you.

Questions 1-11: Please circle the appropriate number on the right. Remember that the questions refer to the past 4 weeks (28 days) only.

On how many of the past 28 days....	No days	1-5 days	6-12 days	13-15 days	16-22 days	23-27 days	Every day
1. Have you been deliberately <i>trying</i> to limit the amount of food you eat to influence your shape or weight (whether or not you have succeeded)?	0	1	2	3	4	5	6
2. Have you gone for long periods of time (8 hours or more) without eating anything at all in order to influence your shape or weight?	0	1	2	3	4	5	6
3. Have you <i>tried</i> to exclude from your diet any foods that you like in order to influence your shape or weight (whether or not you succeeded)?	0	1	2	3	4	5	6
4. Have you <i>tried</i> to follow definite rules regarding your eating (for example, a calorie limit) in order to influence your shape or weight (whether or not you succeeded)?	0	1	2	3	4	5	6
5. Have you had a definite desire to have an <i>empty</i> stomach with the aim of influencing your shape or weight?	0	1	2	3	4	5	6

6.	Have you had a definite desire to have a totally <i>flat</i> stomach?	0	1	2	3	4	5	6
7.	Has thinking about <i>food, eating or calories</i> made it very difficult to concentrate on things you are interested in (for example, working, following a conversation, or reading)?	0	1	2	3	4	5	6
8.	Has thinking about <i>shape or weight</i> made it very difficult to concentrate on things you are interested in (for example, working, following a conversation, or reading)?	0	1	2	3	4	5	6
9.	Have you had a definite fear that you might gain weight?	0	1	2	3	4	5	6
10.	Have you felt fat?	0	1	2	3	4	5	6
11.	Have you had a strong desire to lose weight?	0	1	2	3	4	5	6
12.								

Questions 13-18: please fill in the appropriate number on the right. Remember that the questions only refer to the past 4 weeks (28 days).

Over the past 4 weeks (28days)...

13. Over the past 28 days, how many *times* have you eaten what other people would regard as an unusually *large amount of food* (given the circumstances)?
14. On how many of these times did you have a sense of having lost control over your eating (at the time that you were eating)?
15. Over the last 28 days, on how many *days* have such episodes of overeating occurred (i.e., you have eaten an unusually large amount of food and have had a sense of loss of control at the time)?

16. Over the past 28 days, how many *times* have you made yourself sick (vomit) as a means of controlling your shape or weight?
17. Over the past 28 days, how many *times* have you taken laxatives as a means of controlling your shape or weight?
18. Over the past 28 days, how many *times* have you exercised in a “driven” or “compulsive” way as a means of controlling your weight, shape or amount of fat, or to burn off calories?
-

Questions 19-21: Please circle the appropriate number. Please note that for these questions the term “binge eating” means eating what others of your age and gender would regard as an unusually large amount of food for the circumstances, accompanied by a sense of having lost control over eating.

19.	Over the past 28 days, on how many days have you eaten in secret (i.e. furtively)? Ignore episodes of binge eating	No Days	1-5 days	6-12 days	13-15 days	16-22 days	23-27 days	Every Day
		0	1	2	3	4	5	6
20.	On what proportion of the times that you have eaten have you felt guilty (felt that you’ve done wrong) because of its effect on your shape or weight? Ignore episodes of binge eating	None of the time	A few of the times	Less than half	Half of the time	More than half	Most of the time	Every time
		0	1	2	3	4	5	6
21.	Over the past 28 days, how concerned have you been about other people seeing you eat? Ignore episodes of binge eating	Not at all		Slightly		Moderately		Markedly
		0	1	2	3	4	5	6

Questions: 21-28: Please circle the appropriate number on the right. Remember that the questions only refer to the past 4 weeks (28days).

Over the past 28 days....	Not at all		Slightly		Moderately		Markedly	
22. Has your <i>weight</i> (number on the scale) influenced how you think about (judge) yourself as a person?	0	1	2	3	4	5	6	
23. Has your <i>shape</i> influenced how you think about (judge) yourself as a person?	0	1	2	3	4	5	6	
24. How much would it have upset you if you had been asked to weigh yourself once a week (no more, or less, often) for the next 4 weeks?	0	1	2	3	4	5	6	
25. How dissatisfied have you been with your <i>weight</i> (number on the scale)?	0	1	2	3	4	5	6	
26. How dissatisfied have you been with your <i>shape</i> ?	0	1	2	3	4	5	6	
27. How uncomfortable have <i>you</i> felt seeing your body (for example, seeing your shape in the mirror, in a shop window reflection, while undressing or taking a bath or shower)	0	1	2	3	4	5	6	
28. How uncomfortable have you felt about <i>others</i> seeing your body (for example, in communal changing rooms, when swimming, or wearing	0	1	2	3	4	5	6	

tight clothes)?

29. what is your weight at present? (Please give your best estimate.)

30. What is your height? (Please give your best
estimate.)_____

31. If female: over the past 3-4 months have you missed any menstrual
periods?_____

If so, How many?_____

Have you been taking the “pill”?_____

**Kentucky Inventory of Mindfulness Skills
(KIMS; Baer, Smith & Allen, 2004)**

Please rate each of the following statements using the scale provided. Circle the number that best describes your own opinion of what is generally true for you.

	Never or very rarely true	Rarely true	Sometim es true	Often True	Almost always or always true
1. I notice changes in my body, such as whether my breathing slows down or speeds up.	1	2	3	4	5
2. I'm good at finding the words to describe my feelings.	1	2	3	4	5
3. When I do things, my mind wanders off and I'm easily distracted.	1	2	3	4	5
4. I criticise myself for having irrational or inappropriate emotions.	1	2	3	4	5
5. I pay attention to whether my muscles are tense or relaxed.	1	2	3	4	5
6. I can easily put my beliefs, opinions, and expectations into words.	1	2	3	4	5
7. When I'm doing something, I'm only focused on what I'm doing, nothing else.	1	2	3	4	5
8. I tend to evaluate whether my perceptions are right or wrong.	1	2	3	4	5

9. When I'm walking, I deliberately notice the sensations of my body moving.	1	2	3	4	5
10. I'm good at thinking of words to express my perceptions, such as how things taste, smell, or sound.	1	2	3	4	5
11. I drive places on "automatic pilot" and then wonder why I went there.	1	2	3	4	5
12. I tell myself that I shouldn't be feeling the way I'm feeling.	1	2	3	4	5
13. When I take a shower or bath, I stay alert to the sensations of water on my body.	1	2	3	4	5
14. It's hard for me to find the words to describe what I'm thinking.	1	2	3	4	5
15. When I'm reading, I focus all my attention on what I'm reading.	1	2	3	4	5
16. I believe some of my thoughts are abnormal or bad and I shouldn't think that way.	1	2	3	4	5
17. I notice how foods and drinks affect my thoughts, bodily sensations, and emotions.	1	2	3	4	5
18. I have trouble thinking of the right words to express how I feel about things.	1	2	3	4	5

19. When I do things, I get totally wrapped up in them and don't think about anything else.	1	2	3	4	5
20. I make judgments about whether my thoughts are good or bad.	1	2	3	4	5
21. I pay attention to sensations, such as the wind in my hair or sun on my face.	1	2	3	4	5
22. When I have a sensation in my body, it's difficult for me to describe it because I can't find the right words.	1	2	3	4	5
23. I don't pay attention to what I'm doing because I'm daydreaming, worrying, or otherwise distracted.	1	2	3	4	5
24. I tend to make judgments about how worthwhile or worthless my experiences are.	1	2	3	4	5
25. I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing.	1	2	3	4	5
26. Even when I'm feeling terribly upset, I can find a way to put it into words.	1	2	3	4	5
27. When I'm doing chores, such as cleaning or laundry, I tend to daydream or think of other things.	1	2	3	4	5
28. I tell myself that I shouldn't be thinking the way I'm thinking.	1	2	3	4	5

29. I notice the smells and aromas of things.	1	2	3	4	5
30. I intentionally stay aware of my feelings.	1	2	3	4	5
31. I tend to do several things at once rather than focusing on one thing at a time.	1	2	3	4	5
32. I think some of my emotions are bad or inappropriate and I shouldn't feel them.	1	2	3	4	5
33. I notice visual elements in art or nature, such as colors, shapes, textures, or patterns of light and shadow.	1	2	3	4	5
34. My natural tendency is to put my experiences into words.	1	2	3	4	5
35. When I'm working on something, part of my mind is occupied with other topics, such as what I'll be doing later, or things I'd rather be doing.	1	2	3	4	5
36. I disapprove of myself when I have irrational ideas.	1	2	3	4	5
37. I pay attention to how my emotions affect my thoughts and behavior.	1	2	3	4	5
38. I get completely absorbed in what I'm doing, so that all my attention is focused on it.	1	2	3	4	5
39. I notice when my moods begin to change.	1	2	3	4	5

**Body Image –Acceptance and Action Questionnaire
(BI-AAQ ©, Sandoz & Wilson, 2006)**

Directions: Below you will find a list of statements. Please rate the truth of each statement as it applies to you. Use the following rating scale to make your choices.

	Never True	Very Seldom True	Seldom True	Sometimes True	Frequently True	Almost Always True	Always True
1. I get on with my life even when I feel bad about my body.	1	2	3	4	5	6	7
2. Worrying about my weight makes it difficult for me to live a life that I value.	1	2	3	4	5	6	7
3. I would gladly sacrifice important things in my life to be able to stop worrying about my weight.	1	2	3	4	5	6	7
4. I care too much about my weight and body shape.	1	2	3	4	5	6	7
5. How I feel about my body has very little to do with the daily choices I make.	1	2	3	4	5	6	7

6.	Many things are more important to me than feeling better about my weight.	1	2	3	4	5	6	7
7.	There are many things I do to try and stop feeling bad about my body weight and shape.	1	2	3	4	5	6	7
8.	I worry about not being able to control bad feelings about my body.	1	2	3	4	5	6	7
9.	I do not need to feel better about my body before doing things that are important to me.	1	2	3	4	5	6	7
10.	I don't do things that might make me feel fat.	1	2	3	4	5	6	7
11.	I shut down when I feel bad about my body shape or weight.	1	2	3	4	5	6	7
12.	My worries about my weight do not get in the way of my success.	1	2	3	4	5	6	7

13.	I can move toward important goals, even when feeling bad about my body.	1	2	3	4	5	6	7
14.	There are things I do to distract myself from thinking about my body shape or size.	1	2	3	4	5	6	7
15.	My thoughts and feelings about my body weight and shape must change before I can take important steps in my life.	1	2	3	4	5	6	7
16.	My thoughts about my body shape and weight do not interfere with the way I want to live.	1	2	3	4	5	6	7
17.	I cannot stand feeling fat.	1	2	3	4	5	6	7
18.	Worrying about my body takes up too much of my time.	1	2	3	4	5	6	7
19.	If I start to feel fat, I try to think about something else.	1	2	3	4	5	6	7

20.	Worrying about my weight does not get in my way.	1	2	3	4	5	6	7
21.	Before I can make any serious plans, I have to feel better about my body.	1	2	3	4	5	6	7
22.	I will have better control over my life if I can control my negative thoughts about my body.	1	2	3	4	5	6	7
23.	I avoid putting myself in situations where I might feel bad about my body.	1	2	3	4	5	6	7
24.	To control my life, I need to control my weight.	1	2	3	4	5	6	7
25.	My worries and fears about my weight are true.	1	2	3	4	5	6	7
26.	Feeling fat causes problems in my life.	1	2	3	4	5	6	7

- | | | | | | | | | |
|-----|---|---|---|---|---|---|---|---|
| 27. | I do things to control my weight so I can stop worrying about the way my body looks. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 28. | When I start thinking about the size and shape of my body, it's hard to do anything else. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 29. | My relationships would be better if my body weight and/or shape did not bother me. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
-

Ego-Identity Process Questionnaire
(Balistreri, Busch-Rossnagel & Geisinger, 1995)

	Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
1. I have definitely decided on the occupation I want to pursue.	1	2	3	4	5	6
2. I don't expect to change my political principles and ideas.	1	2	3	4	5	6
3. I have considered adopting different kinds of religious beliefs.	1	2	3	4	5	6
4. There has never been a need to question my values.	1	2	3	4	5	6
5. I am very confident about what kinds of friends are best for me.	1	2	3	4	5	6
6. My ideas about men's and women's roles have never changed as I became older.	1	2	3	4	5	6
7. I will always vote for the same political party.	1	2	3	4	5	6
8. I have firmly held views concerning my role in my family.	1	2	3	4	5	6
9. I have engaged in several discussions concerning behaviours involved in dating relationships.	1	2	3	4	5	6

10. I have considered different political views thoughtfully.	1	2	3	4	5	6
11. I have never questioned my views concerning what kind of friend is best for me.	1	2	3	4	5	6
12. My values are likely to change in the future.	1	2	3	4	5	6
13. When I talk to people about religion, I make sure to voice my opinion.	1	2	3	4	5	6
14. I am not sure about what type of dating relationship is best for me.	1	2	3	4	5	6
15. I have not felt the need to reflect upon the importance I place on my family.	1	2	3	4	5	6
16. Regarding religion, my beliefs are likely to change in the near future.	1	2	3	4	5	6
17. I have definite views regarding the ways in which men and women should behave.	1	2	3	4	5	6
18. I have tried to learn about different occupational fields to find the best one for me.	1	2	3	4	5	6
19. I have undergone several experiences that made me change my views on men's and women's roles.	1	2	3	4	5	6

20. I have consistently re-examined many different values in order to find the ones which are best for me.	1	2	3	4	5	6
21. I think what I look for in a friend could change in the future.	1	2	3	4	5	6
22. I have questioned what kind of date is right for me.	1	2	3	4	5	6
23. I am unlikely to alter my vocational goals.	1	2	3	4	5	6
24. I have evaluated many ways in which I fit into my family structure.	1	2	3	4	5	6
25. My ideas about men's and women's roles will never change.	1	2	3	4	5	6
26. I have never questioned my political beliefs.	1	2	3	4	5	6
27. I have had experiences that led me to review the qualities that I would like my friends to have.	1	2	3	4	5	6
28. I have discussed religious matters with a number of people who believe differently than I do.	1	2	3	4	5	6
29. I am not sure that the values I hold are right for me.	1	2	3	4	5	6
30. I have never questioned my occupational aspirations.	1	2	3	4	5	6

31. The extent to which I value my family is likely to change in the future.	1	2	3	4	5	6
32. My beliefs about dating are firmly held.	1	2	3	4	5	6

Personal Wellbeing Index (International Wellbeing Group, 2006)

Part 1

1. “Thinking about your own life and personal circumstances, how satisfied are you with your life as a whole ?”

Completely Dissatisfied						Neutral						Completely Satisfied
0	1	2	3	4	5	6	7	8	9	10		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Part 2

1. “How satisfied are you with your standard of living ?”

Completely Dissatisfied						Neutral						Completely Satisfied
0	1	2	3	4	5	6	7	8	9	10		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. “How satisfied are you with your health ?”

Completely Dissatisfied						Neutral						Completely Satisfied
0	1	2	3	4	5	6	7	8	9	10		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. “How satisfied are you with what you are achieving in life ?”

Completely Dissatisfied						Neutral						Completely Satisfied
0	1	2	3	4	5	6	7	8	9	10		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. “How satisfied are you with your personal relationships ?”

Completely Dissatisfied						Neutral						Completely Satisfied
0	1	2	3	4	5	6	7	8	9	10		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. “How satisfied are you **with how safe you feel** ?”

Completely Dissatisfied						Neutral						Completely Satisfied
0	1	2	3	4	5	6	7	8	9	10		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. “How satisfied are you **with feeling part of your community ?**”

Completely Dissatisfied					Neutral						Completely Satisfied
0	1	2	3	4	5	6	7	8	9	10	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. “How satisfied are you **with your future security ?**”

Completely Dissatisfied					Neutral						Completely Satisfied
0	1	2	3	4	5	6	7	8	9	10	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8. “How satisfied are you **with your spirituality or religion ?**”

Completely Dissatisfied					Neutral						Completely Satisfied
0	1	2	3	4	5	6	7	8	9	10	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

DASS -21

(Lovibond & Lovibond, 1995) Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you *over the past week*. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

- 0 Did not apply to me at all
- 1 Applied to me to some degree, or some of the time
- 2 Applied to me to a considerable degree, or a good part of time
- 3 Applied to me very much, or most of the time

1. I found it hard to wind down.	0	1	2	3
2. I was aware of dryness of my mouth.	0	1	2	3
3. I couldn't seem to experience any positive feeling at all.	0	1	2	3
4. I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion).	0	1	2	3
5. I found it difficult to work up the initiative to do things.	0	1	2	3
6. I tended to over-react to situations.	0	1	2	3
7. I experienced trembling (eg, in the hands).	0	1	2	3
8. I felt that I was using a lot of nervous energy.	0	1	2	3
9. I was worried about situations in which I might panic and make a fool of myself.	0	1	2	3
10. I felt that I had nothing to look forward to.	0	1	2	3
11. I found myself getting agitated.	0	1	2	3
12. I found it difficult to relax.	0	1	2	3
13. I felt down-hearted and blue.	0	1	2	3
14. I was intolerant of anything that kept me from getting on with what I was doing.	0	1	2	3
15. I felt I was close to panic.	0	1	2	3
16. I was unable to become enthusiastic about anything.	0	1	2	3
17. I felt I wasn't worth much as a person.	0	1	2	3

18. I felt that I was rather touchy.	0	1	2	3
19. I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat).	0	1	2	3
20. I felt scared without any good reason.	0	1	2	3
21. I felt that life was meaningless.	0	1	2	3

Self-Control Scale: Short Form

(Tangeny, Baumeister & Boone, 2004) Using the scale provided, please indicate how much each of the following statements reflects how you typically are:

	Not at all				Very much
1. I am good at resisting temptation.	1	2	3	4	5
2. I have a hard time breaking bad habits	1	2	3	4	5
3. I am lazy	1	2	3	4	5
4. I say inappropriate things	1	2	3	4	5
5. I never allow myself to lose control	1	2	3	4	5
6. I do certain things that are bad for me, if they are fun	1	2	3	4	5
7. People can count on me to keep on schedule	1	2	3	4	5
8. Getting up in the morning is hard for me	1	2	3	4	5
9. I have trouble saying no	1	2	3	4	5
10. I change my mind fairly often	1	2	3	4	5
11. I blurt out whatever is on my mind	1	2	3	4	5
12. People would describe me as impulsive	1	2	3	4	5
13. I refuse things that are bad for me	1	2	3	4	5
14. I spend too much money	1	2	3	4	5
15. I keep everything neat	1	2	3	4	5
16. I am self-indulgent at times	1	2	3	4	5
17. I wish I had more self-discipline	1	2	3	4	5
18. I am reliable	1	2	3	4	5
19. I get carried away by my feelings	1	2	3	4	5
20. I do many things on the spur of the moment	1	2	3	4	5
21. I don't keep secrets very well	1	2	3	4	5
22. People would say that I have iron self-discipline	1	2	3	4	5

23. I have worked or studied all night at the last minute	1	2	3	4	5
24. I'm not easily discouraged	1	2	3	4	5
25. I'd be better off if I stopped to think before acting	1	2	3	4	5
26. I engage in healthy practices	1	2	3	4	5
27. I eat healthy foods	1	2	3	4	5
28. Pleasure and fun sometimes keep me from getting work done	1	2	3	4	5
29. I have trouble concentrating	1	2	3	4	5
30. I am able to work effectively toward long-term goals	1	2	3	4	5
31. Sometimes I can't stop myself from doing something, even if I know it is wrong	1	2	3	4	5
32. I often act without thinking through the alternatives	1	2	3	4	5
33. I lose my temper too easily	1	2	3	4	5
34. I often interrupt people	1	2	3	4	5
35. I sometimes drink or use drugs to excess	1	2	3	4	5
36. I am always on time	1	2	3	4	5

Big 5 Personality Inventory
(Donnellan, Oswald, Baird & Lucas, 2006)

Use the rating below to describe how accurately each statement describes *you*. Describe yourself as you generally are now, not as you wish to be in the future. Please describe yourself honestly.

	Very Inaccurate	Moderately Inaccurate	Neither Inaccurate nor Accurate	Moderately Accurate	Very Accurate
1. I am the life of the party	1	2	3	4	5
2. I sympathize with others' feelings	1	2	3	4	5
3. I get chores done right away	1	2	3	4	5
4. I have frequent mood swings	1	2	3	4	5
5. I have a vivid imagination	1	2	3	4	5
6. I don't talk a lot	1	2	3	4	5
7. I am not interested in other people's problems	1	2	3	4	5
8. I often forget to put things back in their proper place	1	2	3	4	5
9. I am relaxed most of the time	1	2	3	4	5
10. I am not interested in abstract ideas	1	2	3	4	5
11. I talk to a lot of different people at parties	1	2	3	4	5

12. I feel others' emotions	1	2	3	4	5
13. I like order	1	2	3	4	5
14. I get upset easily	1	2	3	4	5
15. I have difficulty understanding abstract ideas	1	2	3	4	5
16. I keep in the background	1	2	3	4	5
17. I am not really interested in others	1	2	3	4	5
18. I make a mess of things	1	2	3	4	5
19. I seldom feel blue.	1	2	3	4	5
20. I do not have a good imagination.	1	2	3	4	5

Sense of Self Inventory
(Basten & Meares, 2007)

This survey is about how you usually feel about yourself. Read the questions as carefully as you can, but do not take too long with any question. Rate your answer by circling a number from 1 to 4 according to the scale below. You should answer by thinking about your personal experience of how you usually feel in your self (rather than what you think *should* be the case or how others feel).

	Strongly disagree	Disagree	Agree	Strongly agree
1. On some days, I feel that my sense of who I am is about to fall apart or be completely lost.	1	2	3	4
2. My personal experience of my self feels false.	1	2	3	4
3. I often feel that there is no “me”; like I’m not really there.	1	2	3	4
4. I have a good sense of who I really am.	1	2	3	4
5. I feel really lonely all the time, even when I am with other people.	1	2	3	4
6. I can feel like I am an actor in my life - just going through the motions without being the real me.	1	2	3	4
7. I don’t know where or how I belong in the world.	1	2	3	4
8. The feeling of being alive and real can be so faint, that I worry it will vanish.	1	2	3	4
9. I often feel really numb inside - like there are no real feelings to have.	1	2	3	4
10. There are times I feel so empty inside that it is like a deadness.	1	2	3	4
11. I usually maintain a consistent feeling of who I am as a person.	1	2	3	4
12. When I think about who I am, I just feel hollow - like I don’t have any personality.	1	2	3	4

13. My values and beliefs in life aren't really mine - I don't know what I believe in.	1	2	3	4
14. On bad days I can feel really 'dead' in myself.	1	2	3	4
15. I feel completely out of control when my sense of who I am is weak.	1	2	3	4
16. I can trust my feelings - I know they are real and that they are mine.	1	2	3	4
17. I have a strong sense of being complete as a person.	1	2	3	4
18. I am sure that other people feel more alive than me.	1	2	3	4
19. I have a strong sense of continuity or stability in myself over the years.	1	2	3	4
20. I usually maintain a firm sense of my own rights and priorities.	1	2	3	4
21. I tend to be inconsistent in myself - I know that I change who I am with different people.	1	2	3	4
22. At times I fall apart and I just can't get back a feeling of being myself or being together as a person.	1	2	3	4
23. I have a strong sense of having a real personality.	1	2	3	4

**Self Compassion
(Neff, 2003)**

HOW I TYPICALLY ACT TOWARDS MYSELF IN DIFFICULT TIMES

Please read each statement carefully before answering. To the right of each item, indicate how often you behave in the stated manner, using the following scale:

	Almost Never				Almost Always
1. I'm disapproving and judgmental about my own flaws and inadequacies.	1	2	3	4	5
2. When I'm feeling down I tend to obsess and fixate on everything that's wrong.	1	2	3	4	5
3. When things are going badly for me, I see the difficulties as part of life that everyone goes through.	1	2	3	4	5
4. When I think about my inadequacies, it tends to make me feel more separate and cut off from the rest of the world.	1	2	3	4	5
5. I try to be loving towards myself when I'm feeling emotional pain.	1	2	3	4	5
6. When I fail at something important to me I become consumed by feelings of inadequacy.	1	2	3	4	5
7. When I'm down and out, I remind myself that there are lots of other people in the world feeling like I am.	1	2	3	4	5
8. When times are really difficult, I tend to be tough on myself.	1	2	3	4	5
9. When something upsets me I try to keep my emotions in balance.	1	2	3	4	5
10. When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people.	1	2	3	4	5
11. I'm intolerant and impatient towards those aspects of my personality I don't like.	1	2	3	4	5

12. When I'm going through a very hard time, I give myself the caring and tenderness I need.	1	2	3	4	5
13. When I'm feeling down, I tend to feel like most other people are probably happier than I am.	1	2	3	4	5
14. . When something painful happens I try to take a balanced view of the situation.	1	2	3	4	5
15. I try to see my failings as part of the human condition.	1	2	3	4	5
16. When I see aspects of myself that I don't like, I get down on myself.	1	2	3	4	5
17. When I fail at something important to me I try to keep things in perspective.	1	2	3	4	5
18. When I'm really struggling, I tend to feel like other people must be having an easier time of it.	1	2	3	4	5
19. I'm kind to myself when I'm experiencing suffering.	1	2	3	4	5
20. When something upsets me I get carried away with my feelings.	1	2	3	4	5
21. I can be a bit cold-hearted towards myself when I'm experiencing suffering.	1	2	3	4	5
22. When I'm feeling down I try to approach my feelings with curiosity and openness.	1	2	3	4	5
23. I'm tolerant of my own flaws and inadequacies.	1	2	3	4	5
24. When something painful happens I tend to blow the incident out of proportion.	1	2	3	4	5
25. When I fail at something that's important to me, I tend to feel alone in my failure.	1	2	3	4	5
26. I try to be understanding and patient towards those aspects of my personality I don't like.	1	2	3	4	5
