

Mindful Embodiment: Preliminary Investigation of the Relationship Between Body Image
Dissatisfaction and Mindfulness, and the Effectiveness of Two Pilot Interventions for Adult
Men and Women

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Declaration of Authorship

I certify that, except where due acknowledgement has been made, the work is that of the candidate alone; the work has not been submitted previously, in whole or in part, to qualify for any other academic award; the content of the thesis is the result of work which has been carried out since the official commencement date of the approved research program; and, any editorial work, paid or unpaid, carried out by a third party is acknowledged.

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Glossary of Terms

AN = Anorexia Nervosa.

ACT = Acceptance and Commitment Therapy.

ASI-R = Appearance Schema Inventory Revised; Measurement of body image investment.

BI = Body Image.

BIQ = Body Ideals Questionnaire – Measuring body image dissatisfaction.

BIDQ = Body Image Disturbance Questionnaire.

BIAQ = Body Image Avoidance Questionnaire.

BI-AAQ = Body Image Action and Acceptance Questionnaire – Measuring acceptance of thoughts and feelings about body image.

BCQ = Body Checking Questionnaire.

BN = Bulimia Nervosa.

BED = Binge Eating Disorder.

BDD = Body Dysmorphic Disorder.

BMI = Body Mass Index.

BSQ = Body Shape Questionnaire.

CBT = Cognitive Behaviour Therapy.

CBT-M-BID = Cognitive Behaviour Therapy and Mindfulness for Body Image Dissatisfaction.

CFQ = Cognitive Fusion Questionnaire.

DBT = Dialectical Behavioural Therapy.

DASS = Depression, Anxiety and Stress Scale.

ED = Eating Disorder.

EDNOS = Eating Disorder Not Otherwise Specified.

EDE-Q = Eating Disorder Examination Questionnaire.

MAAS = Mindfulness Attention Awareness Scale.

MDD = Muscle Dysmorphic Disorder.

MBCT = Mindfulness Based Cognitive Therapy.

MBSR = Mindfulness Based Stress Reduction.

MBAS = Male Body Attitudes Scale.

MAT-BID = Mindfulness and Acceptance Therapy for Body Image Dissatisfaction.

PSPS = Perfectionistic Self-Promotion Scale.

RSES = Rosenberg Self-Esteem Scale.

SIBID = Situational Inventory of Body Image Dysphoria.

SCS = Self-Compassion Scale.

Appendices

Appendix A – Participant Recruitment Advertisement - Study One.

Appendix B – Participant Information and Consent Form - Study One.

Appendix C – Further Information for Participants - Study One.

Appendix D - Ethics Approvals - Study One.

Appendix E – Screening Interview Schedule - Study Two.

Appendix F – Program Evaluation Form - Study Two.

Appendix G – Group Evaluation Form - Study Two.

Appendix H – Ethics Approval - Study Two.

Appendix I – Participant Recruitment Advertisement - Study Two.

Appendix J – Media Release – Study Two.

Appendix K – Participant Information - Study Two.

Appendix L – Informed Consent Form, Study Two.

Appendix M – Inference by Eye Visual Inspection Instructions and Criteria.

Abstract

Body image (BI) dissatisfaction and disturbance is a source of significant distress for men and women of all ages. However, because of its subclinical nature, BI dissatisfaction is often left untreated. Societal pressure to meet body weight and shape ideals place individuals at risk of negative BI; disordered eating; excessive exercise; use of enhancing and appearance altering drugs or surgical procedures; and psychological distress, including anxiety, depression, low self-esteem, perfectionism, and isolation. The overall aim of the current thesis was to investigate the role of mindfulness (i.e., the ability to be present, aware, accepting, and non-judgemental of private experiences including thoughts, feelings, sensations, and behaviours) in improving BI dissatisfaction. The issues were explored through two studies: the first study predominantly focused on investigating the relationship between mindfulness and BI dissatisfaction, with the second study concentrated on evaluating two pilot interventions for BI dissatisfaction; mindfulness stand-alone intervention and cognitive behavioural therapy (CBT) and mindfulness intervention.

The aim of the first study was to investigate the relationship between mindfulness in everyday activities and BI dissatisfaction. A community sample of 208 participants completed measures related to mindfulness, acceptance, ability to distance from thoughts, self-compassion, BI dissatisfaction and disturbance, perfectionism, psychological well-being, self-esteem, and eating disorder symptomatology. Results indicated that higher levels of mindfulness and acceptance were significantly related to less appearance and body dissatisfaction, psychosocial disturbances in daily life as a result of BI dissatisfaction (e.g., avoiding situations), negative emotions and distress, and overvalued importance placed on appearance in both men and women. These findings hold promising implications for the treatment of BI dissatisfaction. Therefore, a follow-up study was conducted to investigate the effect of mindfulness skills training on BI dissatisfaction via intervention.

The aim of the second study was to investigate the effectiveness of CBT plus mindfulness, and stand-alone mindfulness interventions targeting BI dissatisfaction in adult men and women. To date, no research has examined the effectiveness of these interventions in this area. Since the reported interventions were pilot interventions, a mixed-methodology design was used in this study comprising of case series methodology and qualitative feedback from participants. For most out of nine participants, both interventions were shown to be effective in reducing BI dissatisfaction, psychosocial disturbance associated with BI dissatisfaction, negative emotions and distress around BI, and thinking errors/distortions. Although there were limitations in both studies, the results provide useful information regarding the relationship between mindfulness and dissatisfaction with appearance. Recommendations for future research include further examining the relationships between BI dissatisfaction and mindfulness, and the use of a randomised control trials to evaluate the effectiveness of the two pilot interventions investigated in this study.

Overview of Thesis

Body image (BI) dissatisfaction and disturbance are prevalent among children, adolescents, and adults in Western societies (Cash, 2004; Cash & Pruzinsky, 2002). The experience of discontent with some aspect of appearance (e.g., weight, shape, body parts, facial features, muscularity) is referred to as BI dissatisfaction and the combination of discontent, dysfunction, and negative emotions about BI is considered to be BI disturbance (Cash, Phillips, Santos, & Hrabosky, 2004; Cash & Szymanski, 1995; Tiggemann & McCourt, 2013). It has been established that adverse consequences are associated with BI dissatisfaction and disturbance; especially if they are severe and unaddressed. In particular, BI dissatisfaction has been linked to poorer psychological outcomes (depression, anxiety, low self-esteem), the development of eating disorders (EDs) or various forms of disordered eating as a means to control weight, and excessive use of exercise or performance enhancing drugs (Blashill, 2010; Lavender, Gratz, & Anderson, 2012; Lewis & Devaraj, 2010). In addition, BI dissatisfaction has also been linked with poorer psychosocial adjustment, including isolation, avoidance, and dysfunction in day-to-day life (Grammas & Schwartz, 2009; Hildebrandt, Alfano, & Langenbucher, 2010; Jarry & Barardi, 2004; Levesque & Vichesky, 2006; Lewis & Devaraj, 2010; Strachan & Cash, 2002).

Research exploring BI dissatisfaction has been extensive, particularly with regard to women and adolescent girls. However, despite the high prevalence of BI dissatisfaction in adult men and women, research into effective interventions for this group of individuals is limited. With mindfulness and acceptance based interventions showing promising results for other clinical disorders such as Depression, Anxiety, Borderline Personality Disorder, Chronic Pain, Substance Abuse and Psychotic Disorders, such treatment may also prove beneficial for adults experiencing BI dissatisfaction (Abba, Chadwick, & Stevenson, 2008; Baer, 2003; Chadwick, Taylor, & Abba, 2005; Kabat-Zinn, 1982; Kabat-Zinn, 2003; Linehan,

1993; Kristeller, Baer, & Quillian-Wolever, 2006; Segal, Williams, & Teasdale, 2002; Teasdale et al., 2000). Given the benefits associated with mindfulness-based interventions for other aforementioned disorders and issues, further examination of mindfulness and its clinical application to BI dissatisfaction is warranted (Baer, Fischer, & Huss, 2006; Fink, Foran, Sweeney, & O'Hea, 2009; Lavender et al., 2012; Stewart, 2004).

Building upon the collection of previous research outlined above, the current research sought to better understand the relationship between the many different components of BI dissatisfaction, and to explore the process by which an individual relates to themselves, their thoughts, and their feelings. Specifically, the primary aim of the current research was to investigate the relationship between domains of BI dissatisfaction and ability to be aware and mindful of internal experiences, the ability to disentangle and distance from thoughts, and the ability to accept unpleasant emotions or distress associated with a negative BI. In addition, a further aim was to explore how a range of factors including perfectionism, psychological wellbeing (depression, anxiety, stress, self-esteem), and disordered eating relate to the different domains of BI dissatisfaction. With previous research indicating the detrimental effects associated with unaddressed BI dissatisfaction (Cash & Pruzinsky, 2002; Jarry & Berardi, 2004; Levine & Piran, 2004; Grammas & Schwartz, 2009), appropriate and effective interventions for improving BI are imperative. This thesis reports the outcomes from two pilot interventions, which evaluated the effectiveness and utility of mindfulness skills training in improving BI dissatisfaction, both as an add-on to a CBT intervention and as a stand-alone intervention.

The structure of the thesis features four chapters. Chapter 1 provides an overview of the literature pertaining to BI. The definition of BI is provided, together with information regarding prevalence. Factors contributing to the development of BI are also reviewed. A great deal of recent research has explored the attitudinal and behavioural components of BI

dissatisfaction. In addition to reviewing these components, body checking and avoidance behaviours are considered. In light of the BI dissatisfaction prevalence and widespread associated consequences, appropriate interventions for BI dissatisfaction are needed. In this chapter, research pertaining to CBT, an empirically validated intervention for BI dissatisfaction, is reviewed. Following the review, the potential of mindfulness intervention to improve BI dissatisfaction in men and women is discussed. Finally, directions for future research and unanswered research questions are presented.

Study one is summarised in Chapter 2. This chapter provides a detailed overview of the aims and hypotheses related to investigating the relationships between BI dissatisfaction domains, mindfulness, and a range of related factors. The cross-sectional and survey-based method of study one is described in detail, along with the results obtained, and the implications derived from the results. Based upon findings of the effectiveness of mindfulness practice in reducing the reactivity to internal experiences (thoughts, feelings, sensations), leading to greater distance, disentanglement, and acceptance of difficult internal phenomena, the study examined the relationship between mindfulness and BI disturbance. The study also examined the relationship between domains of BI dissatisfaction and the ability to practice self-compassion, acceptance of emotions, and disentanglement from thoughts. Other factors that have been linked to BI dissatisfaction such as perfectionism, psychological wellbeing (depression, anxiety, stress, self-esteem), and disordered eating were also investigated in this study. It is anticipated that determining the relationship between these variables will provide a holistic understanding of how BI is experienced in men and women. It will also provide avenues where modified interventions can be used to more effectively improve BI dissatisfaction among men and women.

An overview of study two is provided in Chapter 3. Dissatisfaction with appearance is considered to be a source of distress for women and men. Dissatisfaction with BI often goes

undetected and untreated due to the social acceptability associated with being unhappy about appearance, shape, and weight. One approach to treating BI dissatisfaction is via CBT interventions aimed at changing dysfunctional thoughts, beliefs, feelings, and behaviours frequently associated with a negative BI (Strachan & Cash, 2002; Jarry & Berardi, 2004). Cash (2007) is a pioneer in this field, having developed a number of modified versions of his *Body Image Workbook* program. Stand-alone CBT interventions such as those developed by Cash have shown to be effective in improving BI dissatisfaction. A recent modification of the Cash's CBT program incorporates mindfulness principles into an existing empirically tested CBT program for BI dissatisfaction (Cash, 2007). The effectiveness of this extended program has not been subject to formal evaluation in either clinical or community samples, and is the focus of Chapter 3. Mindfulness has been incorporated into a number of therapeutic approaches and has shown to be a successful treatment for a number of psychological disorders and psychological difficulties. Scant research has evaluated the efficacy of interventions for BI dissatisfaction and disturbance in men or mixed gender groups. There are also limited evaluations of mindfulness and acceptance as stand-alone interventions for BI dissatisfaction and disturbance.

Chapter 3 describes the evaluation of two pilot interventions: CBT and mindfulness (Cash, 2007); and Mindfulness and Acceptance-Based intervention. A mixed-methodology approach was used in this study to evaluate these interventions. A case-series design was used to evaluate potential improvements in the measured outcomes. Individual results are described in detail and interpretation of these results is offered. Qualitative data regarding the evaluation of the programs, groups, and participants' subjective perception of improvement is also documented. Given the small number of participants recruited, the large amount of variables investigated, and the potential issues with power in this instance, a modified version of the results is presented, with a specific focus on variables related to BI and mindfulness.

A general discussion is offered in Chapter 4, drawing together results and implications of the two studies. This chapter covers the discussion and interpretation of the results obtained in this research, and the scientific and real-world implications of the findings, including their clinical utility for intervention programs. Limitations and suggestions for future research are also detailed.

Chapter 1: Literature Review

The prevalence of body image (BI) disturbance among children, adolescents and adults has risen steadily over recent decades. Recognition of this phenomenon has led to increased acknowledgement of the negative consequences associated with increasing BI dissatisfaction (Cash, 2004; Cash & Pruzinsky, 2002; Jarry & Berardi, 2004; Frederick, Peplau & Lever, 2006). Research to date has established that BI is a multidimensional construct, encompassing the physical and psychological experience of embodiment, pertaining primarily but not exclusively to physical appearance (Cash, 2004; McCabe & Ricciardelli, 2004; Tiggemann & McCourt, 2013). There is general agreement that BI comprises behavioural, attitudinal and perceptual components (Cash, 2004; Cash & Pruzinsky, 2002; Jarry & Berardi, 2004; McCabe & Ricciardelli, 2004). Varying degrees of discontent with some aspect of appearance is considered to be BI dissatisfaction. Often used interchangeably with BI dissatisfaction, BI disturbance or a negative BI is different to BI dissatisfaction in that it includes not only dissatisfaction but also dysfunction in psychological or social functioning and the experience of significant negative emotion in relation to BI (Cash, et al., 2004).

Dissatisfaction with BI is prevalent among adult men and women, as well as children and adolescents (McCabe & Ricciardelli, 2004; Mission Australia Youth Survey, 2013). Traditionally, it was believed that mainly women experience dissatisfaction with their weight, body shape and appearance; however, in recent years it has become clear that men also experience significant BI disturbance. Recent data indicates that BI is one of top three concerns for Australian females and males aged 11 to 24 years (Mission Australia Youth Survey, 2013). These BI concerns have also been documented in adulthood with a suggested 43% of men and 56% of women being dissatisfied with their bodies and overall appearance (Cash, 1997; Cash & Pruzinsky, 2002). More recent studies have shown that the prevalence

of BI dissatisfaction among adults is varied, with an estimated 13.4% - 31.8% of adult women and 9.0% - 28.4% of adult men reporting BI dissatisfaction in an adult US sample (Fallon, Harris, & Johnson, 2014; Frederick, Jafary, Gruys, & Daniels, 2012). Neighbors and Sobal (2007) found that in a sample of 300 university women, 87% reported a desire to weigh less. Taken together, these findings indicate that BI dissatisfaction highly impacts adolescents, young adults, and adults. If unaddressed, this may result in a range of adverse consequences, including disturbances in cognition, emotion regulation, and eating, as well as social functioning (Pearson, Follette, & Hayes, 2012; Grammas & Schwartz, 2009; Jarry & Berardi, 2004).

Individuals with BI dissatisfaction are at risk of developing (i) Maladaptive compensatory strategies (e.g., use of enhancing drugs, excessive use of laxatives, strict dieting, excessive exercise, disordered eating habits and behaviours, increasing use of cosmetic surgeries, etc.); (ii) Eating disorders (EDs); (iii) Other medical and body related disorders (e.g., body dysmorphic disorder; BDD); and (iv) Psychological problems, such as depression, anxiety, stress, low self-esteem, isolation, self-loathing, and low overall life satisfaction (Blashill, 2010; Grammas & Schwartz, 2009; Lavender et al., 2012; Lewis & Devaraj, 2010; Levesque & Vichesky, 2006). The risks associated with unidentified and unaddressed BI disturbance point to the need for BI interventions that are easily accessible and effective in promoting healthier BI in the wider community.

BI dissatisfaction and disturbance are also associated with perfectionistic thinking and behaviours, particularly revolving around self-presentation (McGee, Hewitt, Sherry, Parking, & Fleet, 2005); more self-judgement and self-criticisms, less self-compassion, and self-kindness (Ferreira, Pinto-Gouveia, & Duarte, 2013); considerable rumination, rigidity in thinking, and cognitive distortions (Cash, 1997; Cash, et al., 2004; Cassin, von Rason, & Whiteford, 2008; Lavender, et al., 2012); and decreased awareness of thinking patterns,

emotions, and beliefs that influence BI related behaviours (Dijkstra & Barelds, 2011; Lavender et al., 2012; Lavender, Jardin, & Anderson, 2009; Stewart, 2004). These factors serve to perpetuate BI dissatisfaction and disturbance, but may also provide insight into factors that may contribute to improving BI if addressed appropriately.

Despite the gravity of the psychological, physical, and social negative consequences associated with BI dissatisfaction and disturbance, it frequently remains unaddressed, particularly in adults. This may be due to the notion that BI dissatisfaction and disturbance are frequently considered a “normative” experience for individuals in Western societies, particularly women (Farrell, Shafran, & Lee, 2006; Lewis & Devaraj, 2010). Research to date has shown that Cognitive Behavioural Therapy (CBT) interventions provide one way to address BI dissatisfaction, attenuate distress and negative emotions associated with BI dissatisfaction, and decrease frequency of avoidance and checking behaviours (Jarry & Barardi, 2004; Jarry & Ip, 2005). The therapeutic approach of choice has been CBT, which has shown success in improving BI dissatisfaction (Cash & Pruzinsky, 2002; Jarry & Ip, 2005). Stand-alone CBT interventions have been empirically tested in the past with a range of populations including women, children, and adolescents. Its effectiveness has also been demonstrated with clinical populations, including individuals diagnosed with EDs and BDD. However, no research to date has empirically evaluated CBT interventions with mindfulness as an additional component. Mindfulness has already been incorporated into a number of therapeutic approaches and has been a successful treatment for a number of psychological disorders and psychological difficulties, including Depression, Anxiety, Chronic Pain and Stress, Substance Abuse, and Borderline Personality Disorder (Abba, et al., 2008; Altieri, 2011; Baer, 2003; Bishop et al., 2004; Brown & Ryan, 2003; Linehan, 1993; Segal et al., 2002). Although there has been no empirical integration or investigation of mindfulness based treatment for BI dissatisfaction and disturbance, the construct of mindfulness holds promise

for attenuating BI dissatisfaction and distress. Through mindfulness practice, an individual is able to change how they relate to their internal and private experiences, including thoughts, feelings, and behaviours (Chambers et al., 2009; Stewart, 2004). Furthermore, mindfulness practice increases awareness of private experiences and conditioned ways of thinking and behaving, decreases reactivity to stimuli and associated distress, and builds self-acceptance (Alberts & Raes, 2012; Stewart, 2004). A program developed by Cash (2007) incorporates mindfulness in an empirically tested CBT program for BI dissatisfaction; however, this program is yet to be evaluated. In addition, stand-alone mindfulness is yet to be explored as an option for BI dissatisfaction treatment. Research exploring BI programs specifically targeting men's or mixed gender groups' BI dissatisfaction is also lacking.

The aim of this literature review is to synthesise past literature pertinent to BI dissatisfaction and interventions designed to improve BI satisfaction. This literature review begins with a section exploring BI dissatisfaction, offering a definition and prevalence of BI issues, and introducing proposed factors that contribute to the development of BI dissatisfaction/disturbance. The negative consequences associated with chronic BI dissatisfaction are also highlighted. This leads to a discussion of factors that serve to maintain BI dissatisfaction from a cognitive behavioural perspective as well as the role of mindfulness in BI dissatisfaction. The section that follows provides an overview of stand-alone interventions for BI dissatisfaction and considers the role of mindfulness in improving BI dissatisfaction. Finally, several conclusions are offered with regard to research gaps and future research recommendations.

Body Image Dissatisfaction: An Introduction

Definition & Body Image Dissatisfaction

The definition of BI has evolved over time from “the picture of our own body which we form in our own mind” (Schilder, 1935/1950, p.11) to a multidimensional construct incorporating the psychological and physical experience of embodiment, primarily pertaining to, but not limited to, overall physical appearance (Cash, 2004; Hrabosky et al., 2009). There is now general agreement among researchers that BI comprises behavioural, attitudinal, and perceptual components (Cash, 2004; Jarry & Berardi, 2004; McCabe & Ricciardelli, 2004). Dissatisfaction with BI occurs when discontent with some aspect of appearance is present (e.g., facial features, shape, size, weight; Cash & Pruzinsky, 2002), primarily due to incongruence between internalised ideals and perception of own appearance (Cash & Szymanski, 1995).

The current ideals portrayed in the Western society and media differ for men and women. Whilst for women the striving tends to be for a thinner body, men typically have more mixed aspirations regarding appearance. For some men, there is a desire to be slimmer and leaner, whereas for others there is a desire to be bigger and more muscular (Levesque & Vichesky, 2006; McCabe & Riccardelli, 2004). The ideal body for men portrayed in the current Western media reflects a more muscular and lean body type compared to previous years (Grammas & Schwartz, 2009). For men, dissatisfaction tends to be related to muscle size, body areas including arms and chest, body fat (leanness), and height (Blashill, 2010; Garner, 1997). Studies have shown that men tend to associate muscularity with Western male ideals, such as being powerful, strong, successful, confident, and ability to defend self in a fight (Adams, Turner & Bucks, 2005).

On the other hand, for women, the thin ideal is associated with success and power (Annis, Cash, & Hrabosky, 2004). As such, researchers have noted the “myth of

transformation” that comes with attaining the thin ideal; that is, women believing that meeting their ideal will not only enhance their physical appearance but will also result in success in other areas, including greater employment opportunities, economic stability, and improvement in one’s social status (Annis et al., 2004; Pearson, Heffner, & Follette, 2010). As such, for women, frequent attempts to alter physical appearance have become “the norm” (Pearson et al., 2010; Tiggemann, 2004). While there are qualitative differences regarding the male and female standards of beauty valued in society, these standards play an integral role in instigating and maintaining BI dissatisfaction in men and women. As a result, this can lead to detrimental impairments in psychosocial functioning or BI disturbance for men and women.

It is important to note that BI dissatisfaction differs to BI disturbance, despite frequent interchangeable use of these two terms (Cash, et al., 2004). Whilst BI dissatisfaction refers to the level of discontent with physical appearance, BI disturbance is multidimensional and involves varying degrees of disturbance or dysfunction in an individual’s perception, cognition, behaviour, or affect/emotion (McCabe & Ricciardelli, 2004). The disturbance associated with BI dissatisfaction refers to some level of impairment or dysfunction in daily life. It is important to note the distinction because individuals may experience dissatisfaction with one or more aspects of their appearance, but this may not lead to any adverse consequences or disturbance. In addition, the confusion between the terms can lead to difficulty in interpreting research findings, particularly with regard to which outcomes are targeted in BI interventions.

Prevalence

The prevalence rates of BI dissatisfaction are increasing among children, adolescents, and adults of both genders, demonstrating its pervasiveness and significant impact on individuals in Western societies (Cash, 2004; Fallon et al., 2014; Frederick et al., 2012; McCabe & Ricciardelli, 2004; Neighbors & Sebal, 2007). With the increase in prevalence of

BI dissatisfaction, the rise in dieting, the desire to be slimmer, and attitudes associated with disordered eating has also been evident (Cash & Pruzinsky, 2002; McCabe & Ricciardelli, 2004). For example, 70-94% of female university students report a desire to lose weight and be slimmer, and up to 91% report dieting as a means of achieving this (Yager & O'Dea, 2008). The experience of BI dissatisfaction remains stable across the life span, affecting many women and men in middle to late adulthood (Slevec & Tiggemann, 2011). Dissatisfaction with BI is highly prevalent among gay men and lesbian women, with gay men frequently reporting higher BI dissatisfaction than heterosexual men (Peplau, Frederick, Yee, Maisel, Lever, & Ghavami, 2009). Similarly, lesbian women tend to be the least dissatisfied when compared to gay men, heterosexual men, and heterosexual women (Peplau et al., 2009). These statistics indicate the far-reaching impact of BI dissatisfaction on individuals of all ages and orientations.

Components of Body Image Dissatisfaction and Disturbance

The behavioural component of BI dissatisfaction and disturbance often manifests as ritualistic behaviours including body checking and fixing behaviours (e.g., grooming and concealing), avoidance behaviours such as avoiding social or other situations that may emphasise physical appearance, and as compulsive comparison to other people, including people in general and individuals presented in media (Reas, Whisenhunt, Netemeyer, & Williamson, 2002; Rosenstrom et al., 2013). Engaging in frequent evaluation of the body to gain information regarding body size, shape, or weight is considered to be body checking. These checking behaviours are thought to alleviate distress that is associated with the preoccupation with body weight, shape, and size, in the short-term, as well as to obtain information regarding appearance and the body (Reas et al., 2002; Rosenstrom et al., 2013; Walker, Anderson, & Hildebrandt, 2009). Despite the short-term alleviation of distress, over time these behaviours reinforce unhelpful and negative beliefs around appearance, amplify

perceived imperfections, and reinforce BI dissatisfaction (Reas et al., 2002). For women, body checking is also related to increased shape and weight concern and is associated with temporary worsening of BI dissatisfaction (Walker et al., 2009). Moreover, body checking behaviours are inversely associated with depression, negative affect, symptoms of muscle dysphoria, and greater weight and shape concern in men (Walker et al., 2009).

In contrast to body checking behaviours, avoidance behaviours represent an attempt to minimise awareness of or completely avoid any information regarding body weight, shape, or size (Rosenstrom et al., 2013; Walker et al., 2009). For example, body avoidance in women is associated with BI dissatisfaction, low self-worth around appearance, fear of fatness, and greater importance being placed on losing weight and having the right body shape (Rosen, Srebnik, Saltzberg, & Wendt, 1991; Rosenstrom et al., 2013). Similar to body checking behaviours, avoidance reinforces negative BI and contributes to maintenance of BI dissatisfaction. Taken together, it is evident that the behavioural component of BI dissatisfaction plays an important role in maintaining dissatisfaction and disturbance. Therefore, adequate assessment and intervention around these behaviours is integral to BI dissatisfaction research and treatment.

The attitudinal component of BI dissatisfaction and disturbance pertains to elements such as satisfaction, thoughts, emotions, schemas, and investment experienced by the individual. The attitudinal component can be further divided in affective and cognitive components. The affective component refers to emotions related to BI, such as feelings of anxiety or depression associated with an individual's body. On the other hand, the cognitive component refers to the beliefs about the importance of physical appearance or level of importance placed on appearance as a measure of self-worth (Cash, 1990; Thompson, 1990). A range of historical experiences (e.g., sociocultural pressures, interpersonal experiences, physical characteristics and changes, personality) influence individuals' core schemas or

beliefs in relation to their body and appearance (Jakatdar et al., 2006). Schemas serve as cognitive templates that are used to process, interpret, and store information. The combined effect of these schemas being activated and the dysfunctional processing of information (i.e., influenced by cognitive distortions) leads to the schemas and cognitive distortions being reinforced, unless the individual is aware of the cognitive process occurring (Hrabosky et al., 2009; Jakatdar et al., 2006). Schemas play a central role in maintaining BI dissatisfaction and disturbance, particularly given that they shape individuals' experiences of themselves and the world (Steward, 2004). If left unchallenged, negative schemas bias the processing of information, resulting in repeated habitual, limited, and distorted viewpoints. Given the importance schemas play in BI dissatisfaction, it is clear that their inclusion in BI research is warranted.

Other research into the attitudinal component of BI dissatisfaction has investigated the role of emotion in BI dissatisfaction. The emotions triggered by BI dissatisfaction are frequently negative in nature (referred to as BI dysphoria) and also tend to only occur in specific situational contexts (Cash, 2000). This is important as BI dysphoria triggers the activation of schemas and therefore distress associated with BI dissatisfaction. Women tend to experience higher levels of BI dysphoria compared to men (Cash, 2000). Further to BI related emotions, research has yielded important results regarding the role of cognitive distortions and thinking errors in BI dissatisfaction and disturbance. Cash (2002) has proposed eight key cognitive distortions regarding appearance in precipitating and perpetuating BI dysphoria (*i.e.*, *black and white thinking; biased comparisons to ideals; selective attention bias; conclusions made about appearance being responsible for past injustices; projecting negative thoughts onto another person's presumed thoughts; predictions that appearance will adversely impact on an individual's future; conclusions that an individual cannot do something because of their appearance; negative mood state that*

generalises to negative feelings about appearance). Cognitive distortions have a substantial influence on the interpretation, storage, and activation and retrieval of information. Without identifying and challenging these errors in thinking, BI dissatisfaction would remain unchanged and strengthened each time the chain of reaction is triggered. However, the potential positive impact of identifying, challenging, and changing cognitive distortions is the overall reduction in the activation of distortions, schemas, negative emotions, and automatic and rigid thoughts. As a result, an individual is less likely to engage in self-defeating behaviours such as body checking and avoidance and therefore less likely to reinforce their BI dissatisfaction.

Lastly, the perceptual component refers to size estimation accuracy and traditionally research has shown that most individuals, particularly women tend to overestimate their body size (Jarry & Ip, 2005). Research has suggested that addressing this component of BI dissatisfaction adds to the effectiveness of improving overall BI dissatisfaction (Jarry & Ip, 2005).

The Development of Body Image Dissatisfaction: Theory, Manifestations, and Maintaining Factors

The awareness of physical appearance, body shape, and body size begins in childhood. Life experiences, families, role models, and culture all contribute to ideas about body shape and the development of BI and BI dissatisfaction (Cash & Pruzinsky, 2002). Individuals' sense of identity is very much tied to the experience of being in a body and experiencing through the body; that is, events are experienced in the body (both internal and external) and over time shape an individuals' identity (Cash & Pruzinsky, 2002). As discussed previously, BI dissatisfaction can substantially impact on the sense of self, particularly if an individual bases their self-worth on their appearance. Once BI dissatisfaction or disturbance develops, the potential for detrimental consequences is grave.

For instance, BI dissatisfaction can negatively affect an individual's social functioning, their psychological wellbeing, and their physical health (Jarry & Berardi, 2004; Pearson et al., 2012; Strachan & Cash, 2002). It is therefore important to understand how BI dissatisfaction develops and how it is maintained.

Numerous theories have been proposed in understanding the development BI dissatisfaction and disturbance. Cash's (2007) model suggests that sociocultural pressures, interpersonal experiences, physical characteristics and changes, and personality characteristics shape BI development (Cash & Pruzinsky, 2002; Lewis & Devaraj, 2010). Cash's model is the most widely used model in understanding BI dissatisfaction and has also been supported by research investigating the development of BI dissatisfaction (Carfi, Yamamiya, Brannick, & Thompson, 2005; Lewis & Devaraj, 2010; Tiggemann & McGill, 2004). Historical factors such as past experiences both predispose and influence how an individual thinks, feels, and behaves in relation to their body (Cash & Pruzinsky, 2002). As a result of these past experiences individuals develop core schemas or beliefs about themselves in relation to their body and appearance (Jakatdar et al., 2006). Depending on the schemas formed, an individual may become highly invested in their appearance; that is, high importance may be placed on appearance, which can lead to appearance being linked to self-worth (Cash & Pruzinsky, 2002). Research has identified two types of investment in appearance that occur in individuals with BI dissatisfaction, including self-evaluative and motivational investment. Self-evaluative investment is related to the importance placed on appearance as a sense of self-worth (Cash, 2003; McGee et al., 2005). Conversely, motivational investment is considered to be the individual's aspiration to look attractive and to manage their appearance accordingly; that is, the value that is placed on grooming behaviours to appear more attractive (McGee, et al., 2005).

Proximal factors such as negative self-talk, anxiety and distress, emotional responses, and compensatory or regulative behaviours (e.g., checking, fixing, avoidance) perpetuate and trigger BI distress on an ongoing basis (Cash & Pruzinsky, 2002; Lewis & Devaraj, 2010). Interpersonal influences including peers, roles models, parents, partners, siblings, and friends are among the most influential in the development of BI disturbance, but also in the maintenance of a negative BI (Lewis & Devaraj, 2010; Herbozo & Thompson, 2006). In addition to these proximal factors, research has implicated personality factors (i.e., perfectionism and low self-esteem), negative affect, and a lack of emotional regulation as predisposing or risk factors to developing BI dissatisfaction and potentially EDs (Lewis & Devaraj, 2010; Lavender et al., 2009). These factors can also form part of the ongoing maintenance of BI dissatisfaction. In particular, research has established that negative affect is linked with more BI dissatisfaction and body distortion (Manjrekar & Berenbaum, 2012). Individuals who are able to demonstrate more emotional clarity tend to experience less BI dissatisfaction. Paxton (2002) suggested that higher negative affect is strongly linked with higher importance being placed on thinness, weight, and shape, resulting in more BI dissatisfaction and body comparisons among individuals. Negative affect has also been found to mediate the relationship between BI dissatisfaction and eating disorder symptomatology (Stice & Shaw, 2002). Taken together, it is clear that these findings provide evidence for the important role that negative affect plays in both the development and maintenance of BI dissatisfaction and therefore warrants inclusion in BI dissatisfaction interventions.

Further research has linked BI dissatisfaction with the emergence and development of rigid, negative, and automatic thoughts regarding shape, size, and weight (Fink et al., 2009; Pearson et al., 2012; Stewart, 2004). Automatic and negative thoughts are often outside of conscious awareness, leading to automatic responding to triggers, developing inflexible thinking patterns, and responding with rule-governed behaviour (Lavender et al., 2012;

Stewart, 2004). Some theorists conceptualise preoccupation with appearance, weight, and shape as serving the function of avoiding more difficult emotions and interactions such as interpersonal relationships (Pearson, et al., 2012). Attempts made at alleviating distress associated with BI dissatisfaction (e.g., body checking and avoidance behaviours) are deemed to be various forms of experiential avoidance; that is, avoiding difficult and less “controllable” emotions, internal experiences, and situations (Pearson et al., 2010).

Disordered eating is also conceptualised as a form of experiential avoidance and is also associated with rigid thinking (Pearson et al., 2012). Moreover, Pearson and colleagues (2012) postulate that once certain thoughts and beliefs are shaped through past experience, individuals experience frequent exposure to these “stories” regarding their BI. When BI distress or discomfort is triggered, a familiar set of thoughts, emotions, and behaviours are experienced and expressed, strengthening their association and automaticity, leading to stronger experiences the next time. Therefore, the pervasiveness of BI dissatisfaction and disturbance may very well be maintained by experiential avoidance.

Overview of Body Image Dissatisfaction Research

The following sections synthesise research pertinent to BI dissatisfaction and disturbance research.

Body Image Dissatisfaction and Psychological Wellbeing

Females across the age range are more likely to experience BI concerns than men (Levesque & Vichesky, 2006; Frederick et al., 2006; Tiggemann, 2004). Given this outcome, it is not surprising that this phenomenon is often referred to as a “normative discontent” for females with Western societies, holding the expectation that most girls and women will have some level of BI dissatisfaction (Farrell et al., 2006; Lewis & Devaraj, 2010). This is particularly the expectation for women who are obese, as it may be considered that these

women are furthest away from the societal standard of the “thin ideal” (Pearson et al., 2012). BI dissatisfaction is often associated with substantial detriments to mental and physical health (Lewis & Devaraj, 2010). More specifically, BI dissatisfaction in women is associated with higher levels of dieting, unhealthy weight control behaviours (e.g., binge eating, laxative use, purging), lower levels of physical activity, and eating disorders). In addition, BI dissatisfaction has also been associated with significant levels of depression, and anxiety, and low self-esteem (Gilbert & Meyer, 2005; Lavender et al., 2012; Levesque & Vichesky, 2006; Lewis & Devaraj, 2010).

With regard to self-esteem, past research has found that low self-esteem predicts increased BI dissatisfaction, drive for thinness, and eating disordered symptoms in women (Gilbert & Meyer, 2005; Levesque & Vichesky, 2006; Shea & Pritchard, 2007; Wasylkiw, MacKinnon, & MacLellan, 2012). It has also been described as the central catalyst for the development of BI dissatisfaction, with some researchers suggesting that up to one third of self-esteem is related to the extent to which an individual’s BI is positive or negative (Gilbert & Meyer, 2005; Shea & Pritchard, 2007). Another important factor associated with BI dissatisfaction is depression. Depression in individuals with BI dissatisfaction has the capacity to be as disabling as it is for individuals with EDs (Farrell et al., 2006). Research has consistently found a link between BI dissatisfaction and depression in community samples (Farrell et al., 2006; Levesque & Vichesky, 2006; Stice et al., 2000). A reciprocal relationship between BI dissatisfaction and depression among women has been identified, with greater BI dissatisfaction often associated with greater depressive symptoms and even as a predictor of major depressive disorder in women (Mori & Morey, 1991; Stice, Hayward, Cameron, Killen, & Taylor, 2000). This is further evidenced by BI intervention research, which has consistently found a reduction in depressive symptoms at the completion of an intervention for BI dissatisfaction (Bearman, Stice, & Chase, 2003). Given the high rates of comorbidity

between depression and anxiety, it is not surprising that BI dissatisfaction has also been linked with the experience of heightened anxiety (Cash & Pruzisnky, 2002). Symptoms of anxiety may be related to thoughts about food and weight, worry about not losing enough weight, and fear of gaining weight (Farrell et al., 2006). Taken together, these results imply that BI dissatisfaction is related to lowered self-esteem, depression, and anxiety, all of which can significantly impact on an individual's satisfaction with life and ability to function in society.

For women, body dissatisfaction tends to be primarily related to shape and weight (Farrell et al., 2006; Pearson et al., 2012; Tiggemann, 2004). Furthermore, BI dissatisfaction appears to remain stable across the lifespan potentially making the BI dissatisfaction and associated consequences a chronic issue for women (Pearson, et al., 2012; Tiggemann, 2004). This is problematic given that BI dissatisfaction and disturbance is frequently unaddressed and untreated, particularly in non-clinical and sub-clinical populations, leaving many women with substantial distress and features of depression, anxiety, and disordered eating (Pearson et al., 2012).

In contrast, BI dissatisfaction in men has been referred to as “Adonis complex”; that is, a preoccupation and increased attempts to conform to the culturally constructed body ideal for men (Adams et al., 2005; Grammas & Schwartz, 2009; McCabe & Riccardelli, 2004). The ideal body for men portrayed in the current Western media reflects a more muscular and lean body type compared to previous years (Grammas & Schwartz, 2009). For men, dissatisfaction tends to be with muscle size, body areas including arms and chest, body fat (leanness), and height (Garner, 1997; Blashill, 2010).

Similar to women, BI dissatisfaction in men has also been linked to depression, anxiety, and lowered self-esteem (Blashill, 2010; Kaminski, Chapman, Haynes & Own, 2005). Most

research to date has found a significant relationship between BI dissatisfaction and psychological wellbeing in men (Blashill, 2010; Lavender et al., 2012; Gilbert & Meyer, 2005). For instance, studies by Levesque and Vichesky (2006), Grammas and Schwartz (2009), and Lavender and colleagues (2012) have found that men's desire for muscularity and less body fat was related to self-esteem and depression.

Other research has termed the desire for greater muscular definition as drive for muscularity, mirroring women's drive for thinness, which is highly present in women with EDs. Drive for muscularity has been associated with poorer psychological outcomes and unhealthy behavioural attempts in muscle enhancement (Tod & Edwards, 2013). In their study, they found significant relationships between drive for muscularity, body disturbance, BI dysphoria, and BI investment.

In addition to factors described above, increase in BI dissatisfaction has resulted also in increased prevalence of EDs among men, greater use of steroids, performance-enhancing drugs and protein supplements, impairment in social functioning, excessive and compulsive exercise, muscle dysphoria, and shame (Grammas & Schwartz, 2009; Hildebrandt et al., 2010; Kaminski et al., 2005). Taken together, these findings imply that BI dissatisfaction is associated with a range of detrimental effects for men and are deserving of intervention.

Body Image Dissatisfaction and BMI

The Body Mass Index (BMI) provides the most useful population-level measure of weight and health, mainly because of its reliability, ease of use, high correlation with fat mass, and the associated increased risk of morbidity and mortality with a higher BMI (Bellizzi & Dietz, 1999; World Health Organisation, March 2013). It is calculated by dividing weight in kilograms by height in meters squared. Normal range is defined as BMI between 18.50 and 24.99; underweight is defined as BMI under 18.50 with under 16 being severely

underweight; overweight is defined as a BMI between 25 and 29.8; obesity is defined as a BMI of 30 and above; and morbid obesity is defined as a BMI of 40 and above (Lang & Froelicher, 2006; WHO, March 2013). Individuals with higher BMI tend to exhibit higher levels of BI dissatisfaction (Neighbors & Sobal, 2007). BMI is one of the strongest predictors of BI dissatisfaction among middle-aged women (Slevec & Tiggemann, 2011), and is also one of the strongest predictors of BI dissatisfaction in general (Neighbors & Sobal, 2007). Furthermore, research has found that slender women (BMI = 14.5-22.40) tend to be the most satisfied with their BI; whereas, underweight and obese men tend to be the least satisfied with their appearance (Federick et al., 2006). Therefore, BMI is an important factor in understanding and measuring BI dissatisfaction and disturbance.

Body Image Dissatisfaction and Perfectionism

Perfectionism refers to a multidimensional construct comprising a trait component and a self-presentation component (McGee et al., 2005). Perfectionism is expressed individually as the need to be perfect and interpersonally as the need to appear perfect to others (McGee et al., 2005). The multidimensional model of perfectionism is comprised of three facets; perfectionistic self-promotion (PSP); nondisclosure of imperfection (NDC); and nondisplay of imperfection (NDP). Perfectionistic self-promotion is considered to be the act of promoting strengths, successes and achievement to other people (McGee et al., 2005). Non-display of imperfection relates to avoidance of any behavioural expression of imperfection, (McGee et al., 2005) whilst nondisclosure of imperfection relates to individuals struggling to verbally disclose or acknowledge imperfection and shortcomings (McGee, et al., 2005).

Perfectionism has been identified as associated with many forms of psychological distress, including BI dissatisfaction and disturbance (McGee, et al., 2005; Sherry et al., 2009). For example, a study by McGee and colleagues (2005) examined the relationship between self-presentation of perfectionism, BI, and ED symptoms in a 145 university

undergraduate female participants. Results indicated that dimensions of perfectionistic self-presentation and BI investment and evaluation predict symptoms of EDs and BI dissatisfaction. Interestingly, the study also revealed that higher levels of self-presentation perfectionism predicted higher levels of eating disturbance only for women that displayed BI dissatisfaction. In another study, Sherry and colleagues (2009) found that dysfunctional appearance schemas mediated the relationship between nondisplay of imperfection and BI disturbance. These collections of findings imply the importance of perfectionism dimensions in predicting the experience of eating disordered symptoms and BI dissatisfaction. It also indicates that negative beliefs about appearance mediate the relationship between nondisplay of imperfection and BI disturbance.

In addition, past literature has established that trait perfectionism (that is, enduring patterns, attitudes, etc.) in individuals is likely to result in greater experience of BI dissatisfaction (Sherry et al., 2009). However, socially prescribed perfectionism may have a stronger link to BI disturbance than that of self-orientated or trait perfectionism (Sherry et al., 2009). For example, Grammas and Schwartz's study of 202 men (2009) found that socially prescribed perfectionism predicted muscularity (level of satisfaction with muscularity) and low body fat. However, no significant prediction of height dissatisfaction was detected. Internalisation of cultural messages was also found to be predictor of low body fat. Individuals with socially prescribed perfectionism are thus more likely to strive to achieve a societal standard of perfection, which motivates their behaviour, rather than strive to meet their own high standards and expectations regarding their appearance (Sherry et al., 2009). In summary, it appears that several factors contribute to BI dissatisfaction: (i) a lack of acceptance of imperfection; (ii) inability to display imperfections even if minor; and (iii) a sensitivity and concern over the scrutiny, criticism, and opinion of others all contribute to BI dissatisfaction (Grammas & Schwartz, 2009; Sherry et al., 2009).

BI dissatisfaction is related to perfectionism in a number of ways. Research has indicated that various dimensions of perfectionism are related to BI dissatisfaction, most notably self-presentation perfectionism and socially prescribed perfectionism. Thus, it seems appropriate to include perfectionism in any study of BI dissatisfaction to better understand the relationship between these variables. Perfectionism has also been linked to the development of EDs and requires further investigation (McGee et al., 2005).

Body Image Dissatisfaction and Disordered Eating and Eating Disorders

A significant causal link has been established between BI dissatisfaction and the development of eating disturbances including disordered eating and EDs (Levine & Piran, 2004; Nicolino, Martz & Curtin, 2001). BI dissatisfaction is strongly related to disordered eating among females across the age range at the non-clinical, sub-clinical, and clinical levels (Levesque & Vichesky, 2006; Slevec & Tiggemann, 2011). For example, for middle-aged women, the main factor associated with disordered eating is BI dissatisfaction (Slevec & Tiggemann, 2011). BI dissatisfaction and self-perception of failing to meet the thin ideal or culturally endorsed beauty ideal can lead to disordered eating which encompasses several problematic eating patterns, ranging from dieting to extreme weight control methods (e.g., crash dieting, severe restriction, binge eating, purging) and to clinically diagnosable EDs (e.g., Anorexia Nervosa, Bulimia Nervosa, and Binge Eating Disorder; Slevec & Tiggemann, 2011; Yamamiya, Cash, Melnyk, Posavar, & Posacac, 2005). The rise in EDs has also been observed in men, with BI dissatisfaction associated with increased rates of EDs, muscle dysphoria, and steroid abuse (Adams et al., 2005; Grammas & Schwartz, 2009). Such weight control methods are dangerous and costly in terms of public health but also the individuals' health.

Research has consistently yielded results suggesting that dieting, BI dissatisfaction, and disordered eating is well established among male and females university students

(Ackard, Croll, & Kearney-Cooke, 2002; Levesque & Vichesky, 2006; Nicolino et al., 2001; Paxton, 2002; Slevec & Tiggemann, 2011; Wade, George & Atkinson, 2009; Yager & O'Dea, 2008). Ackard and colleagues (2002) reported that up to 94% of female university students had a strong desire to lose weight and that up to 91% engage in dieting behaviour. Higher dieting frequency is associated with greater severity of disordered eating and symptoms of EDs as well as emotional distress and BI dissatisfaction (Ackard et al., 2002). In addition, individuals with BI dissatisfaction are more likely to report binge eating and also ruminate regarding eating and body weight and shape (Gordon, Holm-Denoma, Troop-Gordon & Sand, 2012).

Research that has examined the role of brooding (rumination), experiential avoidance, and mindfulness in relation to BI dissatisfaction and disordered eating has found that combined rumination and BI dissatisfaction predict concurrent binge eating behaviour in university students (Gordon et al., 2012). Research has also found that rumination about eating, weight and shape, experiential avoidance, and low mindfulness were associated with more eating disordered symptoms in a healthy sample (Cowdrey & Park, 2012). Furthermore, research into EDs has contributed to the understanding that individuals who struggle with emotion regulation are at a risk of developing an disordered eating or EDs, as emotion difficulties frequently contribute to disordered eating behaviours (Lavender et al., 2009). Avoidance of emotional states by binge eating and purging for example, may be related to greater experiential avoidance of thoughts, feelings, and physical sensations (Lavender et al., 2009). The opposite of rumination and avoidance is the cultivation of mindfulness, that is, present moment awareness of internal experiences, without judgement and with acceptance (Baer, 2003; Bishop et al., 2004; Cowdrey & Park, 2012). It is evident that BI dissatisfaction is frequently associated with rumination, rigid and inflexible thoughts, and experiential

avoidance, indicating that mindfulness may be a beneficial avenue to explore in improving BI dissatisfaction and with disordered eating.

In summary, BI dissatisfaction and disturbance have been linked to poorer psychological and serious health outcomes including depression, anxiety, low self-esteem, excessive use of exercise, perfectionism, higher BMI, many forms of disordered eating, and the development of EDs (Jarry & Barardi, 2004; Levine & Piran, 2004; Nicolino et al., 2001; Stice, & Bearman, 2001; Stice et al., 2000). Given that negative BI is a risk factor for developing disordered eating or an ED, the need to address BI dissatisfaction is paramount. Disordered eating and EDs are costly, both to the individual's health (physical and psychological) but also to the public health system. In addition, the eating related difficulties can become a substantial disease burden on the community and without treatment can pose significant long-term problems (Paxton, 2002). Identifying effective interventions for BI dissatisfaction and disturbance is therefore imperative and makes the need for appropriate interventions even more warranted.

Mindfulness, Cognitive Fusion, and Self-Compassion: Understanding an Individuals' Relationship to Self, Thoughts, and Feelings

Researchers of BI dissatisfaction have argued that BI dissatisfaction is associated with rigid, negative, and automatic thoughts about appearance including shape, size, and weight (Lavender et al., 2012; Pearson et al., 2012; Stewart, 2004). These types of thoughts are often associated with the self-defeating behaviours that reinforce BI disturbance such as body avoidance and body checking. In order to better understand how the rigid, negative and automatic thoughts associated with BI dissatisfaction can be addressed, it is important to firstly understand how individuals relate to their experiences; that is, the type of relationship they have with themselves, their thoughts, and their feelings. Therefore, the sections below

provide a synthesis of research pertaining to concepts such as mindfulness, cognitive fusion, and self-compassion.

Mindfulness

In recent years, there has been a substantial surge in the interest and use of mindfulness in research and clinical practice (Sobczak & West, 2011; Baer, 2003). The term mindfulness comes from the Pali word ‘sati’, meaning to remember, be aware, and pay attention (Kabat-Zinn, 1994). The pioneer of mindfulness in the Western world, Jon Kabat-Zinn, defines mindfulness as “the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgementally to the unfolding experience moment to moment” (1994, pg. 3). Mindfulness is the ability to focus awareness and attention purposefully to the current experience and observe moment-to-moment experiences with curiosity, openness, and acceptance, including all thoughts, feelings, and sensations (Alberts & Raes, 2012; Baer, 2003; Bishop et al., 2004). This is the opposite of trying to control experiences or in some way avoid or get rid of unpleasant experiences, including negative thoughts, physical discomfort, and intense or difficult emotions (Alberts & Raes, 2012; Baer, 2003; Bishop et al., 2004; Chadwick, et al., 2005).

From a mindfulness perspective, distress is caused by the *reaction* one has to their experience, rather than the experience itself (Abba, et al., 2008; Brown & Ryan, 2003). Thus, the aim of mindfulness practice is not to reduce or eliminate thoughts and emotions or their intensity, but to alter the relationship an individual has with any difficult thoughts or emotions and associated distress (Abba et al., 2008). It is argued that by enhancing the ability to be ‘mindful’, an individual becomes more aware of a full range of experiences including sensory experiences, thoughts, feelings, imagery, urges, and impulses from a non-judgemental perspective (Baer, 2003; Bishop et al., 2004; Chadwick et al., 2005; Didonna, 2009).

Mindfulness skills can be developed and enhanced by mindfulness and meditation exercises (Baer, 2003; Chambers, Gullone, & Allen, 2009). Some of these exercises focus on the internal experiences occurring in the moment, while others develop from a focus on the aspects of external experiences occurring in the moment (Baer, 2003; Chambers et al., 2009). For example, an exercise may require an individual to focus on their breathing and internal sensations that come up, whereas, from an external focus, a mindfulness exercise may require an individual to focus on an object or one of their five senses. Acceptance is a particularly important aspect of mindfulness practice, which is considered to be the notion of accepting things are they, not as one believes they 'should' be (Kabat-Zinn, 1994).

A common human experience is that all individuals have particular 'habits' in the way in which they think, feel, and respond to things (Kabat-Zinn, 1994; Williams, Teasdale, Segal, & Kabat-Zinn, 2007; Chambers et al., 2009). The act of ignoring or avoiding the present moment leads to a habitual pattern of tuning out important information and preferring alternative moments such as the past or anticipating the moments of the future (Kabat-Zinn, 1994). A lack of awareness of the present moment and moment-to-moment experiences leads to limited understanding of how the mind work and what influences an individual's thoughts, feelings, perceptions, and behaviours; that is, habitual ways of thinking, feeling, and responding to things (Chambers et al., 2009; Kabat-Zinn, 1994).

A number of benefits of mindfulness have been identified. Different forms of mindfulness practice have demonstrated varied beneficial outcomes and tend to stimulate different parts of the brain (e.g., mindfulness meditations versus mantra meditation; Sobczak & West, 2011). Some of the established benefits of mindfulness include emotional regulation (Chambers et al., 2009; Corcoran, Farb, Anderson & Segal, 2010; Davis & Hayes, 2011), greater emotional intelligence (Walsh & Shapiro, 2006), a more positive relationship to the self and others with kindness, acceptance, and compassion (Neff, 2003; Fulton, 2005;

Wallace, 2001), equanimity (Morgan & Morgan, 2005), and improved concentration (Chambers et al., 2009; Young, 1997). Other benefits associated with mindfulness practice include decreased reactivity and improved response flexibility, increased empathy, improved interpersonal relationships, and decreased stress, anxiety, and rumination (Davis & Hayes, 2011; Keng, Smoski, & Robins, 2011; Sobczak & West, 2011; Stewart, 2004). In addition, mindfulness has been found to moderate the relationship between depression and self-esteem (Michalak, Teismann, Heidenreich, Strohle & Vocks, 2011). That is, mindfulness may buffer the detrimental effect of low self-esteem on depression. In addition, research has also found that a positive by-product of mindfulness practice is the change in thought patterns and attitudes about thoughts; that is, the relationship an individual has to their thoughts (Baer, 2003). Kabat-Zinn (2003) posited that mindfulness practice leads to the realisation that thoughts are “just thoughts” rather than reality or absolute truth and that these thoughts do not require a behavioural response or an attempt at escaping.

Mindfulness practice promotes awareness of cognitions and cognitive patterns, decreased rumination via the process of disentangling from thoughts and enhances attention processes, all of which lead to enhanced regulation and understanding of emotional experiences (Chambers et al., 2009; Davis & Hayes, 2011). Hughes and Gullone (2011) found that in adolescents, emotion regulation played a significant role in levels of body dissatisfaction, as well as disordered eating symptoms and depression and anxiety. Emotion regulation is purported to be the process by which an individual processes information and experiences triggered by emotion. Difficulties with emotion regulation have long been implicated in most of the psychological disorders (Chambers et al., 2009; Gross & Levenson, 1997). Difficulties with emotion regulation has also been linked with the development and maintenance of EDs (Lavender et al., 2009). It is clear that mindfulness skills training holds

promise as an intervention, particularly with assisting individuals with emotional regulation, which may in turn lead to improvement in BI dissatisfaction.

Linehan (1993) also argues that mindfulness practice and in particular mindfulness of emotions works as a form of exposure therapy for individuals that may struggle with managing their difficult emotions or have an aversion to unpleasant emotions. Specifically, awareness and willingness to have the emotion leads to exposure to these emotions over time, reduces the aversion to the emotion, and therefore acceptance and tolerance of the emotion. Baer (2003) concurs, arguing that mindfulness acts as exposure and desensitization particularly to things such as pain. The practice of sustained non-judgemental observation of sensations without attempts to escape or avoid these sensations leads to a reduced reactivity to the stimuli (e.g., the sensation). With mindfulness, individuals are assisted in increasing their tolerance of negative and unpleasant states and provided with skills to cope effectively when these occur (Baer, 2003).

Mindfulness Based Interventions

Use of mindfulness-based techniques and interventions for general wellbeing, personal growth, and psychological disorders has increased in recent years. In particular, interventions including Mindfulness-Based Stress Reduction (MBSR) and Mindfulness Based Cognitive Therapy (MBCT) have been found to improve Depression, Anxiety, and Chronic Pain (Chambers et al., 2009; Baer, 2003; Segal et al., 2002). In addition, Dialectical Behaviour Therapy (DBT) developed by Linehan (1993) - which includes a module of mindfulness practice - has shown to be effective with treating the symptoms of Borderline Personality Disorder and Eating Disorders (Altieri, 2011; Baer, 2003; Baer et al., 2005; Kristeller, Baer, & Quillian-Wolever, 2006; Kristeller & Hallett, 1999). Another intervention that incorporates a large mindfulness component is Acceptance and Commitment Therapy (ACT), which has shown effectiveness in improving Depression, Anxiety disorders,

Borderline Personality disorder, and a range of other psychological issues (Pearson et al., 2012). Incorporation of mindfulness principles has also been utilised in the treatment of Substance Use Disorders, Psychosis, Eating Disorders, Anger Management problems, and general psychological wellbeing, and has consistently showed positive results (Abba et al., 2008; Baer, 2003; Chambers et al., 2009; Chadwick et al., 2005; Chadwick et al., 2009; Kristeller et al., 2006; Kristeller & Hallett, 1999; Marlatt & Gordon, 1985; Veehof, Oska, Schreurs, & Bohlmeijer, 2011; Wright, Day, & Howells, 2009). Clearly, mindfulness interventions have an important place in psychological research and practice, and further may offer significant advances in the amelioration of psychological disorders and difficulties, including BI dissatisfaction.

Kabat-Zin (2003) argues that mindfulness should not be treated as a cognitive or behavioural strategy to get rid of difficulties present. He emphasises the importance of understanding the uniqueness of mindfulness practice and its meditative nature. It is further argued that mindfulness practice is not about fixing ‘problems’ or focusing on change or the outcome, but rather opening up to the experience, which at times can result in becoming aware of rumination, distortions of thoughts, habitual ways of thinking, and behaving. Generally, symptom reduction is also considered to be a by-product of mindfulness; however, it is not the intention. It is important to emphasise that mindfulness differs to CBT in that mindfulness does not include an evaluation of thoughts or systemic attempts to change thoughts judged to be distorted or irrational (Baer, 2003). CBT interventions also have clear goals of change, whereas mindfulness does not (Baer, 2003).

Cognitive Fusion

Recent research has examined the effect of cognitive fusion on the experience of emotion, distress, or psychological responses. Cognitive fusion can be defined as the

entanglement with thoughts; that is, high believability in the thought as the truth or command that needs to be obeyed or a rule that needs to be followed (Harris, 2009; Trindale & Ferreira, 2014). Frequently, individuals focus on the content of the mind, the content of thoughts, and behave based on this content. This “fusing” with thoughts is highly related to mindfulness and can be interpreted as the opposite to being “mindful”. It has been argued that it is not the thought or content of the thought that is the problem, but rather the relationship or reaction that occurs in relation to the thought such as fusion and then avoidance of the thought that leads to difficulties (Hayes, Strosahl, & Wilson, 1999; Trindale & Ferreira, 2014). Many interventions have been designed to break up this “fusion” that can occur with thoughts. One such intervention is the use of mindfulness practice as well as cognitive restructuring of thoughts. Cognitive defusion, however, has traditionally been conceptualised as the change in the literal meaning of language and cognition so that there is less of the fusion or entanglement with particular thoughts. Cognitive defusion originates from cognitive distancing, which consists of the ability to view and detect thoughts as cognitive phenomena, but not have to fuse or react to the thought (Luoma & Hayes, in press; Trindale & Ferreira, 2014). The first step in cognitive defusion is the ability to cognitive distance, which is closely related to the practice of mindfulness and the use of metacognitive strategies (Luoma & Hayes, in press; Segal et al., 2002; Wells, 2000). Cognitive defusion is a significant component of ACT, but can also be utilised separately from ACT as an important supplement to a number of other therapy approaches and techniques. It is particularly well suited to experiential approaches such as behavioural activation, acceptance, and mindfulness (Luoma & Hayes, in press). Cognitive defusion can be applied to any individual who finds it difficult to defuse from thoughts and where symptoms are exacerbated by the entanglement with cognitive events (Luoma & Hayes, in press). Research into cognitive defusion is limited and studies that have investigated the effectiveness of cognitive defusion have been mixed. For

example, one of the earliest studies into cognitive defusion found that the strategy resulted in both a decrease in the discomfort experienced and the believability in the thoughts investigated (Masuda, Hayes, Sackett, & Twohig, 2004). On the other hand, Healy and colleagues (2008) reported that defusion in the context of positive and negative self-statements in a non-clinical sample resulted in a decrease in the discomfort experienced with negative self-statements, but did not result in the reduction of believability in the statements. When compared to other strategies such as thought suppression and control, cognitive defusion has shown to be equally effective with thought suppression in reducing arousal associated with negative emotional states (Pilecki & McKay, 2012).

Research into the utility of cognitive defusion in reducing the distress frequently associated with negative thoughts about appearance, shape, weight, and muscularity remains limited. Only one study to date has examined the role of BI cognitive fusion. A study by Trindale and Ferreira (2014) found that BI related cognitive fusion was positively related to broad cognitive fusion and not being conscious of the present moment. In addition, greater cognitive fusion regarding BI was associated with greater BI dissatisfaction and disordered eating severity. No research to date has examined how cognitive defusion techniques in addition to mindfulness may promote BI satisfaction and acceptance, and a more functional relationship with BI related thoughts. Given the impact that distress associated with negative BI thoughts may have on individuals, it is plausible that cognitive defusion techniques may provide an avenue for changing how individuals relate to their thoughts and for reducing distress associated with these thoughts. Therefore, further investigation of the utility of cognitive defusion in BI dissatisfaction is warranted.

Self-Compassion

The concept of self-compassion is an equally relevant concept to mindfulness and cognitive defusion. Links have been made between mindfulness and the subsequent development of empathy and self-compassion (Birnie, Speca, & Carlson, 2010; Hollis-Walker & Colosimo, 2011). Neff (2003) defines self-compassion as the practice of feeling compassion extended toward the self, particularly during times of pain and suffering. Part of this extension of compassion toward the self involves the understanding that pain and suffering are part of the human condition (Birnie et al., 2010). Self-compassion primarily begins with the understanding of compassion: compassion is understood as being affected by someone's suffering and extending kindness, compassion, and understanding toward that person (Neff, 2003). Specifically, Neff (2003) describes three important components to self-compassion: (i) extending self-kindness versus self-judgement; (ii) understanding experiences from the perspective of common humanity versus isolation; and (iii) awareness of thoughts and feelings (mindfulness) versus over-identification/fusion with internal experiences.

Self-compassion activates the self-soothing system rather than the threat system in the body, leading to enhanced wellbeing, greater emotion regulation, successful coping with the environment and greater capacity for intimacy (Neff, Kirkpatrick, & Rude, 2007). In particular, self-compassion has been inversely associated with less depression, anxiety, rumination, thought suppression, and perfectionism (Neff et al., 2007). Researchers also argue that self-compassion differs significantly from self-esteem such that it is not based on comparison but rather an understanding that humans are fallible and make mistakes (Neff, 2003; Neff et al., 2007). At its extreme, positive self-esteem can lead to narcissism, prejudice, distorted self-perceptions, and possible violence when the ego is threatened (Neff et al., 2007), making the pursuit of high self-esteem undesirable and unnecessary. Other research has found that individuals high in self-compassion tend to rely more on positive coping

strategies such as cognitive restructuring, problem-solving and less avoidance and escape driven coping strategies (Allen & Leary, 2010). Moreover, individuals who demonstrate high levels of mindfulness also tend to demonstrate higher self-compassion, psychological wellbeing and tend to be better placed to manage day-to-day problems (Hollis-Walker & Colosimo, 2011).

In addition to identifying the positive outcomes related to self-compassion, research has also examined the relationship between self-compassion and body dissatisfaction. Self-compassion had previously been linked to women's BI and eating attitudes, indicating that more self-compassion was associated with better BI satisfaction and eating attitudes, when controlling for self-esteem (Wasylikiw et al., 2012). According to Ferreira and colleagues (2013), self-compassion has been found as an important factor in eating pathology and body dissatisfaction, as an antidote to shame and self-judgement. It is suggested that self-compassion may serve as a buffer to negative BI experiences and promote a compassionate attitude toward the self, increase the sense of shared humanity and shared experiences, protecting women's self-worth and social acceptance. Further, self-compassion was found to be related to lower BI dissatisfaction and lower engagement in disordered eating behaviours.

Strong links between self-compassion and mindfulness have been suggested (Hollis-Walker & Colosimo, 2011); however, despite this hypothesis, there are notable difference between self-compassion and mindfulness. Self-compassion differs to mindfulness in that it relates to suffering and involves urges to act on feelings of care and kindness toward the self (Birnie et al., 2010). Mindfulness, on the other hand, involves the awareness of all internal experiences, not limited to suffering (Birnie et al., 2010). In addition, a note of caution has been reported by those researching self-compassion, arguing that self-compassion may not be useful at all times (Neff, 2003).

Body Image and Mindfulness: Relevance of Mindfulness, Cognitive Fusion, and Self-Compassion to Body Image Dissatisfaction

There is growing interest into the relationship between BI dissatisfaction and mindfulness. Awareness and experience of the body are essential to the development of the self (Cash & Pruzinsky, 2002). Given the relationship between mindfulness and self-awareness, its potential role in facilitating positive self-awareness is high. The corollary is that mindfulness may prove an effective intervention for individuals with a negative view of self and high levels of BI dissatisfaction. As outlined in the paragraphs above, BI dissatisfaction has been associated with the development of rigid, negative, and automatic thoughts about appearance including shape, size, and weight (Lavender et al., 2012). These types of thoughts are often associated with the self-defeating behaviours that reinforce BI disturbance such as body avoidance and body checking. Fusion with rigid, negative and automatic thoughts and engaging in self-defeating behaviours can be understood as a state of 'mindlessness' given the inflexibility of thought patterns, emotions, and rule-governed behaviours (Lavender et al., 2012). As a result, negative BI-related thoughts and behaviours are thought to contribute to more BI dissatisfaction (Fink et al., 2009). In contrast, mindfulness is associated with greater flexibility in thought patterns, emotions, and behaviours, leading to lower BI dissatisfaction (Lavender et al., 2012). The ability to be mindful is accomplished through a non-judgemental and accepting relationship with internal experiences and being attentive, aware, and accepting of experiences in the present moment, whether pleasant or unpleasant (Brown & Ryan, 2003). Therefore, an individual who is able to cultivate mindfulness is less likely to be attached to inflexible and rigid thoughts and behaviours related to the body or appearance.

Although research into the relationship between mindfulness and BI dissatisfaction is currently in its infancy, extant research has established a link between awareness of the

present moment and components of BI dissatisfaction. For example, Lavender and colleagues (2012) examined the associations between mindfulness (i.e., awareness of the present moment) and appearance evaluation, satisfaction with body areas, and drive for muscularity in 296 undergraduate men. Mindfulness was inversely correlated with drive for muscularity, and positively correlated with appearance evaluation and body areas satisfaction, after accounting for BMI and negative affect. Therefore, men who displayed higher levels of mindfulness also displayed higher levels of BI satisfaction and less behaviour related to the pursuit of a muscular body such as consuming higher calories, lifting weights, and desiring more muscle definition. Similarly, Dijkstra and Barelds (2011) examined body comparison as a potential mediator in the relationship between mindfulness and body satisfaction in 1 287 women aged 19 to 80 years. Significant positive relationships between mindfulness, body satisfaction and body comparison were identified. A positive relationship between mindfulness and body satisfaction was also found; women displaying higher levels of mindfulness found to be displaying higher levels of body satisfaction. Moreover, women who were more mindful engaged in less body comparisons than their less mindful counterparts. Mindfulness was also found to be a mediator in the relationship between body satisfaction and body comparison. Given the complex relationship between these variables, the authors suggested that mindfulness and body comparison appeared to have both a direct and indirect relationship with body satisfaction. Other research examining the relationship between mindfulness and various aspects of body satisfaction (including sexual body esteem) in women have found that non-reactivity to triggers, more mindful awareness and attention, non-judgemental acceptance, and mindful descriptions of experience were associated with more body satisfaction and more sexual body esteem (Dekeyser, Raes, Lejissen, Leysen, & Dewulf, 2008; Fink et al., 2009). Research has also examined the role mindfulness plays in disordered eating behaviours and thoughts, which have been linked to BI dissatisfaction.

Several explanations have been offered for the relevance of mindfulness to BI. Specifically, the practice of non-judgement, a core component of mindfulness is also highly relevant to the experience of BI. Lower BI dissatisfaction is likely to occur if one experiences less judgement regarding their appearance (Dijkstra & Barelds, 2011). The practice of non-judgement also reduces the judgemental comparison of oneself against societal ideals that are impossible to uphold. Distress regarding certain weight and shape related thoughts only occur when judgement is attached to these thoughts or when these thoughts are strongly endorsed by the individual (Masuda & Wendell, 2010). Mindfulness and acceptance based strategies and techniques assist individuals in developing a different relationship with their thoughts and their emotions in that they react to their emotions and thoughts with less criticism, judgement, and ultimately less distress/emotional reactivity (Sobczak & West, 2011). Defusion from thoughts is also likely to occur through practicing mindfulness, resulting in greater objectivity with regard to thoughts. During mindfulness practice and as a result of mindfulness practice individuals are able to cultivate a sense of acceptance which leads to an acknowledgement of internal experiences without attempting to suppress, control, or avoid the experiences, whether pleasant or unpleasant (Sobczak & West, 2011).

These points are also sustained by Stewart (2004) who argues that it is practical to utilise mindfulness in BI dissatisfaction intervention and has offered a number of relevant points described below:

1. Mindfulness practice helps to develop an “inner life” by teaching individuals how to observe internal experiences and develop a curiosity about their external and internal world (e.g., thoughts, feelings, and bodily sensations) all the while remaining non-judgemental. Over time, this may lead to developing a new source of meaning that replaces the sense of purpose that may come with the pursuit of a better body, attractiveness, or meeting societal ideals.

2. Mindfulness is the tool that helps shift attention and focus away from the external world and appearance of the body, to the internal world of experience, compelling individuals to be present in their body more frequently.
3. Awareness of cognitive habits and cognitive distortions is enhanced via mindfulness, allowing a more thorough processing of information without the cognitive bias, expectations, or influence of schemas related to BI dissatisfaction. This awareness fosters both the recognition of conditioned ways of thinking and responding, as well as the opportunity to make more conscious choices regarding thoughts, feelings, and actions.
4. Mindfulness helps individuals to slow down, observe, and sit with discomfort, difficult feelings and thoughts, and decrease “fusion” with thoughts and feelings. By creating a different relationship with thoughts and feelings, unhelpful and avoidance behaviours can be decreased, and better coping strategies can be developed to deal with a negative BI or distress associated with BI dissatisfaction.
5. Through mindfulness, the development of compassion and acceptance toward the self is cultivated; therefore, reducing the frequency of judgmental, destructive and ruminative thoughts about the self and appearance. Ultimately, through mindfulness practice, an individual may evolve from a judgmental stance to a stance of acceptance regarding the whole person and the associated BI.

Mindfulness shows promise in improving BI dissatisfaction and disturbance with many facets of mindfulness related to BI dissatisfaction and disturbance. It is therefore deserving of further investigation. Current research has established preliminary results suggesting that BI dissatisfaction tends to be higher in individuals that display lower levels of mindfulness (attention and awareness). Therefore, it seems important to investigate the effect that increased mindfulness practice (via intervention) may have on BI dissatisfaction and

disturbance. In addition to mindfulness, results from the self-compassion research reviewed earlier suggests that self-compassion may be effective as a strategy in improving the relationship an individual has toward themselves, their thoughts, and their feelings. Self-compassion may be effective by enhancing the use of mindfulness and cognitive defusion skills, improving wellbeing, and reducing distress associated with negative thoughts and feelings. To date, no research has examined the process of cognitive defusion in improving BI dissatisfaction and the distress associated with negative BI related thoughts. Further research into the usefulness of this strategy with BI dissatisfied individuals is warranted.

Overview of Stand Alone Body Image Interventions

BI interventions have largely been embedded within larger eating disorder interventions, making the evaluation of effectiveness for stand-alone interventions difficult (Jarry & Ip, 2005). Research investigating stand-alone interventions for BI dissatisfaction has primarily investigated interventions based on cognitive-behavioural principles (Jarry & Berardi, 2004). Stand-alone CBT interventions have shown to be highly effective in improving the attitudinal components (thoughts, feelings, behaviours, schemas, and importance placed on BI), and the behavioural components of BI in non-clinical populations (Jarry & Berardi, 2004). Other approaches have also been tested, with promising results, including ACT (Pearson et al., 2012); cognitive dissonance approaches (Luethcke, McDaniel & Becker, 2011; Wade et al., 2009); mirror exposure (Delinsky & Wilson, 2010; Farrell et al., 2006; Hildebrandt, Loeb, Troupe, & Delinsky, 2012; Jansen, Bollen, Tuschen-Caffier, Roefs, Tanghe, & Braet, 2008; Moreno-Dominguez, Rodriguez-Ruiz, Fernandez-Santaella, Jansen, & Tuschen-Caffier, 2012; Trentowska, Bender, & Tuschen-Caffier, 2013); reflective therapy; exercise therapy; and emotionally focused therapies (Jarry & Berardi, 2004). A meta-analysis by Elliot, Greenberg, and Leitaer (2004) reviewed 67 outcome studies published since 1990, concluding therapies based on experiential principles to be highly effective. However, BI

interventions focused on increasing experiential awareness are limited (Robinor & Bilich, 2002). Increasing diversity in empirically tested interventions for BI dissatisfaction and disturbance is important, as CBT may not fit every client or therapist style (Jarry & Berardi, 2004). In particular, research into the effectiveness of mindfulness and acceptance based interventions for BI dissatisfaction and disturbance requires further investigation.

The following sections review interventions aimed at improving BI satisfaction and acceptance. Firstly, research on CBT interventions for BI dissatisfaction is discussed, followed by a review of mindfulness and acceptance based approaches. Secondly, research into interventions for men with BI dissatisfaction and disturbance is reviewed. The following two sections include directions for future research as well as an overall conclusion of the literature review.

Body Image Interventions: Cognitive Behaviour Therapy

CBT has evolved to be the treatment of choice for BI dissatisfaction and it is the most extensively investigated treatment. CBT is a multi-dimensional treatment based on the assumption that dysfunctional thoughts, feelings, and behaviours are learned; therefore, they can be unlearned and replaced to become more adaptive (Cash & Strachan, 2004; Jarry & Berardi, 2004). It is considered to be an empirically supported intervention for BI dissatisfaction (Cash & Strachan, Jarry & Berardi, 2004; Jarry & Ip, 2005). CBT has been effective in treating a number of disorders, including but not limited to depression, anxiety related disorders, and eating disorders (Baer, 2003; Butler, Chapman, Forman, & Beck, 2006). Cash, Thompson, and Rosen are the leading researchers in the field of interventions for BI dissatisfaction. Generally, interventions investigated in the literature are modified versions of a handful of programs. Thomas Cash's *Body Image Workbook* is one of the most widely researched programs for BI dissatisfaction, but has also been periodically revised. Therefore, comparison between interventions is at times difficult due to these modifications.

The majority of current, stand-alone interventions for BI issues incorporate the principles of CBT. CBT interventions for BI dissatisfaction interventions traditionally include psycho-education, self-monitoring, exposure to reduce avoidance and checking behaviours (via behavioural experiments and hierarchies), response prevention, desensitisation, size estimation training (providing individuals with feedback on the accuracy of their size estimations in order to correct estimations), assertiveness and problem-solving, and cognitive restructuring to change dysfunctional and distorted beliefs and cognitions about BI (Jarry & Ip, 2005; Jarry & Berardi, 2004; Ferrell, et al., 2006). The current body of research has revealed CBT to be effective in improving not only BI dissatisfaction, but also related psychological variables (depression, anxiety, self-esteem), and eating attitudes and behaviours (Cash & Strachan, 2002; Jarry & Berardi, 2004).

A substantial amount of research has evaluated the effectiveness of the CBT approach to address BI dissatisfaction in the non-clinical population. While initially implemented in an individual format (Butter & Cash, 1987), interventions are now primarily facilitated in group formats. Many modified versions of the CBT program have been designed and tested with BI dissatisfied women. For example, Rosen, Saltzberg, and Srebnik (1989) evaluated the effectiveness of CBT in 23 normal weight women with negative BI and no history of eating disorders. Two treatment conditions were offered, one CBT and the other mirroring CBT but providing not structured exercises to challenge irrational thoughts, self-monitoring forms, or behavioural exposures. Compared to the minimal treatment condition, CBT was significantly more effective in improving all components of BI including improved size estimations, body dissatisfaction, and avoidance of certain behaviours. Other studies that have investigated both therapist-led and self-help CBT programs for improving BI dissatisfaction have consistently found that CBT improves body dissatisfaction, BI investment or overvalued importance related to appearance, and negative emotions associated with BI (Cash & Lavelle, 1995;

Dworkin & Kerr, 1987; Fisher & Thompson, 1994; Grant & Cash, 1995; Strachan and Cash, 2002). Evidently, CBT interventions also produce a number of other positive outcomes, including a reduction in avoidance behaviours, decrease in anxiety and depressive symptoms, improvement in self-esteem, and a reduction of disordered eating behaviours (Jarry & Berardi, 2004).

In addition to the more traditional CBT programs for BI dissatisfaction and disturbance, research has examined the effectiveness of brief CBT interventions in non-clinical samples. For example, a pilot case-series design study by Farrell and colleagues (2005) tested a brief CBT intervention for extreme shape concern in a small sample of five non-clinical women. The interventions incorporated mirror exposure, mindfulness, psycho-education about avoidance and checking behaviours, and video feedback to provide correct size estimations. The results showed that the intervention was successful in reducing anxiety, feelings of fatness, dissatisfaction with body, belief in identified negative thoughts, influence on self-evaluation and checking, and avoidance behaviours. Lewis and Devaraj (2010) investigated a six-week CBT intervention designed to promote positive BI among female University students. Results indicated that the intervention was successful in improving satisfaction with overall appearance, and specifically with weight, lower, mid and upper torso regions. There was no change in satisfaction within the control group. A further study by Nicolino and colleagues (2001) combined CBT treatments into a brief treatment for a non-clinical population of university women. The brief program was compared to an educational program for BI. The study consisted of a sample of 85 women. The brief intervention consisted of 2 hours of CBT, the results showed no reduction in BI anxiety, body shape concerns or fear of fat. The inference from this study is that the results for brief CBT interventions is mixed. While some studies show improvements in BI dissatisfaction, anxiety,

belief in negative thoughts, checking and avoidance behaviours, other studies have shown that brief interventions lead to no improvement in symptoms or distress.

Consistent with the positive outcomes of CBT reported in previous studies for BI issues (Strachan & Cash, 2002; Grant & Cash, 1995; Rosen et al., 1989), Rosen, Orosan, and Reiter (1995) found that obese individuals who received a modified version of Cash's CBT program improved more than individuals in the control group who did not receive treatment. Most notable were significant improvements in BI dissatisfaction, self-esteem, and improved eating patterns, with some participants expressing a sense of greater control over eating, less binge-eating, and less guilt and preoccupation with eating. In addition, these outcomes were maintained at follow-up for individuals in the CBT group.

In their literature review, Ferrell et al. (2006) suggest that whilst most studies indicate CBT to be effective in improving BI satisfaction, there is some inconsistency surrounding this result. For example, Fisher and Thompson (1994) compared CBT to exercise therapy and a no treatment control group and found no difference in the outcomes. That is, CBT was not superior to exercise therapy and the no treatment control group. Ferrell et al. (2006) also reported another study (Dworkin & Kerr, 1987) that showed reflective therapy was just as effective as the CBT in improving BI dissatisfaction. Although CBT based interventions has been shown to be effective in improving BI satisfaction, there is room for improvement.

A series of studies have evaluated the most effective elements of CBT interventions for BI dissatisfaction and disturbance. A meta-analysis of 19 stand-alone CBT interventions for BI dissatisfaction found consistent improvements in BI investment across all studies, irrespective of their specific methodology (Jarry & Ip, 2005). The weight of empirical evidence clearly demonstrates that current CBT interventions for BI investment are successful in challenging and modifying unhelpful assumptions that result from BI overinvestment. However, despite the improvements reported, many individuals remained invested in BI.

Jarry and Ip (2005) argue this to be due to most current interventions not targeting the fundamental motivation and deep-seeded idiosyncratic processes underlying overinvestment. Alternatively, these results may be due to not having enough time to change underlying motivations for overinvestment, as most interventions vary between three to 10 weeks. Other results emerging from the meta-analysis implied that the behavioural aspect of BI was the most improved across all interventions reviewed. Engaging in exposure and response prevention techniques was deemed highly effective in reducing distress associated with exposure to BI salient situations. Overall, interventions that address all three aspects of BI experiences (perceptual, attitudinal, and behavioural) are more effective in improving BI, compared to interventions that only focus on two of the aspects of BI. In addition, Jarry and Ip (2005) found that clinical groups generally benefited more than nonclinical groups and that therapist-assisted interventions were more effective than self-directed treatments. In addition to BI, psychological health variables also improved including eating attitudes, depression, anxiety, and self-esteem.

In summary, CBT interventions for BI dissatisfaction have been widely investigated. Research has consistently found that CBT is effective in improving BI dissatisfaction, BI investment, BI dysphoria, and psychological wellbeing factors (depression, anxiety, self-esteem) with the most success attributed to addressing attitudinal, behavioural, and perceptual components of BI disturbance. In addition, therapist-led group have shown to be most effective when compared to self-help or guided interventions. Holistically, evidence from the research is that CBT is effective in improving BI dissatisfaction. Notwithstanding this there is a notable absence of interventions that incorporate men, non-university students, or mixed gender groups. In addition, most notably no research to date has examined an additional component of mindfulness with CBT, despite the existence of such programs. Not every individual or therapist will respond to CBT as well as perhaps other interventions. For

example, some individuals may respond more to reflective interventions, emotion-focused interventions, or experiential interventions, focusing on the process of thoughts and feelings, instead of the content. Research has shown that therapies based on experiential approaches are effective, but have yet to be evaluated with improving BI dissatisfaction (Jarry & Berardi, 2004). Hence, the need for further research is clear.

Body Image Interventions: Mindfulness and Acceptance

Growing interest in the use of mindfulness and acceptance for BI dissatisfaction is evident in the current literature. Although no studies to date have evaluated the use of mindfulness for BI dissatisfaction, research has found that there is a significant inverse relationship between these two variables (Dekeyser et al., 2008; Dijkstra & Barelds, 2011; Fink et al., 2009; Lavender et al., 2012). Interventions for BI dissatisfaction have also incorporated elements of mindfulness practice, which will be reviewed below.

Mindfulness principles have primarily been applied to mirror exposure or behavioural exposure interventions for BI dissatisfaction. These interventions are based on the principles of exposure therapy (Luethcke et al., 2011), which stipulates that the conditioned relationship between the body and feelings of distress, anxiety, and disgust can be extinguished by the repeated exposure to the image of appearance/body in the mirrors (Luethcke et al., 2011). It is postulated that incorporating mirror exposure into BI interventions leads to enhanced outcomes for anxiety, avoidance behaviors, and BI dissatisfaction (Key et al., 2002). During mirror exposure, clients observe their bodies in a mirror and focus on different parts of their body non-critically and for equal amounts of time. For example, Luethcke et al. (2011) used mirror exposure to manage the anxiety of 168 females. The intervention consisted of three sessions featuring a comparison of cognitive dissonance, mindfulness, and acceptance principles applied to mirror exposure. It was found that all three approaches improved body checking, body avoidance, depression, shape and weight concern, and eating disorder

symptoms, with cognitive dissonance producing the strongest improvements for body satisfaction. Other research has found that pure mirror exposure was more effective than guided mirror exposure and reduced body discomfort and feelings of ugliness (Moreno-Dominguez et al., 2012). Similarly, Delinsky and Wilson (2006) evaluated the use of mindfulness with mirror exposure. Mindfulness-based mirror exposure was more effective in improving body checking, body avoidance weight and shape concerns, depression, and self-esteem compared to the control group that did not receive directions to engage in non-judgemental observations of what they saw in the mirror (Delinsky & Wilson, 2006).

Consistent with utilising exposure and mindfulness, a study by McMahan (2001) compared the effectiveness of mindfulness practice and combined exposure to 3D individuals' images to a psycho-educational BI program. Results from the study indicated that both interventions were equally effective in improving BI satisfaction, self-esteem, dieting behaviours, and eating concern. The combined results from the aforementioned studies imply that although mindfulness principles have shown to be as effective as other approaches, mindfulness has not been superior to other approaches in improving BI dissatisfaction. Despite this, further investigation into the utility and effectiveness of mindfulness approaches has been recommended to clarify the construct and validate its clinical applicability to BI dissatisfaction. It is evident that no research to date has investigated mindfulness plus CBT training in the context of BI, nor has mindfulness as a stand-alone intervention been investigated or compared to CBT.

Body Image Interventions: Treatment for Body Image Dissatisfaction in Men

Evaluation of interventions for BI dissatisfaction have primarily assessed efficacy for women. For men, no stand-alone BI interventions have been developed or evaluated to date. Mixed gender groups have also remained largely untested. Given the increasing prevalence of BI dissatisfaction among boys and men, it is essential that appropriate interventions are

developed and evaluated for this population. In addition, mixed gender groups could potentially offer an avenue for decreasing the prejudice or stereotype that only women experience BI dissatisfaction. Combining genders in mixed group interventions warrants further investigation.

Directions for Future Research

A number of questions remain unanswered in relation to BI dissatisfaction, and effective interventions, and the relationship between BI dissatisfaction, mindfulness and a range of other factors (psychological wellbeing, perfectionism, self-compassion, and eating behaviours). Extant research suggests that individuals who are able to distance themselves from negative and distressing cognitions are less likely to (i) act impulsively and engage in disordered eating behaviours; (ii) become distressed because of their thoughts; (iii) believe their distorted thoughts about food and body shape; and (iv) avoid certain situations and behaviours related to their bodies (Baer, 2003; Brown & Ryan, 2003; Davis & Hayes, 2011; Fink et al., 2009; Lavender et al., 2012; Stewart, 2004). Mindfulness may therefore be useful in helping individual defuse from negative cognitions, given the research evidence that mindfulness is effective in reducing reactivity to internal experiences, disentanglement from difficult thoughts, greater acceptance of emotions and self-compassion (Baer, 2003; Brown & Ryan, 2003; Davis & Hayes, 2011; Fink et al., 2009; Lavender et al., 2012; Stewart, 2004;). Therefore, questions arise about BI dissatisfied individuals and their relationship to themselves, their thoughts, and their feelings. Specifically, the field would benefit from investigating whether individuals with BI dissatisfaction are able to defuse from negative and distressing thoughts regarding their appearance, shape, and weight. In addition, understanding the relationship between mindfulness and BI dissatisfaction requires further investigation as well as the relationship between BI dissatisfaction and self-compassion. It is also important to

understand how the different components of BI dissatisfaction relate to mindfulness, cognitive defusion, and self-compassion.

In addition to the association between BI dissatisfaction and the individuals relationship to him/herself, their thoughts, and their feelings, questions arise about how a range of other factors relate to BI dissatisfaction, including depression, anxiety, stress, self-esteem, perfectionism, and eating behaviours. The relationships between all of these factors require further investigation as this may inform other factors that may need to be addressed in improving BI dissatisfaction. Moreover, it will enhance the understanding of the negative consequences associated with BI dissatisfaction.

Documented in the research are numerous BI interventions ranging in their theory, orientation, approaches, duration, and aims. BI dissatisfaction is pervasive across the lifespan and may affect individuals significantly even if they do not meet clinical criteria for an ED, BDD, depression, anxiety, or any other related clinical issues. Rising numbers of women and men are affected by BI dissatisfaction. However, interventions primarily target adolescent females or female university students. No research to date has evaluated interventions with men, non-university students, or mixed gender groups. Although CBT has long been the traditional choice of intervention for BI dissatisfaction, there is a paucity of research into other approaches such as mindfulness and acceptance, or CBT with an added component such as mindfulness. Consequently, questions arise about the effectiveness of CBT plus mindfulness, and mindfulness stand-alone interventions. Specifically, the field would benefit from future research investigating CBT and mindfulness interventions for BI dissatisfaction in both men and women. It is important to adequately address BI concerns in men and women given the adverse and long-term consequences that are associated with BI dissatisfaction such as the development of EDs, medical complications due to severe exercise or dieting habits,

low self-esteem, isolation, depression, anxiety, and overall more dysfunction psychologically, socially, and intimately.

Conclusions

BI dissatisfaction is a multidimensional construct referring to the discontent with appearance, shape, and weight in men and women. This discontent often arises due to a discrepancy between internalised ideals and what an individual perceives they look like (Cash, 2004; Cash & Szymanski, 1995; Hrabosky et al., 2009; Jarry & Barardi, 2004). In contrast, BI disturbance is defined as a negative body image, comprising BI dissatisfaction, negative emotions around BI, and psychosocial dysfunction as a result of BI dissatisfaction (Cash et al., 2004). Currently, BI is one of the highest area of concern for young females and males (Mission Australia Youth Survey, 2013). In addition, up to 30% and 50% of men and women, respectively, are reportedly dissatisfied with their appearance (Frederick et al., 2006). BI dissatisfaction is a source of significant distress for many in Western societies; without intervention, the prevalence of BI dissatisfaction and associated issues is likely to rise in the future. BI dissatisfaction is associated with depression, anxiety, perfectionism, and lower self-esteem (Strachan & Cash, 2002). In addition, BI dissatisfaction has also been linked with increased use of performance and muscle enhancing drugs, excessive and dangerous exercise, use of plastic and cosmetic surgeries, crash dieting, strict diets, bingeing, purging, laxative use, and the development of EDs in both men and women (McCabe & Riccardelli, 2004; Hildebrandt et al., 2010; Strachan & Cash, 2002; Cash & Pruzinsky, 2002).

Generally, interventions for BI dissatisfaction and disturbance have been embedded within larger ED interventions or have targeted BI in adolescent girls, university students, or middle-aged women. To date, no interventions have targeted BI disturbance and dissatisfaction in men. Stand-alone BI interventions have been predominantly CBT in nature

and have shown to be effective in improving BI dissatisfaction; however, there is room for improvement. Mindfulness has been incorporated as a core component in a number of interventions (e.g., DBT, MBCT, MBSR, ACT) and has shown to be effective for individuals with Depression, Anxiety, Chronic Pain, Substance Abuse, Borderline Personality Disorder, EDs, and many other psychological disorders. Research has also found significant relationships between mindfulness and BI dissatisfaction, negative cognitions, and helping individuals develop greater acceptance and self-compassion. In particular, evidence has emerged that individuals with more mindful awareness tend to exhibit less BI dissatisfaction, investment in BI, and eating disordered symptoms. Further, more self-compassion has been associated with better BI satisfaction, more acceptance, and better eating attitudes. However, mindfulness and acceptance-based strategies are yet to be incorporated within CBT interventions for BI dissatisfaction, nor evaluated as sole interventions in their own right.

Given the high prevalence of BI dissatisfaction and the associated health, psychological, social, and interpersonal consequences, the need for effective interventions in the community is clear. It is important that interventions adequately cover all aspects of BI (attitudinal, perceptual and behavioural) and in addition, include the use of appropriate measures of BI in evaluating intervention effectiveness. Similarly, it is important that males be included in BI intervention programs given the increasing prevalence in BI dissatisfaction and disturbance in men. Interventions that incorporate mindfulness principles may offer easily accessible and applicable intervention strategies for improving BI dissatisfaction in men and women.

The Current Research

As stated in the thesis overview section, findings of this research are presented across two studies. The first study investigated the relationship between mindfulness and BI

dissatisfaction components, with a focus on how the different BI components relate to a range of factors including mindfulness, cognitive defusion, self-compassion, acceptance, perfectionism, self-esteem, psychological wellbeing, and eating disorder symptomatology.

Based on past research, research questions addressed in the first study are exploratory analyses; examining the relationships between variables, exploring differences between men and women on the investigated variables, and testing a number of mediation models. These results will provide a foundation for the development and evaluation of a mindfulness intervention in study two. Research questions to be addressed in Study 1 include:

- (i) Are more mindful individuals (awareness of thoughts, defusion from thoughts, acceptance) less dissatisfied with their BI, less invested in their BI, experience less dysphoric emotions, and engage in less avoidance and checking behaviours?
- (ii) Is more self-compassion related to less BI dissatisfaction (and related BI components)?
- (iii) How do a range of factors (psychological wellbeing, perfectionism, self-esteem, eating disorder symptoms) relate to both BI dissatisfaction and mindfulness?
- (iv) Are there differences between men and women on measures of BI dissatisfaction, mindfulness, self-compassion, acceptance, cognitive defusion, perfectionism, self-esteem, psychological wellbeing and eating disorder symptoms?

The aim of the second study was to evaluate the efficacy of two pilot group-based intervention (CBT plus mindfulness and mindfulness stand-alone) in improving BI dissatisfaction in men and women. Research questions that were addressed include:

- (i) Are the two pilot interventions effective in improving the attitudinal (dissatisfaction, cognitive distortions, distress associated with thoughts, dysphoric emotions, and investment in BI) and behavioural (avoidance and checking behaviours) components of BI dissatisfaction?
- (ii) How effective are the two pilot intervention in increasing mindful awareness, self-compassion, acceptance, and cognitive distancing from negative thoughts?
- (iii) What is the impact of the two pilot interventions on measures of self-esteem and disordered eating?
- (iv) Are there differences between CBT plus mindfulness and mindfulness stand-alone interventions in improving BI dissatisfaction in men and women?
- (v) Evaluation of the interventions based on qualitative feedback provided by participants.

Addressing each of the research questions, it is hoped that the present research will clarify the relationships between BI dissatisfaction, mindfulness, cognitive fusion, acceptance, self-compassion, perfectionism, psychological wellbeing, and eating disorder symptoms. In addition, it is hoped that addressing the research questions will provide an avenue into new and effective interventions for BI dissatisfaction in both men and women.

Chapter 2: Study One

Body Image and Mindfulness: The Relationship Between Focused Attention, Awareness and Body Image Dissatisfaction in Adult Men and Women

BI dissatisfaction is highly prevalent in Western societies and is a source of significant distress for many men and women (Cash, 2004; Cash & Pruzinsky, 2002). There is increasing recognition of the damaging consequences associated with substantial BI dissatisfaction (Blashill, 2010; Jarry & Berardi, 2004; Lavender, et al., 2012). Research has linked BI dissatisfaction with the development of maladaptive compensatory strategies to control weight and to alter appearance, including the use of muscle and performance enhancing drugs, disordered eating habits and behaviours, excessive and at times dangerous exercise, and increasing use of cosmetic surgeries (Grammas & Schwartz, 2009; Jarry & Barardi, 2004; Lavender et al., 2012; Levesque & Vichesky, 2006; Lewis & Devaraj, 2010). BI disturbance is associated with poorer psychological adjustments in both clinical and nonclinical populations, such as increased depression, social anxiety, poorer self-esteem, impaired sexual functioning, disordered eating, and attempts at weight control (e.g., strict dieting, use of laxatives, excessive exercise; Grammas & Schwartz, 2009; Hildebrandt, et al., 2010; Jarry & Berardi, 2004; Levesque & Vichesky, 2006; Strachan & Cash, 2002). In addition, personality factors are implicated as playing an integral role in the formation of BI attitudes, particularly self-esteem and perfectionism (Cash & Pruzinsky, 2002). Factors such as self-compassion, mindfulness, and the degree of fusion with cognitions germane to BI disturbance have not been extensively researched and warrant further investigation.

Research to date has found that BI dissatisfaction and body comparison is inversely related to levels of mindfulness (Dijkstra & Barelds, 2011; Dekeyser, et al., 2008). Mindfulness is also a noted predictor of bulimic symptoms in university students with, greater

mindfulness associated with fewer symptoms of disordered eating (Lavender, et al., 2009). The results found in past literature regarding the relationship between mindfulness and BI dissatisfaction apply to both men and women. Generally, mindfulness or higher levels of awareness and attention lead to greater acceptance of private and internal experiences including cognitions, emotions and sensations (Brown & Ryan, 2003). BI dissatisfaction frequently results in the development of rigid and negative thoughts about appearance, shape, weight, and size (Lavender et al., 2012). Once developed, experiencing negative or distressing thoughts tend to lead to self-defeating behaviors and compensatory strategies aimed at weight control and altering appearance. This then serves to further maintain BI dissatisfaction and associated difficulties. Thus, given the aforementioned risks associated with unidentified and unaddressed BI disturbance, it is evident that the need for effective BI interventions is paramount.

BI dissatisfaction is associated with disordered eating behaviours and also distorted cognitions about food, body weight, and overall appearance. Research evidence shows that individuals who are able to distance themselves from intrusive and distressing cognitions are less likely to act impulsively and engage in self-defeating behaviours (Baer, 2003; Stewart, 2004). Such individuals are also less likely to become distressed because of their thoughts and are less likely to believe distorted thoughts about food, body weight, and appearance (Stewart, 2004; Trindale & Ferreira, 2014). Consequently, this reduces their engagement in avoidance or checking behaviours, leading to lower BI dissatisfaction. As such, questions arise about whether individuals with BI dissatisfaction are able to distance themselves from negative and distressing thoughts regarding their appearances, shape, and weight. Questions also arise about whether individuals who are able to be mindful, defuse from their thoughts, and demonstrate self-compassion towards themselves also demonstrate lower levels of BI dissatisfaction and disturbance. The primary aim of this study is to investigate this

relationship; that is, the relationship between BI dissatisfaction and how an individual relates to themselves, their thoughts, and their feelings (e.g., mindfulness, cognitive defusion, self-compassion, acceptance). The aim of the present study is also to examine overall BI dissatisfaction in adult men and women, and how a range of factors (i.e., depression, anxiety, stress, self-esteem, self-compassion, perfectionism, mindfulness, disordered eating behaviours) relate to BI components (including BI dissatisfaction, disturbance, investment in BI, dysphoric emotions around BI, male body attitudes, avoidance behaviours, and checking behaviours). Further, the purpose of the study was to investigate sex differences on measures of BI dissatisfaction and mindfulness. Finally, the aim of the current study was to test two mediation models; whether the relationship between BI and mindfulness is mediated by other factors including fusion with thoughts and acceptance of BI related thoughts and feelings.

Based on these aims and on previous research, a number of hypotheses were generated:

- (i) Mindfulness, acceptance, and self-compassion will be negatively correlated with measures of BI, including BI dissatisfaction, BI dysphoria, BI investment, BI disturbance, body shape dissatisfaction, male body image attitudes, body checking behaviours, and BI avoidance, whereas cognitive fusion will be positively correlated with measures of BI.
- (ii) Positive relationships would be found between mindfulness, self-compassion, and acceptance of thoughts and feelings and an inverse relationship would be found between these and cognitive fusion.
- (iii) BI dissatisfaction will be positively correlated with BI disturbance, investment in BI, body checking and avoidance behaviours, BI dysphoria, male body attitudes for men, and body shape dissatisfaction for women.
- (iv) All BI measures will be positively correlated with eating disorder

symptomatology.

- (v) All BI measures will be positively related to perfectionism, depression, anxiety, and stress and negatively correlated with self-esteem.
- (vi) Mindfulness, self-compassion, and acceptance will be inversely related to eating disorder symptomatology, whereas cognitive fusion will be positively correlated with eating disorder symptomatology.
- (vii) Mindfulness, self-compassion, and acceptance will be negatively correlated with perfectionism, depression, anxiety, and stress; and that these would be positively correlated with cognitive fusion. In addition, mindfulness, self-compassion, and acceptance will be positively correlated with self-esteem; and self-esteem will be negatively correlated with cognitive fusion.
- (viii) Women will display significantly higher scores on all of the BI measures (BI dissatisfaction, BI dysphoria, BI investment, BI disturbance, body checking behaviours, and BI avoidance) than men. There will be no difference between women and men on measures of mindfulness, cognitive fusion, acceptance, and self-compassion.

All other relationships and analyses were exploratory in nature and no specific hypotheses were created.

Method

Participants

287 individuals were recruited from the general community in Melbourne, Victoria via advertisements on social media websites and on community discussion boards at local gymnasiums to participate in the study. However, 79 of these individuals did not complete the research questionnaire and thus were eliminated from the study, resulting in a total sample of 208 participants. Participants were required to be aged between 18-65 years. The sample of

208 individuals comprised 159 females (M age =25.53; SD = 8.57) and 49 males (M age =27.17; SD =8.20). In terms of cultural identification or race, 85% of the participants indicated Caucasian/White ethnicity or race, 8.4% Asian, 3.3% Middle Eastern, and 3.3% identified as Other (including African, Hispanic, and no ethnic background). In addition, 87.6% of participants identified themselves as heterosexual, 8.0% as homosexual, and 4.4% as bisexual. The average BMI for the sample was 24.18 (SD = 4.85) and falls within the healthy range for young and middle-aged adults (World Health Organisation, 2013). 3.9% of participants were categorised as underweight (i.e., BMI of 18.5 or less); 63.5% in the normal range (i.e., BMI between 18.50 - 24.99); 22.1% as overweight (i.e., BMI 25-29) 30; and 10.1% within the obese range (i.e., BMI 30 or above). 10 females (4.8%) reported having a current or previous diagnosis of an EDs, however their mean scores on the measure assessing eating pathology (Eating Disorder Examination Questionnaire; Fairburn & Beglin, 1994) and the body image questionnaire did not significantly differ to those without a current or previous diagnosis of an eating disorder, $t(117) = 1.01, p = .31$ and $t(110) = 1.37, p = .17$, respectively. In terms of depression, the majority of participants (70.5%) scored in the normal to mild range on the Depression, Anxiety and Stress Scale (DASS-21; Lovibond & Lovibond, 1995), 15.5% scored in the moderate range, and 14% of participants scored in the severe and extremely severe category.

Measures

Participants completed a customised online questionnaire package, containing 17 psychometrically sound measures assessing four areas of clinical interest to the study: (i) body image (ii) individuals' relationship to self, thoughts, and feelings; (iii) eating disorder symptomatology; and (iv) personality and psychological wellbeing. Measures within each area of interest are described below.

Body Image

Appearance Schemas Inventory–Revised (ASI–R; Cash, 2004; Cash, Melnyk, & Hrabosky, 2004). This 20-item measure assesses dysfunctional investment in appearance. Items are rated on a 5-point scale ranging from *Disagree* to *Agree*. The measure consists of two subscales: Self-Evaluative Salience which includes 12 items such as, “*When I see good-looking people, I wonder how my own looks measure up*”; and Motivational Salience which includes 8 items such as, “*I try to be as physically attractive as I can be*”). Reliabilities of both subscales have shown to be satisfactory for each gender. Specifically for men the internal reliability for the composite scores is $\alpha = .90$; motivational salience is $\alpha = .91$; and self-evaluative salience is $\alpha = .84$. In addition for women, the internal reliability for the composite score is $\alpha = .88$; motivational salience is $\alpha = .90$; and self-evaluative salience in $\alpha = .82$. The Cronbach’s alpha for this study was as follows: Self-evaluative salience .85; Motivational salience .89; Total appearance schema score .91 (Cash, 2004).

Body Image Ideals Questionnaire (BIQ; Cash & Szymanski, 1995) The BIQ is a 22-item questionnaire that examines body image satisfaction-dissatisfaction by assessing the self-perceived discrepancies from internalised ideals and the importance of these ideals on 11 physical characteristics (e.g., height, skin complexion, hair texture and thickness, facial appearance, muscle tone and definition, body proportions, weight, chest size, physical strength, physical coordination, and overall physical appearance). These items are rated first on a 4-point scale of perceived incongruence to personal ideals for these characteristics, and then rated on the importance of these ideals. For the first part, items are scored from “*Exactly as I am*” (0) to “*Very unlike me*” (3). For the second part, items are scored from “*Not important*” (0) to “*Very important*” (3). An example item is “*My ideal height is*” and “*How important is your ideal height*”. Scores can range from -3 to +9, with higher scores reflecting greater self-ideal discrepancy. Research has established the BIQ as an internally consistent

(.81 for males; and .76 for females) and valid measure of evaluative body image. The Cronbach's alpha for this study was .90 (Cash & Szymanski, 1995).

The Body Shape Questionnaire (BSQ; Cooper, Taylor, Cooper, & Fairburn, 1987). The BSQ is a 34-item questionnaire assessing an individual's feelings about their body in terms of their weight and shape concerns during the past four weeks. Items are rated on a 6-point Likert scale ranging from *Never* (1) to *Always* (6). An example item is "*Have you felt so bad about your shape that you cried?*" and "*Has being with thin women made you feel self-conscious about your shape?*". Scores are obtained by adding and summing all of the item responses together. Higher scores indicate greater body shape dissatisfaction. The BSQ has excellent psychometric properties and has been used primarily with women, as the wording of items appears to be female-specific. The Cronbach's alpha for this study was .98 (Cooper et al., 1987).

Male Body Attitudes Scale (MBAS; Tylka, Bergeron, & Schwartz, 2005). The MBAS is a 24-item questionnaire designed to measure males' attitudes toward their bodies. The measure consists of three subscale including: Muscularity, Low Body Fat, and Height. Items are rated on a 6-point Likert scale, ranging from "*Never*" (1) to "*Always*" (6). An example item is: "*I think my body should be leaner*". An overall score is obtained by adding all of the item scores and creating a mean or average. Subscale scores are also obtained by working out the average score of those items. Higher score indicate more negative body attitudes in men. Adequate psychometric properties have been reported with alphas of .91, .93, .90, and .88 for the global score, body fat subscale, muscularity subscale, and height subscale, respectively. The authors of the measure (Tylka et al., 2005) found that Cronbach's alpha for this study to was as follows: Muscularity .86; Body fat .91; Height .35; Total scale .89.

The Body Image Disturbance Questionnaire (BIDQ; Cash, Phillips, Santos, & Hrabosky, 2004) is a 7-item measure assessing a number of concerns regarding body image and the extent of disturbance associated with body image concerns. Items are rated on a 5-point Likert scale ranging from “*No distress*” (1) to “*Extreme and disabling*” (5); “*No limitation*” (1) to “*Extreme, incapacitating*” (5); and “*Never*” (1) to “*Very often*” (5), depending on the question. Items 1, 2, 5, 6, and 7 also ask for an open-ended clarification of responses. Scores are obtained by calculating a single mean of the seven items. Qualitative responses can be evaluated by looking at commonalities among the participants. Internal consistency has been reported as $\alpha = .89$; for men $\alpha = .88$ and for women $\alpha = .90$. The BIDQ also correlates with other BI measures suggesting adequate concurrent validity. The Cronbach’s alpha for this study was .83 as provided by the authors of the measure (Cash et al., 2004).

The Body Image Avoidance Questionnaire (BIAQ; Rosen, Srebnik, Saltzberg, & Wendt, 1991) is a 19-item measure, which assesses the frequency of body image related avoidance behaviours. Items are rated on a six point Likert scale ranging from “*Always*” (5) to “*Never*” (0). An example item is: “*I avoid going clothes shopping*” and “*I wear baggy clothes*”. The measure is scored by adding all of the scores together, with higher scores indicating greater BI avoidance. The measure has adequate internal consistency ($\alpha = .89$), good 2 week test-retest reliability ($r = .87$) and is sensitive to body image disturbance treatment changes. The Cronbach’s alpha provided by the authors for this study was .86.

Situational Inventory of Body Image Dysphoria (SIBID; Cash, 1994) measures the frequency of negative body image emotions in social and non-social contexts. The SIBID asks respondents to rate the frequency of negative body image emotions in 48 distinct social situations and non-social contexts and activities related to exercising, grooming, eating, intimacy, physical self-focus, and appearance alterations. The SIBID uses a 5-point scale

ranging from “Never” (0) to “Always or Almost Always” (4). An example item is: “How often do you have negative feelings about your appearance...When someone looks at parts of *mu* appearance that I dislike”. Scores can range from 0 to 4, with higher scores reflecting more frequent context specific BI dysphoria or negative feelings. The internal consistency has been reported as .96 for both males and females and one month test re-test has been reported as .80 for males and .86 for females (Cash, 1994). The Cronbach’s alpha provided by the author for this study was .94.

Body Checking Questionnaire (BCQ; Reas et al., 2002) is a 23-item questionnaire that measures checking of overall appearance, specific body parts, and checking behaviours. Items pertaining to how often one engages in checking behaviours are rated on a Likert-scale ranging from “Never” (1) to “Very often” (5). An example item is: “I pull my clothes as tightly as possible around myself to see how I look” and “I pinch my stomach to measure *fatness*”. Higher scores indicate more frequent checking. The measure has an excellent concurrent validity with other measures of negative body image, and good 2 week test-re-test reliability ($r = .94$; Reas et al., 2002). The Cronbach’s alpha provided by the authors for this study for the overall scale was .95.

Individual’s Relationship to Self, Thoughts, and Feelings

The Mindfulness Attention Awareness Scale (MAAS; Brown & Ryan, 2003) is 15-item measure of people’s tendency to be mindful of moment-to-moment experiences. Thus, the instrument focuses on the presence or absence of attention and awareness of what occurs in the present. The frequency of the experience is rated on a 6-point Likert scale ranging from “Almost Always” (1) to “Almost Never” (6). An example of an item is: “It seems I am *running on automatic,*” without much awareness of what I’m doing”. High scores reflect more mindfulness. Internal consistency has been reported as ranging between .82 and .87.

The MAAS also demonstrates convergent and discriminant correlations in the expected direction with other measures such as the Beck's Depression Inventory (BDI), Rosenberg's Self-Esteem Scale, and the State-Trait Anxiety Inventory (STAI). The Cronbach's alpha for this study was .87 (Brown & Ryan, 2003).

Cognitive Fusion Questionnaire (CFQ; Gillanders et al., 2014) is a 13-item cognitive fusion measure, which measures both fusion and defusion with thoughts and feelings. Items are rated on a 7-point Likert scale ranging from "*Never True*" (1) to "*Always True*" (7). An example of an item is: "*I tend to get very entangled in my thoughts*". Scores are added to create a total score. Higher scores on the CFQ indicated greater fusion with thoughts and feelings. The measure has shown to have good internal consistency ($\alpha = .85$) and good convergent validity. The Cronbach's alpha for this study was .91 (Gillanders et al., 2014).

The Body Image - Acceptance and Action Questionnaire (BI-AAQ; Sandoz, Wilson, & Kellum, 2013) is a 29-item self-report scale designed to measure body image flexibility and the extent to which an individual exhibits an accepting posture toward negative thoughts and feelings about his or her body shape and/or weight. A shortened version of the questionnaire was used in the online survey (12 items). The reason for using the shortened version was to assist with reducing how long it takes to complete the overall survey. Psychometric properties have shown to be equivalent to the full scale (Sandoz et al., 2013). Items are rated on a 7-point scale ranging from "*Never True*" (1) to "*Always true*" (7). An example item is "*My thoughts and feelings about my body weight and shape must change before I can take important steps in my life*". Higher scores indicate more acceptance and greater body image flexibility. The measure appears to be psychometrically sound, with an internal consistency of $\alpha = .93$ and good construct validity. The Cronbach's alpha for this study was .91.

Self-compassion Scale (SCS; Neff, 2003) is a 26-item measure that assesses levels of compassion that one holds toward self. The measure includes a total of six subscales. These subscales include the following: a 5-item Self-Kindness subscale (e.g., *“I try to be understanding and patient toward aspects of my personality I don’t like”*); a 5-item Self-Judgment subscale (e.g., *“I’m disapproving and judgmental about my own flaws and inadequacies”*); a 4-item Common Humanity subscale (e.g., *“I try to see my failings as part of the human condition”*); a 4-item Isolation subscale (e.g., *“When I think about my inadequacies it tends to make me feel more separate and cut off from the rest of the world”*); a 4-item Mindfulness subscale (e.g., *“When something painful happens I try to take a balanced view of the situation”*); and a 4-item Over-Identification subscale (e.g., *“When I’m feeling down I tend to obsess and fixate on everything that’s wrong”*). Responses are rated on a 5-point Likertscale from *“Almost Never”* (1) to *“Almost Always”* (5). A total score is also computed by adding the six subscales together and creating a mean. The psychometric properties of the scale have been established. Higher score indicate more self-compassion. The Cronbach’s alpha for the total scale in this study was .93; self-kindness .85; self-judgment .84; common humanity .76; isolation .74; mindfulness .76; over-identified .76.

Eating Disorder Symptomatology

Eating Disorder Examination Questionnaire (EDE-Q; Fairburn & Beglin, 1994). This 36-item self-report measure assesses the severity of eating disorder symptoms in addition to the cognitive and behavioural features of eating disorders experienced over the past 28 days. There are four subscales: Dietary Restraint (five items), Eating Concern (five items), Weight Concern (five items), and Shape Concern (eight items). Example items include: *“Have you been deliberately trying to limit the amount of food you eat to influence your shape and weight?”* and *“How dissatisfied have you felt about your weight?”* Each item is rated on a 7-point Likert scale ranging from either *“No days”* (0) to *“Everyday”* (6); or

“*Not at all*” (0) to “*Markedly*” (6), depending on the subscale. Items one to 14 evaluate disordered eating attitudes and behaviours; items 15 to 28 assess the occurrence and frequency of disordered eating behaviours considered typical in individuals with eating disorders; and items 29 to 36 measure dissatisfaction and distress associated with body shape and weight. Items within the subscale are also combined to provide a global EDE-Q score. This measure has good psychometric properties. Concurrent and criterion validity for the global scale and subscales have been confirmed (Mond et al., 2004). In addition, internal consistency of the EDE-Q shows Cronbach’s alpha range from .78 to .93. Two-week test-retest reliability coefficients range from .81 to .94 (Carter, Stewart, & Fairburn, 2001). Australian norms are also available for this questionnaire. It is an ease measure to use and has sound psychometric properties (Mond et al., 2004; 2006), making one of the most frequently used measures for treatment outcomes or screening of eating disorders in the community. Lavender et al. (2010) have reported the following psychometric properties for the EDE-Q in their study with men: Cronbach's alpha was .93 for the global score, .78 for the restraint subscale, .78 for the eating concern subscale, .89 for the shape concern subscale, and .80 for the weight concern subscale. Average scores that are four or higher tend to be considered as falling within the clinical range (Fairburn & Beglin, 1994).

Personality Factors and Psychological Well-being

Rosenberg Self-esteem Scale (The RSES; Rosenberg, 1965) is 10-item questionnaire that measures global self-esteem or feelings of self-worth. An example item is: “*I wish I could have more respect for myself.*” Each item is answered using a 4 point scale including strongly agree, agree, disagree and strongly disagree. This is a well-known and widely used measure of self-esteem. Higher scores indicate greater self-esteem. Internal consistency of the measure has been reported as 0.95 for men and 0.94 for women.

Depression, Anxiety, and Stress Scale (DASS-21; Lovibond & Lovibond, 1995) is an abbreviated version of the DASS-42, which consists of a 21-item scale that measures feelings of depression, anxiety and stress. Responses are given on a 4-point Likert scale ranging from “*Did not apply to me at all*” (0) to “*Applied to me very much, or most of the time*” (3). Scores range from 0 to 63, with higher scores indicating higher levels of depression, stress, and anxiety. To score the results, each subscale is multiplied by two, given that the DASS-21 is a shortened version of the scale. A sample item from this scale is “*Over the past week I found it difficult to relax*”. The DASS-21 has good internal consistency (Cronbach’s alpha of .94 for Depression, .87 for Anxiety, and .91 for Stress) and moderate to high concurrent validity with other measures of depression, anxiety, and stress (Antony, Bieling, Cox, Enns, & Swinson, 1998). The Cronbach’s alpha in this study was as follows: Stress .89; Depression .92; Anxiety .85.

The Perfectionistic Self-Promotion Scale (PSPS; Hewitt et al., 2003; Sherry, et al., 2007) is a 27-item scale that comprises three subscales: 10 items related to perfectionistic Self-Promotion (e.g., “*I try always to present a picture of perfection*”); 7 items of Nondisclosure of Imperfection (e.g., “*Admitting failures to others is the worst possible thing*”); and 10 items of Non-display of Imperfection (e.g., “*I hate to make errors in public*”). Two items in the perfectionistic self-promotion subscale specifically relate to appearance-related concerns (e.g., “*I do not really care about being perfectly groomed*” (reverse scored). Items are rated on a 7-point Likert scale ranging from “*Disagree*” (1) to “*Agree*” (7). Items 1, 11, 16, 18, and 22 are reverse scored. Higher scores indicate greater perfectionistic tendencies and scores are obtained by summation. Research supports the discriminant validity, predictive validity, incremental validity, and factorial stability of the measure (Hewitt et al., 2003). Internal consistency alphas vary between .78 and .86 for the subscales.

Procedure

The community sample was recruited via advertisements in local gymnasiums and universities as well as via the Internet (e.g., using website advertisements and social networking sites). RMIT University media department assisted in the advertising process. See Appendix A for a copy of the flyer used to advertise for participation in the program.

Participation in the study required the completion of an online survey. Individuals interested in participating in the research followed an online link to the host platform (Survey Monkey) in order to access the questionnaire. A plain language statement formed the initial page of the survey containing information about the study, its aims, and participant eligibility criteria (see Appendix B). Participation was voluntary and all responses remained anonymous. Participants were informed that they had the right to withdraw from the study at any time and to have any questions answered by the researchers. Informed consent was assumed by completion of the survey.

Completion time was estimated to be approximately 45 minutes. A progress bar was included on the online measure to enable participants to estimate their progress and a possible completion time. The last page of the questionnaire provided a list of agencies (and their contact details) for participants to utilise if their participation caused them any distress (see Appendix C). This research project was approved by the RMIT University Human Research Ethics Committee (HREC; Appendix D).

The primary researcher having the only access to the data stored on the Survey Monkey server protected confidentiality and security of the data. A copy of this data was stored on a password protected USB drive. The primary researcher and supervisors were the only ones that had access to this data and USB drive.

Data Design and Analysis

This study utilised a correlational methodology. The data set was screened visually for outliers and data distribution was assessed using histograms. The data set was cleaned by deleting participants from the data set who provided incomplete demographic information. Information from participants under the age of 18 years ($n=1$) was also excluded from analyses. All data analyses were conducted using the Statistical Package for Social Sciences (SPSS) Version 19. Alpha levels were set at the standard .05 level for all analyses.

Missing values analyses

Of the 287 individuals who accessed the survey, 79 discontinued following the completion of the demographic section. These cases were deleted from the data file. The data file was then examined for other missing values. Following the screening and cleaning of the data file, it was observed visually by inspecting the raw data that random cases of data were missing throughout the data file. Given the survey contained 17 different measures, it is likely that many participants discontinued completing the survey at different points and skipped some of the questionnaires. Cases with missing values were identified and removed as recommended by Tabachnik and Fidell (2007). This procedure involved identifying cases with missing values on all of the scale and excluding them from analyses. If participants were observed to have completed about half of the survey, their data was retained. No missing data analyses were calculated, as there were too many cases of missing data; however, the size of the data file was sufficient to run analyses excluding case wise data points.

Results

Sample Characteristics

Descriptive statistics (i.e., age, BMI, sexual orientation, and ethnicity/race) are provided in Table 1.

Table 1

Means and Standard Deviation of Demographic Information

Variable	n	Percentage	<i>M</i>	<i>SD</i>
Age	208	-	26.62	8.17
Male	49	25.9%	27.17	8.20
Female	159	74.1%	25.53	8.57
Body Mass Index	207	-	24.18	4.85
Sexual Orientation	208	-	-	-
Heterosexual	181	87.5%	-	-
Homosexual	16	7.7%	-	-
Bisexual	11	4.8%	-	-
Ethnicity/Race		-	-	-
Caucasian/White	167	85%	-	-
Asian	23	8.4%	-	-
Middle Eastern	9	3.3%	-	-
Other	9	3.3%	-	-
ED Diagnosis	17	9%	-	-

*Notes. *n* = Number of participants that category; ED = Current or previous Eating Disorder diagnosis.

The sample in this study consisted of more female participants than male participants, with the mean age of 26.62. The sample is slightly older than reported in previous studies (e.g., Fink et al., 2009; Grammas & Schwartz, 2009; Herbozo & Thompson, 2006; Jarry & Berardi, 2004; Luetcke et al., 2011; Masuda & Wendell, 2010; Walker et al., 2009), where research into BI dissatisfaction generally consists of university aged populations or much younger cohorts, averaging between 18-22 years. Interestingly, the average BMI for the sample was within the normal weight range. Further, the sample was predominantly Caucasian/White. Given the limited numbers of diverse ethnic backgrounds in this sample, the smaller numbers of males in the sample, and the small numbers of different sexual orientations in the sample, no further comparisons were made.

Table 2 displays scores for BI dissatisfaction, levels of mindfulness, cognitive fusion, self-compassion, eating disorder symptoms, perfectionism, and psychological wellbeing, descriptive statistics and norms. Specifically, Table 2 provides an overview of the means and standard deviations relevant to each area investigated in this study including BI domain, relationship to self, thoughts and feelings domain, eating disorder symptomatology domain,

and personality and psychological wellbeing domain. Furthermore, available community and clinical norms for each variable within the four domains are also presented in Table 2.

Table 2
Means, Standard Deviations, Clinical and Non-Clinical Norms for Study Variables

Variables	Current Study		Clinical Norms		Non-Clinical Norms	
	Male M (SD)	Female M (SD)	Male M (SD)	Female M (SD)	Male M (SD)	Female M (SD)
<i>Body Image Components</i>						
BI dissatisfaction	2.16 (2.08)	2.03 (1.63)	-	-	1.31 (1.35) ^a	1.75 (1.38) ^a
BI disturbance	1.75 (.73)	2.09 (.92)	-	-	1.57 (.60) ^b	1.81 (.67) ^b
BI Investment	3.16 (.70)	3.51 (.71)	-	-	3.20 (.67) ^c	3.47 (.62) ^c
Self-evaluative	3.21 (.73)	3.39 (.78)	-	-	2.96 (.75)	3.30 (.73)
Motivational	3.78 (.75)	3.25 (.68)	-	-	3.57 (.74)	3.71 (.67)
BI Dysphoria	1.00 (.91)	1.73 (1.03)	-	-	1.20 (.64) ^d	1.71 (.79) ^d
BI checking	36.76 (15.12)	49.85 (17.7)	-	82.1 (18) ^e	56.00 (26) ^e	49.00 (11) ^e
BI avoidance	20.47 (9.26)	29.34 (13.91)	-	40.17 (10.9) ^f	-	31.5 (13.9) ^f
MBAS	3.31 (.95)	-	-	-	3.18 (.79) ^g	-
Muscularity	3.10 (1.14)	-	-	-	3.23 (.94)	-
Body Fat	3.57 (1.34)	-	-	-	2.75 (1.19)	-
Height	5.92 (3.17)	-	-	-	3.13 (1.76)	-
Body Shape	-	97.70 (41.38)	-	136.9 (22.5) ^h	-	81.5 (28.4) ^h
<i>Relationship to Self, Thoughts and Feelings</i>						
Mindfulness	59.46 (11.3)	57.36 (11.34)	55.87 (18.72) ⁱ	55.87 (18.72) ⁱ	-	-
Cognitive Fusion	45.54 (10.47)	50.02 (13.33)	60 (12.4) ^j	-	40.2 (11.04) ^j	40.2 (11.04) ^j
Acceptance	68.22 (15.7)	57.52 (19.12)	31.43 (11.79) ^k	-	65.25 (15.38) ^k	61.59 (15.56) ^k
Self-Compassion	2.99 (.7)	2.83 (.65)	-	-	3.13 (.59) ^l	3.07 (.65) ^l
Self-kindness	2.77 (.89)	2.84 (.84)	-	-	3.12 (.75)	3.00 (.75)
Self-judgement	2.81 (.97)	2.60 (.87)	-	-	3.00 (.81)	3.24 (.77)
Common Humanity	3.15 (.79)	3.13 (.87)	-	-	2.95 (.82)	3.03 (.76)

Table 2 Continued.

Isolation	2.94 (.91)	2.70 (.87)	-	-	2.90 (.94)	3.09 (.90)
Mindfulness	3.35 (.83)	3.18 (.78)	-	- ¹	3.57 (.72)	3.27 (.76)
Over-identified	3.04 (.94)	2.54 (.82)	-	-	2.78 (.97)	3.25 (.90)
<i>Eating Disorder Symptomatology</i>						
EDE-Q	1.75 (1.38)	1.84 (1.41)	-	-	1.09 (1.0) ^m	1.52 (1.25) ^m
Restraint	1.44 (1.48)	1.45 (1.48)	-	-	1.04 (1.19)	1.30 (1.40)
Eating Concern	.96 (1.28)	1.15 (1.43)	-	-	.43 (0.77)	.76 (1.06)
Shape Concern	2.45 (1.78)	2.49 (1.71)	-	-	1.59 (.27)	2.23 (1.65)
Weight Concern	2.14 (1.62)	2.2 (1.62)	-	-	1.29 (1.27)	1.79 (1.51)
<i>Personality Factors and Psychological Wellbeing</i>						
Depression	9.16 (9.55)	10.32 (10.56)	-	29.96 (9.18) ⁿ	2.12 (3.64) ⁿ	-
Anxiety	7.90 (9.08)	8.72 (8.79)	-	18.72 (10.77)	1.22 (1.77)	-
Stress	12.03 (9.45)	15.75 (9.70)	-	24.30 (9.84)	3.51 (3.78)	-
Self-esteem	23.31 (2)	23.41 (2.03)	-	-	-	29.57 (4.07) ^o
Perfection Self-promotion	42.22 (10.55)	41.28 (12.95)	43.29 (12.55) ^p	-	38.86 (12.19) ^p	-
Nondisplay of Imperfection	43.22 (12.48)	44.15 (12.28)	45.06 (10.47)	-	41.31 (12.14)	-
Nondisclosure of Imperfection	25.38 (7.84)	24.26 (8.53)	25.87 (8.89)	-	22.41 (7.82)	-

*Notes. BI = Body Image; MBAS = Male Body Attitudes Scale; EDE-Q = Eating Disorder Examination Questionnaire.

^a = (Cash, 2000a); ^b = (Cash et al., 2004); ^c = (Cash, 2003); ^d = (Cash, 2000b); ^e = (Reas et al., 2003); ^f = (Rosen et al., 1991); ^g = (Tylka et al., 2005); ^h = (Cooper et al., 1987); ⁱ = (Brown & Ryan, 2003); ^j = (Gillanders et al., 2010); ^k = (Sandoz et al., 2013); ^l = (Neff, 2003); ^m = (Fairburn & Beglin, 2008; Lavender et al., 2010; Mond et al., 2006); ⁿ = (Lovibond & Lovibond, 1995); ^o = (Shea & Pritchard, 2007); ^p = (Hewitt et al., 2003).

¹ Where no normative data is provided, no data for a particular clinical or non-clinical sample could be found.

Body Image Components

Male participants in the current sample reported higher levels of dissatisfaction with height and body fat compared to the community norms obtained in previous research. Men in this sample also scored higher on measures of BI dissatisfaction and disturbance. However, body checking and body avoidance scores were slightly lower than would be expected in a community sample. Overall, these trends are representative of a community sample, with slightly higher levels of dissatisfaction with height and body fat than expected.

Similarly, female participants in this sample showed higher levels of body shape dissatisfaction to community norms, suggesting that this particular sample of women displayed moderate levels of body shape dissatisfaction, based on the body shape dissatisfaction score categories provided by the authors of the measure (< than 80 meaning no concern with shape; 80-100 meaning mild concerns with shape; 111-140 meaning moderate concern with shape; and >140 marked concern with shape).

Eating Disorder Symptomatology, Individuals' Relationship to Self, Thoughts, and Feelings, and, Personality and Psychological Wellbeing

The sample displayed clinically high levels of perfectionism and high levels of cognitive fusion (entanglement with thoughts), eating disorder symptomatology, and levels of depression, anxiety and stress when compared to community norms. In addition, the sample also displayed lower levels of self-esteem and self-judgement than would be expected for a community sample.

Inter-correlations Between Measures of BI Dissatisfaction Domains, Relationship to Self, Thoughts and Feelings Domains, Eating Disorder Symptomatology Domains, and Personality and Psychological Wellbeing Domains

The primary aim of this study was to investigate the experience of BI in Australian men and women and to assess how a range of factors (relationship to self, thoughts, feeling, eating disorder symptoms, perfectionism, psychological wellbeing) relate to BI dissatisfaction components.

To explore the relationship between BI domains and how an individual related to themselves, their thoughts and their feelings (e.g., mindfulness, cognitive defusion, acceptance, self-compassion), a series of Pearson correlations were conducted. The relationship between BI domains and eating disorder symptomatology, perfectionism, and psychological wellbeing, was also examined using Pearson correlations. These correlations presented in separate tables for men and women in a series of tables below. To assist with ease of interpretation, measures are reported in four domains: *(1) Body Image Components; (2) Individuals' Relationship to Self, Thoughts and Feelings; (3) Eating Disorder Symptomatology; (4) Personality and Psychological Wellbeing.*

Table 3 and 4 display results for the relationships between BI components and individuals' relationship to self, thoughts and feelings. Following on from this, Table 5 and 6 display the results for the relationships between BI components and eating disorder symptomatology. Then, Tables 7 and 8 provide Pearson correlations for BI components and personality/psychological wellbeing. Tables 9 and 10 show correlation results between individuals' relationship to self, thoughts and feelings and eating disorder symptomatology. Results for individuals' relationship to self, thoughts and feelings and personality/psychological wellbeing are presented in Tables 11 and 12.

Table 3

Pearson Correlation Results Between Body Image Components and Individuals' Relationship to Self, Thoughts, and Feelings, Females Only

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.
1.BSQ	-	.74**	.76**	.86**	.61**	.34**	.68**	.75**	.83**	-.40**	.50**	-.83**	-.50**	-.45**	-.48**	-.20*	-.45**	-.35**	-.37**
2.BIQ		-	.69**	.73**	.56**	.26*	.66**	.56**	.70**	-.42**	.54**	-.68**	-.52**	-.44**	-.45**	-.26*	-.42**	-.38**	-.41**
3.BIDQ			-	.76**	.60**	.31**	.68**	.51**	.77**	-.31**	.56**	-.74**	-.51**	-.43**	-.44**	-.27*	-.48**	-.37**	-.41**
4.SIBID				-	.63**	.30*	.75**	.61**	.80**	-.34**	.65**	-.78**	-.58**	-.48**	-.57**	-.22*	-.57**	-.35**	-.44**
5.ASI-R					-	.86**	.94**	.68**	.57**	-.19*	.37**	-.63**	-.46**	-.43**	-.43**	-.13	-.40**	-.30**	-.39**
6.ASI-R Mot						-	.63**	.53**	.29**	-.04	.16	-.33**	-.22*	-.21*	-.27**	.04	-.15	-.12	-.24*
7.ASI-R SE							-	.66**	.65**	-.26*	.44**	-.72**	-.54**	-.50**	-.45**	-.22*	-.50**	-.37**	-.42**
8.BCQ								-	.65**	-.30**	.38**	-.58**	-.34**	-.28**	-.34**	-.13	-.23*	-.21*	-.34**
9.BIAQ									-	-.39**	.55**	-.78**	-.57**	-.47**	-.46**	-.29**	-.51**	-.42**	-.45**
10.MAAS										-	-.46**	.38**	.33**	.21*	.33**	.11	.32**	.23*	.33**
11.CFQ											-	-.57**	-.75**	-.56**	-.66**	-.41**	-.62**	-.58**	-.66**
12.BI-AAQ												-	.53**	.45**	.49**	.25*	.46**	.36**	.43*
13.SCS													-	.84**	.80**	.64**	.77**	.79**	.78**
14.Self-kindness														-	.61**	.58**	.51**	.67**	.46**
15.Self-judgement															-	.23*	.65**	.43**	.67**
16.Com Hum																-	.26*	.63**	.29**
17.Isolation																	-	.45**	.66**
18.Mindfulness																		-	.54**
19. Overidentified																			-

* Note. BIQ = Body Image Ideals; BIDQ = Body Image Disturbance Questionnaire; SIBID = Situational Inventory of Body Image Dysphoria; BSQ = Body Shape Questionnaire; BCQ = Body Checking Questionnaire; BIAQ = Body Image Avoidance Questionnaire; ASI-R = Appearance Schema Inventory Revised; Mot = Motivational Salience; SE = Self-Evaluative Salience; MAAS = Mindfulness Attention and Awareness Scale; CFQ = Cognitive Fusion Questionnaire; BI-AAQ = Body Image Action and Acceptance Questionnaire; SCS Total = Self-Compassion Scale Total; Com Hum = Common Humanity subscale.

* $p < .05$.

** $p < .001$

Table 4 continued

Variables	16.	17.	18.	19.	20.	21.	22.
1. BIQ	-.42*	-.35*	-.48*	.02	-.33*	-.23	-.50**
2. BIDQ	-.45*	-.32*	-.49**	-.13	-.37*	-.28	-.43*
3. SIBID	-.43*	-.11	-.56**	.03	-.62**	-.07	-.57**
4. ASI-R	-.17	-.18	-.10	-.07	-.17	-.06	-.20
5. ASI-R Mot	-.19	-.06	-.24	-.01	-.24	.06	-.35*
6. ASI-R SE	-.34*	-.13	-.47*	.15	-.42*	-.17	-.42*
7. MBAS	-.12	-.06	-.19	.18	-.17	-.11	-.15
8. MBAS Mus	-.39*	-.15	-.54**	.12	.49**	-.15	-.50**
9. MBAS BF	-.24	-.26	-.22	-.01	-.07	-.26	-.29
10. MBAS Height	-.30	-.37*	-.24	-.03	-.07	-.33*	-.33*
11. BCQ	-.07	.01	-.08	-.02	-.08	-.02	-.12
12. BIAQ	.20	.09	.18	.23	.13	.11	.19
13. MAAS	.34*	.39*	.25	.18	.13	.35*	.29
14. CFQ	-.73**	-.51**	-.64**	-.31	-.65**	-.48*	-.78**
15. BIAAQ	.26	.12	.38*	.002	.19	.11	.30
16. SCS	-	.83**	.87**	.64**	.64**	.79**	.86**
17. Self-kindness		-	.54**	.72**	.21	.81**	.56**
18. Self-judgment			-	.31*	.68**	.56**	.84**
19. CH				-	.15	.64**	.30
20. Isolation					-	.21	.69**
21. Mindfulness						-	-.52**
22. OI							-

*Note. BIQ = Body Image Ideals; BIDQ = Body Image Disturbance Questionnaire; SIBID = Situational Inventory of Body Image Dysphoria; BCQ = Body Checking Questionnaire; BIAQ = Body Image Avoidance Questionnaire; ASI-R = Appearance Schema Inventory Revised; Mot = Motivational Salience; SE = Self-Evaluative Salience; MAAS = Mindfulness Attention and Awareness Scale; CFQ = Cognitive Fusion Questionnaire; BI-AAQ = Body Image Action and Acceptance Questionnaire; SCS Total = Self-Compassion Scale Total; CH = Common Humanity; OI = Over-identified.

* $p < .05$

** $p < .001$

Body Image Components and Individuals' Relationship to Self, Thoughts and Feelings

In order to assess the hypothesis that mindfulness, acceptance of thoughts and feelings, and self-compassion would be negatively correlated with measures of BI dissatisfaction a number of intercorrelations were conducted and can be inspected in Tables 3 and 4, for females and males, respectively. In addition, the tables also show the intercorrelations between cognitive fusion and measures of BI dissatisfaction.

Attitudinal Component of Body Image & Mindfulness, Acceptance, Self-Compassion and Cognitive Fusion

As predicted, significant negative relationships were found for both genders amongst mindfulness and BI dissatisfaction, BI disturbance, and BI investment, including overall investment in BI and self-evaluative investment. This relationship pattern was consistent for both genders between acceptance of BI thoughts and feelings and BI dissatisfaction, BI disturbance, and BI investment, including self-evaluative investment. The analysis also revealed that both genders showed significant negative relationships between self-compassion scores and BI dissatisfaction, BI disturbance, and BI dysphoria, as predicted. Also as predicted, cognitive fusion was positively and significantly related to BI dissatisfaction and disturbance for both genders.

Taken together, these results suggest that both men and women who displayed higher levels of mindfulness, acceptance of thoughts and feelings, and self-compassion also displayed lower levels of dissatisfaction with their BI, less disturbance associated with their BI, placed less importance on their BI as a measure of self-worth, and displayed less frequent dysphoria associated with BI salient situations. In addition, individuals who were more fused with their thoughts also displayed more BI dissatisfaction and disturbance.

Behavioural Component of Body Image & Mindfulness, Acceptance, Self-Compassion, and Cognitive Fusion

Gender differences were observed in the relationship patterns amongst body checking and body avoidance behaviours and mindfulness, cognitive fusion, acceptance, and self-compassion, with females displaying significant negative relationships between body checking and body avoidance behaviours, and mindfulness, self-compassion, and acceptance of BI thoughts and feelings. On the other hand, no significant relationships between these variables were observed for men in the sample, except for the negative correlation between

acceptance and body checking behaviours. Significant positive correlations were observed between body checking/body avoidance behaviours and cognitive fusion for women only.

Gender Specific Measures of Body Image & Mindfulness, Acceptance, Self-Compassion and Cognitive Fusion

Lastly, differences were also observed for men and women in their relationship patterns with independent measures of BI (male body attitudes in men and body shape dissatisfaction in women). For men, significant relationships between mindfulness and muscularity, body fat and height were observed. Interestingly, cognitive fusion was positively and significantly related to muscularity only; acceptance was mostly strongly and significantly correlated with muscularity and body fat.

As expected, for women, dissatisfaction with body shape was negatively and significantly correlated with mindfulness, acceptance, and self-compassion. A positive significant relationship was observed between dissatisfaction with body shape and cognitive fusion.

Relationship Between Mindfulness, Self-Compassion, Acceptance, and Cognitive Fusion

As hypothesised, the intercorrelations showed that for women, significant positive relationships were observed between mindfulness, self-compassion, and acceptance; a negative significant relationship was found amongst cognitive fusion and mindfulness, self-compassion, and acceptance. Similar results were found for men, with the exception of the correlation between acceptance and self-compassion.

Tables 5 and 6 below display the results for the intercorrelations amongst BI components and eating disorder symptomatology.

Table 5

Pearson Correlations Between Body Image Components and Eating Disorder Symptomatology, Females Only

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
1.EDE-Q Res	-	.65**	.66**	.66**	.82**	.44**	.52**	.42**	.64**	.56**	.59**	.47**	.31**	.49**
2.EDE-Q EC		-	.82**	.80**	.90**	.58**	.74**	.72**	.82**	.66**	.77**	.52**	.30**	.58**
3.EDE-Q WC			-	.94**	.95**	.73**	.78**	.81**	.87**	.64**	.85**	.59**	.31**	.67**
4.EDE-Q SC				-	.95**	.73**	.78**	.83**	.89**	.68**	.86**	.65**	.38**	.70**
5.EDE-Q Global					-	.69**	.78**	.79**	.87**	.70**	.85**	.61**	.35**	.67**
6.BIQ						-	.69**	.73**	.74**	.56**	.70**	.56**	.26**	.66**
7.BIDQ							-	.76**	.76**	.51**	.77**	.60**	.31**	.68**
8.SIBID								-	.87**	.61**	.80**	.63**	.30*	.75**
9.BSQ									-	.75**	.83**	.61**	.34**	.68**
10.BCQ										-	.65**	.68**	.54**	.66**
11.BIAQ											-	.57**	.29**	.65**
12.ASI-R												-	.86**	.94**
13.ASI-R Mot													-	.63**
14.ASI-R SE														-

* Note. EDE-Q Res = Eating Disorder Examination Questionnaire Restraint Subscale; EDE-Q EC = Eating Concern subscale; EDE-Q WC = Weight Concern subscale; EDE-Q SC = Shape Concern subscale; EDE-Q Global= Eating Disorder Examination Questionnaire Global score; BIQ = Body Image Ideals; BIDQ = Body Image Disturbance Questionnaire; SIBID = Situational Inventory of Body Image Dysphoria; BSQ = Body Shape Questionnaire; BCQ = Body Checking Questionnaire; BIAQ = Body Image Avoidance Questionnaire; ASI-R = Appearance Schema Inventory Revised; Mot = Motivational Salience; SE = Self-Evaluative Salience.

* $p < .05$.

** $p < .001$.

Table 6

Pearson Correlations Between Body Image Components and Eating Disorder Symptomatology, Males Only

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.
1.EDE-Q Res	-	.70**	.54**	.43**	.76**	.33*	.05	.15	.22	.18	.25	.25	.22	.36*	.19	.39*	-.32*
2.EDE-Q EC		-	.70**	.85**	.92**	.36*	.45*	.55**	.52**	.46**	.46**	.27	.50**	.46*	.17	.60**	-.26
3.EDE-Q WC			-	.86**	.87**	.43*	.61**	.67**	.43*	.59**	.50**	.19	.60**	.50**	.11	.63**	-.19
4.EDE-Q SC				-	.94**	.55**	.69**	.76**	.50**	.60**	.65**	.39*	.71**	.56**	.25	.63**	-.25
5.EDE-Q Global					-	.49**	.52**	.61**	.47**	.53**	.54**	.31*	.59**	.54**	.21	.64**	-.29
6.BIQ						-	.58**	.68**	.25	.36*	.56**	.36**	.59**	.46*	.51*	.21	.02
7.BIDQ							-	.71**	.31*	.41*	.48**	.12	.60**	.38*	.23	.32*	.04
8.SIBID								-	.53**	.66**	.71**	.40*	.79**	.32	.10	.40*	-.07
9.BCQ									-	.61**	.55**	.33*	.58**	.21	.07	.30*	-.10
10.BIAQ										-	.57**	.33*	.63**	.32*	.11	.46**	-.21
11.ASI-R											-	.78**	.93**	.27	.22	.21	-.09
12.ASI-R Mot												-	.50**	.14	.18	.11	-.06
13.ASI-R SE													-	.29	.19	.25	-.11
14. MBAS														-	.81**	.74**	.16
15. MBAS Mus															-	.24	.26
16. MBAS BF																-	-.24
17.MBAS Height																	-

* Note. EDE-Q Res = Eating Disorder Examination Questionnaire Restraint Subscale; EDE-Q EC = Eating Concern subscale; EDE-Q WC = Weight Concern subscale; EDE-Q SC = Shape Concern subscale; EDE-Q Global = Eating Disorder Examination Questionnaire Global score; BIQ = Body Image Ideals; BIDQ = Body Image Disturbance Questionnaire; SIBID = Situational Inventory of Body Image Dysphoria; BCQ = Body Checking Questionnaire; BIAQ = Body Image Avoidance Questionnaire; ASI-R = Appearance Schema Inventory Revised; Mot = Motivational Salience; SE = Self-Evaluative Salience; MBAS = Male Body Attitudes Scale; Mus = Muscularity subscale; BF = Body Fat subscale.

* $p < .05$.

** $p < .001$.

Correlations Between Body Image Components

As expected, the result revealed significant positive relationships for both genders amongst BI dissatisfaction and BI disturbance, BI dysphoria, body avoidance, and BI investment (global, self-evaluative and motivational). These results indicate that individuals who experience BI dissatisfaction are also more likely to experience disturbance because of their BI dissatisfaction, more frequent negative emotions associated with their BI, body avoidance behaviours, and are likely to be invested in their BI as a measure of their self-worth.

In line with the hypothesis that BI dissatisfaction will be positively related to body shape dissatisfaction and male body attitudes, the result found that for women, BI dissatisfaction was also strongly and significantly correlated with dissatisfaction with body shape; whereas for men, positive significant relationships were observed between BI dissatisfaction, and muscularity and global male body attitudes. However, differences were also found in the patterns of relationships observed between the BI measures. In particular, BI dissatisfaction was positively correlated with body checking behaviours for women but not for men, suggesting that women are more likely to engage in body checking behaviours when feeling dissatisfied with their appearance, compared to men.

In addition, all of the BI measures were significantly and positively correlated for women, but not for men. In particular, men displayed significant positive correlations amongst BI disturbance and BI dysphoria, BI investment, and male body attitudes, but not motivational investment, muscularity and height. With regard to male only measures, the male body attitudes body fat subscale was the only measure that correlated significantly and positively with BI dysphoria, body checking and avoidance behaviours. This suggests that men who are dissatisfied with the amount of body fat they have are more likely to also experience negative emotions about their BI, are more likely to body check and avoid situations where their body may be exposed or evaluated.

Body Image Components & Eating Disorder Symptomatology

Results indicated that both genders exhibited significant positive relationships amongst global eating disorder behaviours (EDE-Q total) and BI dissatisfaction and BI disturbance. This was in line with the hypotheses generated. However, differences were also observed. In particular, males displayed significant positive correlations between global eating disorder behaviours, eating concern, shape concern, and weight concern and male body attitudes, body fat dissatisfaction, BI investment (self-evaluative and overall only), BI dysphoria, BI dissatisfaction and BI disturbance. In contrast and as expected, females exhibited significant and positive relationships between all of the eating disorder symptomatology and BI measures, with the strongest associations between EDE-Q subscales and dissatisfaction with body shape. Specifically, eating and weight concern were also positively and significantly related to BI disturbance, BI dysphoria, and body avoidance for women.

These results indicate that higher BI dissatisfaction and disturbance are related to more eating disorders symptomatology including food restraint, eating concern, weight concern, and shape concern. For men, more dissatisfaction with body fat is related to more atypical eating thoughts and behavioural patterns as measured by the EDE-Q. Similarly, for women, more dissatisfaction with body shape is linked to more disordered eating thoughts and behaviours.

Tables 7 and 8 provide the intercorrelations obtained between BI measures and personality and psychological wellbeing.

Table 7

Pearson Correlation Between Body Image Components and Personality and Psychological Wellbeing, Females Only

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.
1.RSES	-	.29**	.22**	.35*	.45**	.33**	.27*	.41**	.48**	.36**	.38**	.19*	.40*	.20*	.07	.26*
2.PSP		-	.71**	.7**	.33**	.21*	.25*	.49**	.47**	.61**	.55**	.54**	.46**	.65**	.46**	.65**
3.NDIP			-	.69**	.26*	.23*	.25*	.42**	.39**	.57**	.51**	.41**	.39**	.43**	.21*	.49**
4.NDCP				-	.46**	.40**	.40**	.38**	.42**	.56**	.51**	.40**	.43**	.38**	.14	.46**
5.DASS-Dep					-	.69**	.66**	.36**	.48**	.49**	.47**	.31**	.47**	.28**	.12	.35**
6.DASS-Anx						-	.76**	.27*	.41**	.36**	.41**	.26*	.36**	.18*	.07	.22*
7.DASS-Stress							-	.33**	.39**	.42**	.40**	.27**	.42**	.25*	.12	.29**
8.BIQ								-	.69**	.73**	.74**	.56**	.70**	.56**	.26*	.66**
9.BIDQ									-	.76**	.76**	.51**	.77**	.60**	.31**	.68**
10.SIBID										-	.86**	.61**	.80**	.63**	.30**	.75**
11.BSQ											-	.75**	.83**	.61**	.34**	.68**
12.BCQ												-	.65**	.68**	.54**	.66**
13.BIAQ													-	.57**	.29**	.65**
14.ASI-R														-	.86**	.94**
15.ASI-R Mot															-	.63**
16.ASI-R SE																-

* Note. RSES = Rosenberg Self-Esteem Scale; PSP = Perfectionistic Self-Presentation; NDIP = Nondisplay of Imperfection; NDCP = Nondisclosure of Imperfection; DASS = Depression, Anxiety and Stress Scale; Dep = Depression; Anx = Anxiety; BIQ = Body Image Ideals; BIDQ = Body Image Disturbance Questionnaire; SIBID = Situational Inventory of Body Image Dysphoria; BSQ = Body Shape Questionnaire; BCQ = Body Checking Questionnaire; BIAQ = Body Image Avoidance Questionnaire; ASI-R = Appearance Schema Inventory Revised; Mot = Motivational Salience; SE = Self-Evaluative Salience.

* $p < .05$.

** $p < .001$.

Table 8

Pearson Correlations Between Body Image Components and Personality and Psychological Wellbeing, Males Only

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.
1.RSES	-	.16	.19	.35*	.42*	.34*	.38*	.48*	.50*	.67*	.26	.50**	.48**	.18	.58**	.20	.13	.23	.00
2.PSP		-	.67**	.66**	.21	.37*	.32*	.35*	.31	.40*	.26	.30	.61**	.53**	.53**	.13	.13	.09	-.16
3.NDIP			-	.68**	.62**	.44*	.58**	.48*	.47*	.58*	.37*	.42*	.51**	.22	.60**	.11	.17	.01	-.19
4.NDCP				-	.45*	.32*	.36*	.43*	.47*	.41*	.30	.19	.43*	.33*	.39*	.36*	.30	.20	-.08
5.DASS-Dep					-	.67**	.72**	.32*	.40*	.43*	.25	.24	.18	-.13	.35*	.11	.08	.09	.07
6.DASS-Anx						-	.77**	.29	.22	.35*	.40*	.21	.39*	.11	.49**	.05	.12	-.02	.15
7.DASS-Stress							-	.42*	.37*	.50*	.35*	.39*	.37*	-.08	.56**	.17	.12	.13	.02
8.BIQ								-	.58**	.68**	.25	.36*	.56**	.36*	.59*	.46*	.51**	.21	.02
9.BIDQ									-	.71**	.31*	.41*	.48*	.12	.60**	.38*	.23	.32*	.04
10.SIBID										-	.53**	.66**	.71**	.40*	.79**	.32	.10	.40*	-.07
11.BCQ											-	.61**	.55**	.33**	.93**	.21	.07	.30*	-.10
12.BIAQ												-	.57**	.33**	.63**	.32*	.11	.46*	-.21
13.ASI-R													-	.78**	.93**	.27	.22	.21	-.09
14.ASI-R Mot														-	.50**	.14	.18	.11	-.06
15.ASI-R SE															-	.29	.19	.25	-.11
16.MBAS																-	.81**	.74**	.16
17.MBAS Mus																	-	.24	.26
18.MBAS BF																		-	-.24
19.MBAS Height																			-

*Note. RSES = Rosenberg Self-Esteem Scale; PSP = Perfectionistic Self-Presentation; NDIP = Nondisplay of imperfection; NDCP = Nondisclosure of imperfection; DASS = Depression, Anxiety, and Stress Scale; BIQ = Body Ideals Questionnaire; BIDQ = Body image disturbance questionnaire; SIBID = situational inventory of body image dysphoria; BCQ = body checking questionnaire; BIAQ = Body image avoidance questionnaire; ASI-R = Appearance Schemas Inventory – Revised; Mot = Motivational salience; SE = self-evaluative salience; MBAS = Male body attitudes scale; Mus = Muscularity; BF = Body fat.

*<.05

**<.001

Body Image Components & Personality and Psychological Wellbeing

Body Image Components & Perfectionism

As hypothesised that BI measures would be positively related to perfectionism, the results showed that all of the BI measures significantly and positively correlated with perfectionistic self-presentation, nondisplay of imperfection and nondisclosure of imperfection (except motivational investment) for women. The results found that men differed slightly to those of the women in this sample. Specifically, only BI dissatisfaction, BI dysphoria, and BI investment were significantly and positively correlated with perfectionistic self-presentation. Further, nondisplay of imperfection was correlated significantly with all BI measures for men except motivational investment and male body attitudes; whereas only BI dissatisfaction, BI disturbance, BI dysphoria, BI investment, and global male attitudes were significantly correlated with nondisclosure of imperfection. Taken together, these results indicate that there is a significant link between perfectionism and BI dissatisfaction in men and women. A range of BI outcomes have been found to significantly relate to perfectionism.

Body Image Components & Self-Esteem

The hypothesis that BI measures would be negatively related to self-esteem was not supported as the result revealed that the intercorrelations among BI related variables and self-esteem for both genders show positive and significant relationships, except for a small number of BI variables (motivational investment for women; motivational investment, body checking and male body attitudes for men).

Body Image Components & Psychological Wellbeing

As predicted, it was found that for women all of the BI measures with the exception of motivational investment, were positively and significantly correlated with depression, anxiety, and stress. On the other hand, it was found that for men BI measures (BI dissatisfaction, BI disturbance, BI dysphoria, and self-evaluative investment in BI) were

positively and significantly related to depression and stress. However, anxiety levels were positively and significantly correlated with BI dysphoria, body checking, and BI investment measures only. This implies that there may be some differences for men and women and how psychological wellbeing relates to BI outcomes. Specifically, it seems that for women psychological wellbeing is significantly related to all BI outcomes except motivational investment. This suggests that the importance placed on grooming and looking attractive is not connected to experiencing depression, anxiety and stress. On the other hand, for men it seems that if an individual is experiencing BI dysphoria, body checking behaviour and BI investment they are also more likely to experience anxiety. In addition, these BI outcomes and BI dissatisfaction and disturbance are positively related to depression and stress in men.

Intercorrelations between measures of the relationship to self, thoughts and feelings and eating disorder symptomatology can be inspected in Tables 9 and 10.

Table 9

Pearson Correlation Between Individuals' Relationship to Self, Thoughts, and Feelings and Eating Disorder Symptomatology, Females Only

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.
1.EDE-Q Res	-	.65**	.66**	.66**	.82**	-.27**	.31**	-.58**	-.29**	-.28**	-.26**	-.15	-.16	-.25*	-.21*
2.EDE-Q EC		-	.82**	.80**	.90**	-.36**	.49**	-.74**	-.41*	-.36**	-.37**	-.20*	-.35**	-.26*	-.32**
3.EDE-Q WC			-	.94**	.95**	-.39**	.51**	-.82**	-.54**	-.47**	-.47**	-.25*	-.46**	-.40**	-.44**
4.EDE-Q SC				-	.95**	-.40**	.51**	-.80**	-.52**	-.49**	-.48**	-.19*	-.44**	-.37**	-.41**
5.EDE-Q Global					-	-.38**	.50**	-.81**	-.48**	-.44**	-.44**	-.21*	-.39**	-.35**	-.38**
6.MAAS						-	-.46**	.38**	.33**	.21*	.33**	.11	.31**	.23*	.33**
7.CFQ							-	-.57**	-.75**	-.56**	-.66**	-.41**	-.62**	-.58**	-.66**
8.BI-AAQ								-	.53**	.45**	.49**	.25*	.46**	.36**	.43**
9.SCS Total									-	.84**	.80**	.64**	.77**	.79**	.78**
10.Self-kindness										-	.61**	.58**	.51**	.67**	.46**
11.Self-judgement											-	.23*	.65**	.43**	.67**
12.Com Hum												-	.26*	.63**	.29**
13.Isolation													-	.45**	.66**
14. Mindfulness														-	.54**
15. Overidentified															-

* Note. EDE-Q Res = Eating Disorder Examination Questionnaire Restraint Subscale; EDE-Q EC = Eating Concern subscale; EDE-Q WC = Weight Concern subscale; EDE-Q SC = Shape Concern subscale; EDE-Q Global = Eating Disorder Examination Questionnaire Global score; MAAS = Mindfulness Attention and Awareness Scale; CFQ = Cognitive Fusion Questionnaire; BI-AAQ = Body Image Action and Acceptance Questionnaire; SCS Total = Self-Compassion Scale Total; Com Hum = Common Humanity subscale.

* $p < .05$.

** $p < .001$.

Table 10

Pearson Correlation Between Individuals' Relationship to Self, Thoughts, and Feelings and Eating Disorder Symptomatology, Males Only

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.
1.EDE-Q Res	-	.70**	.54**	.43**	.76**	-.19	-.05	-.27	-.12	-.21	-.09	-.04	-.06	-.15	-.12
2.EDE-Q EC		-	.70**	.85**	.92**	-.43*	.27	-.55**	-.29	-.22	-.29	-.15	-.25	-.14	-.26
3.EDE-Q WC			-	.86**	.87**	-.38*	.41*	-.76**	-.30	-.21	-.34*	-.12	-.22	-.12	-.30
4.EDE-Q SC				-	.94**	-.45*	.31*	-.77**	-.40*	-.25	-.48*	-.09	-.33*	-.20	-.43*
5.EDE-Q Global					-	-.41*	.27	-.68**	-.32*	-.26	-.35*	-.10	-.21	-.18	-.33*
6.MAAS						-	-.48**	.48**	.34*	.39*	.25	.18	.13	.35*	.29
7.CFQ							-	-.35*	-.73**	-.51**	-.64**	-.31	-.65**	-.48*	-.78**
8.BI-AAQ								-	.26	.12	.38*	.02	.19	.11	.30
9.SCS Total									-	.83**	.87**	.64**	.64**	.79**	.86**
10.Self-kindness										-	.54**	.72**	.21	.81**	.56**
11.Self-judgement											-	.31*	.68**	.56**	.84**
12.Com Hum												-	.15	.64**	.30
13.Isolation													-	.21	.69**
14. Mindfulness														-	.52**
15. Overidentified															-

* Note. EDE-Q Res = Eating Disorder Examination Questionnaire Restraint Subscale; EDE-Q EC = Eating Concern subscale; EDE-Q WC = Weight Concern subscale; EDE-Q SC = Shape Concern subscale; EDE-Q Global = Eating Disorder Examination Questionnaire Global score; MAAS = Mindfulness Attention and Awareness Scale; CFQ = Cognitive Fusion Questionnaire; BI-AAQ = Body Image Action and Acceptance Questionnaire; SCS Total = Self-Compassion Scale Total; Com Hum = Common Humanity subscale.

* $p < .05$.

** $p < .001$.

Individuals' Relationship to Self, Thoughts and Feelings & Eating Disorder

Symptomatology

As hypothesised, significant negative relationships were found amongst all of the eating disorder symptoms and mindfulness, acceptance and self-compassion for women. Acceptance of BI related thoughts and feelings was most strongly linked to eating concern, weight concerns, shape concern, and the global eating pathology scores. Also as expected, positive significant relationships were found between cognitive fusion and all of the eating disorder subscales for women. These results show that women with more mindful awareness, more self-compassion, and more acceptance regarding their feelings and thoughts are likely to experience less disordered eating overall. Similarly, higher levels of fusion with thoughts are likely to result in more disordered eating.

The intercorrelations among measures of *eating disorder symptomatology* and measures of *relationship to self, thoughts, and feelings* for men differed slightly from those for women. The results showed that negative significant relationships exist between all EDE-Q subscales except restraint and mindfulness and acceptance for men. In addition, self-compassion was negatively and significantly correlated with shape concern and global EDE-Q only. Lastly, cognitive fusion was found to positively correlate with weight and shape concern only.

Tables 11 and 12 present the correlational data for mindfulness, self-compassion, cognitive fusion, acceptance, and perfectionism/ psychological wellbeing.

Table 11

Pearson Correlation Between Individuals' Relationship to Self, Thoughts, and Feelings and Personality and Psychological Wellbeing, Females Only

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.
1.RSES	-	.29**	.22**	.35*	.45**	.33**	.27*	-.26*	.40**	-.36**	-.31**	-.24*	-.18*	-.24*	-.36**	-.22*	-.20*
2.PSP		-	.71**	.7**	.33**	.21*	.25*	-.34**	.43**	-.52**	-.50**	-.49**	-.45**	-.27*	-.45**	-.33**	-.33**
3.NDIP			-	.69**	.26*	.23*	.25*	-.39**	.43**	-.43**	-.52**	-.49**	-.42**	-.27*	-.45**	-.37**	-.40**
4.NDCP				-	.46**	.40**	.40**	-.41**	.53**	-.48**	-.55**	-.49**	-.49**	-.30**	-.47**	-.43**	-.32**
5.DASS-Dep					-	.69**	.66**	-.26**	.63**	-.42**	-.62**	-.49**	-.52**	-.34**	-.56**	-.43**	-.49**
6.DASS-Anx						-	.76**	-.28**	.58**	-.34**	-.46**	-.33**	-.38**	-.20*	-.40**	-.37**	-.43**
7.DASS-Stress							-	-.40**	.60**	-.36**	-.48**	-.37**	-.45**	-.16	-.41**	-.31**	-.47**
8.MAAS								-	-.46**	.38**	.33**	.21*	.33**	.11	.32**	.23*	.33**
9.CFQ									-	-.57**	-.75**	-.56**	-.66**	-.41**	-.62**	-.58**	-.66**
10.BI-AAQ										-	.53**	.45**	.49**	.25*	.46**	.36**	.43**
11.SCS											-	.84**	.80**	.64**	.77**	.79**	.78**
12.Self-kindness												-	.61**	.58**	.51**	.67**	.46**
13.Self-judgement													-	.23*	.65**	.43**	.67**
14.Com Hum														-	.26*	.63**	.29**
15.Isolation															-	.45**	.66**
16.Mindfulness																-	.54**
17. Overidentified																	-

* Note. RSES = Rosenberg Self-Esteem Scale; PSP = Perfectionistic Self-Presentation; NDIP = Nondisplay of Imperfection; NDCP = Nondisclosure of Imperfection; DASS = Depression, Anxiety and Stress Scale; Dep = Depression; Anx = Anxiety; MAAS = Mindfulness Attention and Awareness Scale; CFQ = Cognitive Fusion Questionnaire; BI-AAQ = Body Image Action and Acceptance Questionnaire; SCS Total = Self-Compassion Scale Total; Com Hum = Common Humanity subscale.

* $p < .05$.

** $p < .001$

Table 12

Pearson Correlation Between Individuals' Relationship to Self, Thoughts, and Feelings and Personality and Psychological Wellbeing, Males Only

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.
1.RSES	-	.16	.19	.35*	.42*	.34*	.38*	-.15	.48**	-.46*	-.47*	-.21	-.51**	-.18	-.53**	-.22	-.51**
2.PSP		-	.67**	.66**	.21	.37*	.32*	-.38*	.49**	-.31	-.45*	-.24	-.57**	-.09	-.37*	-.33*	-.45*
3.NDIP			-	.68**	.62**	.44*	.58**	-.53**	.71**	-.41*	-.61**	-.43*	-.63**	-.25	-.62**	-.29	-.62**
4.NDCP				-	.45*	.32*	.36*	-.39*	.55**	-.26	-.61**	-.51**	-.55**	-.33*	-.41*	-.49**	-.50**
5.DASS-Dep					-	.67**	.72**	-.43*	.67**	-.26	-.47*	-.34*	-.35*	-.25	-.52**	-.23	-.51**
6.DASS-Anx						-	.77**	-.47**	.47**	-.27	-.25	-.17	-.23	-.07	-.24	-.19	-.27
7.DASS-Stress							-	-.51**	.59**	-.41*	-.44**	-.25	-.45*	-.12	-.39*	-.26	-.52**
8.MAAS								-	-.48**	.48**	.34*	.39*	.25	.18	.13	.35*	.29
9.CFQ									-	-.35*	-.73**	-.51**	-.64**	-.31	-.65**	-.48*	-.78**
10.BI-AAQ										-	.26	.12	.38*	.002	.19	.11	.30
11.SCS											-	.83**	.87**	.64**	.64**	.79**	.86**
12.Self-kindness												-	.54**	.72**	.21	.81**	.56**
13.Self-judgement													-	.31*	.68**	.56**	.84**
14.Com Hum														-	.15	.64**	.30
15.Isolation															-	.21	.69**
16.Mindfulness																-	.52**
17.Overidentified																	-

* Note. RSES = Rosenberg Self-Esteem Scale; PSP = Perfectionistic Self-Presentation; NDIP = Nondisplay of Imperfection; NDCP = Nondisclosure of Imperfection; DASS = Depression, Anxiety and Stress Scale; Dep = Depression; Anx = Anxiety; MAAS = Mindfulness Attention and Awareness Scale; CFQ = Cognitive Fusion Questionnaire; BI-AAQ = Body Image Action and Acceptance Questionnaire; SCS Total = Self-Compassion Scale Total; Com Hum = Common Humanity subscale.

* $p < .05$.

** $p < .001$.

Individuals' Relationship to Self, Thoughts and Feelings, & Personality and Psychological Wellbeing

Mindfulness, Acceptance, Self-Compassion, Cognitive Fusion & Perfectionism

As expected, the results revealed significant negative relationships between mindfulness, acceptance, self-compassion and perfectionistic self-presentation, nondisplay of imperfection, nondisclosure of imperfection, depression, anxiety, and stress for women. In contrast, the men showed negative significant relationships between mindfulness, self-compassion and perfectionistic self-presentation, nondisclosure of imperfection and nondisplay of imperfection only. Nondisplay of imperfection was also significantly correlated with acceptance of thoughts and feelings. All perfectionism subscales were significantly and positively related to cognitive fusion. In addition, these findings indicate that more fusion, less acceptance, mindfulness, and self-compassion are correlated with more perfectionistic tendencies.

Mindfulness, Acceptance, Self-Compassion, Cognitive Fusion & Self-Esteem

Contrary to predictions, significant positive relationships were found for both genders amongst self-esteem and cognitive fusion; and negative relationships amongst self-esteem and acceptance, self-compassion. Mindfulness was negatively correlated with self-esteem for women only. These results are unexpected, as the data is not in line with previous research that positive correlates of self-esteem and mindfulness. Generally, as mindfulness increases, so too does self-esteem.

Mindfulness, Acceptance, Self-Compassion, Cognitive Fusion & Psychological Wellbeing

As predicted, mindfulness was negatively and significantly correlated with depression, anxiety and stress. These results indicate that the less mindful individuals are, the more depressed, anxious, and stressed they are. In addition, as expected, for men, the results

showed that self-compassion and acceptance were significantly and negatively related to depression, anxiety and stress. Significant, positive relationships between cognitive fusion and depression, anxiety and stress were found for women. Contrary to predictions, for men, significant negative relationships were found between acceptance and stress, and self-compassion and stress only. A significant positive relationship was found between cognitive fusion and depression, anxiety, and stress for men.

Group comparisons

In order to investigate possible gender differences on measures of BI, mindfulness, cognitive fusion, acceptance, self-compassion, BMI, and eating disorder symptomatology, a number of *t*-test analyses were conducted. The results of these analyses are presented in Table 13. Effect sizes (Cohen's *d*) were calculated along with 95 per cent confidence intervals around the effect size (*d*). Hopkins' (2002) criteria were used to interpret the effect sizes. According to Hopkins, a $d < 0.1$ is considered *trivial*, 0.2 is *small*, 0.6 is *moderate*, 1.2 is *large*, 2.0 is *very large*, and 4.0 is *nearly perfect*.

Table 13

T-test Results From Group Comparisons Between Males and Females on Body Image Measures, Individuals' Relationship to Self, Thoughts, and Feelings, BMI, and Eating Disorder Symptomatology

Variable	Male	Females	<i>t</i> statistic	df	<i>p</i>	<i>d</i>	CI (95%)
	M (SD)	M (SD)					
BMI	24.5(4.86)	24.08(4.87)	.52	205	.61	0.09	-0.24-0.41
<i>Body Image Components</i>							
BIQ	2.16(2.08)	2.03(1.63)	.37	58.21	.71	0.07	-0.27-0.42
BIDQ	1.76(.73)	2.09(.92)	2.11	166	.04*	-0.04	-0.39-0.31
SIBID	1.01(.9)	1.72(1.03)	-3.89	146	<.001*	-0.71	-1.08--0.34
BCQ	36.76(15.12)	49.85(17.7)	-4.54	182	<.001	-0.76	-1.11- -0.42
BIAQ	20.47(9.26)	29.34(13.91)	-4.88	112.98	<.001	-0.68	-1.03- -0.34
ASI-R	3.16(.70)	3.51(.71)	-2.89	190	.004*	-0.49	-0.83- -0.15
ASI-R Motivational	3.09(.67)	3.25(.68)	-1.43	190	.16	-0.24	-0.57 - 0.10
ASI-R Self-Evaluative	2.92(.81)	3.39(.78)	-3.41	190	<.001*	-0.58	-0.92- -0.24
<i>Individuals' Relationships to Self, Thoughts and Feelings</i>							
MAAS	59.46(11.3)	57.36(11.34)	1.12	198	.26	0.18	-0.14 - 0.51
CFQ	45.54 (10.47)	50.02 (13.33)	-2.12	198	.04*	-0.35	-0.68- -0.02
BI-AAQ	68.22 (15.69)	57.52 (19.12)	3.40	184	<.001*	0.58	0.24 - 0.92
SCS Total	2.99(.7)	2.83(.65)	1.39	173	.17	0.24	-0.11 - 0.59
Self-kindness	2.77(.89)	2.84(.84)	-.46	173	.65	-0.08	-0.43 - 0.27
Self-judgement	2.81(.97)	2.60(.87)	1.35	172	.18	0.23	-0.12 - 0.58
Common Humanity	3.15(.79)	3.13(.87)	.11	172	.91	0.02	-0.33- 0.37
Isolation	2.94(.91)	2.70(.87)	1.51	173	.13	0.27	-0.08- 0.62
Mindfulness	3.35(.83)	3.18(.78)	.65	172	.23	0.21	-0.14 - 0.56
Overidentified	3.04(.94)	2.54(.82)	3.24	173	<.001*	0.59	0.23 - 0.94

Eating Disorder Symptomatology

EDE-Q Restraint	1.03(1.37)	1.45(1.48)	-1.66	180	.09	-0.29	-0.63- 0.04
EDE-Q Eating Concern	.65(.87)	1.15(1.43)	2.75	124.91	.007*	-0.38	-0.72- -0.04
EDE-Q Weight Concern	1.21(1.25)	2.2(1.62)	-4.24	96.05	<.001*	-0.64	-0.98- -0.30
EDE-Q Shape Concern	1.47(1.51)	2.49(1.51)	3.55	179	<.001*	-0.61	-0.95- -0.27
EDE-Q Global	1.09(1.09)	1.84(1.41)	-3.67	97.20	<.001*	-0.56	-0.90- -0.22

*Note. BIQ = Body Image Ideals; BIDQ = Body Image Disturbance Questionnaire; SIBID = Situational Inventory of Body Image Dysphoria; BCQ = Body Checking Questionnaire; BIAQ = Body Image Avoidance Questionnaire; ASI-R = Appearance Schema Inventory Revised; MAAS = Mindfulness Attention and Awareness Scale; CFQ = Cognitive Fusion Questionnaire; BI-AAQ = Body Image Action and Acceptance Questionnaire; SCS Total = Self-Compassion Scale Total; EDE-Q = Eating Disordered Examination Questionnaire; PSP = Perfectionistic Self-Presentation; NDIP = Nondisplay of Imperfection; NDCP = Nondisclosure of Imperfection; DASS = Depression, Anxiety and Stress Scale; RSES = Rosenberg Self-Esteem Scale.

* $p < .05$.

** $p < .001$.

Body Image Components

A series of independent samples *t*-tests were carried out to determine potential sex differences on BI measures. As hypothesised, significant differences between men and women were found on measures of BI overall and self-evaluative investment, BI disturbance, BI dysphoria, body checking, BI avoidance, with females displaying higher scores on all of the aforementioned measures. Levene's tests found that the assumption of homogeneity of variance was not met for BI dissatisfaction ($p=.013$) and BI avoidance ($p=.001$), therefore equal variances were not assumed for these measures.

Individuals' Relationship to Self, Thoughts and Feelings

A number of independent samples *t*-tests were conducted to assess potential sex differences on measures of mindfulness, cognitive fusion, acceptance, and self-compassion. As hypothesised, it was found that there were no significant differences between males and females on measures of mindfulness and self-compassion. However, significant differences were found for cognitive fusion, with females display higher levels of cognitive fusion than males. In addition, the males in this sample displayed significantly higher scores on acceptance of BI thoughts and feelings, and over-identification with thoughts compared to females.

Eating Disorder Symptomatology

A series of independent samples *t*-tests were conducted to assess potential sex differences on measures of eating disorder symptomatology. As hypothesised, significant sex differences were observed on measures of eating concern, weight concern, shape concern and global eating disorder pathology, with women scoring higher than men on all subscales. No significant differences were found for the restraint subscale. Levene's tests found that the

assumption of homogeneity of variance was not met for eating concern ($p=.001$), weight concern ($p=.04$) and global EDE-Q ($p=.04$), therefore equal variances were not assumed for these measures.

Group Comparisons Within Depression and BMI Categories on Measures of Body Image, Relationship to Self, Thoughts and Feelings, Eating Disorder Symptomatology and Perfectionism

In order to better understand any significant BMI group differences on measures of BI, mindfulness, cognitive fusion, acceptance, self-compassion, eating disorder symptomatology and perfectionism within depression, anxiety, further analyses are warranted. To assess differences among categories of depression, anxiety, and BMI, a number of 1-way ANOVA comparisons were conducted. World Health Organisation (2013) BMI categories were used to create the BMI categories for this study, given that these are meaningful categories. Table 14 displays the means and standard deviations for all of the variables within the BMI categories. Results are presented within domains (*body image components, individuals' relationship to self, thoughts and feelings, eating disorder symptomatology, and psychological wellbeing*).

Table 14
Means and Standard Deviations for Body Image Measures, Eating Disorder Symptomatology, Psychological Wellbeing and Individuals' Relationship to Self, Thoughts and Feeling with BMI Categories

BMI Categories	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
Body Image	BIQ	BIDQ	SIBID	ASI-R	BCQ	BIAQ
<16	3.18 (2.31)	2.57 (1.01)	3.15 (-)	4.00 (.14)	46 (7.07)	27 (16.9)
<18.5	2.66 (2.48)	1.64 (.64)	1.55 (1.08)	3.68 (.57)	45.67 (15.8)	29 (11.3)
18.50-24.99	1.83 (1.66)	1.89 (.86)	1.39 (.95)	3.39 (.78)	46.59 (17.6)	24.93 (13.1)
>25	2.00 (1.78)	2.03 (.97)	1.52 (1.18)	3.34 (.56)	44.67 (19.2)	27.89 (13.3)
>30	3.09 (1.69)	2.60 (.69)	2.21 (.98)	3.58 (.59)	49.25 (18.3)	37.8 (11.8)
	Mindfulness	Cognitive Fusion	Acceptance	Depression	Anxiety	Stress
<16	55 (7.07)	66 (21.21)	65.50 (10.60)	18 (22.63)	8 (8.49)	14 (11.41)
<18.5	55.60 (10.67)	45.20 (12.44)	63 (19.11)	9 (7.87)	9 (7.46)	15.33 (11.22)
18.50-24.99	58.64 (11.30)	48.43 (13.09)	63.25 (17.56)	9.23 (9.81)	8.24 (8.33)	13.80 (9.18)
>25	57.77 (11.60)	49.07 (11.62)	57.82 (20.12)	10.49 (9.83)	9.39 (8.79)	17.24 (10.55)
>30	54.10 (11.86)	50.75 (13.06)	44.55 (18.04)	13.33 (11.07)	9.62 (9.77)	17.24 (9.66)
	EDE-G Global	Restraint	Eating Concern	Weight Concern	Shape Concern	-
<16	1.26 (.94)	.70 (.42)	.00 (.00)	1.90 (1.83)	2.44 (1.50)	-
<18.5	1.26 (1.84)	1.15 (2.17)	.50 (.74)	1.60 (2.29)	1.78 (2.20)	-
18.50-24.99	1.45 (1.27)	1.30 (1.49)	.86 (1.18)	1.62 (1.42)	1.97 (1.54)	-
>25	1.72 (1.61)	1.31 (1.45)	1.20 (1.72)	2.17 (1.77)	2.21 (1.98)	-
>30	2.67 (.91)	1.67 (1.14)	1.75 (1.19)	3.46 (1.20)	3.74 (1.33)	-

*Note. BMI = Body Mass Index; BCQ = Body Checking Questionnaire; BIAQ = Body Image Avoidance Questionnaire; ASI-R = Appearance Schema Inventory Revised; SIBID = Situational Inventory of Body Image Dysphoria; BIQ = Body Image Ideals Questionnaire; BIDQ = Body Image Disturbance Questionnaire; EDEQ = Eating Disorder Examination Questionnaire.

Body Image Components

As shown in Table 14, significant group differences were observed for BI dysphoria, $F(4, 146) = 2.76, p = .03$, BI dissatisfaction, $F(4, 170) = 2.63, p = .04$, and BI disturbance, $F(4, 166) = 3.12, p = .02$, with individuals in the severely underweight and obese categories displaying the highest levels of BI dissatisfaction, BI disturbance, and BI dysphoria. No significant group differences were found for body checking, $F(4, 182) = .22, p = .93$ or appearance investment $F(4, 190) = .92, p = .46$; however, significant group differences were found for BI avoidance, $F(4, 181) = 4.26, p = .003$, with individuals in the obese BMI category displaying the highest BI avoidance behaviours.

Individuals' Relationship to Self, Thoughts, and Feelings & Psychological Wellbeing

As evident from inspection of Table 14, the lowest level of mindfulness occurred within the obese BMI category; however, there were no significant differences in mean scores for mindfulness across the BMI categories, $F(4, 198) = .78, p = .54$. Although individuals within the severely underweight BMI category reported the highest level of cognitive fusion (i.e., entanglement with their thoughts), no significant differences were found across the BMI categories, for cognitive fusion $F(4, 198) = 1.14, p = .34$. Similar results were found for depression, $F(4, 205) = 1.14, p = .34$; anxiety, $F(4, 206) = .23, p = .92$; and stress $F(4, 206) = .75, p = .56$, although severely underweight individuals reported the highest levels of depressive symptoms (see Table 14). In terms of acceptance, individuals with a BMI of 30 and above (obese) were the least accepting of their BI, followed by individuals who were overweight. Significant group differences were observed, $F(4, 184) = 4.77, p = .001$.

Eating Disorder Symptomatology

The restraint subscale was the only subscale of the eating disorder symptoms that did not display any significant group differences, $F(4, 180) = .40, p = .81$. However, significant group differences were found for eating concern, $F(4, 179) = 2.65, p = .04$, shape concern, $F(4, 179) = 5.07, p = .001$, weight concern, $F(4, 180) = 6.70, p < .001$, and global EDEQ score, $F(4, 178) = 3.64, p = .007$, with individuals in the obese BMI category showing the highest scores.

In addition to BMI, the data divided into meaningful depression categories (based on the DASS scoring sheet). One-way ANOVAs were also conducted to assess for group differences within the depression categories. These results can be observed in Table 15. Once again, results are presented based on their domains.

Table 15
Means and Standard Deviations for Body Image Measures, Individuals' Relationship to Self, Thoughts and Feelings, and Eating Disorder Symptomatology Within Depression Categories

Depression Categories	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
<i>Body Image Measures</i>					
	<i>BIQ</i>	<i>BIDQ</i>	<i>SIBID</i>	<i>BCQ</i>	<i>BIAQ</i>
Normal	1.63 (1.6)	1.75 (.71)	1.21 (.88)	43.31 (15.5)	23.4 (11.2)
Mild	2.72 (1.66)	2.27 (.92)	1.85 (1.18)	47.8 (18.35)	29.11 (13.2)
Moderate	2.50 (1.57)	2.18 (.66)	1.84 (.84)	48.23 (17.7)	31.6 (12.58)
Severe	3.06 (2.32)	2.62 (1.05)	2.01 (1.38)	55.45 (25.03)	31.81 (17.6)
Extremely severe	3.41 (1.64)	3.09 (1.39)	2.85 (.82)	63.31 (21.9)	42.69 (15.72)
<i>Individuals' Relationship to Self, Thoughts and Feelings</i>					
	<i>Mindfulness</i>	<i>Cognitive Fusion</i>	<i>Acceptance</i>	-	-
Normal	60.43 (11.34)	42.95 (10.68)	65.17 (16.23)	-	-
Mild	57.25 (10.53)	55 (6.52)	56 (21.39)	-	-
Moderate	52.11 (10.04)	55.89 (7.96)	55.46 (15.7)	-	-
Severe	53.38 (8.78)	60.15 (9.17)	51.36 (23.7)	-	-
Extremely severe	52.63 (11.04)	65.81 (13.49)	40.92 (22.8)	-	-
<i>Eating Disorder Symptomatology</i>					
	<i>EDEQ Total</i>	<i>Restraint</i>	<i>Eating Concern</i>	<i>Shape Concern</i>	<i>Weight Concern</i>
Normal	1.29 (1.09)	1.22 (1.4)	.62 (.84)	1.81 (1.46)	1.49 (1.23)
Mild	2.08 (1.61)	1.80 (1.46)	1.51 (1.66)	2.68 (1.98)	2.32 (1.92)
Moderate	1.93 (1.37)	1.14 (1.33)	1.37 (1.39)	2.7 (1.66)	2.52 (1.59)
Severe	2.08 (1.59)	1.24 (1.18)	1.49 (1.49)	2.97 (2.08)	2.6 (2.07)
Extremely severe	3.10 (1.84)	2.38 (1.98)	2.74 (2.1)	3.69 (1.95)	3.58 (1.59)

*Note. *BIQ* = Body Image Ideals Questionnaire; *BIDQ* = Body Image Disturbance Questionnaire; *SIBID* = Situational Inventory of Body Image Dysphoria; *BCQ* = Body Checking Questionnaire; *BIAQ* = Body Image Avoidance Questionnaire; *EDEQ* = Eating Disorder Examination Questionnaire.

Body Image Measures

Analyses of group differences for BI measures revealed significant group differences for BI dissatisfaction $F(4, 170) = 5.79, p < .001$, BI disturbance $F(4, 166) = 9.89, p < .001$, BI dysphoria $F(4, 146) = 8.59, p < .001$, BI avoidance $F(4, 181) = 9.06, p < .001$, and body checking $F(4, 182) = 4.84, p = .001$. For all of these variables, the ‘extremely severe’ category of depression was linked with higher scores in BI dissatisfaction, BI disturbance, BI dysphoria, BI avoidance and body checking.

Individuals’ Relationship to Self, Thoughts and Feelings

As can be seen in Table 14, significant group differences were found for mindfulness, with the ‘extremely severe’ depressed individuals scoring lowest on mindfulness, $F(4, 198) = 5.11, p = .001$. Similarly, this category of individuals also scored highest on cognitive fusion $F(4, 198) = 30.58, p < .001$ and lowest on acceptance of thoughts and feelings around BI $F(4, 184) = 7.57, p < .001$.

Eating Disorder Symptomatology

With regard to eating disorder symptoms, significant group differences were found for restraint $F(4, 180) = 2.51, p = .04$, eating concern $F(4, 179) = 11.51, p < .001$, shape concern $F(4, 179) = 6.01, p < .001$, weight concern $F(4, 180) = 8.54, p < .001$, and total EDEQ score $F(4, 178) = 7.28, p < .001$, with individuals within the ‘extremely severe’ depression category displaying the highest scores for all of the eating disorder subscales.

Mediation Analyses

Mediation analyses are designed to investigate the extent at which one variable influences another through a third, or mediating variable. For example, a relationship between variable X (Independent variable: IV) and variable Y (Dependent variable: DV) may

be influenced through variable Z (mediator or predictor variable). This type of analysis serves to identify or at least offer an indication of a third variable that may influence the relationship. In order to perform a mediation analysis, it is conditional that the variables in under analysis are all significantly related to each other. Once a relationship has been established, hierarchical regression analyses followed by post hoc tests are utilised to interpret whether the mediator variable does indeed influence the relationship between IV and DV (Preacher, 2013). The Sobel test is commonly used for the purpose of post hoc analysis (Preacher, 2013).

Preliminary correlational analyses for the mediation analyses and results are presented in Table 16. Presented in Table 16 are significant correlations found between IV, variables, mindfulness, cognitive fusion, acceptance, and DV variables including BI dissatisfaction, BI disturbance, BI dysphoria, overall and self-evaluative BI investment, body shape dissatisfaction, male body attitudes, body checking and body avoidance behaviours. Other variables investigated in this study including depression, anxiety, stress, perfectionism, eating disorder symptomatology, self-esteem, and self-compassion did not significantly correlate with the IV and are therefore not presented in Table 16.

Table 16

Mediation Results – Preliminary Significant Correlations Between Mindfulness, Cognitive Fusion, Acceptance and Dependent Variables

Variable	Mindfulness	Cognitive Fusion	Acceptance
1. BI Dissatisfaction	-.41**	.48**	-.59**
2. BI Disturbance	-.33**	.56**	-.73**
3. BI dysphoria	-.29**	.63**	-.76**
4. BI investment	-.24**	.40**	-.64**
5. Self-evaluative investment	-.29**	.48**	-.73**
6. Body shape dissatisfaction	-.40**	.50**	-.83**
7. Male body attitudes	-.42*	-	-.46*
8. Body checking	-.32**	.41**	-.58**
9. Body avoidance	-.37**	.53**	-.76**
10. Mindfulness	-	-.47**	.40**

* $p < .05$ ** $p < .001$ **Mediation Model 1 – Mindfulness, Cognitive Fusion, and Body Image Measures**

As displayed in Table 16, significant relationships were observed between mindfulness, cognitive fusion, and BI dissatisfaction. Given these significant relationships, a preliminary hierarchical regression analysis was conducted to determine whether mindfulness (IV) was a significant predictor of cognitive fusion (CFQ; mediating variable). At step one, the mediating variable was entered (CFQ) and at step two, the IV (mindfulness) was entered. It was found that mindfulness was a significant predictor of CFQ, $R^2 = .22$, adjusted $R^2 = .22$, $F(1, 198) = 55.83$, $p < .001$. Additional regression analyses were conducted to ascertain if mindfulness was a significant predictor of BI dissatisfaction, and whether cognitive fusion mediated this relationship. At step one, BI dissatisfaction (DV) and mindfulness (IV) were entered. At step two, cognitive fusion (possible mediating variable) was entered. The results revealed that mindfulness was a significant predictor of BI dissatisfaction, $R^2 = .17$, adjusted $R^2 = .16$, $F(1, 168) = 34.23$, $p < .001$. Further analyses revealed that mindfulness remained a significant predictor from the first model to the second model and that the semi-partial correlations decreased from $-.41$ (0.17) to $-.21$ (.04), resulting in the variance decreasing from

17% to 4% when the mediating variable was added. This suggests a possible mediation effect. However, the result remained significant for both models (model one and two), suggesting that there was no medication effect. Despite this, the follow-up Sobel test of significance suggested a significant mediation, $t = -4.21, p < .001$.

Further mediation analyses were conducted to test whether cognitive fusion mediated the relationship between mindfulness and other DV variables. As shown in Table 16, significant relationships were found between mindfulness, cognitive fusion, and BI disturbance, BI dysphoria, overall investment in BI and self-evaluative investment in BI, body shape dissatisfaction, body checking, and body image avoidance. Consequently, a number of separate hierarchical regression analyses were conducted to determine whether: (a) mindfulness was a significant predictor of BI disturbance, BI dysphoria, overall investment in BI, self-evaluative investment in BI, body shape dissatisfaction, body checking, and BI avoidance and (b) whether cognitive fusion mediated these relationships. For each analysis at step one, the DV (BI disturbance, BI dysphoria, overall investment in BI, self-evaluative investment in BI, body shape dissatisfaction, body checking, and BI avoidance) and the predictor variables (mindfulness) were entered. At step two, the possible mediating variable (cognitive fusion) was entered for each separate analysis.

The results revealed that for BI disturbance, mindfulness was a significant predictor, $R^2 = .11$, adjusted $R^2 = .10$, $F(1, 166) = 19.76, p < .001$. Mindfulness remained a significant predictor from first model to the second model with the semi-partial correlations reducing from $-.33 (.11)$ to $-.07 (.01)$, resulting in the variance reducing from 11% to 1% when the mediating variable was added. This indicated a mediation effect. In addition, model 1 was found to be significant ($p < .001$) while model 2 was non-significant ($p = .30$), further indicating a mediation effect. A follow-up Sobel test of significance revealed a significant mediation effect, $t = -5.18, p < .001$.

It was also found that for BI dysphoria, mindfulness was a significant predictor, $R^2 = .08$, adjusted $R^2 = .08$, $F(1, 145) = 13.34$, $p < .001$. Mindfulness remained a significant predictor from first model to the second model. Semi-partial correlations reduced from $-.29 (.08)$ to $.02 (.0004)$, resulting in the variance decreasing from 8% to under 1% when the mediating variable was added, indicating a mediation effect. In addition, the significance level changed from significant at model 1 ($p < .001$) to non-significant at model two ($p = .76$) further indicating a mediation effect. A follow-up Sobel test of significance indicated a significant mediation effect, $t = -5.76$, $p < .001$.

Further mediation analyses indicated that for overall investment in BI, mindfulness was a significant predictor, $R^2 = .06$, adjusted $R^2 = .05$, $F(1, 182) = 10.78$, $p = .001$. Mindfulness remained a significant predictor from first model to the second model. Semi-partial correlations reduced from $-.24 (.06)$ to $-.05 (.003)$, resulting in the variance dropping from 6% to under 1% when the mediating variable was added, suggesting a possible mediation effect. In addition, the significance level changed from significant at model 1 ($p = .001$) to non-significant at model two ($p = .43$) further indicating a mediation effect. A follow-up Sobel test of significance indicated a significant mediation effect, $t = -4.38$, $p < .001$.

In addition, for self-evaluative investment in BI, mindfulness was a significant predictor, $R^2 = .09$, adjusted $R^2 = .08$, $F(1, 182) = 16.97$, $p < .001$. Mindfulness remained a significant predictor from first model to the second model. Semi-partial correlations reduced from $-.29 (.08)$ to $-.08 (.006)$ resulting in the variance dropping from 8% to under 1% when the mediating variable was added, suggesting a possible mediation effect. In addition, the significance level changed from significant at model 1 ($p < .001$) to non-significant at model two ($p = .24$) further indicating a mediation effect. A follow-up Sobel test of significance revealed a significant mediation effect, $t = -4.29$, $p < .001$.

A further analysis showed that for body shape dissatisfaction, mindfulness was a significant predictor, $R^2 = .16$, adjusted $R^2 = .15$, $F(1, 136) = 25.15$, $p < .001$. Mindfulness remained a significant predictor from first model to the second model. Semi-partial correlations reduced from $-.40 (.16)$ to $-.18 (.03)$ resulting in the variance reducing from 16% to 3% indicating a possible mediation effect; however, the significance level remained significant at model 1 ($p < .001$) and at model two ($p = .01$), indicating no mediation. A follow-up Sobel test of significance however indicated that there was a mediating effect that was significant, $t = -4.11$, $p < .001$.

Furthermore, the results revealed that for body checking, mindfulness was a significant predictor, $R^2 = .10$, adjusted $R^2 = .09$, $F(1, 174) = 18.56$, $p < .001$. Mindfulness remained a significant predictor from first model to the second model. Semi-partial correlations reduced from $-.31 (.10)$ to $-.13 (.02)$ resulting in the variance reducing from 10% to 2% when the mediating variable was added, indicating a possible mediation effect. In addition, the significance level changed from significant at model 1 ($p < .001$) to non-significant at model two ($p = .06$) further indicating a mediation effect. Follow-up Sobel test of significance indicated a significant mediation effect, $t = -3.72$, $p < .001$.

Lastly, it was found that for BI avoidance, mindfulness was a significant predictor, $R^2 = .14$, adjusted $R^2 = .13$, $F(1, 173) = 27.68$, $p < .001$. Mindfulness remained a significant predictor from first model to the second model. Semi-partial correlations reduced from $-.37 (.14)$ to $-.13 (.02)$ resulting in the variance decreasing from 14% to 2% when the mediating variable was added, indicating a possible mediation effect; however, the significance level remained significant at model 1 ($p < .001$) and at model two ($p = .04$) indicating no mediation. Follow-up Sobel test of significance however indicated that the mediation was significant, $t = -4.86$, $p < .001$.

Mediation Model 2 – Mindfulness, Acceptance, and Body Image Measures

In addition to cognitive fusion, further mediation analyses were performed to determine whether acceptance of BI thoughts and feelings mediated the relationship between mindfulness and DV variables.

Hierarchical regression analysis showed that mindfulness was a significant predictor of acceptance, $R^2 = .16$, adjusted $R^2 = .15$, $F(1, 176) = 32.87$, $p < .001$. Further, as shown in Table 16, all DV variables were significantly correlated with both mindfulness and acceptance. Therefore, a number of separate hierarchical regression analyses were conducted to determine whether acceptance mediated the significant correlations between mindfulness and the DV variables. For each analysis at step one, BI dissatisfaction, BI disturbance, BI dysphoria, overall investment in BI, self-evaluative investment in BI, body shape dissatisfaction, body checking, BI avoidance, and male body attitudes (DVs) and mindfulness (IV) were entered. At step two, acceptance (the possible mediating variable) was entered for each separate analysis.

For BI dissatisfaction, mindfulness was a significant predictor, $R^2 = .17$, adjusted $R^2 = .16$, $F(1, 168) = 34.22$, $p < .001$. Mindfulness remained a significant predictor from first model to the second model. Semi-partial correlations reduced from $-.41 (.17)$ to $-.24 (.06)$ resulting in a reduction in variance from 17% to 6% when the mediating variable was entered, indicating a possible mediation effect; however, the significance level remained significant at model one and at model two, indicating potentially no mediating effect. Follow-up analyses with the Sobel test of significance indicated that there was significant mediation effect, $t = -4.67$, $p < .001$.

Mindfulness was also a significant predictor of BI disturbance, $R^2 = .11$, adjusted $R^2 = .10$, $F(1, 166) = 19.76$, $p < .001$. Mindfulness remained a significant predictor from first model to the second model. Semi-partial correlations reduced from $-.33 (.11)$ to $-.06 (.004)$

resulting in a reduction in variance from 11% to 6% when the mediating variable was entered, indicating a potential mediation effect. Follow-up Sobel test of significance revealed a significant mediation effect, $t=-5.10$, $p<.001$.

Further, the results revealed that for BI dysphoria, mindfulness was a significant predictor, $R^2= .08$, adjusted $R^2=.08$, $F(1, 145) = 13.34$, $p<.001$. Mindfulness remained a significant predictor from first model to the second model. Semi-partial correlations reduced from $-.29 (.08)$ to $.03 (.0009)$, resulting in a reduction in variance from 8% to under 1% when the mediating variable was entered, indicating a potential mediation effect. In addition, the significance level changed from significant at model one ($p<.001$) to non-significant at model two ($p=.60$) further indicating a mediation effect. Follow-up Sobel test of significance indicated a significant mediation effect, $t=-5.28$, $p<.001$.

It was also found that for overall investment in BI, mindfulness was a significant predictor, $R^2= .08$, adjusted $R^2=.07$, $F(1, 176) = 14.28$, $p<.001$. Mindfulness remained a significant predictor from first model to the second model. Semi-partial correlations reduced from $-.27 (.07)$ to $-.02 (.0004)$ resulting in a reduction in variance from 7% to under 1% when the mediating variable was entered, indicating a possible mediation effect. In addition, the significance level changed from significant at model 1 ($p<.001$) to non-significant at model two ($p=.69$) further indicating a mediation effect. Follow-up Sobel test of significance revealed significant mediation, $t=-5.14$, $p<.001$.

The results revealed that for self-evaluative investment in BI, mindfulness was a significant predictor, $R^2= .11$, adjusted $R^2=.10$, $F(1, 176) = 21.03$, $p<.001$. Mindfulness remained a significant predictor from first model to the second model. Semi-partial correlations reduced from $-.33 (.11)$ to $-.04 (.002)$ resulting in a reduction in variance from 11% to under 1% when the mediating variable was entered, indicating possible mediation. In addition, the significance level changed from significant at model one ($p<.001$) to non-

significant at model two ($p=.44$) further suggesting presence of mediation. Follow-up Sobel test of significance indicated significant mediation, $t=-5.37$, $p<.001$.

In addition, mindfulness was a significant predictor of body shape dissatisfaction, $R^2=.20$, adjusted $R^2=.20$, $F(1, 123) = 31.50$, $p<.001$. Mindfulness remained a significant predictor from first model to the second model. Semi-partial correlations reduced from $-.45 (.20)$ to $-.16 (.03)$ resulting in a reduction in variance from 20% to under 3% when the mediating variable was entered, indicating possible mediation; however, the significance level remained significant at model 1 ($p<.001$) and at model two ($p=.004$), indicating potentially no mediation. Follow-up Sobel tests revealed significant mediation, $t=-5.34$, $p<.001$.

The results also showed that mindfulness was a significant predictor of body checking, $R^2=.10$, adjusted $R^2=.09$, $F(1, 174) = 18.56$, $p<.001$. Mindfulness remained a significant predictor from first model to the second model. Semi-partial correlations reduced from $-.31 (.10)$ to $-.09 (.008)$ when the mediating variable was entered, reducing the variance from 10% to less than 1%. This indicated possible mediation. In addition, the significance level changed from significant at model 1 ($p<.001$) to non-significant at model two ($p=.17$) further indicating mediation. Follow-up Sobel test of significance revealed significant mediation, $t=-4.72$, $p<.001$.

Further analyses indicated that mindfulness was also a significant predictor of BI avoidance, $R^2=.14$, adjusted $R^2=.13$, $F(1, 173) = 27.68$, $p<.001$. Mindfulness remained a significant predictor from first model to the second model. Semi-partial correlations reduced from $-.37 (.14)$ to $-.08 (.006)$ when the mediating variable was entered, reducing the variance from 14% to less than 1%. This indicated possible mediation. In addition, the significance level changed from significant at model 1 ($p<.001$) to non-significant at model two ($p=.12$) further indicating mediation. Follow-up Sobel test of significance revealed significant mediation, $t=-5.31$, $p<.001$.

Lastly, it was found that for male body attitudes, mindfulness was a significant predictor, $R^2 = .16$, adjusted $R^2 = .14$, $F(1, 39) = 7.23$ $p = .01$. Mindfulness remained a significant predictor from first model to the second model. Semi-partial correlations reduced from $-.40 (.16)$ to $-.20 (.04)$ when the mediating variable was entered, reducing the variance from 16% to less than 4%. This indicated possible mediation. The significance level changed from significant at model one to non-significant at model two ($p = .17$) indicating mediation. Follow-up Sobel test of significance revealed significant mediation, $t = -2.14$, $p = .03$.

Discussion

Recent studies have sought to identify the utility of mindfulness skills in reducing BI dissatisfaction and disturbance in men and women (Dekeyser et al., 2008; Dijkstra & Barelds, 2011; Lavender et al., 2012; Stewart, 2004). Research examining the utility of mindfulness among clinical samples (EDs) is accumulating (Farrell et al., 2006; Baer et al., 2005; 2006; Masuda & Wendell, 2010; Kristeller et al., 2006); however, few studies have evaluated how mindfulness relates to BI dissatisfaction, perfectionism, and self-esteem. In the current study, a series of correlational and group-based analyses were conducted to determine the relationship between BI domains (i.e., dissatisfaction, disturbance of BI, importance placed on BI, negative emotions associated with BI, checking and avoidance behaviours) and how an individual relates to themselves, their thoughts, and their feelings (e.g., mindfulness, self-compassion, cognitive fusion and acceptance). The study also assessed for potential differences among Australian men and women in their experience of BI, eating disorder symptomatology and levels of mindfulness, self-compassion, cognitive fusion and acceptance. The relationship between mindfulness and BI, and a range of other factors including eating disorder symptoms, perfectionism, self-compassion, anxiety, depression, stress, and self-esteem was also investigated. An aim of the study was also to investigate two mediation models: (i) whether cognitive fusion mediates the relationships between

mindfulness and a range of BI measures; and (ii) whether acceptance of BI thoughts and feelings mediates the relationships between mindfulness and a range of BI measures. Lastly, the purpose of the study was to use the results obtained to inform the development of a pilot intervention for BI dissatisfaction in a non-clinical sample of adult men and women. A number of *a priori* hypotheses were created and are discussed below. Results and their implications are discussed within their respective domains.

Body Image Components & Individuals' Relationship to Self, Thoughts, and Feelings

Partial support for the hypothesis that mindfulness would be negatively correlated with measures of BI, including BI dissatisfaction, BI dysphoria, BI investment, BI disturbance, body shape dissatisfaction, male body image attitudes, body checking behaviours, and BI avoidance was found for both genders. For women, it was found that higher levels of mindfulness were related to less BI dissatisfaction and disturbance, less frequent experiences of negative and difficult emotions associated in BI salient situations, and less overall investment in BI as a measure of self-worth. However, for women, mindfulness was not significantly related to motivational investment in BI, body checking behaviours, or BI avoidance behaviours. In contrast, it was found that men displayed higher levels of mindfulness, which was significantly related to lower BI dissatisfaction and disturbance, less importance placed on BI, dissatisfaction with muscularity body fat and height. Conversely, no significant relationships were found between levels of mindfulness and BI dysphoria, global male body attitudes scale, body checking behaviours and BI avoidance behaviours for men.

Mindfulness and Body Image Dissatisfaction

The finding of a significant inverse relationship between mindfulness and BI dissatisfaction supports previous research that individuals who display more mindful attention and awareness tend to also display less dissatisfaction with their appearance (Dekeyser et al., 2008; Dijkstra & Barelds, in press; Lavender et al., 2012). Mindfulness

provides the skills to be aware of internal experiences (cognitions, beliefs, emotions, sensations), which in turn allows an individual to develop greater insight into negative thoughts, distorted BI beliefs and their impact, reduce autonomic arousal, and decrease activation of schemas and self-defeating behaviours (Brown & Ryan, 2003; Delinsky & Wilson, 2010; Sobczak & West, 2011; Stewart, 2004). It is plausible that individuals high in mindfulness skills have this ability and in the instance of BI dissatisfaction, may experience less dissatisfaction due to this awareness. The findings from this study and from previous research (Dijkstra & Barelds, 2011; Lavender et al., 2012; Stewart, 2004; Rosenstrom et al., 2013) imply that less mindfulness is related to more thought and behavioural rigidity, dysphoria, and activation of negative BI schemas. Therefore, the results of this study offer an avenue that requires further investigations, that is, the effectiveness of mindfulness training on changing and improving BI dissatisfaction. The ability of increasing awareness of thoughts and potential triggers, practicing nonjudgement and acceptance of internal phenomena (thoughts, feelings, sensations), distancing and defusing from negative and automatic thoughts about appearance, and decreasing the distress associated with these thoughts and feelings may be the particular mechanisms which may help with improving BI dissatisfaction.

Mindfulness and Body Image Disturbance

The current study's finding that mindfulness was inversely related to BI disturbance was consistent with significant relationships between mindfulness and BI dissatisfaction found in previous research (Dekeyster et al., 2008; Dijkstra & Barelds, 2011; Fink et al., 2009; Lavender et al., 2012). Although previous research investigating the relationship between mindfulness and BI disturbance is limited, these results provide support for mindfulness as a way to reduce the disturbance associated with a negative BI. Individuals with significant BI dissatisfaction and low levels of mindfulness may experience more disturbance or dysfunction in their psychosocial functioning. With less awareness of negative

thoughts, BI schema triggers, and self-defeating behaviours, individuals are more likely to experience more dissatisfaction, dysphoria, and avoidance of social and other situations, therefore leading to more dysfunction as a result of BI dissatisfaction.

Mindfulness and Body Image Dysphoria

It was found that higher levels of mindfulness were related to lower levels of BI dysphoria in women. Previous research has found that individuals who practise mindfulness have greater emotional clarity and are able to better regulate their emotional experiences in general and related to specific situations or events (Baer, 2003; Corcoran et al., 2010; Manjrekar & Berenbaum, 2012; Stewart, 2004; Walsh & Shapiro, 2006). Thus, individuals who have significant BI dissatisfaction and dysphoria may have less emotional clarity and lower emotional regulation skills, which may explain the significant results between mindfulness and BI dysphoria for women. However, the same results were not found for men. In general, men tend to experience less BI dysphoria than do women (Cash, 2000), which may explain why no significant relationship was found between mindfulness and BI dysphoria. Overall, low scores on the BI dysphoria measure may also explain the lack of significant results for males in this sample. The men in this sample scored less on the BI dysphoria measure than expected. There has been no previous research examining the link between the ability to be mindful and BI dysphoria in men. These results are therefore new and provide insight into this new area of research; that is, that these variables may not be significantly related for men. However, previous research has found that BI dysphoria plays an important role in male BI and that it is related to more BI dissatisfaction, depression, and anxiety (McFarland & Kaminski, 2009). The findings from this study support the notion that BI dissatisfaction is related to more BI dysphoria in men. The results of this study revealed that BI dysphoria was strongly and significantly related to dissatisfaction with muscularity, BI investment, and body checking behaviours in men, suggesting that BI dysphoria is more related to aspects of BI dissatisfaction, but not to mindfulness.

Mindfulness and Body Image Investment

The results also revealed significant negative relationships between mindfulness and overall and self-evaluative investment in BI for men and women. However, for women, it was also found that there were no significant relationships between mindfulness and the motivational investment component. Motivational investment, or the value placed on looking attractive and the motivation to change appearance in order to appear attractive, tends to be less important and less dysfunctional than the overall BI investment and self-evaluative investment (Cash, Melnyk & Hrabosky, 2003; McGee et al., 2005). It may be that for women, mindfulness has little influence on motivation to appear and present as attractive. That is, the motivation to appear attractive may not be driven by the same underlying mechanisms that promote self-evaluative and overall investment in BI. For women in particular, the motivation to appear attractive or present well groomed may not be related to thoughts and feelings associated with BI dissatisfaction and therefore mindfulness may not be relevant to this experience. The opposing results for men was be due to the need to appear attractive or present in a particular way may be more important to men than to women. The motivation to appear attractive for men may be more closely and significantly related to negative thoughts about BI and BI schemas. As a result, this could be related to less insight into the impact of BI thoughts and schemas on motivation, investment, and BI related behavioural responses. For example, objectification theory suggests that attending to physical appearance is required for social and professional success in Western societies (Walker et al., 2012). This is believed to be the case because of the favourable treatment given to individuals who are perceived to be more attractive. This is increasingly true for men as well (Walker et al., 2012). Walker and colleagues (2012) suggest that as a result of this belief that more attractive people receive favourable treatment, men may be more likely to attend to their physical appearance in order minimise or avoid negative appearance related social and

professional consequences. To date, no literature has examined the relationship between BI investment and mindfulness and further research in this area is needed.

Mindfulness and Body Checking and Avoidance Behaviours

Body checking and BI avoidance behaviours were significantly related to mindfulness for women but not for men. The results for women are consistent with previous research, which has shown that BI dissatisfaction is related to more body checking and avoidance behaviours (Lydecker et al., 2014; Fink et al., 2009). It is intuitive that as BI dissatisfaction increases, so too do checking and avoidance behaviours. Given the significant relationship between mindfulness and BI dissatisfaction, it is reasonable to link less mindfulness with more body checking and avoidance behaviours. Less awareness of triggers, distress, and behavioural responses is related to more frequent use of checking and avoidance behaviours as a way to cope with the negative thoughts and emotions. Researchers have argued that mindfulness is about the ability to stay in contact with present moment experiences, regardless of whether they are pleasant or unpleasant (Baer, 2003; Stewart, 2004). In contrast to body avoidance, mindfulness requires an individual be exposed to and remain with negative or distressing thought that may arise (e.g., BI distress, negative thoughts about BI; Alberts & Raes, 2012). In addition, mindfulness is about cultivating self-compassion, acceptance, and non-judgement, all of which are opposite to body checking behaviours (Alberts & Reas, 2012). Body checking behaviours may be driven by rigid, judgemental, and self-critical thoughts (Lydecker et al., 2014; Stewart, 2004; Alberts & Reas, 2012). Conceptualising body checking behaviours using these components, it is plausible that mindfulness is associated with less BI dissatisfaction, body checking, and BI avoidance behaviours. The lack of significant relationships observed between mindfulness and body checking and avoidance behaviours for men may be due to the instruments used in this study. In particular, questions that assess elements of female body checking and avoidance behaviours may not be relevant to males or representative of male checking and avoidance

behaviours. For example, these mainly female-based measures do not assess checking, fixing, or avoidance behaviours related to muscularity, leanness, body proportions, body fat on areas relevant to men, and height, all of which are known to be salient aspects of male BI dissatisfaction (Levesque & Vichesky, 2006; McCabe & Ricciardelli, 2004).

Body Image Measures and Acceptance

Further, the hypothesis that scores on the BI measures (BI dissatisfaction, BI dysphoria, BI investment, BI disturbance, body checking behaviours, and BI avoidance) would be negatively related to acceptance of thoughts and feelings and self-compassion, for both men and women was partially supported. For women, all of the BI measures were negatively related to acceptance of thoughts and feelings around BI. That is, lower levels of acceptance around BI were related to higher levels of BI dissatisfaction, BI disturbance, body shape dissatisfaction, BI investment, body checking, and BI avoidance. Similarly for men, lower levels of acceptance of BI related thoughts and feelings was related to higher levels of BI dissatisfaction, BI disturbance, BI investment, body checking, BI dysphoria, muscularity and body fat, but not related to global male body attitudes, height, and BI avoidance. The significant relationship between acceptance of BI thoughts and feelings and BI dissatisfaction is consistent with previous research (Sandoz et al., 2013). Research has found that it is not the presence of negative thoughts and feelings around BI that are the issue, but rather how an individual relates to these and how they prevent such thoughts and feelings impact their health and wellbeing (Masuda et al., 2010; Sandoz et al., 2013). The findings of the current study support previous findings that more acceptance and flexibility that an individual exerts over their BI related thoughts and feelings, the less dissatisfaction, disturbance, investment, and behavioural responses they experience. The non-significant results found for global male body attitudes, dissatisfaction with height, and BI avoidance may be explained in several ways. For instance, BI avoidance again was assessed by a questionnaire that measures mainly female avoidance behaviours, which may not be related to how men avoid situations related

to their BI. This may explain the non-significant result found for acceptance and BI avoidance. In addition, the lack of significant results between acceptance and dissatisfaction with height and global male body attitudes may be due to the fact that height cannot be altered and therefore acceptance and flexibility may not be relevant to this experience. Alternatively, this result may be due to low levels of dissatisfaction with height in this sample, which also affected the global body attitudes scores.

Body Image and Self-Compassion

The findings from the study also partially supported the hypothesis that higher levels of self-compassion were related to lower levels of BI dissatisfaction, disturbance, dysphoria, investment, body checking, BI avoidance, and body shape dissatisfaction for women. These results provide support for previous research, which has found that self-compassion plays an important role in BI dissatisfaction and provides an antidote to shame, for women only (Ferreira et al., 2013; Wasylikiw et al., 2012). Individuals who are able to cultivate self-compassion, have been found to also display greater emotional clarity, mindfulness, self-acceptance, and less judgement related to their thoughts, feelings, and behaviours (Hollis-Walker & Colosimo, 2001; Neff, 2003). Therefore, it makes sense that higher levels of self-compassion would be significantly related to less dissatisfaction with BI and body shape, less disturbance, dysphoria and overall less self-defeating behaviours. On the other hand, for men, similar results were found except for a lack of significant relationships amongst self-compassion and overall and motivational investment overall, body checking, BI avoidance, total male body attitudes, body fat and height dissatisfaction. Self-compassion is yet to be evaluated as a factor related to BI in men. Therefore, it is unclear whether self-compassion would play a significant role for men.

Body Image and Cognitive Fusion

Women who displayed more cognitive fusion (entanglement with their thoughts and feelings) also displayed more BI dissatisfaction, disturbance, dysphoria, investment (not

motivational investment), body shape dissatisfaction, body checking, and BI avoidance. Similarly, the findings of this study suggested that men who were more cognitively fused with their thoughts and feelings also displayed higher levels of BI dissatisfaction, disturbance, investment, dysphoria, and dissatisfaction with muscularity. This was an expected result and provides support for previous research, which has found that overall, higher levels of BI dissatisfaction tend to be related to ruminative thoughts, less acceptance of thoughts, and greater reactivity based on negative thoughts (Baer, 2003; Bishop et al., 2004; Gordon et al., 2012; Pearson et al., 2012; Trindale & Ferreira, 2014). Research into the relationship between BI dissatisfaction components and cognitive fusion remains largely untested. The results from this study imply that cognitive fusion may play an important role in women's experience of all BI components, but may differ for men. In particular, cognitive fusion appears to play an important part in men's experience of BI dissatisfaction, disturbance, investment, dysphoria and dissatisfaction with muscularity. This is not surprising, especially because research on cognitive fusion has established that greater entanglement and belief in thoughts is likely to result in more disturbance as a result of this fusion. In addition, fusion with difficult and negative thoughts is likely to trigger difficult emotions associated with BI related situations (Harris, 2009; Hayes et al., 1999; Luoma & Hayes, in press; Trindale & Ferreira, 2014). The more an individual fuses with their thoughts about their appearance related thoughts, the more likely they are to associate their BI with a sense of self-worth and therefore experience dissatisfaction.

Mediation Models

In addition to correlational analyses between measures within the BI domain and individuals' relationship to self, thoughts and feelings domain, other analyses were performed to better understand the relationships between these domains. One aim of the current study was to assess for potential mediating effects that cognitive fusion and acceptance of thoughts and feelings may have on the relationship between mindfulness and a range of BI measures.

Two mediation models were tested and the results showed that both cognitive fusion and acceptance of thoughts and feelings significantly mediated the relationship between mindfulness and BI dissatisfaction, BI disturbance, BI dysphoria, overall BI investment, self-evaluative investment, body shape dissatisfaction, body checking and body avoidance. In addition, acceptance of thoughts and feelings also significantly mediated the relationship between mindfulness and male body attitudes. This suggests that BI dissatisfaction and other BI related domains may be improved through mindfulness practice via the process of disentangling from thoughts and therefore reducing negative, automatic, and reactive responses to triggers in the environment. In addition, it appears that accepting thoughts and feelings that are specific to BI may be another important process of improving BI dissatisfaction via mindfulness. Cultivating body image flexibility and acceptance of experiences seems to also play an important role in increasing mindfulness and reducing the negative experiences associated with BI dissatisfaction (e.g., difficult emotions, disturbances, investment, checking and avoidance behaviours). Taken together, these results provide new insights into the relationship between mindfulness and BI domains, which may explain some of the underlying associations.

Body Image Components

The hypothesis that BI dissatisfaction would positively correlate with BI disturbance, body shape dissatisfaction, male body attitudes, investment in BI, body checking behaviours, avoidance behaviours, and BI dysphoria in men and women was supported. For women, more BI dissatisfaction was related to more BI disturbance, body shape dissatisfaction, BI dysphoria, BI investment (motivational and self-evaluative), body checking and avoidance behaviours. On the other hand, men display significant and positive correlations between BI dissatisfaction and BI disturbance, BI dysphoria, male body attitudes, dissatisfaction with muscularity, body fat, and height, and BI investment (motivational and self-evaluative) but not with overall BI investment, body checking, and avoidance behaviours. The results

obtained were in line with previous research, which found that significantly higher BI dissatisfaction is related to more appearance investment, dysphoric emotions, and disturbance (Cash et al., 2003; Cash & Pruzinsky, 2002; Grammas & Schwartz, 2009; Lavender et al., 2012; Muth & Cash, 1997). For women, previous research has found that BI dissatisfaction is positively related to body checking and avoidance behaviours (Lydecker et al., 2014; Reas et al., 2002; Rosen et al., 1991; Walker et al., 2009). Although engaging in these behaviours may alleviate any anxiety or distress associated with BI dissatisfaction in the short-term, it serves to increase concern about appearance, shape and weight, and reinforce BI dissatisfaction in the long-term (Reas et al., 2002; Rosen et al., 1991; Walker et al., 2009). However, some of the results obtained for men were inconsistent to previous research, which has found checking and avoidance behaviours in men are also positively related to BI dissatisfaction (Walker et al., 2009). This may be due to the measures used to assess checking and avoidance behaviours in men. The measures may not have targeted the relevant male body checking and avoidance behaviours. Another plausible explanation for the lack of significant results between body checking and avoidance behaviours and BI dissatisfaction may be that men in this sample engaged less frequently in these behaviours, particularly given their low scores. Checking and avoidance behaviours are also very difficult to uncover and can go undetected even when the instruments are adequate. This is often due to the automaticity of these behaviours and a lack of awareness that they exist. Taken together, the results suggest that individuals who experience substantial levels of BI dissatisfaction are also more likely to experience disturbance in their psychosocial functioning, more frequent dysphoric emotions, greater investment in BI as a measure of self-worth, and participation in self-defeating behaviours such as frequent checking of body areas, fixing appearance, and avoiding situations, activities or people to avoid evaluation or negative thoughts associated with their BI. These significant results provide support for addressing these factors in BI dissatisfaction treatment, given that they serve to maintain body eating and body related

psychopathology (Shafran, Fairburn, Robinson, & Lask, 2004). Therefore, targeting behavioural manifestations and dysphoric emotions may consequently reduce overall BI dissatisfaction.

The hypothesis that women would display significantly higher scores on all of the BI measures (BI dissatisfaction, BI dysphoria, BI investment, BI disturbance, body checking behaviours, and BI avoidance) compared to men was partially supported. No differences were found between men and women on measures of BI dissatisfaction and motivational BI investment; however, women scored significantly higher than men on measures of BI disturbance, BI dysphoria, body checking, BI avoidance, BI investment (overall and self-evaluative). The lack of differences observed between men and women on measures of BI dissatisfaction and motivational investment is unexpected. Research has shown that women display stronger associations with motivational investment than do men (Cash et al., 2003). However, motivational investment is not considered to be maladaptive and thus may not significantly vary between genders. In contrast, the results of this study are inconsistent with previous research that has repeatedly demonstrated a link between women who exhibit higher levels of BI dissatisfaction than men (Cash & Szymanski, 1995; Frederick et al., 2006; Levesque & Vichesky, 2006; Peplau et al., 2009; McCabe & Riccardelli, 2004; Muth & Cash, 1997). The findings obtained in the current study may be due to a number of reasons. In particular, data obtained in previous studies has been primarily from the US for adult men and women. The differences that have been observed in previous research with regard to men and women may not be representative of BI dissatisfaction among Australian men and women. In addition, descriptive statistics from the current study suggest that men in the sample actually scored higher than women in the sample, although the differences were not significant. This may be more representative of BI dissatisfaction among men and women in Australia and the results may be representative of the increase in BI dissatisfaction among men. Prevalence of BI dissatisfaction may no longer differ between genders and the results of

this study suggest that equal levels of dissatisfaction may be prevalent in Australian societies. Although BI dissatisfaction may not differ amongst men and women, other components of BI did differ in this study. The significant differences observed for of BI disturbance, BI dysphoria, and BI investment (overall and self-evaluative) corroborate the findings of previous research in this area (Cash et al., 2003; Cash et al., 2004; Muth & Cash, 1997). Overall, the findings imply that women are more prone to experiencing disturbance as a result of their BI dissatisfaction, more frequent dysphoric emotions, and more investment in their BI than men, despite both men and women experiencing equivalent levels of BI dissatisfaction.

Individuals' Relationship to Self, Thoughts, and Feelings

The hypothesis that positive relationships would be observed between mindfulness, self-compassion, and acceptance of thoughts and feelings was supported. It was also hypothesised that mindfulness, self-compassion, and acceptance of thoughts and feelings would be inversely related to cognitive fusion for both men and women. These hypotheses were partially supported. Significant relationships were detected between mindfulness and self-compassion for both men and women. These findings are consistent with previous research surrounding mindfulness and self-compassion (Birnie et al., 2010; Hollis-Walker & Colosimo, 2011; Neff, 2003;). Self-compassion is developed through empathy and mindfulness, so it makes sense that these factors would be related. In addition, self-compassion leads to greater acceptance of internal experiences, which mirrors part of the approach in mindfulness (Neff, 2003). Therefore, the more mindful individuals are, the more self-compassionate over time they may become of their thoughts, their feelings, and their behaviours. In addition, significant results were found for mindfulness, cognitive fusion, and acceptance. Both men and women displayed positive relationships amongst mindfulness and acceptance and negative relationships amongst mindfulness and cognitive fusion. These findings support previous research into this area which links cognitive fusion and lack of

acceptance and cognitive flexibility to either being “mindful” or “mindless” (Kabat-Zinn, 1994; Stewart, 2004; David & Hayes, 2011). Further, it is possible that as an individual increase their capacity for mindfulness, that their level of entanglement and believability in their thoughts diminishes, particularly given that mindfulness is not compatible with ruminative, negative, and destructive thoughts (Stewart 2004). With mindfulness, acceptance and cognitive flexibility are also likely to increase, especially given that acceptance is a core component of mindfulness (Kabat-Zinn, 1994; Stewart, 2004; Baer, 2003). Thus, the more mindful an individual is, the less fused they are with their thoughts, and the more self-compassionate and accepting they are likely to be with regard to their thoughts, feelings, and overall experiences.

The hypothesis that there would be no difference between women and men on measures of mindfulness, cognitive fusion, acceptance, and self-compassion was partially supported. No differences were observed for self-compassion and mindfulness between men and women; however, significant differences were found on measures of cognitive fusion and acceptance, with women scoring higher than men for cognitive fusion, but lower for mindfulness and acceptance. This may be due to women being more prone to believing and fusing with their thoughts, particularly surrounding their appearance and BI. Men may be less self-critical and more accepting of their own BI and related thoughts and feelings, therefore displaying less cognitive fusion and more acceptance. Overall, the results suggest that men display equivalent levels of mindfulness and self-compassion; however, they tend to differ on how entangled they are with their thoughts and their level of acceptance and flexibility associated with their BI, with women appearing more self-critical, less acceptance, and less flexible in their cognitive processes.

Body Image Components & Eating Disorder Symptomatology

The hypothesis that BI measures would be positively correlated with eating disorder symptomatology for both men and women was partially supported. Higher disordered eating scores on all of the subscales (restraint, eating concern, weight concern, shape concern and global eating pathology) were associated with higher scores on all BI measures for women including BI dissatisfaction, disturbance, dysphoria, investment, body shape dissatisfaction, body checking and BI avoidance. For men, higher scores on restraint were associated with higher levels of BI dissatisfaction, male body attitudes, body fat and height dissatisfaction. In addition, higher eating concern, and weight concern were associated with higher BI measures except motivational salience of BI investment, muscularity and height. For shape concern and global eating pathology, higher scores were associated with higher scores on all BI measures except muscularity and height dissatisfaction. These results are consistent with previous research that has found that BI dissatisfaction is associated with disordered eating among women and men (Levine & Piran, 2004; Levesque & Vichesky, 2006; Nicolino et al., 2001; Olivadia et al., 2004). BI dissatisfaction and disturbance have been established as risk factors for the development of EDs and have shown to predict the onset of EDs where the BI dissatisfaction is significant and not addressed (Levine & Piran, 2004). This suggests that BI dissatisfaction is highly associated with disordered eating behaviours and provides evidence that when addressing BI dissatisfaction it is also important to address disordered eating. Without addressing disordered eating or BI dissatisfaction, individuals are likely to face many negative consequences, including medical and physical complications due to disordered eating, psychosocial dysfunction, and lowered overall quality of life.

Body Image Components & Personality and Psychological Wellbeing

The hypothesis that BI measures would be positively related to perfectionism, depression, anxiety, and stress was partially supported. Higher levels of perfectionism, including perfectionistic self-presentation and nondisplay and nondisclosure of imperfection

were significantly related to higher levels of BI dissatisfaction, disturbance, dysphoria, investment, body shape dissatisfaction, body checking and BI avoidance for women, with the exception of nondisclosure of imperfection and motivational salience of BI investment. Results were slightly different for men with higher levels of perfectionistic self-presentation being related to higher levels of BI dissatisfaction, dysphoria and investment only. In addition, more nondisplay of imperfection was correlated with higher BI dissatisfaction, disturbance, dysphoria, investment (overall and self-evaluative only), body checking, and BI avoidance. Greater scores on the nondisclosure of imperfection were significantly correlated with higher BI dissatisfaction, disturbance, dysphoria, and investment. Most of the observed results noted between perfectionism and measures of BI are consistent with previous research, which has found that higher perfectionism is related to higher BI dissatisfaction and disturbance (Sherry et al., 2009; McGee, et al., 2005). Specifically, previous research has suggested that the nondisplay of imperfection contributes to higher BI dissatisfaction (Hewitt et al., 2003; McGee et al., 2005). The findings of the current research are consistent with findings from previous research, with significant correlations found between nondisplay of imperfection and BI dissatisfaction for both men and women. Further, past research has established that perfectionism can predispose individuals to developing BI dissatisfaction and disturbance (Lewis & Devaraj, 2010). It is therefore important to better understand the relationship between perfectionism and BI dissatisfaction, as this may inform future research into addressing BI dissatisfaction. Although no causal links could be established from this study, the results strengthen the link between perfectionism and BI dissatisfaction, disturbance, dysphoria, investment, avoidance, and body checking.

In terms of psychological wellbeing, higher levels of depression, anxiety and stress were related to higher levels of all BI measures except motivational salience of BI investment, for women. On the other hand, for men, higher levels of depression were associated with higher levels of BI dissatisfaction, disturbance, dysphoria, and self-evaluative

BI investment; higher levels of anxiety were related to more dysphoric emotions, body checking, and BI investment (overall and self-evaluative only); and greater stress levels were significantly correlated with more BI dissatisfaction, disturbance, dysphoria, body checking, BI avoidance, and BI investment (overall and self-evaluative only). Contrary to expectations, this study did not find significant results between psychological wellbeing (depression, anxiety and stress) and male body attitudes. Even more interesting is the lack of significant relationships between anxiety and BI dissatisfaction and disturbance. It is plausible that this sample of men experienced low levels of depression, anxiety, and stress and therefore this was not related to BI dissatisfaction. Further, this study's sample of men consisted of a substantial number of homosexual men (almost half), which may have influenced these results. Previous research has found differences between how gay and heterosexual men experience BI dissatisfaction and factors that relate to this dissatisfaction (Adams et al., 2005; Levesque & Vichesky, 2006; Peplau et al., 2009). Levesque and Vichesky (2006) found that BI dissatisfaction was not significantly related to feelings of depression for gay men. It is also plausible that the ratings on male body attitudes do not reflect or relate to feelings of anxiety, depression, and stress as they reflect attitudes and not dissatisfaction.

Most of the results found for this domain are consistent with previous research, which has found that higher levels of BI dissatisfaction and disturbance are related to higher levels of depression and anxiety (Cash & Pruzinsky, 2002; Farrell et al., 2006; Mori & Morey, 1991; Stice et al., 2000). This suggests that individuals with BI dissatisfaction may be more prone to developing or experiencing significant depressive symptoms and symptoms of anxiety. This is problematic if it serves as a trigger for developing other psychological issues and difficulties. In addition, the co-morbid experience of depressive symptoms and anxiety may be more disabling than experiencing BI dissatisfaction on its own.

The hypothesis that BI measures would be negatively correlated with self-esteem was not supported. For both men and women, self-esteem was positively correlated with BI

measures, including BI dissatisfaction, BI disturbance, BI dysphoria, BI investment (overall and self-evaluative), avoidance behaviours, body shape dissatisfaction for women and male body attitudes for men. However, no significant relationships were found between self-esteem and motivational investment for both genders and body checking behaviours for men. The results between self-esteem and BI measures are inconsistent with previous research, given that the expected relationship should be an inverse one; that is, as BI dissatisfaction decreases, self-esteem increases (Lavender et al., 2012; Gilbert & Meyer, 2005; Shea & Pitchard, 2007). This result is unexpected. A possible explanation is that individuals in this study may not have truthfully responded to the questions or may have overestimated their self-esteem given that self-esteem was correlated in the opposite direction to what is expected based on previous research, for all investigated variables.

Comparisons Within Depression Categories

Given that depression and BI dissatisfaction have been strongly linked in past literature (Bearman et al., 2003; Farrell et al., 2006; Jarry & Berardi, 2004; Mori & Morey, 1991; Rosenstrom et al., 2013; Stice et al., 2000), further analyses were performed to better understand this relationship. Although not formally hypothesised, a number of results emerged from these additional exploratory analyses. This was done by dividing individuals into depression categories, based on the scoring of the Depression, Anxiety, and Stress Scale (Lovibond & Lovibond, 1995). These categories were then correlated with BI measures as well as other domains including perfectionism, disordered eating, and individuals' relationship to self, thoughts and feelings.

Results revealed that individuals who scored in the category of severe depression displayed lowest levels of mindfulness and acceptance of thoughts and feelings. This group of individuals also displayed highest cognitive fusion scores. This representation is consistent with the clinical picture of depression. These results support consistent previous research, which has highlighted that negative BI experiences are highly related to feelings and

experience of depression (Farrell et al., 2006; Mori & Morey, 1991; Rosenstrom et al., 2013; Stice et al., 2000). These findings suggest that depression is an important area to address in BI dissatisfaction interventions.

With regard to BI, individuals with severe depression also exhibited higher BI dissatisfaction scores, body shape dissatisfaction, greater negative emotions associated with BI, BI disturbance, BI avoidance behaviours and greater checking of body as a way to alleviate distress or anxiety around BI. Severe depression was also strongly associated with more food restraint, greater concern around eating and weight, more shape concern, and overall greater disordered eating symptoms.

The links between BI dissatisfaction and depression is unclear and warrant further investigation outside of this study. In addition, the causal link between depression and disordered eating is also unclear. However, it is likely that the relationship is reciprocal as argued by previous research (Farrell et al., 2006; Mori & Morey, 1991).

Individuals' Relationship to Self, Thoughts, and Feelings & Eating Disorder Symptomatology

The findings of this study partially supported the hypothesis that mindfulness, self-compassion, and acceptance would be inversely related to eating disorder symptoms. Results also partially supported the hypothesis that cognitive fusion would be positively correlated with eating disorder symptomatology. Results showed significant negative relationships between mindfulness, and restraint, eating concern, weight concern, shape concern and global eating disorder scores for women. Similar results were found for men, except no significant relationship was observed for restraint and mindfulness. These results suggest that lower levels of mindfulness are related to higher disordered eating among both men and women. As such, these results are consistent with previous research showing that lower levels of mindfulness are related to greater disordered eating and greater bulimic symptoms in both men and women (Lavender et al., 2009). It is likely that individuals with disordered eating

experience more rigid, negative, and automatic thoughts associated with eating, food, and weight. Therefore, if individuals are able to cultivate mindful attention and awareness, acceptance of thoughts and feelings, distance from negative thoughts and feelings, and more self-compassion, it is likely that they would experience less disordered eating, particularly rigid thoughts associated with disordered eating. These results lend support for addressing disordered eating via mindfulness training.

It was also hypothesised that EDE-Q scores would be positively related to cognitive fusion and negatively correlated to acceptance of thoughts and feelings. This hypothesis was partially supported. Higher EDEQ scores were related to higher cognitive fusion in women on all of the subscales. For men, this was only the case with weight concern and shape concern. Higher EDEQ scores were associated with less acceptance in women on all subscales. For men, this was only the case for eating concern, shape concern, weight concern and EDEQ total score. This too is in line with previous research (Cowdrey & Park, 2012; Gordon et al., 2012; Lavender et al., 2009) but also provides new information and support for these concepts. The results from this study suggest that the use of cognitive defusion and acceptance based strategies may prove useful in reducing eating concern, weight concern, shape concern, dietary restraint, and overall disordered eating attitudes and behaviours. Less acceptance and more fusion (believability) in eating disordered thoughts and feelings may result in individuals partaking in eating disordered behaviours due to the distress that may be associated with these thoughts and feelings. Learning to defuse from these thoughts, see them as 'just thoughts' and practicing acceptance of internal phenomena may be helpful in enhancing awareness around these issues, but also improving an individual's understanding that not all thoughts and feelings require a behavioural response, no matter how distressing they may be. The investigation of this requires further attention and should be considered in future research.

Individuals' Relationship to Self, Thoughts, and Feelings & Personality and Psychological Wellbeing

The findings from this study also partially supported the hypothesis that mindfulness, self-compassion, and acceptance would be negatively correlated with perfectionism, depression, anxiety, and stress; and that these would be positively correlated with cognitive fusion. For both genders, lower levels of mindfulness were significantly correlated with higher levels of depression, anxiety, stress, perfectionistic self-presentation, nondisplay and nondisclosure of imperfection. The results for depression, anxiety, and stress are consistent with previous research that has found a negative relationship with mindfulness capacity (Baer, 2003; Segal et al., 2002). No previous research has examined the relationship between mindfulness and perfectionism. It makes sense that increasing flexibility, acceptance, and non-judgement associated with thoughts, feelings, and behaviours (i.e., via mindfulness) is likely to challenge the rigid, definitive, and demanding perfectionistic tendencies. Mindfulness, therefore, may provide a new avenue in perfectionism research, and requires further research in the future.

It was also hypothesised that mindfulness, self-compassion, and acceptance would be positively correlated with self-esteem; and that self-esteem would be negatively correlated with cognitive fusion. This hypothesis was not supported. Specifically, the results revealed negative relationships between mindfulness and self-esteem for women and no significant relation between mindfulness and self-esteem for men. In addition, a negative relationship was found between self-esteem and acceptance, for both men and women. Lastly, positive relationships were found with cognitive fusion for both men and women. These results are contrary to what would be expected. It is surprising that as cognitive fusion increases, that self-esteem would also increase. Similarly, it is surprising that as acceptance and mindfulness increase, self-esteem would decrease. It is unclear what factors underline this relationship.

Eating Disorder Symptomatology

It was hypothesised that women would score higher on eating disorder symptomatology than men in this sample. This hypothesis was mostly supported. The analyses conducted to assess his relationship significant gender differences on measures of eating concern, weight concern, shape concern and global eating disorder pathology, with women scoring higher than men on all subscales. No significant differences were observed for restraint. This suggests that women tend to experience more disordered eating than men, which is consistent with previous research (Ackard et al., 2002; Kohn & Golden, 2001; Levesque & Vichesky, 2006; Slevec & Tiggemann, 2001; Wade et al., 2009; Yager & O'Dea, 2008). Consequently, it is important to be aware of the differences between men and women with regard to disordered eating so that these issues can be adequately addressed on a case-by-case basis and during intervention. If women tend to experience more disordered eating, they are placed at greater risk of developing an eating disorder and/or medical, physical and mental health related issues as result of unaddressed disordered eating behaviours and cognitions.

Comparisons Within BMI Categories

In addition to assessing gender difference with regard to BMI, follow-up analyses were conducted to better understand how individuals within different BMI categories experience BI, how they relate to themselves, their thoughts and feelings, the relationship to disordered eating, and psychological wellbeing. These results revealed that individuals in the underweight BMI category displayed greatest cognitive fusion, depression, anxiety and stress despite no significant differences observed between the BMI categories. Individuals in the overweight and obese BMI categories appeared to be the least accepting of their BI when compared to individuals in the other BMI categories. Further, individuals in the obese BMI category also displayed highest levels of eating concern, weight concern, shape concern and overall more disordered eating. The results of this study support the findings of past research,

which consistently shows that individuals with higher BMIs tend to exhibit a more negative BI (Neighbors & Sobal, 2007). Further, the finding that avoidance was also highest among the obese category of BMI is consistent with research showing that individuals with higher BMI tend to avoid activities (Paxton, 2002; Neighbors & Sobal, 2007).

Given that BI dissatisfaction is considered to be discrepancy between an internalised ideal and perceived appearance (Cash & Szymanski, 1995), it can be expected that individuals who are considered to be the furthest away from the “cultural ideal” will display more BI dissatisfaction and disturbance associated with their weight and appearance. As an individual’s weight increases, if their internalised ideal is the ideal that is represented in the Western culture (thin for female and muscular and lean for males), they are likely to move further and further away from this internalised ideal. This in turn may lead to greater BI dissatisfaction, disturbance, and distress. It may also lead to more depression, lower self-esteem, and over time, the use of avoidance or compensatory strategies.

Implications

Overall, when attempting to understand the BI experiences of this sample, results imply that both men and women experienced higher levels of depression, anxiety, and stress than would be expected in a community sample. Although results are not comparable to the clinical samples in previous studies, when inspecting the descriptive statistics, they appear to be much higher than community norms. In addition, perfectionism in this sample also appears to closely resemble clinical norms, more so than what would be expected from a community sample. Similarly, the sample in this study displayed higher levels of BI dissatisfaction and BI disturbance than previous community norms. Other BI measures were comparable to community norms, including BI investment, body checking, BI avoidance, and BI dysphoria. For men, body fat and height dissatisfaction in this sample appeared to be higher than previously obtained community norms, suggesting that this particular sample display more dissatisfaction with body fat and height. For women, body shape dissatisfaction also

appeared higher in this sample compared to previously obtained community norms.

Comparing overall eating disorder symptomatology scores from this sample to Australian obtained norms, it is evident that men in this sample scored higher on all of the subscales when compared to the Australian norms. This is also the case for women in this sample. This suggests that participants in this study reported higher levels of eating disorder symptomatology than what would be expected in a community sample even though the number of individuals with eating disorders in this sample was minimal and their results did not differ to those that did not have an ED diagnosis. Scores for mindfulness, cognitive fusion, acceptance of thoughts and feelings, self-compassion, and self-esteem, appeared to be comparable to community norms and what would be expected in a community sample. The results obtained in this study provide valuable information in better understanding how adults experience BI. Based on the results obtained, it is clear that the need for appropriate BI dissatisfaction treatments for men and women is paramount. The costs to society are likely to increase without increasing the community's awareness of this issue. A proliferation of BI dissatisfaction and its associated physical and psychological detriments is expected, without the introduction of adequate, effective, and easily accessible programs.

The mean age of participants in the current study was slightly higher than samples commonly used in BI research, which have predominantly been university aged women and men (e.g., Fink et al., 2009; Grammas & Schwartz, 2009; Herbozo & Thompson, 2006; Jarry & Berardi, 2004; Luetcke et al., 2011; Masuda & Wendell, 2010; Walker et al., 2009). This may explain the different results obtained in this study regarding the levels of BI dissatisfaction, disturbance, perfectionism, depression, anxiety, stress, and disordered eating attitudes and behaviours in men and women. The relatively high levels of BI dissatisfaction and disturbance in this sample are concerning and support previous findings that BI dissatisfaction is also prevalent among men (Peplau et al., 2009). The results from this study indicate that addressing BI dissatisfaction in young adults (in their 20s and 30s) is deserving

of focus, given that BI dissatisfaction is highly prevalent in this age group and does not dissipate with age (Pearson et al., 2012; Tiggemann, 2004; Slevec & Tiggemann, 2011).

Mediation results in this study suggest that the capacity to defuse from and accept difficult thoughts and feelings are significantly related to the relationship between mindfulness and BI dissatisfaction components. This significant result raises questions about how techniques such as cognitive fusion and acceptance may assist in improving BI dissatisfaction, dysphoria and self-critical judgements. The results also raise questions about the utility of mindfulness training as core component in improving BI dissatisfaction and reducing the negative consequences that frequently accompany BI dissatisfaction.

Approaches to BI interventions have primarily been CBT in nature (Jarry & Berardi, 2004; Jarry & Ip, 2005). Components of CBT interventions for BI dissatisfaction have focused largely on challenging and changing the content of thoughts, reducing the occurrence of cognitive distortions, and reducing the distress associated with BI experiences. Mindfulness, acceptance, cognitive defusion, and self-compassion offer techniques and skills to change how an individual relates to their experiences, rather than altering the content of thoughts. The techniques are likely to address the process of relating to thoughts and feelings that appear to play a role in maintaining BI dissatisfaction. Seeing and experiencing internal phenomena in a different light, reducing automatic reactivity to stimuli, increasing present moment awareness, and being more accepting leads to changing the experience of BI dissatisfaction in a way that traditional approaches, like CBT may not. This therefore, requires further investigation to better understanding how these approaches and techniques may serve to improve BI dissatisfaction.

The findings of this study also indicate that mindfulness is significantly related to BI dissatisfaction for both men and women. As postulated in previous research, BI dissatisfaction is often associated with the development of rigid, inflexible, negative and automatic thoughts and judgements about appearance. Over time, this leads to the

development of negative schemas about appearance, which are then triggered by BI related stimuli in the environment. Consequently an individual develops more frequent dysphoric emotions, distress and anxiety about their appearance, use of compensatory strategies (ranging from body checking and avoidance, disordered eating) to manage the distress, and overall disturbance in their psychosocial functioning. Given the known benefits of mindfulness practices such as greater emotional clarity, a reduction in reactivity and habitual responding, less entanglement with thoughts and judgements, greater self-awareness and acceptance, and more self-compassion, it seems that mindfulness may be an important tool to in better understand and treat BI dissatisfaction. The principles of mindfulness fit well as an intervention to reduce the psychological manifestations of BI dissatisfaction, and therefore necessitate further research. The findings from this research thus far provide support for the relationship between mindfulness and BI dissatisfaction. The implication of the results obtained in this study is that mindfulness, cognitive fusion, acceptance, and self-compassion are also factors that should be taken into account when understanding and targeting BI dissatisfaction. These factors offer a useful avenue for further investigation that remains untested for BI dissatisfaction. Developing an awareness of internal experiences, including thoughts, feelings, judgements, beliefs, sensations, and urges around BI is likely to lead to greater acceptance of self and individuals' experience, but also of current BI experiences, whether negative or positive. Along with mindfulness, it appears that self-compassion may also be useful in combating BI dissatisfaction, by developing a sense of compassion for the self, increasing the sense of being part of a common human experience, developing greater kindness and awareness, and reducing feelings of isolation, self-judgements, and feeling over-identified with thoughts and feelings. This information can be used to develop targeted interventions aimed at improving BI dissatisfaction. With improved BI dissatisfaction, the negative consequences associated with unaddressed BI dissatisfaction can be reduced and

individual's quality of life improved. It would also potentially reduce the significantly costly psychological and physical effects on individuals and improve overall public health.

Limitations

It is important to consider the results of this study in light of several limitations. First, given the cross-sectional nature of the study, a comprehensive examination of factors that may contribute to the development, prevention, or prediction of change in BI dissatisfaction over time was not possible, which may be interpreted as a limitation of this research. A longitudinal design examining these factors would provide a deeper understanding of the nature of the relationships between the factors investigated in this study. In addition, all of the questionnaires and questions in this study relied solely on the self-report of the individual. Even though self-report questionnaires are known to be valuable in the assessment of internalising problems, other forms of assessment would also be useful and may add rich information. The use of interviews, focus groups, and behavioural observations may enhance the validity of the results. Further, although the use of a comprehensive list of assessments in this study is considered a strength of the study, it may have contributed to participant fatigue, and potentially reducing the quality of the data obtained. This may have occurred due participants not answering honestly or thoroughly given the length of time required to answer all of the questions in the survey. Future research may consider reducing the number of assessments used in one study. Another limitation of the study was, the use of a community sample rather than a clinical sample. Both a community sample and a clinical sample would provide equally important information regarding the relationships between the factors investigated. These relationships may be different in a clinical sample; however, the results from previous research into clinical ED samples and other psychiatric disorders suggest that mindfulness plays an important role in the improvement of symptoms and that clinical samples generally have low levels of mindfulness. Perhaps the use of both samples would have proved beneficial and allowed for comparisons on all of the factors investigated. Lastly,

a limitation for the study was the inclusion of a large number of questionnaires, which some participants may have found too onerous and thus ceased answering some questions. Despite these limitations, this study provided valuable information regarding BI dissatisfaction domains and their relationship to eating disorder symptoms, perfectionism, psychological wellbeing, and how an individual relates to themselves, their thoughts, and their feelings.

Recommendations for Future Research

Extant research and the findings from the current study provide evidence that there is a strong link between mindfulness and BI dissatisfaction. The findings also support the notions that individuals who are able to distance themselves from negative and distressing cognitions are less likely to (i) act impulsively and engage in disordered eating behaviours; (ii) become distressed because of their thoughts; (iii) believe their distorted thoughts about food and body shape; and (iv) avoid certain situations and behaviours related to their bodies (Stewart, 2004; Davis & Hayes, 2011; Baer, 2003; Brown & Ryan, 2004; Lavender et al., 2012; Fink et al., 2009). Given the benefits associated with mindfulness and the detrimental effects associated with BI dissatisfaction, future research would benefit from investigating the utility of mindfulness training in improving BI dissatisfaction. CBT is a well-established intervention for BI dissatisfaction; however, little research has examined the usefulness of other approaches such as mindfulness, both as a stand-alone intervention and as an add-on to CBT interventions. Therefore, questions remain unanswered about whether other approaches may provide useful benefits above and beyond CBT or may offer more accessible interventions that may be better suited to some individuals and therapists. Future research would benefit from investigating CBT and mindfulness interventions for BI dissatisfaction in both men and women. In addition to mindfulness, self-compassion and cognitive fusion have shown to be significantly related to BI dissatisfaction and related factors. These techniques and processes are also strongly linked to mindfulness practice. Therefore, incorporating elements of self-compassion and cognitive fusion may be warranted to better understand how

these techniques may be of use in improving BI dissatisfaction. It is important to adequately address BI concerns in men and women given the adverse and long-term consequences that are associated with BI dissatisfaction such as the development of disordered eating or EDs, medical complications due to severe exercise or dieting habits, low self-esteem, isolation, depression, anxiety, and overall more dysfunction psychologically, socially, and intimately.

A number of other recommendations for future research can be made. The inclusion of participants aged in the mid-late twenties and above warrants further investigation given that research has found that levels of BI dissatisfaction do not subside with age (Slevec & Tiggemann, 2011; Tiggemann, 2004). Past research has also found that BI dissatisfaction is becoming more prevalent among men and women of all ages, therefore, warranting investigations into how different age groups experience BI dissatisfaction and interventions that may be effective in improving BI dissatisfaction for individuals in their mid-twenties and above. The majority of research into BI dissatisfaction interventions has been aimed at adolescent girls and university aged females (Jarry & Barardi, 2004; Jarry & Ip, 2005).

Given the rising number of men who experience BI dissatisfaction, and the results of the current study imply that BI dissatisfaction may be as prevalent in men as it is women, it is important to include men in future intervention studies. No research to date has investigated the usefulness of BI dissatisfaction interventions for mixed gender groups. Investigations of both CBT and mindfulness group interventions for BI dissatisfaction in men and women are an important area for future research. The use of mixed gender group interventions may also provide an opportunity to challenge the perception that BI dissatisfaction only occurs in women, and is a 'normal' belief not in need of therapeutic attention.

The results from the current study will further inform the development of pilot interventions targeted at improving BI dissatisfaction and BI acceptance in men and women. Given the significant relationships observed between mindfulness, self-compassion, acceptance, cognitive fusion and a range of BI factors, disordered eating, and psychological

wellbeing, research into interventions incorporating factors such as mindfulness, acceptance, cognitive defusion and self-compassion are warranted. Therefore, the second study of this research involved the development of mindfulness and acceptance based intervention for BI dissatisfaction. This intervention was developed by the researchers to incorporate elements of mindfulness, acceptance, self-compassion, and cognitive defusion. The testing of the two pilot interventions in the second study (CBT and mindfulness intervention and mindfulness stand-alone intervention, developed by the researcher) will provide useful information about how these techniques can improve BI dissatisfaction and associated negative consequences in adult men and women.

Conclusion

The results of this study indicate the need for interventions for BI in the community. The findings suggest that mindfulness, acceptance, and self-compassion all play an important role in the experience of BI dissatisfaction and disturbance, for both men and women. More specifically, the findings highlight the relationships individuals have with their BI related thoughts and feeling, reducing avoidance of BI situations and checking behaviours, and increasing self-acceptance, self-compassion, and overall awareness of self, thoughts, and feelings in treatment. Further research examining these factors and investigating mindfulness and acceptance based interventions for BI are warranted, including experimental designs whereby causal relationships may be examined and these variables further investigated.

Chapter 3: Study Two

Investigation of Two Pilot Interventions: Cognitive Behaviour Therapy and Mindfulness, and Mindfulness and Acceptance Based Interventions for Body Image Dissatisfaction

BI dissatisfaction and disturbance has risen steadily over the last couple of decades, affecting children, adolescents, and adults of both genders (McCabe & Ricciardelli, 2004). BI is considered to be the experience of embodiment, that is, the attitudinal, perceptual, and behavioural experience of the body and appearance (Cash, 2004; Jarry & Berardi, 2004; McCabe & Ricciardelli, 2004). Discontent with an aspect of appearance is considered to lead to dissatisfaction with BI (Cash & Pruzinsky, 2002; Cash & Szymanski, 1995). BI disturbance is thought to be related to an individual's perception, cognition, behaviour, or affect/emotion, which equates to some levels of impairment or dysfunction in daily life (McCabe & Ricciardelli, 2004). Historically, BI dissatisfaction and disturbance were highly prevalent primarily among women and adolescent girls; however, prevalence has also risen for men and boys. Frequently, the pursuit of the cultural ideal (lean and muscular for males, thin and emaciated for females) leads to significant adverse effects. Women and men that become preoccupied with their appearance and attaining the 'cultural ideal' frequently resort to unhealthy and dangerous compensatory weight-control and appearance related strategies. For women, these predominantly represent attempts at weight control including caloric restriction, starvation, dieting, excessive exercise, bingeing and purging, use of laxatives and other diuretics, and the use of expensive and sometimes dangerous plastic surgeries (Cash & Pruzinsky, 2002; Lewis & Devaraj, 2010; Pearson, et al., 2010). On the other hand, for men, compensatory strategies include use of muscle building drugs, performance enhancing drugs, excessive and dangerous exercise, disordered eating and different forms of plastic surgeries (Grammas & Schwartz, 2009; Lavender et al., 2012; Levesque & Vichesky, 2006; McCabe & Ricciardelli, 2004). Moreover, BI dissatisfaction and disturbance have been linked to poorer psychological and psychosocial outcomes for both genders including depression,

anxiety, lower self-esteem and self-worth, isolation, and difficulties with intimate relationships (Grammas & Schwartz, 2009; Jarry & Berardi, 2004; McCabe & Ricciardelli, 2004; Strachan & Cash, 2002). Most importantly perhaps is that unaddressed BI dissatisfaction and disturbance can lead into the development of an ED or BDD (Nicolino et al., 2001; Levine & Piran, 2004).

A core component of the experience of BI dissatisfaction and disturbance is the development of rigid, critical, and negative cognitions regarding the individual and their BI (Stewart, 2004). This then may lead to the development of rule-governed behaviour, and a multitude of self-defeating and self-reinforcing unhealthy behaviours, including avoidance, ritualistic behaviours of checking and fixing appearance, and as aforementioned compensatory strategies (Lavender, et al., 2012; Stewart, 2004). Negative and unpleasant emotions also develop and become linked to situations and contexts where BI may present some discomfort, leading to more frequent experience of dysphoria, negative thoughts, and self-defeating behaviours. It may also lead to the individual becoming preoccupied with shape, weight, and appearance, limiting their self-evaluation as a person based solely on their appearance. This may cause significant distress and impairment for any individual, robbing them of enjoyment, pleasure, and quality of life. The development of such a relationship with the body can create a flow on affect of other problems and significant unhappiness, medical and psychological disorders, substantially affecting people's lives and capacity to engage in life.

Numerous interventions have been developed to address BI dissatisfaction and disturbance. In particular, interventions have targeted adolescent girls, college women, or middle-aged women. Interventions have predominantly been based on CBT principles. CBT-based interventions have shown to be effective in improving BI dissatisfaction, reducing the frequency of negative thoughts, body checking and avoidance behaviours, and improving associated depression and disordered eating behaviours (Jarry and Ip, 2005; Jarry & Berardi). Although CBT has shown effectiveness for improvement in some aspects of BI dissatisfaction and disturbance,

research has indicated that there is room for improvement. For example, some studies have found that CBT was not superior to other treatments such as exercise therapy and reflective therapy (Dworkin & Kerr, 1987; Ferrell et al., 2006; Fisher & Thompson, 1994). Further, research has found that the psycho-educational component of CBT intervention is equally as effective as the cognitive restructuring involved in CBT (McMahan, 2001; Jarry & Berardi, 2004).

Empirically evaluated interventions for BI dissatisfaction have primarily assessed efficacy for women (Jarry & Berardi, 2004). There is a lack of research examining the efficacy of BI dissatisfaction interventions for men and among mixed gender groups. Given the increasing prevalence of BI dissatisfaction among men (McGabe & Ricciardelli, 2004), it is essential that appropriate interventions are developed and evaluated for this population. In addition, mixed gender groups could potentially offer an avenue for decreasing the prejudice or stereotype that only women experience BI dissatisfaction. Combining genders in mixed group interventions warrants further investigation.

Limited research has explored the utility of mindfulness training in improving BI dissatisfaction, despite the rise in mindfulness-based interventions for other psychological issues and the significant associations between mindfulness and BI dissatisfaction. Research has shown that mindfulness practice and mindfulness-based interventions have been effective in the treatment of Depression and Depressive relapse, Chronic Pain, Anxiety related disorders, Stress management, improvement in general wellbeing and life satisfaction, Substance abuse and relapse, Borderline Personality Disorder, psychosis and EDs (Baer, 2003; Bishop et al., 2004; Abba et al., 2008; Chadwick et al., 2009; Kristeller et al., 2006; Linehan, 1993; Marlatt & Gordon, 1985; Pearson et al., 2012; Segal et al., 2002).

Recently, research has utilised mindfulness principles and practices in BI related interventions, primarily applied to mirror exposure situations (Delinsky & Wilson, 2006; Key et

al., 2002; Luethcke et al., 2011). Its usefulness is promising, with findings suggesting that mindfulness was as effective as acceptance, cognitive dissonance and psycho-educational approaches for BI dissatisfaction (McMahan, 2001; Delinsky & Wilson, 2006). It seems practical to incorporate mindfulness in BI interventions for a number of reasons. Stewart (2004) argues strongly for the use of mindfulness in improving BI dissatisfaction for the following reasons: (i) helps develop an inner life by teaching individuals to observe their internal and external experiences without judgement; (ii) promotes a change in attention and awareness from the external experiences to the internal experience of the body, leading to present moment awareness of what it feels to be in the body; (iii) increases awareness and recognition of conditioned ways of thinking, feeling, and responding, thus creating a greater opportunity to change the relationship and meaning of the internal sensations experienced; (iv) helps individuals to slow down, observe, and sit with discomfort, difficult feelings and thoughts, and decrease “fusion” or getting caught up in thoughts. By creating a different relationship with and more distance from thoughts and feelings, individuals can decrease the unhelpful and avoidance behaviours and coping strategies often utilised to deal with negative BI thoughts, emotions, and experiences (v) mindfulness practice is a practice, therefore, reducing the expectations of having to have it “right” or “perfect” but instead helps individuals to be aware of what they experience not the unrealistic images of “what they would like things to be” (Stewart, 2004).

Given the multitude of psychological, psychosocial, and health related consequences associated with BI dissatisfaction and disturbance, there is a clear need for the development and evaluation of interventions for adult men and women with BI difficulties. Moreover, the increased recognition of mindfulness as an effective, stand-alone intervention for varying psychological problems (Baer, 2003; Bishop et al., 2004; Segal et al., 2002; Linehan, 1993; Pearson et al., 2012; Abba et al., 2008; Chadwick et al., 2009; Kristeller et al., 2006), raises the question of whether it has applicability in the treatment of BI disturbance. No research to date has examined a CBT with

the adjunct of mindfulness in improving BI, disordered eating symptoms, and psychological wellbeing. To date, no published data has examined mindfulness and acceptance based intervention for improving BI, disordered eating symptoms, and psychological wellbeing. Further, no published research has investigated the effectiveness of both of these interventions together. Moreover, mixed gender groups have yet to be employed in BI research.

Based on the previous research outlined here, the primary aim of the current study was to develop and evaluate the relative efficacy of two pilot group-based interventions for BI dissatisfaction and disturbance in a community sample of adult men and women. Specifically, the study aimed to investigate the effectiveness of a Mindfulness and Acceptance-Based Therapy Intervention for BI dissatisfaction and disturbance (MAT-BID) and an existing Cognitive Behavioural and Mindfulness combined Intervention for BI dissatisfaction and disturbance (CBT-M-BID; Cash, 2007). The study aimed to utilise a repeated measures design across three time points (baseline, post intervention, and follow-up) and aimed to establish the effectiveness of these two pilot interventions in decreasing BI dissatisfaction, disturbance, cognitive distortions, investment, BI dysphoria, and checking and avoidance behaviours. A further aim was to investigate the effectiveness of these interventions in improving mindfulness, self-compassion, cognitive fusion, and acceptance of thoughts and feelings in group participants. The impact of these interventions on eating disorder symptomatology or disordered eating, and self-esteem was also investigated.

As the primary purpose of this study was to develop and evaluate these pilot interventions, no specific hypotheses were developed. However, it was expected that individuals in both groups would show improvements in BI dissatisfaction and disturbance.

Design

This study utilised a case series design. It should be noted that the original design for the study was a randomised control trial; however, in order to achieve the necessary level of statistical power, group sizes of at least 10 individuals were necessary. However, due to difficulties with recruitment and candidature time constraints, an extension of the data collection period was not possible. Consequently, as suggested by Foster, Watson, Meeks, and Young (2002), an alternative cases series design was utilised and the variables analysed were reduced in number. With case series designs, participants act as their own controls (Kazdin, 2011). While several common misconceptions about single-case designs exist (see Dallery, Cassidy, & Raiff, 2013), there is increasing recognition that this methodology can detect small, but meaningful changes in behaviour and can validly be used to assess behaviours over time (Kazdin, 2011).

In addition, qualitative research methods were employed to capture the participants' personal experiences as reported during the screening interview and follow-up phone calls and on their feedback forms, using Thematic Analysis (TA: Braun & Clarke, 2006). This approach is frequently used in qualitative research as a way of identifying, examining, and establishing patterns in data. Meaning is then derived from these patterns to better understand the information and the experience of research participants. Importantly, TA is easily and conveniently used with other approaches without interfering or impeding on other forms of analysis and other designs. In using TA, meaningful data can be extracted that might otherwise be missed with exclusive of quantitative data analysis. Braun and Clarke (2006) proposed a six-phase method for conducting TA, including: (i) Data familiarisation (transcribing, reading, re-reading, and noting general ideas from the data); (ii) Generation of initial codes (collating information pertinent to each code); (iii) Theme search (codes are collated into each theme, and all data that is relevant); (iv) Review of themes (themes are coded and data checked); (v) Naming and defining themes (ongoing analysis and refining themes, and establishing clear definitions and names for each theme); (vi) Production

of manuscript (compelling extracts are selected and finalised, and themes are related back to research questions and literature).

Method

Participants

All potential participants were screened individually to assess their suitability and eligibility for participation in one of two intervention groups (CBT-M-BID or MAT-BID). Eligibility criteria included: experiencing BI concerns such as dissatisfaction and avoidance of activities related to the body; aged between 18 and 65 years; ability to commit to group attendance for 8 weeks and willingness to complete questionnaires. Exclusion criteria including having a diagnosis of an eating disorder, psychotic disorder, or personality disorder, being under the age of 18, having cognitive impairment or an intellectual disability, and lastly violent or aggressive behaviour.

A total of 40 individuals expressed interest in participating in the study. Of these, 20 participants were screened and interviewed. The other 20 participants either did not follow-up their initial expression of interest or following discussion chose not to proceed with study recruitment. Four participants were deemed ineligible to participate in the study as they were not dissatisfied with their bodies and one participant presented with a diagnosis of an eating disorder. The remaining 16 participants were randomly allocated to either Group One (CBT-M-BID) or Group Two (MAT-BID). However, prior to commencement of intervention, two participants withdrew from the MAT-BID group. A further five participants discontinued their involvement in the study at different stages. In the CBT-M-BID group, two female participants withdrew from the study at different stages for personal reasons. One of these participants had completed four weeks of the program and the other had completed five weeks of the program prior to withdrawing. In the MAT-BID group, one participant dropped out after two weeks of the program; another participant could not attend the program following week three due to personal reasons; and

another participant completed a total of four weeks of the program and could not attend all of the weeks due to personal reasons. Nine participants completed the full group program. Participants were males and females, aged between 18 years and 65 years.

Group one (CBT-M-BID) initially comprised eight participants (three males; five females) of whom six completed the full program. The mean age for participants in the CBT-M-BID group was 32.12years ($SD= 7.16$). Table 17 displays the demographic information for participants in the CBT-M-BID group.

Group two (MAT-BID) initially comprised eight participants (three males; five females). Out of these participants, only three completed the full program. The mean age for the three participants in the MAT-BID group was 36.67 years ($SD= 7.23$). Table 17 displays the demographic information for participants in this group.

Table 17

Participant Demographic Information for CBT-M-BID and MAT-BID Intervention Groups

ID	Gender	Age	Ethn/Race	TC/TNC	MS	MH
<i>Group CBT-M-BID</i>						
1	Female	28	Cauc/White	TC	Defacto	CF/Dep
2	Female	21	Cauc/White	TNC	Single	Depression
3	Female	28	Cauc/White	TC	Relationship	Nil
4	Male	34	Cauc/White	TC	Single	Dep/Anx
5	Male	42	Cauc/White	TC	Single	Nil
6	Female	31	Cauc/White	TC	Single	Nil
7	Female	42	Cauc/White	TNC	Divorced	Nil
8	Male	31	Cauc/White	TC	Married	Nil
<i>Group MAT-BID</i>						
1	Female	45	Cauc/White	TC	Married	Nil
2	Female	52	Cauc/White	TNC	Divorced	Nil
3	Female	32	Cauc/White	TC	Relationship	Nil
4	Male	33	Cauc/White	TC	Relationship	Nil
5	Male	26	Asian/Cauc.	TNC	Single	Nil
6	Female	36	Cauc/White	TNC	Married	Nil

***Note. ID = Identification; Ethn = Ethnicity; TC/TNC = Treatment Completed/Treatment Not Completed; MS = Marital Status; MH = Mental Health Diagnosis, current or past; CF = Chronic Fatigue; Dep = Depression; Anx = Anxiety; Cauc = Caucasian.*

Materials

Screening Interview

A semi-structured screening interview schedule was developed for the purpose of the study to assist with recruitment of participants. During the screening interview, potential participants were asked a range of questions relating to their demographics (i.e., age, ethnicity, occupation and work load, weight in kilograms, height in centimetres, sexual orientation, and marital status), BI related information (e.g., main concerns, history of BI dissatisfaction), mental health related information (e.g., history of anxiety, depression, eating disorders), and general group related information.

The recruitment process was explained during the screening interview. In addition, potential participants were provided with a Plain Language Statement, Informed Consent Forms, and their rights as participants were explained (see Appendix K). All but one screening interviews were conducted by the primary researcher. Both interviewers were provisional psychologists, completing doctoral level postgraduate studies in clinical psychology, with both interviewers were trained to adhere to the screening interview protocol (see Appendix E).

Measures

Participants completed a questionnaire package prior to commencing group sessions (i.e., baseline), following the completion of the intervention (i.e., post-test), and at three-month post-intervention (i.e., follow-up). The questionnaire battery included the questionnaires utilised in Study One (see Chapter 2 for descriptions) as well as 2 additional measures selected to assess any intervention effects (described below).

Body Image Cognitive Distortions (ABCD; Jakatdar, Cash, & Engle, 2006) is a 36-item questionnaire, which examines cognitive distortions related to body image. The ABCD samples eight types of distorted thinking related to how persons process information about their physical

appearance. Two 18-item parallel forms of the unidimensional measure were also constructed. Responses on form A and form B are rated on a 5-point Likert Scale ranging from “*Not at all*” (0) to “*Exactly like me*” (4). A sample item from the questionnaire is “*Imagine that on a certain day your hair doesn’t look “right.” Would you think, “I look awful today”?*” For both form A and B, the composite score is the mean of the 18 items. All forms have shown to be highly internally consistent and relatively free from socially desirable responding. Convergent validity for all ABCD forms has also been established using several standardized measures of body image and eating attitudes. Both forms have been shown to be highly internally consistent (Cronbach’s alpha .93 and .94).

The Body Image - Acceptance and Action Questionnaire (BI-AAQ; Sandoz & Wilson, 2006) is a 29-item self-report scale that has been designed to measure body image flexibility and the extent to which an individual exhibits an accepting posture toward negative thoughts and feelings about his or her body shape and/or weight. Items are rated on a 7-point scale ranging from “*Never True*” (1) to “*Always true*” (7). An example item is “*My thoughts and feelings about my body weight and shape must change before I can take important steps in my life*”. Higher scores indicate more acceptance and greater body image flexibility. The measure appears to be psychometrically sound, with an internal consistency of $\alpha = .93$ and good construct validity.

Evaluation Forms

In order to evaluate the programs qualitatively, two different evaluation forms were created for the purpose of the study. The evaluation forms were slightly different for Group one and Group two in order to reflect the slightly different content covered in the groups.

Program Evaluation Form. This was an anonymous form which participants completed following their last week of the program (Week 8) to provide feedback regarding their experience in the group. The form consisted of six questions evaluating the program and its usefulness. Please refer to Appendix F for a copy of the program evaluation form.

Group Evaluation Form. This was a form attached to the questionnaire package that was returned following the completion of the respective group intervention. The group evaluation form asked participants a number of questions relating to their experience of the group, what they learned and are taking away from the group, aspects of the group they would improve, and how they feel their body image has improved (if in any way). Refer to Appendix G for the qualitative questions on the evaluation form.

Table 18 lists all the questionnaires used in this study. However, and as previously noted, due to the small sample size not all these measures were included in data analyses.

Table 18

Summary of Self-Report Measures Used in the Questionnaire Package

Measure	Authors & Year	Information & Subscales
Background Information	Demographic Questions	Developed for the study
Eating Disorder Examination Questionnaire	Fairburn & Beglin, 1994	Global score; Restraint; Eating Weight & Shape Concern
Rosenberg Self-Esteem Scale	Rosenberg, 1965	Total Score
Appearance Schemas Inventory Revised	Cash, 2004	Global Score; Self-Evaluative Salience; Motivational Salience
Body Image Ideals Questionnaire	Cash & Szymanski, 1995	Global Score
Body Shape Questionnaire	Cooper, Taylor, Cooper, & Fairburn, 1987	Total Score
Male Body Attitudes Scale	Tylka, Bergeron, & Schwartz 2005	Global Score; Muscularity; Low; Body Fat; Height
Body Image Disturbance Questionnaire	Cash, Phillips, Santos & Hrabosky, 2004	Total Score
Body Image Avoidance Questionnaire	Rosen, Srebnik, Saltzberg & Wendt, 1991	Total Score
Situational Inventory of Body Image Dysphoria	Cash, 1994	Total Score
Body Checking Questionnaire	Reas et al., 2002	Global Score
Mindfulness Attention Awareness Scale	Brown & Ryan, 2003	Total Score
Cognitive Fusion Questionnaire	Dempster, Bolderston, Gillanders & Bond, 2009	Total Score
Self-compassion Scale (SCS)	Neff, 2003	Global; self-kindness; self-judgement, Common humanity; isolation; mindfulness; over-identified

Procedure

Participants in this study comprised a community sample from Melbourne, Australia. This research project was approved by the RMIT University HREC (See Appendix H for ethics approval letters). Recruitment for the study occurred over a 4-5 month period and the following recruitment methods were used:

Recruitment and Advertising

Flyers, brochures and advertisements (see Appendix J) were placed on notice boards around RMIT University's Bundoora and City Campuses. Permission was sought from local gymnasiums to place flyers on their notice boards, which was granted. In addition, a media release (see Appendix K) was distributed to Victorian media in 2012, developed by the RMIT University Department of Media and Communications. The media release provided background information about the research, a summary of the aims of the research, and information regarding the recruitment of participants. In response to the media interest from the media release, the research was advertised on radio and in the print media (i.e., advertisements in *The Age* and *Moreland Local Newspaper*). The primary researcher participated in two radio interviews (*ABC News radio* and *Radio National*). The research was advertised on the RMIT University website and both staff and student newsfeeds.

Screening

Individuals interested in participating in the research were invited to email or telephone the researcher, at which time a brief telephone assessment was conducted. Potential participants were also asked whether they had ever been diagnosed with an Eating Disorder (ED). If potential participants responded in the affirmative, they were informed that they were ineligible for the study given that the intervention programs did not address ED symptoms and were unlikely to meet their therapeutic needs. Conversely, potential participants who reported not having received

an ED diagnosis were asked to attend a formal screening interview. The interview schedule is shown in Appendix E. During this interview, potential participants were provided with a Plain Language Statement (PLS; Refer to Appendix K) informing them of the study and the process involved in the study. In addition, all potential participants voluntarily signed consent forms (Appendix L) at the beginning of the screening interview, consenting to be asked questions and to participate in the research. If a potential participant was deemed ineligible to participate in the groups, they were advised of their status either (i) following the screening interview or in cases where doubt existed (ii) following consultation with project supervisors.

Individuals who were not invited to participate were provided with information regarding the reasons for this decision and also given details of alternative treatment options for their consideration. These options included: (i) consulting a General Practitioner for referral to private psychologist; (ii) self-referral to the RMIT University Psychology Clinic for individual counselling; (iii) psychoeducation resources (including self-help body image workbooks); and (iv) helpful websites, such as the Butterfly Foundation and Eating Disorders Victoria.

Data obtained during the screening interview from participants that were not eligible to participate in the groups was destroyed. Eligible, consenting participants were informed that the researcher would be in contact to advise them of group commencement details (dates and times) and their allocated group.

Therapist Training

Two group facilitators (one fully registered clinical psychologist, one provisional psychologist) were utilised in the study. They facilitated both intervention groups. Both facilitators have been trained in CBT and mindfulness, with the clinical psychologist having more than 20 years of clinical experience using CBT, DBT, and mindfulness in clinical practice. The doctoral candidate received training in CBT through the department's clinical training program, as

well as attending numerous workshops and training in mindfulness and ACT. The doctoral facilitator also had 2.5 years of supervised practicum experience in clinical work utilising mindfulness, ACT, DBT, and CBT skills with clients, both within individual and group settings. In addition, the facilitators met weekly to discuss the treatment manual protocol and session plans. The senior supervisor provided ongoing supervision and feedback.

Participation in the Research

Eligible participants were randomly allocated to either CBT-M-BID or MAT-BID groups. All participants were informed about their rights and the process involved in the research as stipulated in the Plain Language Statement (see Appendix K). At the beginning of both groups, participants were provided with their respective manuals/workbooks, mindfulness CDs and information about the group (i.e., expectations, group rules, questionnaire information). Participants were also advised to approach the group facilitators in the first instance if they became distressed.

Participants completed the questionnaire package at three time points: baseline, post-treatment, and at three-month follow-up. During the follow-up period, participants were also contacted by telephone and asked a number of questions across four content domains as detailed below: *(i) How have you been since the group in terms of your psychological wellbeing?; (ii) How has your body image been since the completion of the group? Have there been situations that have triggered your body image and how have you managed this?; (iii) Have you continued to use any of the skills that you learned in the group? If so, which ones? And if not, what got in the way?; (iv) Having had time to reflect on the group now, how was your experience and what are your reflections? How would you describe your relationship with your body now that this time has passed and following your involvement in the group?*

Following the 10-15 minute telephone conversation, participants were informed that a set of questionnaires was going to be mailed to them and they were required to complete this and mail it back within maximum two weeks, which all participants did. The questionnaire package included all of the questionnaires stated above. Participants were informed that this completed their assessment and participation in the research.

Group Treatment Procedures and Conditions

Intervention programs were delivered over eight, two-hour consecutive weekly sessions. Between-session practice exercises and homework tasks were assigned and are summarised in Tables 19 and 20.

Treatment was standardised by using treatment manuals, which contained weekly session plans. The first 30 minutes of the each group session was spent on checking in with participants, a review of previous week's content and discussions, homework review and signposting that week's session. An hour of the group was spent on content presentations, discussions, and exercises. The last 30 minutes of the group was spent of practical application of skills, practice of skills in the group, discussion about homework tasks, and a review of that week. The last five minutes were spent on evaluation of the week's session and answering participants' questions or queries.

The first intervention was a body image self-help workbook and program developed by Cash (2007). *The Body Image Workbook: An 8-Step Program for Learning to Like Your Looks* intervention uses cognitive behavioural techniques and mindfulness-based techniques to improve body image satisfaction. Slight modifications were made to the program, by incorporating additional CBT techniques or exercise.

Table 19

Overview of the CBT-M-BID Group

Session	Activities
1. Introduction & Discovering Your Own Body Image	<ul style="list-style-type: none"> • General Introduction & setting therapeutic frame • Introduction to BI and understanding BI development • Discussion of what influences BI • Body image dissatisfaction – what it is, how it develops and the associated costs • Developing BI goals, Identifying triggers and BI investment • Homework – Read week 1 materials, BI goals, understanding personal past events (expressive writing) and completion of all worksheets.
2. Origins of Your Personal Body Image – How Did Your Story Originate?	<ul style="list-style-type: none"> • Homework review & Week 1 review • Historical influences of BI • Cultural reflections • Interpersonal influences • Personality and attentional bias with BI • Homework: Read Week 2 materials, expressive writing, mindfulness handout, complete all other worksheets.
3. Mindfully Accepting Your Body Image Experience	<ul style="list-style-type: none"> • Homework review & Week 2 Review • Mindfulness and introduction to thinking process • Current BI influence and maintaining factors • Acceptance • Understanding ABC's of behaviour and BI episode of distress • Completion of mindfulness exercise (breath) and vicious flower worksheet • Homework: Read Week 3 materials, mindful self-monitoring, and mindfulness practice (with CD)
4. Beneath the Private Body Talk	<ul style="list-style-type: none"> • Homework review & Week 3 Review – • Understanding internal dialogues and private body talk • Introduction to appearance assumptions and cognitive challenging of assumptions • Developing a new inner voice through these challenges • Homework: Read Week 4 materials, ongoing practice of mindfulness, ABCs of BI experiences, challenging assumptions (worksheets)
5. Mindfully Modifying Mental Mistakes	<ul style="list-style-type: none"> • Homework Review & Week 4 Review • Introduction and discussion of mental mistakes and cognitive distortions • Actively challenging cognitive distortions • Changing the inner voice (self-talk) • Homework: Read Week 5 materials, mindfulness practice (CD) and using the new inner voice in daily situations.
6. Facing Body Image Avoidance	<ul style="list-style-type: none"> • Homework Review & Week 5 Review • BI avoidance • Self-defeating behaviours and reinforcing behaviours • Erasing avoidance and evasive actions • Exposure and facing avoidance through developing and working through exposure hierarchies • Developing plans for exposure • Introduction to relaxation and deep breathing • Homework: Read Week 6 materials, completion of worksheets,

7. Erasing Body Image Rituals	<ul style="list-style-type: none"> • beginning to carry out plans for exposure and practicing mind-body relaxation. • Homework Review & Week 6 Review • Introduction to appearance preoccupied rituals (checking and fixing) • Strategies for erasing rituals • Developing hierarchies and plans for erasing rituals • Homework: Read Week 7 materials, complete all worksheets, carrying out plans for exposure.
8. Treating Your Body Well	<ul style="list-style-type: none"> • Homework Review & Week 7 Review • Writing wrongs (letter to your body) • Discussion of physical activities and assertiveness • Review of goals and discovering ongoing needs and goals • Positive flower worksheet • Relapse prevention • Questions and comments/Review • Homework: Read Week 8 materials, writing your body a letter, continue to use skills, completion of questionnaires.

**Note. BI = Body Image.*

Table 20
Overview of the MAT-BID Group

Session	Activities
1. Introduction to Body Image & Discovering Your Personal Body Image	<ul style="list-style-type: none"> • General Introduction & setting therapeutic frame • Introduction to BI and understanding BI development • Discussion of what influences BI • Body image dissatisfaction – what it is, how it develops and the associated costs • Developing BI goals, Identifying triggers and BI investment • Homework – Read week 1 materials, BI goals, complete worksheets, mindfulness handout.
2. Your Personal Body Image Story & Introduction to Mindfulness	<ul style="list-style-type: none"> • Homework review & Week 1 review – discussion of goals • Understanding historical and current influence and maintain factors of BI • Introduction to mindfulness and its relevance to BI • Mindfulness of breath and mindfulness of the hand exercises • Completion of vicious flower worksheet and understanding BI distress worksheet • Homework: Read Week 2 materials, monitor mindfulness practice, complete worksheets.
3. Acceptance & The Mindfulness Mirror	<ul style="list-style-type: none"> • Homework review & Week 2 Review • Introduction to acceptance • Mirror exposure and mindfulness • Techniques to reduce distress (breathing, relaxation) • In session mindfulness of object, mindfulness of breath, and slow breathing technique • Homework: Read Week 3 materials, mindfulness practice (with CD), reflections in the mirror, mindful mirror exercise.
4. Mindfully Letting Go of Private Body Related Thoughts and Judgements	<ul style="list-style-type: none"> • Homework review & Week 3 Review • Discussion about the impact of thoughts and judgements on BI experiences • Relating differently to thoughts – introduction to letting go of

- thoughts and defusion
 - Introduction to appearance related beliefs and their influence – distancing from these beliefs
 - In session mindfulness of thoughts, mindfulness of judgements and learning to label thoughts and judgements
 - Homework: Read Week 4 materials, ongoing practice of mindfulness (CD), mindful mirror, record of negative judgements worksheet and completion of other worksheets.
5. Body Acceptance and Mindfulness of Emotions
- Homework Review & Week 4 Review
 - Emotions and BI emotions
 - Approaching rather than avoiding emotions
 - Mindfulness, eating and the physical body
 - Responding to emotions non-judgementally
 - In session mindfulness of emotions and urge surfing and discussion about body appreciation
 - Homework: Read Week 5 materials, mindfulness practice (CD), mindfulness mirror, emotions record, completion of worksheets.
6. Mindfulness of Unhelpful Behaviours
- Homework Review & Week 5 Review
 - BI self-defeating behaviours(avoidance, checking, fixing)
 - Understanding what drives these behaviours
 - Building a positive and pleasant relationship with one’s body, mindfully
 - In session mindfulness of the breath and body scan.
 - Discussion about mindfulness of movement and pleasant activities.
 - Homework: Read Week 6 materials, mindfulness practice (CD), mindful mirror, monitoring BI experiences, carrying out positive activities and using mindfulness during these times, completion of worksheets.
7. Developing Self-Compassion & Letting Go
- Homework Review & Week 6 Review
 - Understanding self-compassion
 - Developing a compassionate self
 - Mindfulness and self-compassion
 - Forgiveness
 - In session loving-kindness meditation, discussion about self-compassion and putting together all concepts covered so far
 - Homework: Read Week 7 materials, mindfulness practice (CD), mindful mirror, writing a letter of forgiveness, and completion of all worksheets
8. Planning Ahead – Maintaining a Healthy Body Image
- Homework Review & Week 7 Review
 - Review of last 7 week and review of BI goals
 - Discovering ongoing needs and goals
 - Relapse Prevention – developing mindful plans
 - Ongoing mindfulness practice
 - In session mindfulness of the breath, completion of positive flower exercise, developing relapse prevention plans and reflecting on any improvements
 - Questions and comments/Review
 - Homework: Read Week 8 materials, completion of any worksheets, continued practice, and completion of questionnaires.

**Note1 = Body Image.*

Data Analysis

Inference by eye (i.e., interpretation of graphically presented individual data sets by two independent raters) and thematic analyses were used to interpret the results from this study. Given that a case series design was utilised in this study, inference by eye analyses were indicated (Kazdin, 2011). In addition to inference by eye analyses, clinical significance data was also used to better understand the implications of the results in this study. It is important to note that given the large number of variables initially in the study, only the global scores are reported throughout. Statistical Package for Social Sciences (SPSS), version 19 was used for the initial analyses (comparison of treatment completers and non-completers and descriptive statistics).

Results

Participant Attrition

Both groups, CBT-M-BID and the MAT-BID were initially allocated 8 participants each. In the CBT-M-BID group, two participants did not complete the intervention; one withdrew at session four and the other withdrew at session six. On the other hand, in the MAT-BID group, three participants failed to complete the intervention; one withdrew at session three, one at session four, and one at session six. Two participants withdrew prior to commencing the treatment, but after they were allocated. Thus, 6 participants completed the CBT-M-BID program and 3 completed the MAT-BID program. Table 21 displays participants' reasons for withdrawing from the program.

Table 21

Participants' Reasons for Withdrawal from the Study

Reason for withdrawal from the study	Number of participants
Unable to meet the scheduled session start times	2
Changes in personal circumstances	4
Changes in mental health status	1
Total	7

Changes in personal circumstances was the reason that led to the majority of the non-completing participants withdrawing from the study.

A series of t-tests were conducted to detect differences between treatment completers (TC) and treatment non-completers (TNC) on any of the variables measured at baseline. Table 22 displays the results of the *t*-test analyses.

Table 22
Comparison of Treatment Completers and Treatment Non-Completers at Baseline

Variable	TC M(SD)	TNC M(SD)	Levene's	<i>t</i>	df	<i>p</i>
<i>Demographics</i>						
Age	33.78(5.91)	35.40(12.4)	.08	-.34	12	.74
BMI	25.77(4.99)	25.61(5.74)	.67	.05	12	.96
<i>Body Image Measures</i>						
BI Investment	3.99(.30)	3.67(.51)	.28	1.52	12	.15
Body checking	55.0(14.51)	54.4(11.14)	.51	.08	12	.94
Body avoidance	50.33(13.64)	59.0(6.78)	.12	-1.32	12	.21
BI Dysphoria	2.17(.79)	2.64(.94)	.67	-.98	12	.34
BI dissatisfaction	3.61(1.31)	3.27(.81)	.16	.51	12	.62
BI disturbance	2.73(.47)	3.03(.53)	.52	-1.09	12	.30
Cognitive Distortions A	2.23(.87)	2.48(.93)	.52	-.49	12	.63
Cognitive Distortions B	2.11(.77)	2.44(1.13)	.32	-.65	12	.53
<i>Individuals' Relationship to Self, Thoughts and Feelings</i>						
Mindfulness	56.22(14.93)	44.4(13.61)	.62	1.46	12	.17
Cognitive Fusion	53.44(9.64)	65.8(9.73)	.97	-2.29	12	.04*
Acceptance	113.89(25.5)	109.80(24.65)	.68	.29	12	.15
Self-Compassion	2.81(.94)	2.58(1.02)	.99	.40	11	.70
<i>Personality and Psychological Wellbeing</i>						
Self-esteem	15.44(1.13)	16.6(2.88)	.014	-.86	4.69	.43
<i>Eating Disorder Symptomatology</i>						
EDEQ Global	2.64(1.47)	2.59(.92)	.32	.06	11	.95

*Note. BMI = Body Mass Index; BI = Body Image; EDEQ= Eating Disorder Examination Questionnaire.

*<.05

**<.001

No significant differences were observed between TC and TNC in their demographics, BI measures, personality and psychological wellbeing, and eating disorder symptomatology.

Significant differences were found between TC and TNC on the measure of cognitive fusion only,

with the TNC displaying higher levels of being fused with their thoughts and feelings at baseline compared to TC.

Attendance

For both groups, a total of seven participants attended all group sessions. However, one participant in the CBT-M-BID group and one participant in the MAT-BID group missed session three and session two, respectively. Both participants met individually with the primary researcher prior to their next scheduled session to discuss the content that was missed.

Descriptive Statistics

Table 23 displays the means and standard deviations at baseline, post-treatment, and follow-up for both treatment groups, together with community norms for the variables measured. Note that only global scores are presented, unless the display of subscales is warranted.

Table 23
 Descriptive Statistics of Baseline, Post Intervention, and Three-Month Follow-Up for CBT-M-BID and MAT-BID Groups (N = 9)

Variables	CBT-M-BID			MAT-BID			Community Norms M (SD)
	Baseline M (SD)	Post Intervention M (SD)	Follow-up M (SD)	Baseline M (SD)	Post Intervention M (SD)	Follow-up M (SD)	
<i>Body Image Measures</i>							
BI dissatisfaction	3.41(1.39)	3.29(.94)	2.13(1.09)	4.00(1.28)	.55(.18)	1.27(.79)	1.75 (1.38)
BI disturbance	2.81(.52)	2.37(.31)	2.07(.70)	2.57(.38)	1.81(.46)	1.62(.50)	1.81 (.67)
BI Investment	3.93(.28)	3.74(.44)	3.55(.30)	4.12(.35)	3.32(.51)	3.13(.10)	3.47 (.62)
Body checking	59.83(15.33)	53.67(11.48)	52.33(19.94)	45.33(6.66)	37.00(8.54)	39.33(9.29)	49.00 (11)
Body avoidance	51.83(15.99)	53.83(15.09)	47.50(12.65)	47.33(9.23)	46.33(12.58)	49.33(14.57)	31.5 (13.9)
BI Dysphoria	2.06(.91)	1.70(.54)	2.00(.46)	2.41(.55)	1.08(.50)	1.32(.48)	1.71 (.79)
MBAS	3.51(.87)	3.31(.60)	3.24(1.05)	4.16(-)	2.42(-)	2.54(-)	3.18 (.79)
MBAS Muscularity	3.66(.72)	3.63(.86)	3.37(1.10)	4.60(-)	2.40(-)	2.50(-)	3.23 (.94)
MBAS Body Fat	3.58(2.14)	3.04(1.69)	3.25(1.75)	2.88(-)	2.38(-)	2.50(-)	2.75 (1.19)
MBAS Height	2.33(1.89)	2.17(1.61)	2.17(2.02)	6.00(-)	3.00(-)	3.50(-)	3.13 (1.76)
Body Shape Dissatisfaction	114.33(25.10)	95.33(34.21)	78.33(15.50)	137(1.41)	106(32.53)	98.50(28.99)	81.5 (28.4)
Cognitive Distortions A	2.10(.99)	2.09(.57)	1.89(1.04)	2.50(.63)	1.22(.58)	1.19(.61)	1.45(.89)
Cognitive Distortions B	1.94(.89)	2.13(.63)	1.90(1.08)	2.46(.32)	1.09(.65)	1.07(.41)	1.43(.87)
<i>Individuals' Relationship to Self, Thoughts and Feelings</i>							
Mindfulness	56.5(15.53)	53.83(13.31)	52.33(13.23)	55.67(17.0)	71.67(15.5)	66.00(18.52)	55.87 (18.72)
Cognitive fusion	51.17(11.49)	47.50(10.38)	49.00(13.02)	52.00(6.08)	35.00(10.44)	39.33(8.08)	40.2 (11.04)
Acceptance	104.83(27.19)	121.60(20.40)	130.33(39.75)	134(4.58)	150(32.23)	140.67(18.58)	65.25 (15.38)
Self-compassion	2.88(1.14)	3.32(.66)	3.27(.65)	2.68(.69)	4.22(.45)	3.62(.77)	3.07 (.65)
<i>Personality and Psychological Wellbeing</i>							
Self-esteem	15.82(.75)	24.00(1.22)	24.00(1.67)	14.67(1.53)	24.33(.58)	23.67(2.08)	29.57 (4.07)
<i>Eating Disorder Symptomatology</i>							
EDEQ Total	2.62(1.66)	1.57(1.04)	1.72(1.48)	2.68(1.33)	1.87(.59)	1.78(1.01)	1.52 (1.25)
EDEQ Shape Concern	3.33(1.97)	2.22(1.39)	2.33(1.76)	3.67(2.22)	1.88(1.27)	1.67(1.01)	2.23 (1.65)

*Note. MBAS = Male Body Attitudes Scale; BI = Body Image; EDEQ = Eating Disorder Examination Questionnaire.

As can be seen in Table 23, descriptive statistics are presented under individual domains and are therefore reviewed by domain below.

Body Image Measures

Male body attitudes showed little change for the CBT-M-BID group and remained within the expected level for males in the general community. For the MAT-BID group, the one male participant reported a reduction in his negative male body attitudes at the end of the intervention and maintained this reduction at follow-up. For females in the sample from both the CBT-M-BID and MAT-BID group, body shape dissatisfaction appeared to reduce from baseline to follow-up and again at the three-month follow-up. A lack of difference in scores was observed for BI investment between CBT-M-BID and community norms; however, participants in the CBT-M-BID group showed a slight reduction in BI investment over time. Further, as shown in Table 23, the MAT-BID group showed reductions in BI investment over time. In addition, body checking was lower for the MAT-BID group, as compared to the CBT-M-BID and community norms. However, BI avoidance was higher for both groups when compared to community norms. For the CBT-M-BID group, BI dissatisfaction, disturbance and dysphoria appeared to reduce but remain above the expected levels in the community, whereas the MAT-BID group displayed reductions in dissatisfaction, disturbance and dysphoria, with scores appearing lower than that expected in the community at the three-month follow-up.

The descriptive statistics show that the CBT-M-BID group displayed higher levels of BI dissatisfaction and disturbance compared to community norms. Participants in this group also displayed more frequent body checking and avoidance behaviours compared to norms and the MAT-BID group at baseline. The CBT-M-BID group was also found to experience more cognitive distortions, which did not

alter significantly post intervention. Body shape dissatisfaction was extremely high for females in the CBT-M-BID group, particularly when compared to the norms and the MAT-BID group. These results significantly improved over time and were found to decrease beyond what would be expected in the community. Male body attitudes, muscularity and body fat dissatisfaction were also higher in the CBT-M-BID group than the community norms. Overall, the CBT-M-BID group presented as a highly dissatisfied group but also showed improvements in BI dissatisfaction, disturbance, BI investment, body checking and avoidance behaviours, body shape dissatisfaction and slight reductions in male body attitudes as a result of the intervention.

Compared to the CBT-M-BID sample, the MAT-BID group displayed higher levels of BI dissatisfaction, BI disturbance, investment in BI, and male body attitudes at baseline. This group also displayed improvements in BI dissatisfaction, BI disturbance, BI investment, body checking behaviours and cognitive distortions. Although body shape dissatisfaction decreased, it remained higher than community norms and the CBT-M-BID group. Interestingly, it appears that avoidance behaviours increased for this group. Overall, the MAT-BID sample was a highly dissatisfied sample, but showed significant improvements in their BI measures.

Individuals' Relationship to Self, Thoughts and Feelings

At baseline, individuals in both groups scored within the community norms for mindfulness; however, the MAT-BID group increased in mindfulness at post intervention and maintained a higher level of mindfulness at follow-up compared to both the CBT-M-BID group and community norms. Cognitive fusion and acceptance was higher in both groups at baseline when compared to community norms. In addition, cognitive fusion appeared to decrease post intervention and follow-up; however, more so for the MAT-BID group. With regard to self-compassion, slight

changes in scores were observed at different time points for both groups, but overall appears to be no different to what would be expected in the general community.

Personality & Psychological Wellbeing

Self-esteem improved for both groups; however, remained below the average expected within general community (Shea & Pritchard, 2007).

Eating Disorder Symptomatology

Scores on the EDEQ reduced for both groups to within the general community norms category, despite beginning at much higher levels (at baseline).

Inference by Eye Analysis

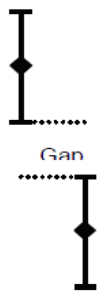
Given the low number of treatment completers in each group, and consequent deficits in power levels, results were analysed on an individual basis using inference by eye analysis (Cumming & Finch, 2005). Within this statistical framework, two independent raters visually inspected graphs of participants' results over the three assessment points (i.e., baseline, post intervention, and three-month follow-up) to determine whether any meaningful change in scores occurred. In this study, graphs were created from the questionnaire scores of each individual and included standard error of measurement (SEM) bars to aid with inference by eye assessment (Cumming & Finch, 2005). The two independent raters assessed each graph using criteria developed by Hudson, Wilken, Jaurig, and Raddler (1995) and Weiskop, Matthews, and Richdale (2001; See Appendix M). The assessment criteria depict three change levels and are specified below:

- i. *Substantial change* - used if the intervention resulted in a substantial decrease or increases in the variable and there was a gap between the standard error of measurement bars.

- ii. *Moderate change* - used if the intervention resulted in a clear increase or decrease in the variable, but not big enough to suggest substantial change, leading to a minimal overlap between the standard error of measurement bars.
- iii. *No change* - used if the intervention resulted in no change in the variable over time, leading to a significant overlap between the standard error of measurement bars.

The visual representations of the three ratings is displayed below:

Substantial change



Moderate change



No change



The raters were both registered psychologists with doctorate level qualifications in clinical psychology. No identifiable information or variable names were provided on the scoring or graph sheets. Following Cumming and Finch (2005), where raters initially disagreed on a particular rating (26.37%), they conferred until agreement was reached, resulting in a 100% agreement rate.

Clinical significance

In addition to the inference by eye results, clinical significance analysis was conducted to ascertain whether the changes in scores were clinically meaningful. This is an important part of evaluating an intervention, to ascertain whether the intervention was therapeutic; that is, if it made a difference to a person's daily functioning (Kazdin, 2011). The Clinical Change Generator, part of ClinTools version

4 (Deville, 2005) was used to assess reliable and clinical change in scores. Jacobson and Truax (1991) approach is used in the program when calculating reliable and clinical change. Three confidence intervals are provided in the program for assessing reliable change, with the 95% confidence interval (1.96 SD) used in this study for determining reliable change. In addition to being reliable, any changes were also assessed to ascertain if they were clinically meaningful. Following Jacobson and Truax (1991) criteria, one out of the three criteria were used in this study, which was criterion B. Criterion A is considered to be the change in participant's post-treatment functioning which is outside of the dysfunctional population range, defined as extending two standard deviations beyond the mean of that population toward the functional population. Criterion B refers to the participant's post-treatment level of functioning falling within the normal population mean. Criterion C refers to the participants' post-treatment level of functioning being closer to the normal population mean than the clinical population mean. Criterion B was used to determine clinically meaningful changes as clinically and normative data together were not available for all of the measures, but normative data was. The other two options were considered, however, given that most participants scored worse compared to the norms, it was deemed appropriate that clinically meaningful change be judged by post-treatment results falling within the norm for each individual participant. Only one criterion is needed to assess clinically meaningful changes and is often selected based on the availability of normative and clinical data (Deville, 2005). In order for change in scores to be considered meaningful, changes in both inference by eye results and reliable and clinical change was needed.

Primary Outcomes

Results from the inference by eye analysis are presented under relevant and clinically meaningful domains, including (i) *Body Image Measures*; (ii) *Individual's Relationship to Self, Thoughts and Feelings*; (iii) *Personality and Psychological Wellbeing*; and (iv) *Eating Disorder Symptomatology*. Within each domain, the relevant outcome variable is presented, along with individual participant graphs from both the CBT-M-BID and MAT-BID groups. In addition to change scores in the inference by eye analysis, reliable and clinical change was also needed. These results are presented within each respective domain, variable, and group for ease of interpretation.

Body Image Measures

BI is a multidimensional construct, consisting of attitudinal, perceptual and behaviours components. Different BI measures have been designed to assess BI in men and women separately. Therefore, a total of 13 measures of BI constructs are presented below. Figures 1 to 13 show scores on variables indexing BI measures for participants in each treatment group. Results are presented individually for each participant. The results are also presented by treatment group, with CBT-M-BID presented first, followed by MAT-BID. For ease of interpretation, the results are presented individuals variables within treatment groups.

Body Image Dissatisfaction

Figure 1 presents the individual data for both groups on the measure of BI dissatisfaction (BIQ). For ease of interpretation, the analysis of data is presented by treatment group.

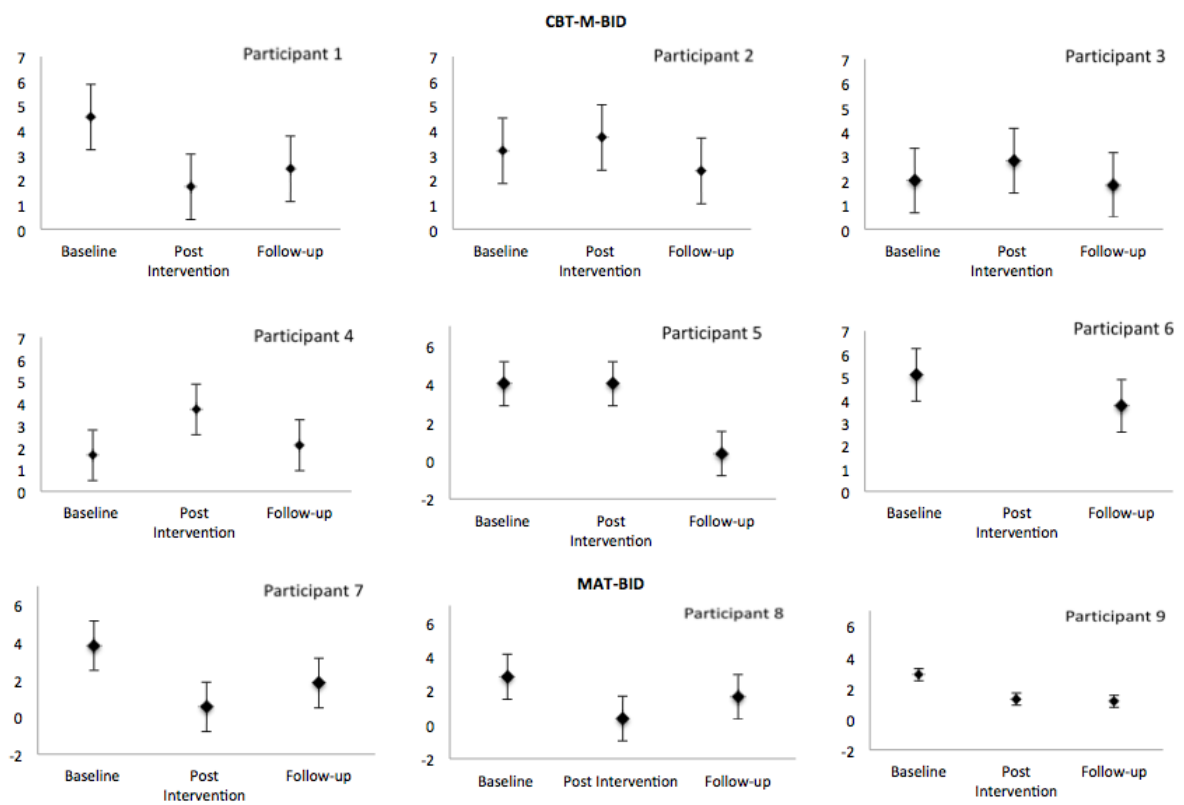


Figure 1. CBT-M-BID and MAT-BID Participants' 1-9 graphs for BIQ scores at Baseline, Post Intervention, and Follow-up.

CBT-M-BID. Participant 1 showed substantial change from baseline to post-treatment and moderate change from baseline to follow-up. Changes in scores from baseline to post-treatment were deemed to be reliable and clinical in nature, indicating significant improvements in BI dissatisfaction. Moderate change from post-treatment to follow-up was observed for participant 2; however this was not reliable or clinical change. Participant 3 showed no changes in scores across different time points for BI dissatisfaction. This was supported by no reliable and clinical change.

For the male participants, participant 4 displayed moderate change in scores from baseline to post-treatment and post-treatment to follow-up; participant 5 displayed substantial change from post-treatment to follow-up and baseline to follow-up; participant 6 displayed moderate change in scores from baseline to follow-up only. The results indicated that there was no reliable or clinical change for participant 4; however, the changes observed for participant 5 were considered to be reliable and clinical in nature. For participant 6, reliable and clinical change was observed for baseline to follow-up results only. Post-treatment results for participant 6 were missing and not included in the analysis of outcome data. These results suggest that participant 5 and 6 showed improvements in their BI dissatisfaction by follow-up.

MAT-BID. Participant 7 showed substantial change from baseline to post-treatment and moderate change from baseline to follow-up, which was reliable and clinically meaningful, indicating significant improvements in BI dissatisfaction. In addition, moderate change was observed in participant 8 from baseline to post-treatment and baseline to follow-up. The change from baseline to post-treatment was found to be reliable and clinically meaningful. Participant 9 displayed substantial change in BI dissatisfaction from baseline to post-treatment and baseline to follow-up,

with reliable and clinical change found for baseline to post-treatment and baseline to follow-up, indicating a decrease in BI dissatisfaction.

Body Image Disturbance

Participants' scores on the BI disturbance questionnaire (BIDQ) are displayed Figure 2 for both groups. Analysis of the data for BI disturbance is reviewed by treatment group.

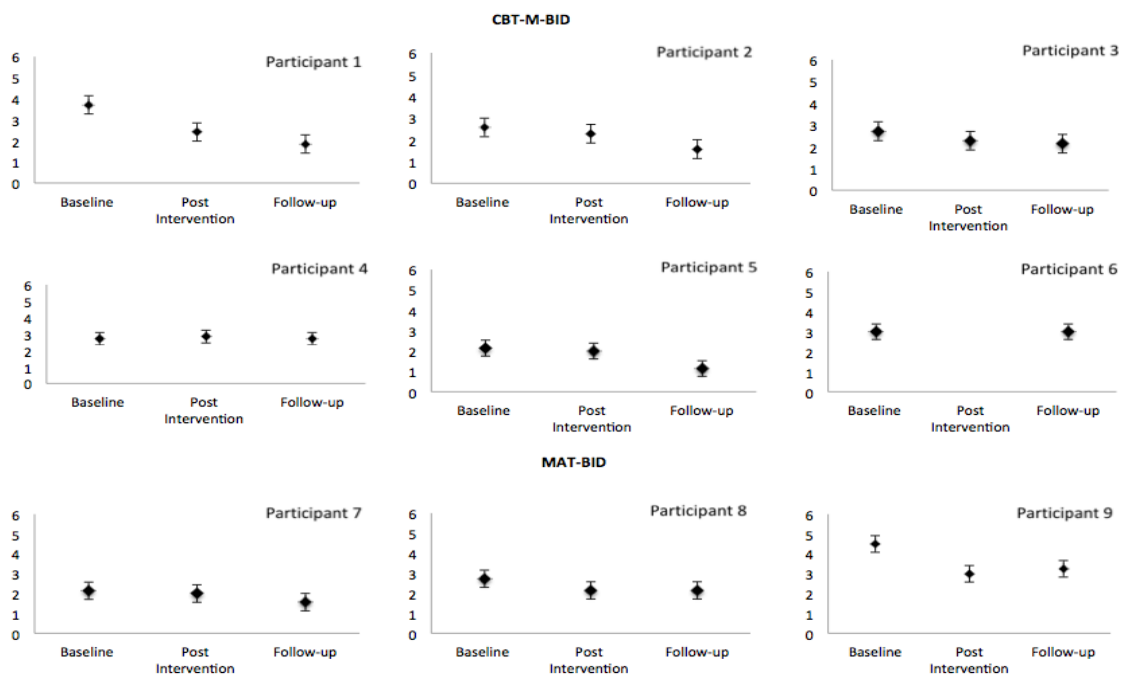


Figure 2. CBT-M-BID and MAT-BID Participants' 1-9 graphs for BIDQ scores at Baseline, Post Intervention, and Follow-up.

CBT-M-BID. Substantial change was found for participant 1 from baseline to post-treatment and baseline to follow-up, with moderate change in scores observed from post-treatment to follow-up. The change observed from baseline to post-treatment was deemed to be reliable and clinically meaningful. Similarly, moderate change was found for participant 3 from baseline to post-treatment and to follow-up. Participant 2 displayed moderate change from post-treatment to follow-up and substantial change from baseline to follow-up. No reliable or clinical change was found for participants 2 and 3.

For men, substantial change was observed for participant 4 from post-treatment to follow-up and baseline to follow-up. This change in scores was not reliable or clinically significant. Although no substantial or moderate change was rated for participant 5, reliable and clinical change was found from baseline to follow-up and post-treatment to follow-up. For participant 6, no reliable and clinical change was noted for changes in scores.

MAT-BID. Participants 7 and 8 showed substantial changes from baseline to post-treatment. It was found that participant 8 displayed substantial changes from baseline to follow-up, whereas, participant 7 displayed moderate change in scores from baseline to follow-up. The change from baseline to post-treatment was reliable and clinically meaningful for both participants. For participant 9, substantial, reliable and clinical change was found in scores from baseline to post-treatment and to follow-up.

Body Image Investment

Visual representation of all participants' scores for BI investment (ASI-R) can be found in Figure 3. Results are presented by treatment group.

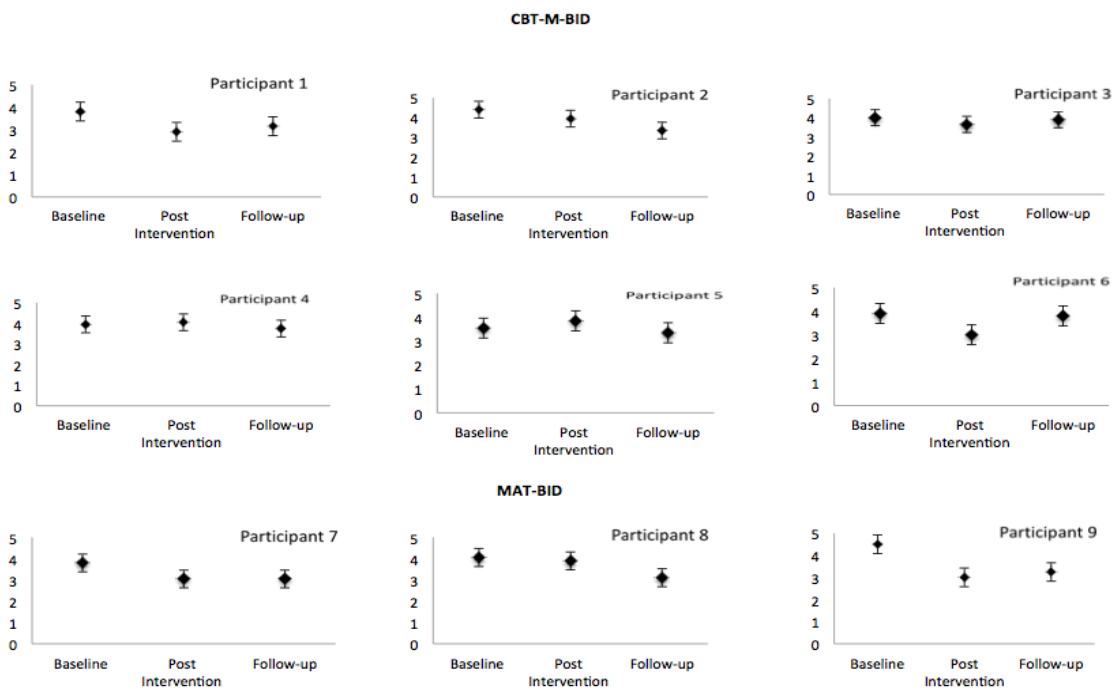


Figure 3. CBT-M-BID and MAT-BID Participants' 1-9 graphs for ASI-R scores at Baseline, Post Intervention, and Follow-up.

CBT-M-BID. Participants 1 displayed moderate change in scores from baseline to post-treatment and baseline to follow-up. Reliable and clinical change was present for participant 1's change in scores from baseline to post-treatment suggesting a decrease in BI investment at the end of treatment. Participant 2 displayed moderate change in scores from baseline to post-treatment, moderate change from post-treatment to follow-up, and substantial change from baseline to follow-up. No clinical or reliable change was observed for participant 2. Participant 3 showed no change in scores.

For men, participant 6 showed substantial decreases in scores from baseline to post-treatment and substantial change from post-treatment to follow-up (back to baseline). The change from baseline to post-treatment was the only change in scores found to be reliable and clinically meaningful. This suggests substantial decrease in BI investment scores; however, these results were not maintained at follow-up. Participant 4 showed no change and participant 5 showed moderate change from post-treatment to follow-up (return to baseline). These changes in scores for both participant 4 and 5 were found to be non-reliable and clinical in nature.

MAT-BID. Participant 7 displayed moderate change in BI investment scores from baseline to post-treatment with moderate change in scores from baseline to follow-up as well. The change observed in scores showed to be reliable and clinical in nature, suggesting that the change in BI investment remained low at the end of treatment. On the other hand, participant 8 showed moderate change from post-treatment to follow-up and substantial change from baseline to follow-up; however, reliable and clinical change was observed for scores from baseline to follow-up only. In addition, participant 9 showed substantial decrease in scores from baseline to post-treatment and baseline to follow-up (maintained change). This change showed to be

reliable and clinical change, indicating that participant 9 was substantially less invested in his BI at the end of treatment.

Body Image Dysphoria

Figure 4 presents visual representations of all participant scores for BI dysphoria (SIBID) across the three time points. All of the data is reviewed by group.

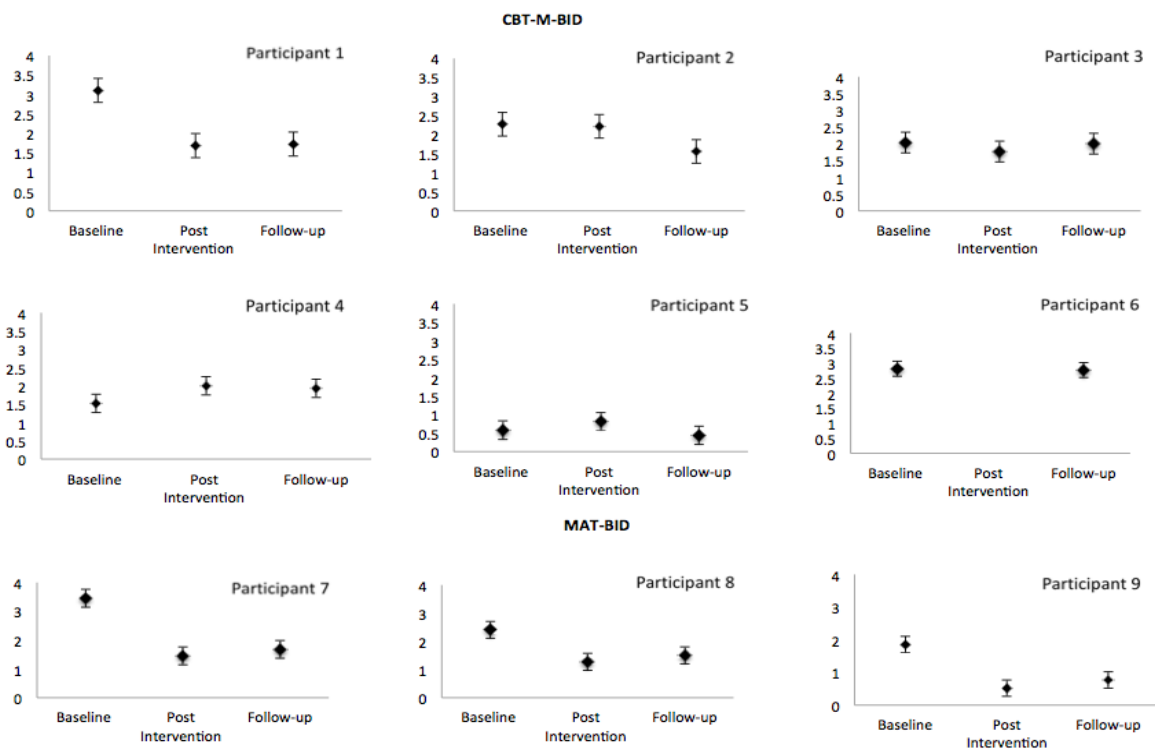


Figure 4. CBT-M-BID and MAT-BID Participants' 1-9 graphs for SIBID scores at Baseline, Post Intervention, and Follow-up.

CBT-M-BID. Participant 1 displayed substantial change from baseline to post-treatment and baseline to follow-up. The change was reliable and clinically meaningful. Participant 2 showed substantial change from post-treatment to follow-up and baseline to follow-up. This change was found to be reliable and clinically meaningful. Taken together, these results indicate that participant 1 and 2 displayed improvements in BI dysphoria at the end of treatment. In contrast, participant 3 showed no change in scores, which was supported by a lack of reliable or clinical change in scores.

The results also indicated a moderate change from baseline to post-treatment and follow-up for participant 4. Moderate change from post-treatment to follow-up was found for participant 5. No reliable or clinical change was found for these two participants. In addition, participant 6 showed no change across time.

MAT-BID. Results also revealed a substantial change from baseline to post-treatment and baseline to follow-up for participants 7 and 8. These changes were reliable and clinically meaningful, showing improvements in BI dysphoria at the end of treatment. Substantial change from baseline to post-treatment and to follow-up, with moderate change from post-treatment to follow-up was found for participant 9. This change was reliable and clinically meaningful, implying that BI dysphoria improvement across time.

Body Checking Behaviours

Individual results for all participants measuring body-checking behaviours (BCQ) are shown in Figure 5. Results are analysed by treatment group.

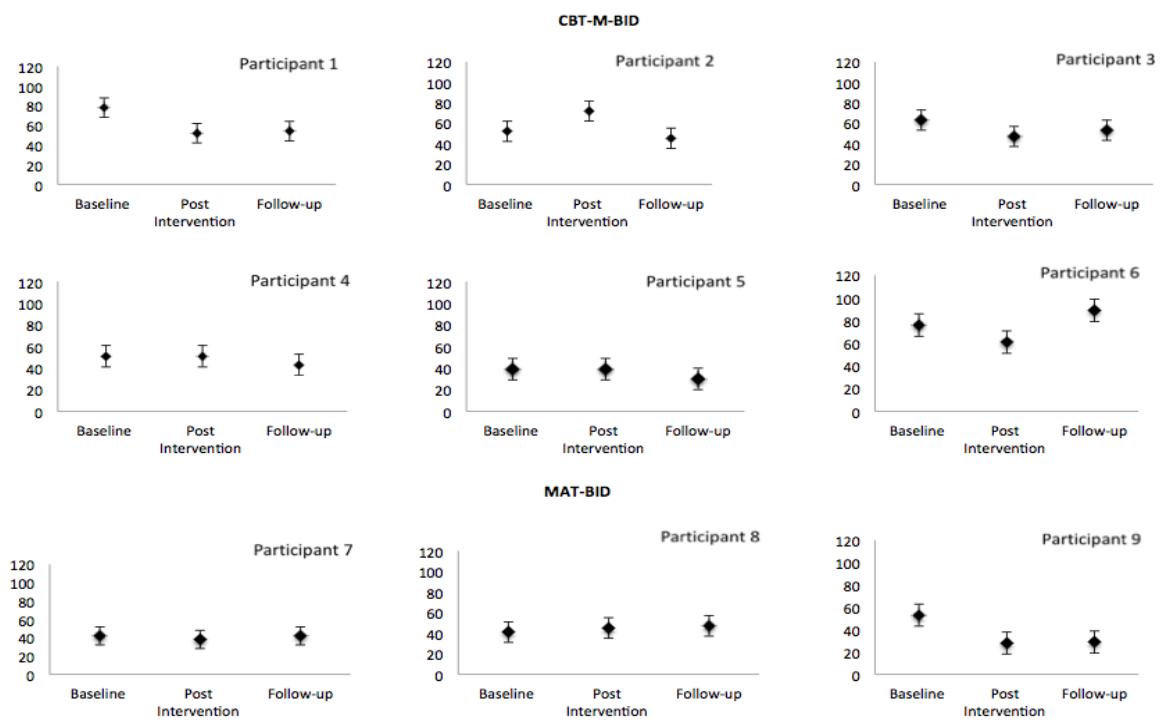


Figure 5. CBT-M-BID and MAT-BID Participants' 1-9 graphs for BCQ scores at Baseline, Post Intervention, and Follow-up.

CBT-M-BID. Participant 1 showed substantial reductions from baseline to post-treatment and baseline to follow-up. The baseline to post-treatment change was reliable and clinically meaningful. Participant 2 showed moderate change from baseline to post-treatment, substantial change from post-treatment to follow-up and no change from baseline to follow-up, indicating a return to baseline scores, following increase in body checking at post-treatment. Post-treatment to follow-up was a reliable and clinical change. Participant 3 displayed moderate changes from baseline to post-treatment and post-treatment to follow-up. The baseline to post-treatment change in scores was considered to be reliable and clinically meaningful, suggesting a decrease in body checking behaviour at post-treatment.

On the contrary, participants 4 and 5 showed no changes in scores across time. Participant 6 showed increases in his body checking scores across time, with moderate change from baseline to post-treatment, and baseline to follow-up, and substantial change from post-treatment to follow-up. The change from post-treatment to follow-up was deemed to clinically meaningful and reliable, indicating an increase in body checking behaviours for this participant.

MAT-BID. Moreover, participants 7 and 8 showed no changes across time for body checking behaviours. Participant 9 displayed substantial changes from baseline to post-treatment and baseline to follow-up. These changes were reliable and clinically meaningful, indicating that body checking behaviours decrease substantially.

Body Image Avoidance Behaviours

Figure 6 offers visually represented results for all participants on the body avoidance measure (BIAQ).

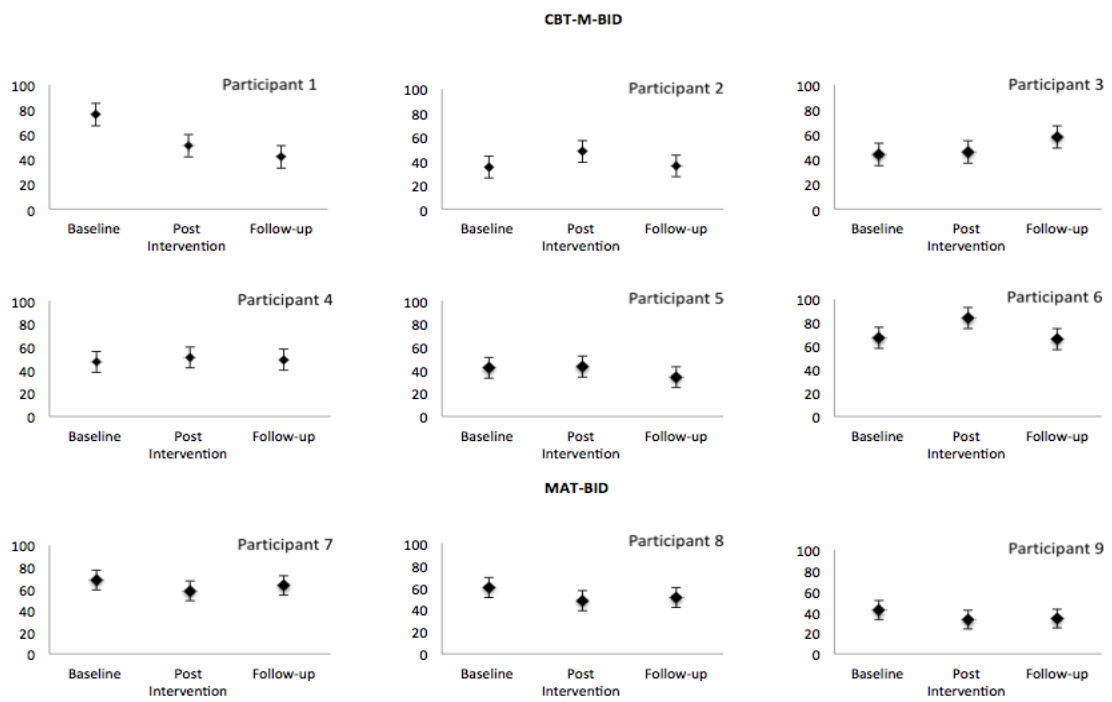


Figure 6. CBT-M-BID and MAT-BID Participants' 1-9 graphs for BIAQ scores at Baseline, Post Intervention, and Follow-up.

CBT-M-BID. Participant 1 demonstrated substantial decrease in avoidance from baseline to post-treatment and follow-up. These changes were reliable and clinically significant. In addition, participant 2 showed moderate change from baseline to post-treatment and post-treatment to follow-up, indicating a return to baseline scores following an increase in avoidance at post-treatment. Post-treatment to follow-up result was reliable and clinically meaningful. Participant 3 demonstrated moderate change from post-treatment to follow-up and baseline to follow-up; however, these changes were not reliable or clinically meaningful.

Participant 4 and 5 showed no changes in body avoidance scores across time. Participant 6, however, showed moderate change from baseline to post-treatment and post-treatment to follow-up, suggesting a return to baseline scores following an increase in avoidance behaviours at post-treatment. Post-treatment to follow-up change was found to be reliable and clinical in nature.

MAT-BID. In contrast, participant 7 showed a moderate change from baseline to post-treatment; however, this change was not reliable or clinically meaningful. Participant 8 showed moderate changes from baseline to post-treatment and follow-up; however, these changes were also not reliable or clinically meaningful. Participant 9 showed no changes in body avoidance across time.

Body Shape Dissatisfaction

Figure 7 displays the visually represented results for female participants only for body shape dissatisfaction (BSQ).

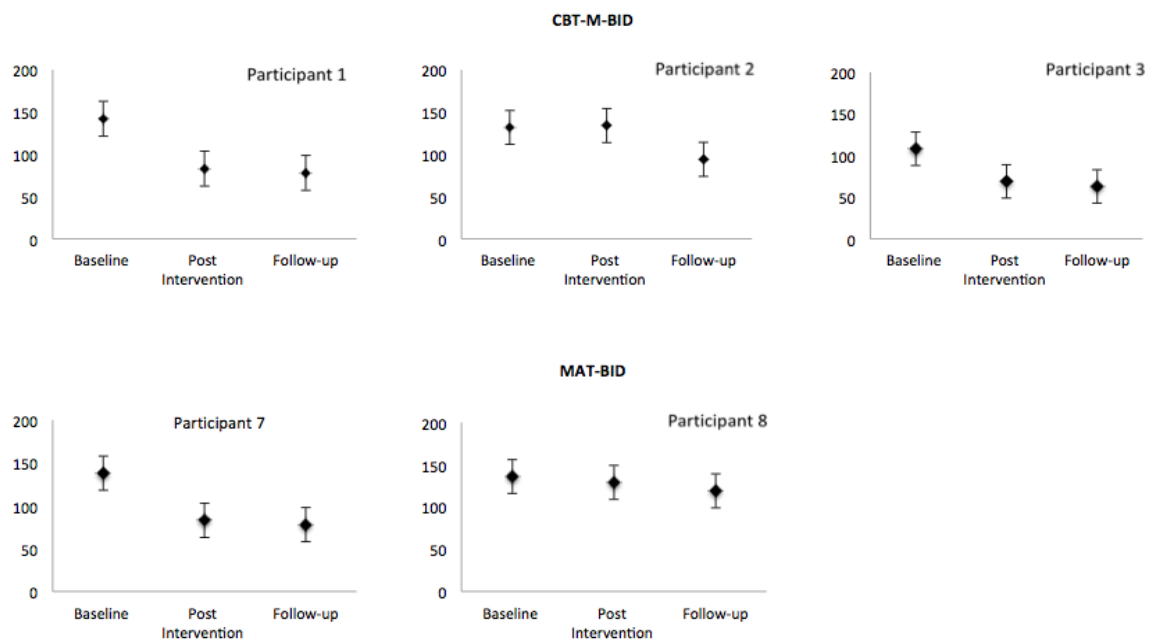


Figure 7. CBT-M-BID and MAT-BID graphs (female only) for BSQ scores at Baseline, Post Intervention, and Follow-up.

CBT-M-BID Group. Inference by eye results showed substantial decrease in participant 1's scores from baseline to post-treatment and from baseline to follow-up, suggesting less body shape dissatisfaction at the end of treatment. These results were found to be reliable and clinically meaningful. Similarly, participant 2 showed moderate decrease in scores from post-treatment to follow-up and from baseline to follow-up. This change was considered to be reliable and clinically meaningful, also suggesting less body shape dissatisfaction at the end of treatment. Participant 3 showed moderate decrease in body shape dissatisfaction from baseline to post-treatment and substantial decrease from baseline to follow-up. This too was a reliable and clinically meaningful change for this participant.

MAT-BID Group. Inference by eye results indicated that participant 7 showed substantial decrease in their scores from baseline to post-treatment and from baseline to follow-up, suggesting less body shape dissatisfaction. These results were reliable and clinically meaningful. However, participant 8 was found not to have made any notable changes in their levels of body shape dissatisfaction.

Male Body Image Attitudes

Individual results for overall male body attitudes (MBAS) are presented in Figure 8. The results from this measure are presented for male participants only, given it is a male-specific measure.

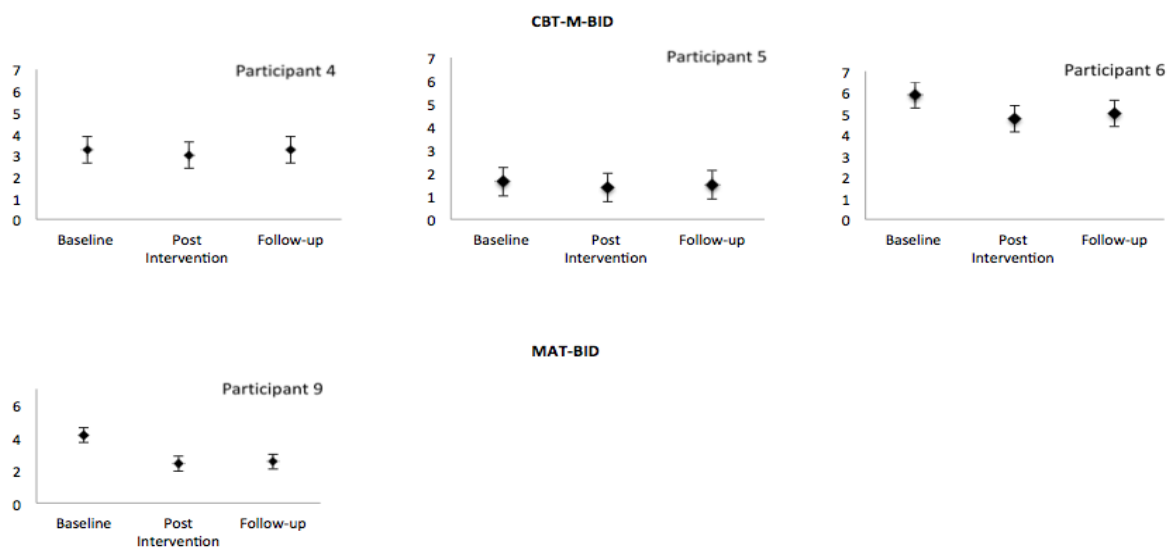


Figure 8. CBT-M-BID and MAT-BID Participants' graphs for MBAS scores at Baseline, Post Intervention, and Follow-up.

CBT-M-BID. Participant 4 and 5 showed no changes in scores. Participant 6 showed moderate change from baseline to post-treatment and baseline to follow-up; however these changes were not reliable or clinically significant.

MAT-BID. Participant 9 displayed substantial reductions in overall male body attitudes from baseline to post-treatment and baseline to follow-up. These changes were also reliable and clinically meaningful.

Muscularity Dissatisfaction

Figure 9 displays visually represented results for the muscularity subscale of the male body attitudes measure.

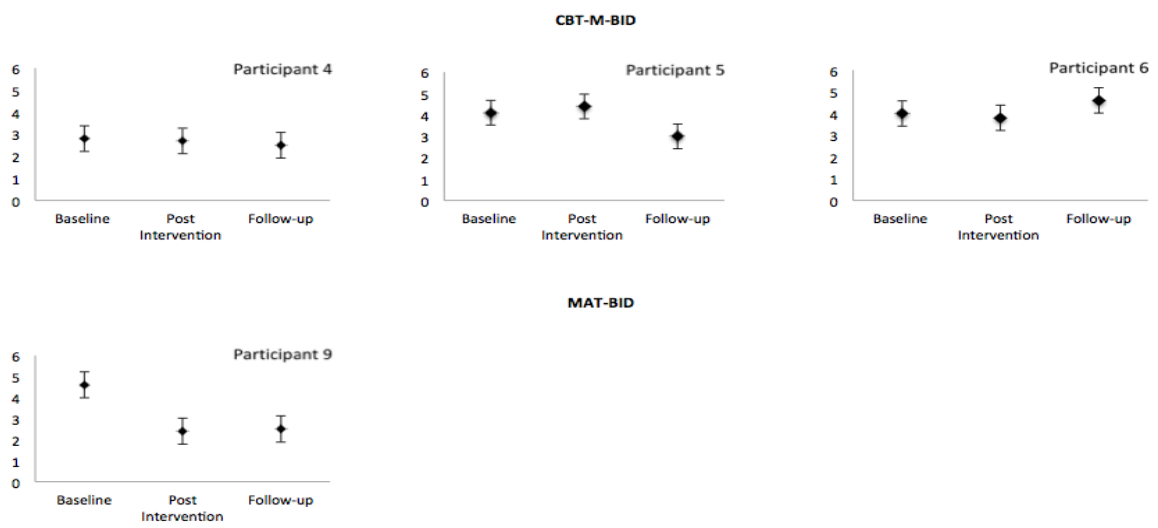


Figure 9. CBT-M-BID and MAT-BID Participants' graphs for MBAS Muscularity scores at Baseline, Post Intervention, and Follow-up.

CBT-M-BID. Results showed that participant 4 experienced no changes in scores. Participant 5 showed moderate change from baseline to post-treatment. This participant also showed substantial change in scores from baseline to follow-up and from post-treatment to follow-up, both of which were reliable and clinical changes. This suggested meaningful decreases in dissatisfaction with muscularity. Participant 6 showed moderate change from post-treatment to follow-up and baseline to follow-up. This change was not clinically reliable or meaningful.

MAT-BID. Participant 9 showed substantial change from baseline to post-treatment and baseline to follow-up, both of which were reliable and clinical changes. This suggested a substantial decrease in dissatisfaction with muscularity by the end of the treatment.

Body Fat Dissatisfaction

Individual results for all male participants are presented in Figure 10. The results presented are for the body fat subscale of the male body attitudes scale.

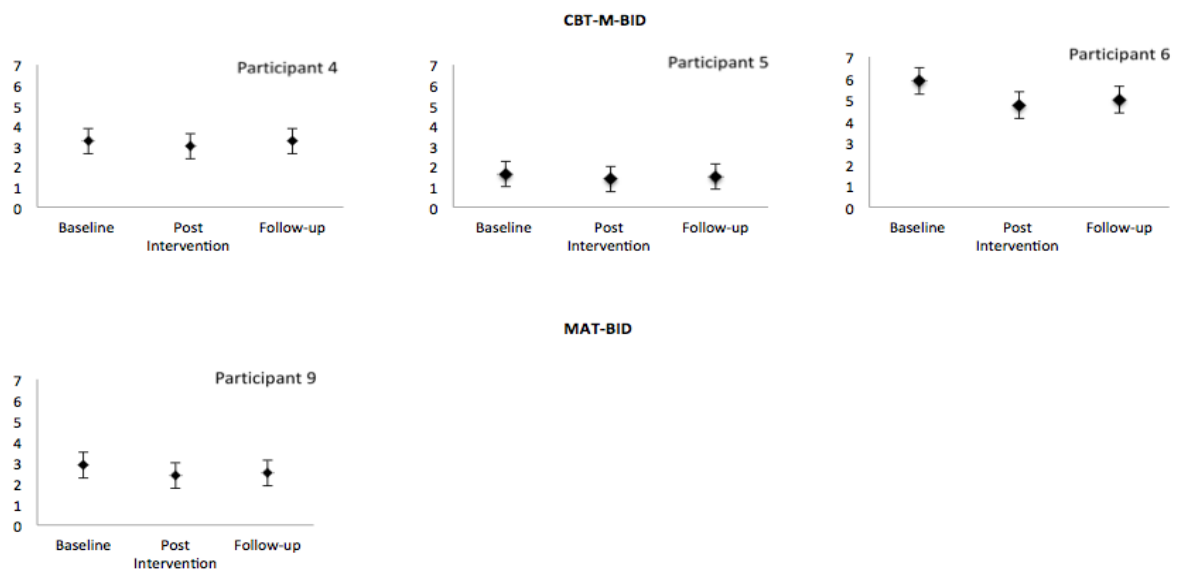


Figure 10. CBT-M-BID and MAT-BID Participants' graphs for MBAS Body Fat scores at Baseline, Post Intervention, and Follow-up.

CBT-M-BID. No changes were observed for participants 4, and 5. Participant 6 displayed moderate change (reduction) in scores from baseline to post-treatment and baseline to follow-up. Both of these results were considered reliable and clinically meaningful, suggesting less body fat dissatisfaction at the end of treatment.

MAT-BID. No change in scores was observed for participant 9.

Height Dissatisfaction

Figure 11 displays visually represented results for the height subscale of the male attitudes scale. Once again, these results are presented for the male participants only.

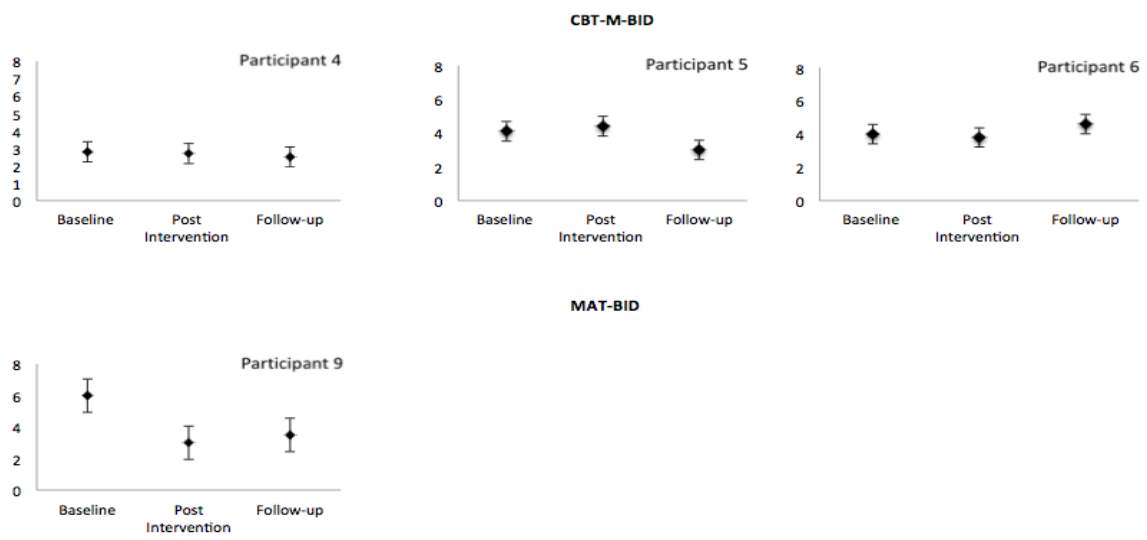


Figure 11. CBT-M-BID and MAT-BID Participants' graphs for MBAS Height scores at Baseline, Post Intervention, and Follow-up.

CBT-M-BID. No changes in scores were observed for participant 4, 5, and 6 on the height dissatisfaction subscale.

MAT-BID. Participant 9 displayed substantial decreases in his scores from baseline to post-treatment and baseline to follow-up on the measure of height dissatisfaction. Both of these results showed to be reliable and clinically meaningful, indicating substantial decrease in height dissatisfaction at the end of treatment.

Cognitive Distortions

In Figure 12, scores for each participant for cognitive distortions, part A (ABCD A) can be found. Participants' visually represented scores for part B of the cognitive distortions questionnaire (ABCD B) can be observed in Figure 13.

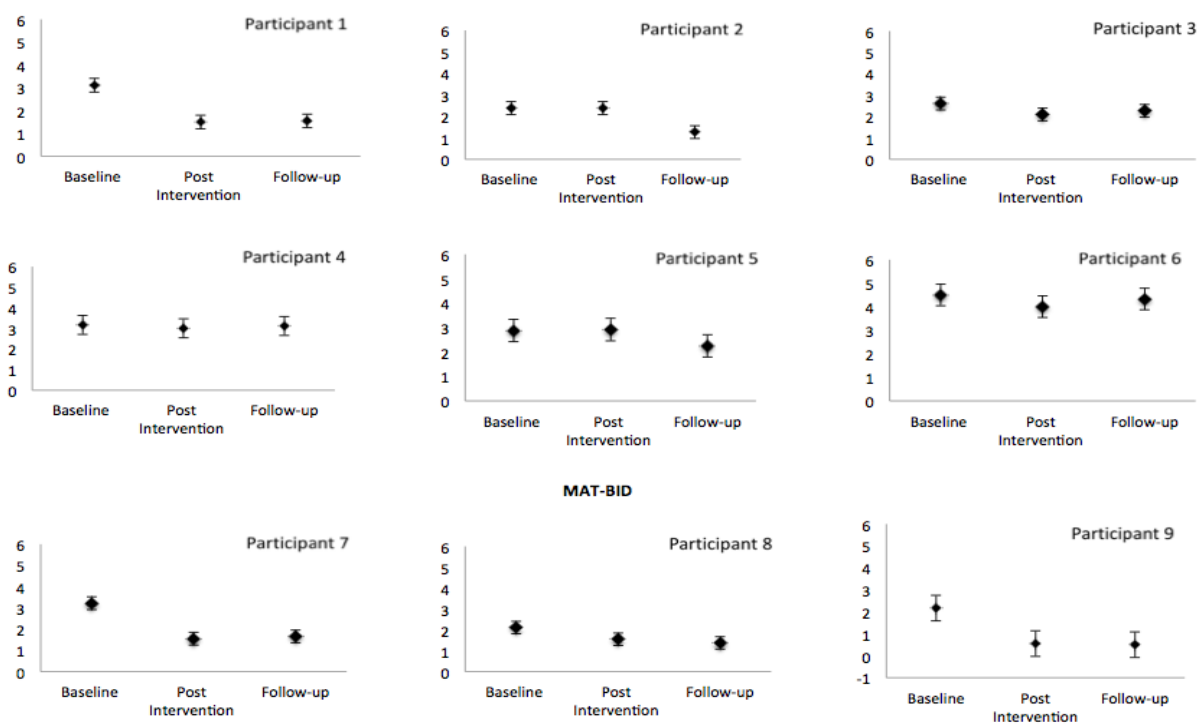


Figure 12. CBT-M-BID and MAT-BID Participants' 1-9 graphs for ABCD A scores at Baseline, Post Intervention, and Follow-up.

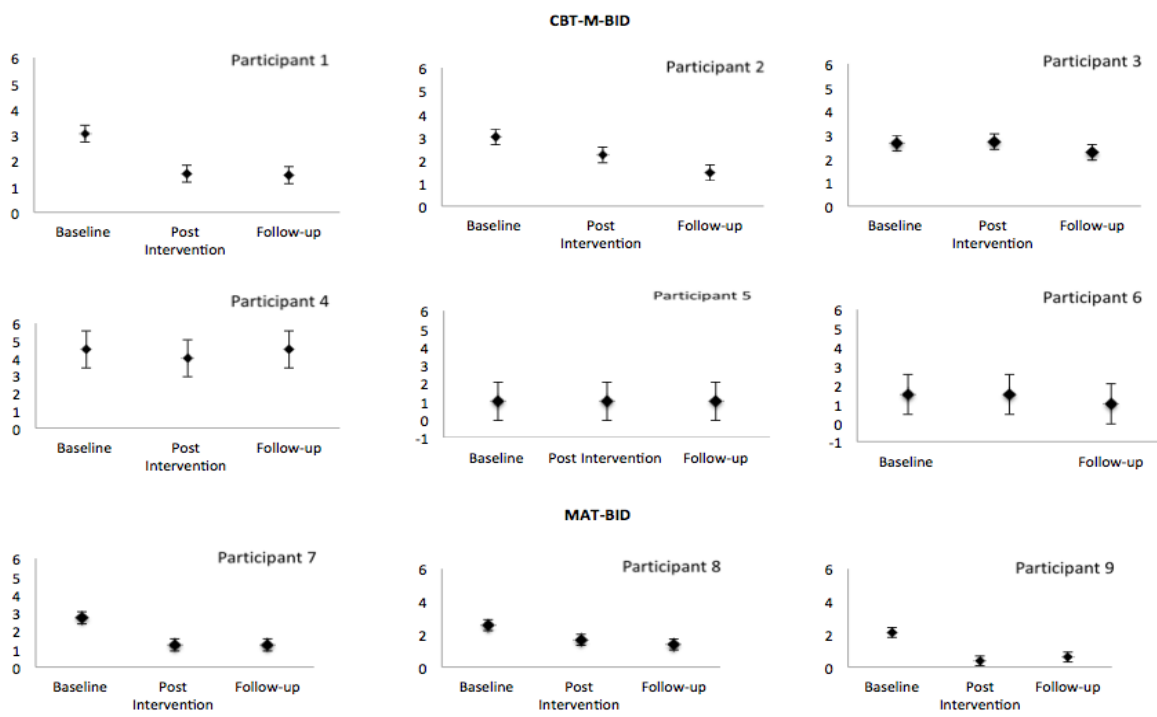


Figure 13. CBT-M-BID and MAT-BID Participants' 1-9 graphs for ABCD B scores at Baseline, Post Intervention, and Follow-up.

CBT-M-BID - Cognitive Distortions A. Participant 1 showed substantial decreases from baseline to post-treatment and baseline to follow-up, maintaining the decrease in cognitive distortions at the end of the program. These changes were found to be reliable and clinically meaningful. Participant 2 showed substantial change from post-treatment to follow-up and baseline to follow-up, whereas participant 3 showed only moderate change from post-treatment to follow-up. For participant 2, the change from baseline to follow-up was deemed reliable and clinical in nature; however for participant 3, the change in scores from baseline to post-treatment was deemed to be not reliable and clinical.

In contrast, participant 4 showed no change in cognitive distortions across time. Participant 5 displayed moderate change from baseline to follow-up and post-treatment to follow-up with the change from post-treatment to follow-up being reliable and clinically significant. In addition, participant 6 showed moderate change from baseline to post-treatment, and post-treatment to follow-up, changes which were not considered to be reliable or clinically meaningful.

Cognitive Distortions B. Participant 1 showed a substantial decrease in cognitive distortions from baseline to post-treatment as well as baseline to follow-up. The change observed from baseline to post-treatment was found to be reliable and clinical in nature. Participant 2 showed moderate change from baseline to post-treatment, which was reliable and clinical, and substantial change from post-treatment to follow-up and baseline to follow-up, which was neither reliable nor clinically meaningful. Participant 3 showed moderate changes from post-treatment to follow-up and baseline to follow-up, none of which were clinically meaningful or reliable. For men, no change was observed for participant 4, 5, and 6.

MAT-BID - Cognitive Distortions A. Participant 7 showed a substantial decrease from baseline to post-treatment and baseline to follow-up. Change from baseline to post-treatment was reliable and clinically meaningful. Participant 8 showed moderate changes from baseline to post-treatment and substantial change from baseline to follow-up. Both of these changes in scores were

reliable and clinically significant. Lastly, participant 9 displayed substantial change in score from baseline to post-treatment and baseline to follow-up. Similarly to the other participants, these changes were found to be reliable and clinically significant.

Cognitive Distortions B. Participants 7 and 8 showed substantial decreases in cognitive distortions from baseline to post-treatment and baseline to follow-up. These changes were reliable and clinically meaningful. Participant 9 showed substantial improvement from baseline to post-treatment and follow-up. These changes were deemed to be clinically meaningful and reliable.

Individuals' Relationship to Self, Thoughts and Feelings

How an individual relates to themselves, their thoughts and feelings plays an important part in how individuals experience their BI. Mindfulness, cognitive fusion, acceptance, and self-compassion were grouped to provide a clinically meaningful domain representing how individuals relate to themselves, difficult thoughts and feelings. Figures 14 to 17 present the CBT-M-BID and MAT-BID individual scores on these variables across time. For ease of interpretation, data is analysed by treatment group.

Mindfulness

Figure 14 shows visual representations of all participants' scores across time for mindfulness (MAAS).

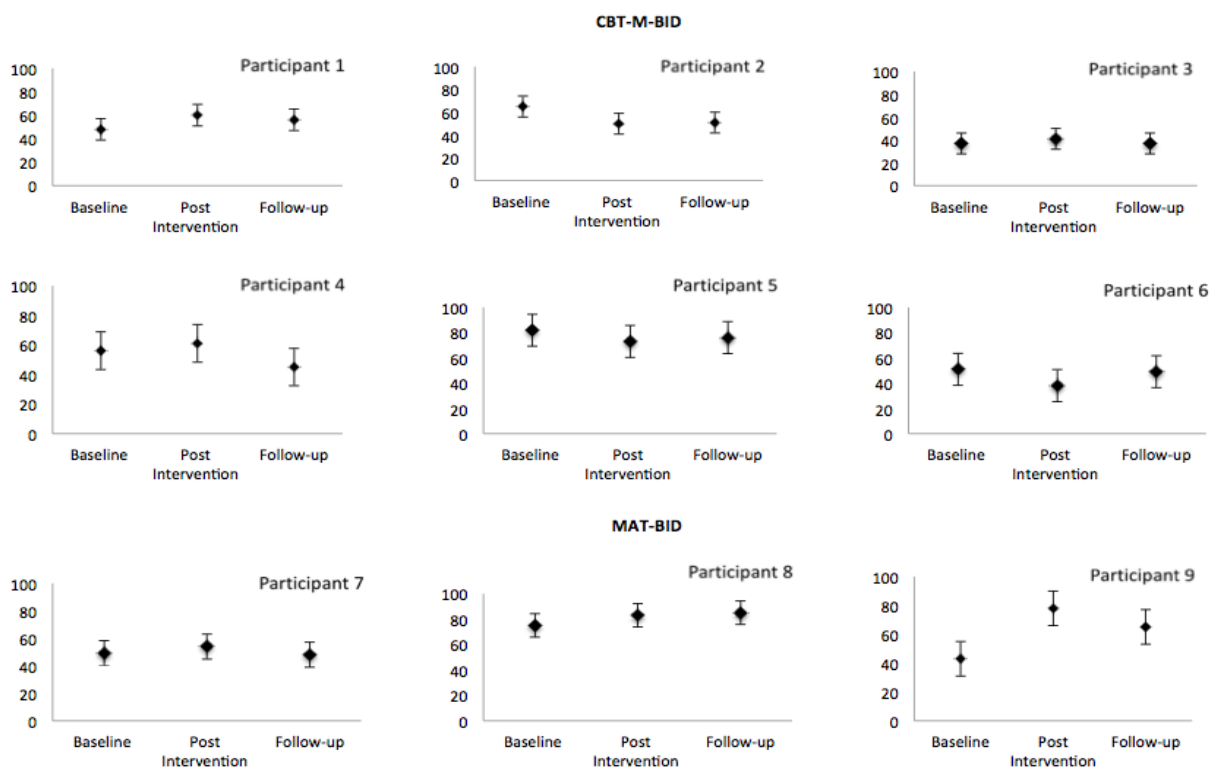


Figure 14. CBT-M-BID and MAT-BID Participants' 1-9 graphs for MAAS scores at Baseline, Post Intervention, and Follow-up.

CBT-M-BID. Results indicated that participants 1 and 2 showed moderate changes from baseline to post-treatment and baseline to follow-up. Specifically, participant 1 showed an increase in mindful attention and awareness, whereas participant 2 showed a decrease in mindfulness levels. For participant 2, these changes were reliable and clinically meaningful, but not for participant 1. Participant 3 showed no changes in mindfulness levels.

Participant 4 showed a moderate decrease in mindfulness from post-treatment to follow-up, which was a reliable and clinical change. Participant 5 showed no changes in scores. Participant 6 showed a moderate change from baseline to post-treatment (a reduction in mindfulness) and a return to baseline from post-treatment to follow-up, which was found to be a moderate change in scores. Baseline to post-treatment reduction was reliable and clinically significant.

MAT-BID. Participant 7 showed no changes in mindfulness levels. Participant 8 showed moderate changes from post-treatment to follow-up and baseline to follow-up, suggesting gradual increase in mindfulness levels; however these changes showed to be unreliable and not clinically meaningful. Participant 9 demonstrated substantial increase in mindfulness from baseline to post-treatment and moderate reduction from post-treatment to follow-up. The change from baseline to follow-up was substantial, indicating an overall increase in mindfulness.

Cognitive Fusion

Cognitive fusion (CFQ) scores are visually represented in Figure 15 for all participants.

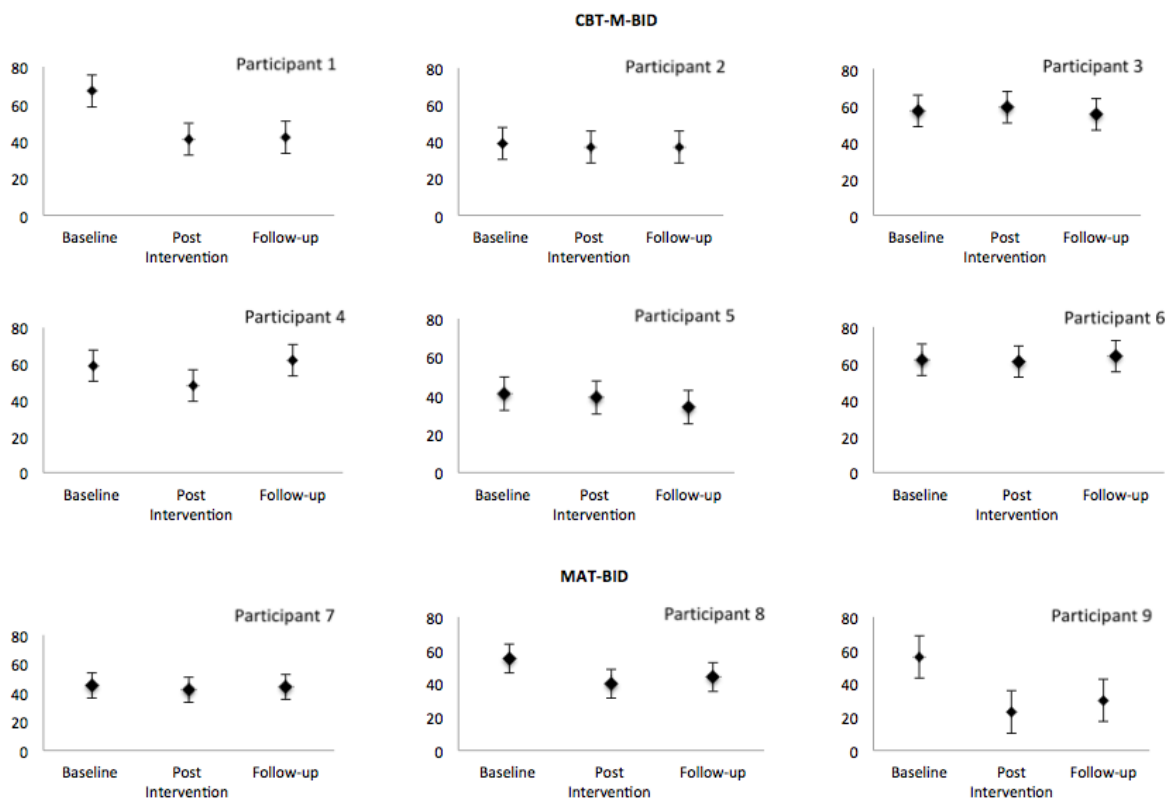


Figure 15. CBT-M-BID and MAT-BID Participants' 1-9 graphs for CFQ scores at Baseline, Post Intervention, and Follow-up.

CBT-M-BID. Results showed that participants 2 and 3 experienced no change in cognitive fusion scores across time. Participant 1 showed substantial decrease from baseline to post-treatment and follow-up, with the change from baseline to post-treatment only found to be reliable and clinical change.

Participant 4 showed moderate change from baseline to post-treatment and post-treatment to follow-up, indicating a return to baseline scores following a reduction at post-treatment. These changes were not reliable or clinically meaningful. Participants 5 and 6 showed no changes in cognitive fusion scores.

MAT-BID. Participant 7 showed no changes in scores across time. Participant 8 showed moderate decreases in cognitive fusion from baseline to post-treatment and follow-up, with the change from baseline to post-treatment being reliable and clinical. Participant 9 showed substantial changes from baseline to spot-treatment and follow-up, suggesting a decrease in levels of cognitive fusion. These changes were reliable and clinically meaningful.

Acceptance

Acceptances of BI thoughts and feelings (BI-AAQ) results are visually represented in Figure 16 for all participants.

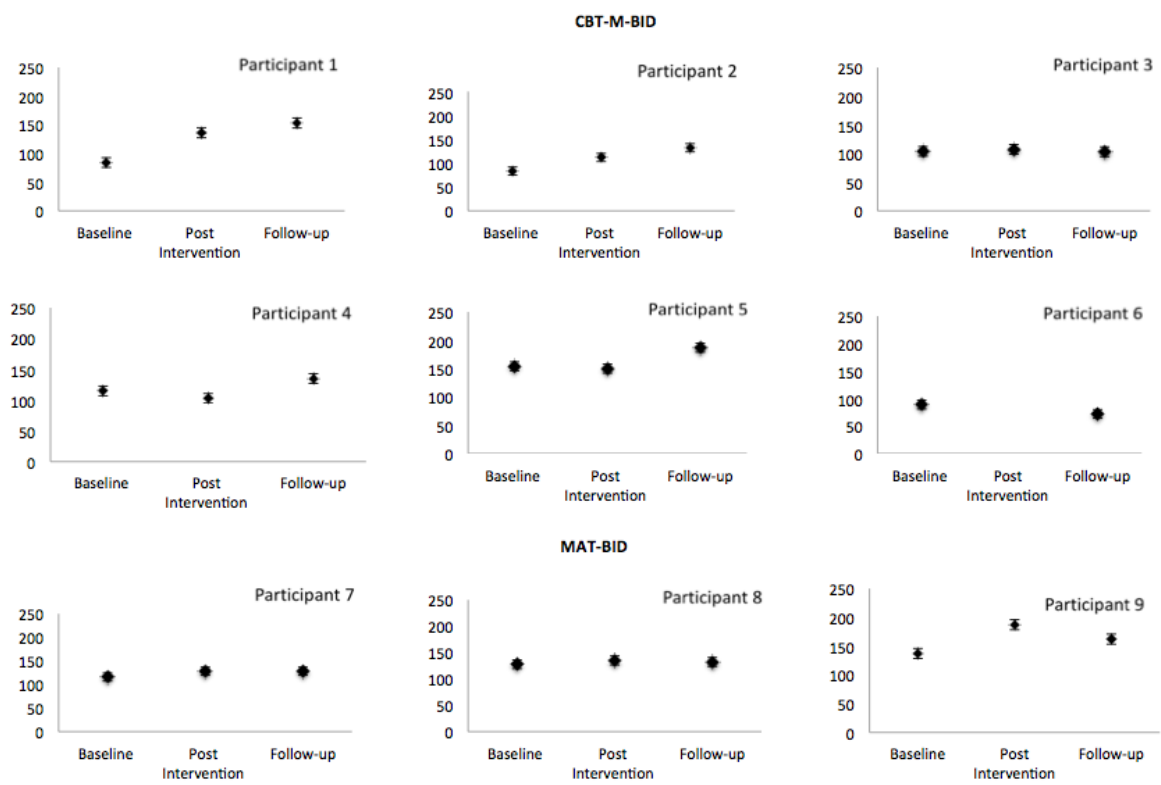


Figure 16. CBT-M-BID and MAT-BID Participants' 1-9 graphs for BIAAQ scores at Baseline, Post Intervention, and Follow-up.

CBT-M-BID. As can be seen in Table 16, participant 1's acceptance scores increased substantially from baseline to post-treatment and to follow-up; these changes were reliable and clinically meaningful. Substantial increases are also observed for participant 2 from baseline to post-treatment and to follow-up, and from post-treatment to follow-up. All of these changes were reliable and clinical. No change was observed for participant 3.

It was found that participant 4 displayed moderate change from baseline to post-treatment, and substantial changes from post-treatment to follow-up and baseline to follow-up, suggesting an overall increase in acceptance by the three-month follow-up. Changes from post-treatment to follow-up and baseline to follow-up were reliable and clinically meaningful. Participant 5 demonstrated substantial changes from post-treatment to follow-up and baseline to follow-up, indicating an increase in acceptance, both of which were reliable and clinical changes. Participant 6 showed a substantial reduction in acceptance and this was a reliable and clinical change.

MAT-BID. Participant 7 showed moderate increase in acceptance from baseline to post-treatment and follow-up; however, this was not a reliable or clinical change. No changes were observed for participant 8. Lastly, participant 9 demonstrated a substantial increase from baseline to post-treatment, a substantial reduction from post-treatment to follow-up, but an overall substantial change from baseline to follow-up, indicating an increase in acceptance of BI related thoughts and feelings. All of these changes were considered to be reliable and clinically meaningful.

Self-compassion

Figure 17 presents scores on the self-compassion measure (SCS) for participants from both groups.

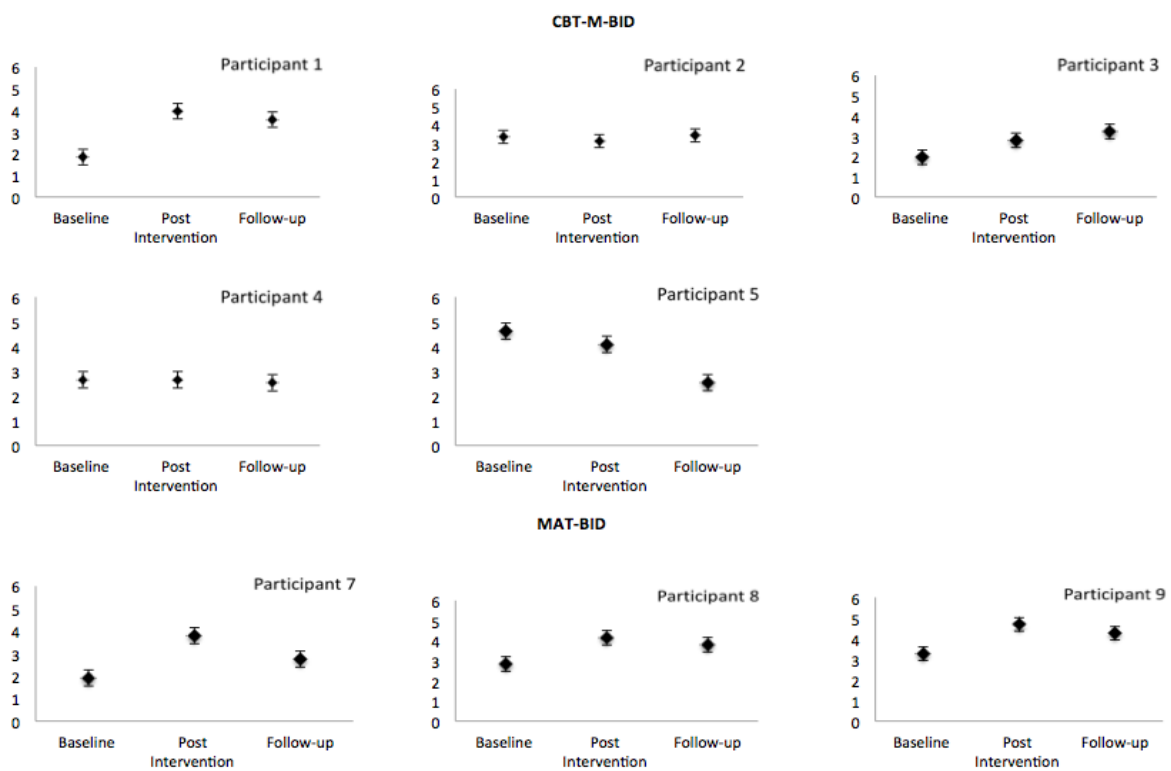


Figure 17. CBT-M-BID and MAT-BID Participants' 1-9 graphs for SCS Total scores at Baseline, Post Intervention, and Follow-up.

CBT-M-BID. Results revealed that participants 1 and 3 displayed substantial increases in self-compassion from baseline to post-treatment and to follow-up, which were reliable and clinically meaningful. Participant 2 showed moderate change from post-treatment to follow-up; however, this was not a reliable or clinical change.

Participant 4 showed no change. Participant 5 showed moderate change from baseline to post-treatment, and substantial change from post-treatment to follow-up and baseline to follow-up, indicating an overall decrease in self-compassion, which was a reliable and clinical change.

MAT-BID. Participants 7 and 8 displayed substantial increases from baseline to post-treatment and follow-up. Specifically, participant 7 displayed substantial change from post-treatment to follow-up and participant 8 displayed moderate change from post-treatment to follow-up. These results were found to be clinically meaningful and reliable. Lastly, participant 9 displayed substantial change from baseline to post-treatment and to follow-up, and moderate change from post-treatment to follow-up, indicating an overall increase in self-compassion that was found to be reliable and clinically meaningful.

Personality and Psychological Wellbeing

Self-esteem

Figure 18 shows individuals' results for self-esteem (RSES) across time for both groups, CBT-M-BID and MAT-BID.

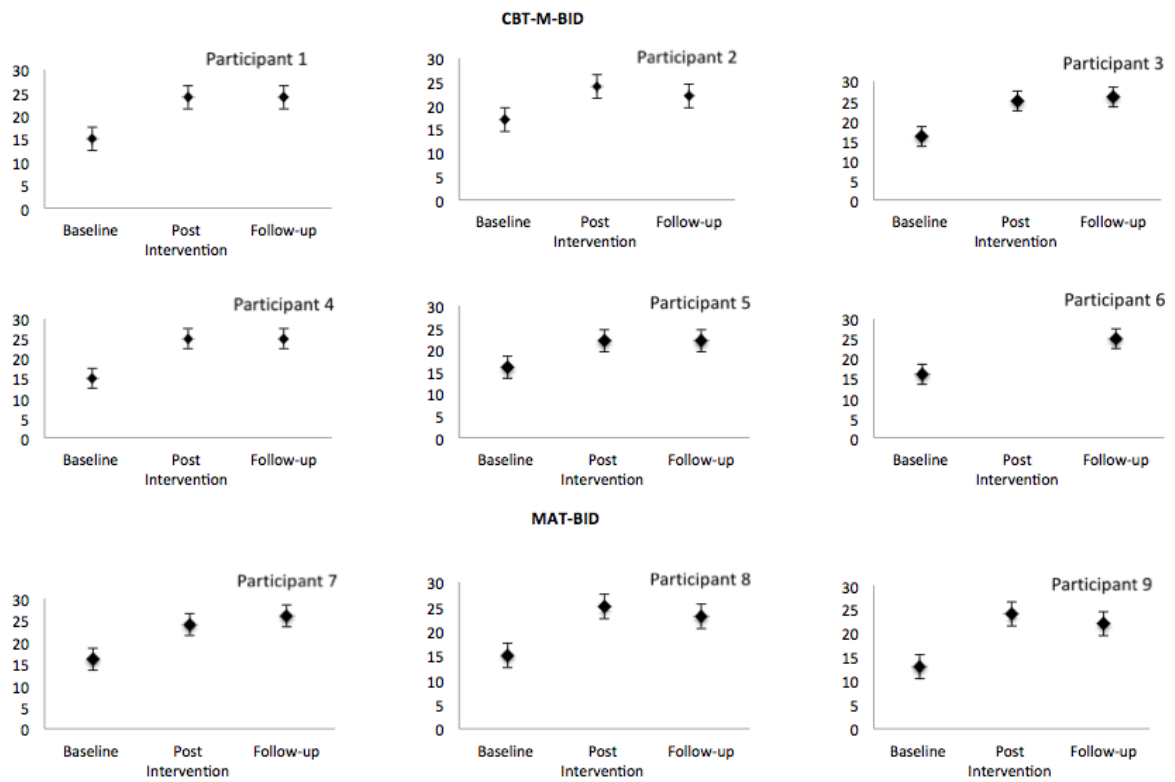


Figure 18. CBT-M-BID and MAT-BID Participants' 1-9 graphs for RSES scores at Baseline, Post Intervention, and Follow-up.

CBT-M-BID. Results indicated that participants 1, 2, and 3 showed substantial increase from baseline to post-treatment and baseline to follow-up. All of these results were reliable and clinically meaningful.

In addition, participants 4 and 5 showed an increase in self-esteem from baseline to post-treatment and follow-up, with participant 6 also showing an increase in self-esteem from baseline to follow-up only. These results were also reliable and clinically significant.

MAT-BID. Participants 7, 8 and 9 showed substantial increase from baseline to post-treatment and baseline to follow-up. These results were also reliable and clinically significant.

Eating Disorder Symptomatology

This domain represents the subscales from the eating disorder examination questionnaire (EDE-Q), which assesses disordered eating thoughts, feelings, and behaviours. However, only the global disordered eating score (EDE-Q global) and concern about shape (EDE-Q Shape Concern) results are presented in this study. Figures 19 and 20 display the results for CBT-M-BID and MAT-BID on these two variables.

Global Eating Disorder Symptomatology

Results for the eating disorder questionnaire global score can be inspected in Figure 19.

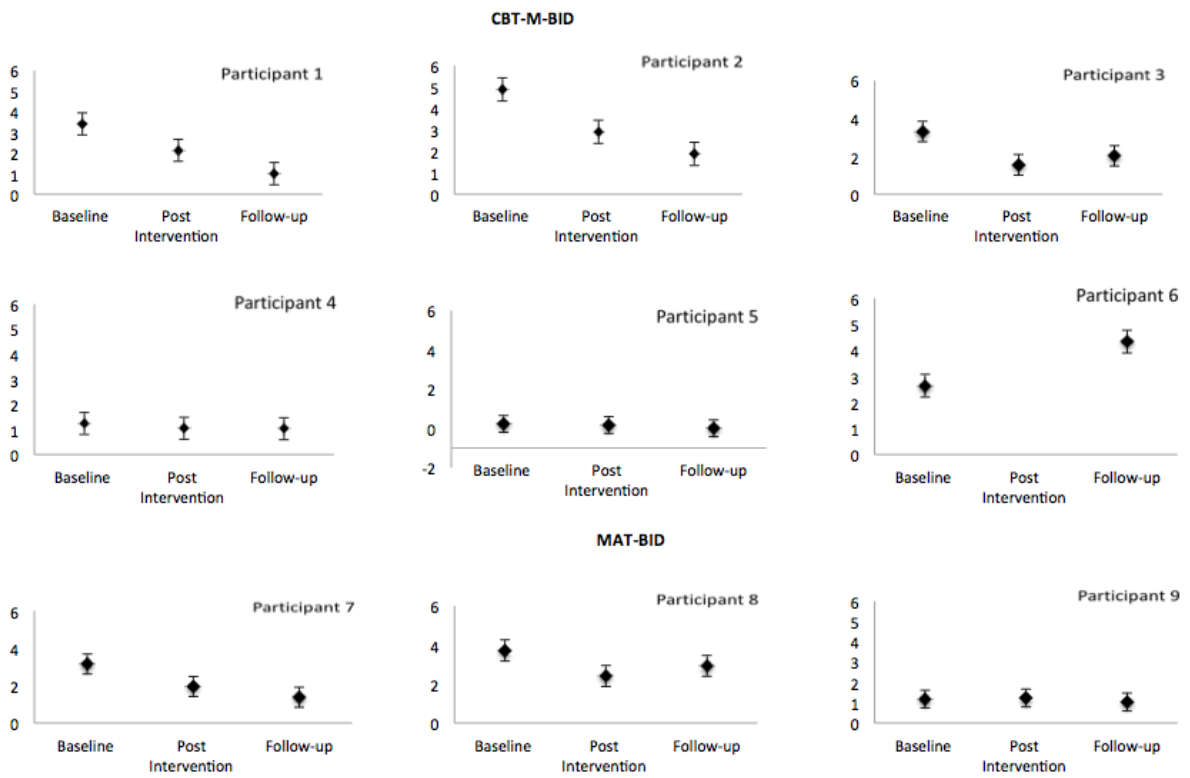


Figure 19. CBT-M-BID and MAT-BID Participants' 1-9 graphs for EDE-Q Global scores at Baseline, Post Intervention, and Follow-up.

CBT-M-BID. Results showed that participant 1 displayed moderate changes from baseline to post-treatment and follow-up, with the changes being reliable and clinical. Participant 2 on the other hand showed substantial changes from baseline to post-treatment and to follow-up as well as moderate change from post-treatment to follow-up, demonstrating an overall decrease in scores, all of which were reliable and clinically meaningful. In addition, participant 3 displayed substantial change from baseline to post-treatment and follow-up, demonstrating reliable and clinically meaningful change.

Participants 4 and 5 demonstrated no changes in their scores across time. Participant 6 showed a substantial increase from baseline to follow-up. The change for participant 6 was reliable and clinically meaningful.

MAT-BID. Participant 7 showed substantial changes from baseline to post-treatment and follow-up, and moderate change from post-treatment to follow-up, demonstrating an overall decrease in scores, all of which were reliable and clinically meaningful. Participant 8 displayed substantial change from baseline to post-treatment, which was reliable and clinical, and also a moderate change from post-treatment to follow-up, indicating a slow approaching to baseline scores. Participant 9 showed no changes in scores.

Shape Concern

Results for all the participants on the eating disorder questionnaire shape concern subscale can be found in Figure 20.

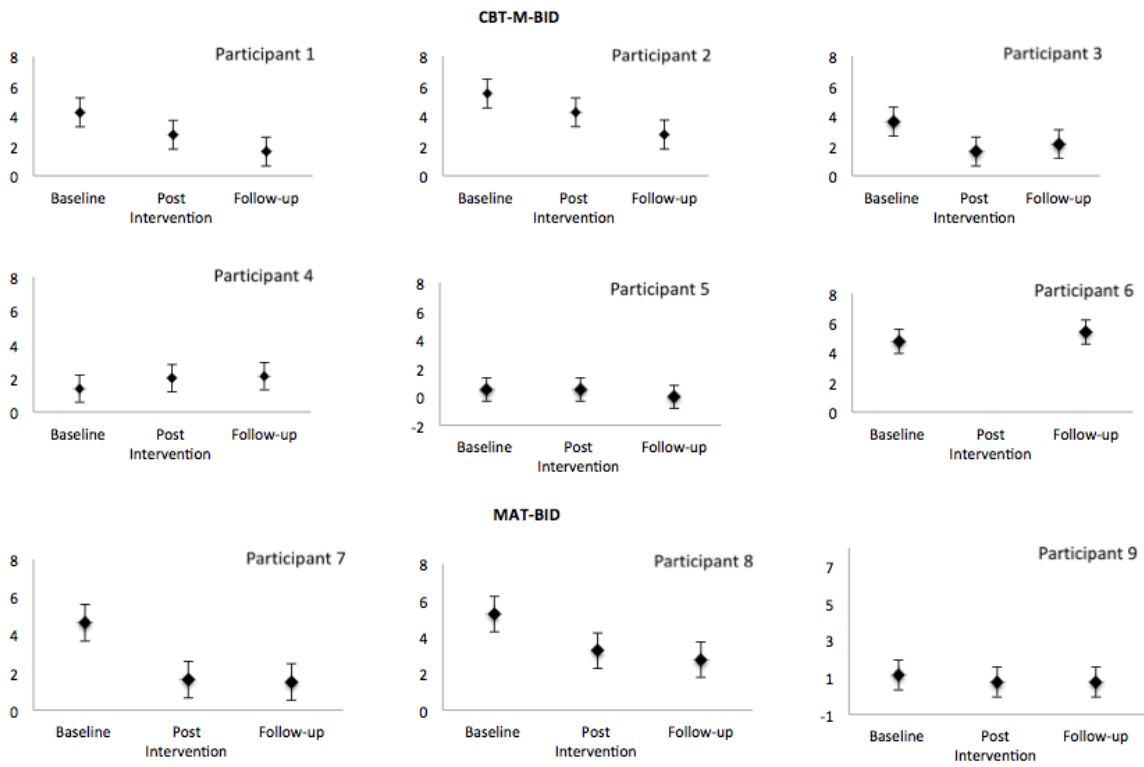


Figure 20. CBT-M-BID and MAT-BID Participants' 1-9 graphs for EDE-Q Shape Concern scores at Baseline, Post Intervention, and Follow-up.

CBT-M-BID. Results indicated that participant 1 displayed substantial change from baseline to post-treatment and follow-up, with the change from baseline to follow-up showing as reliable and clinically meaningful. Moderate change from baseline to post-treatment and post-treatment to follow-up was observed for participant 2 as well as substantial change from baseline to follow-up. Changes from baseline to follow-up, and post-treatment to follow-up were found to be reliable and clinical. In addition, participant 3 displayed substantial change from baseline to post-treatment and moderate change from baseline to follow-up, changes which were reliable and clinical. No change was observed for participants 4, 5, and 6.

MAT-BID. Participants 7 and 8 showed substantial changes from baseline to post-treatment and follow-up, all of which were reliable and clinical changes. No change was observed for participant 9.

Individual results obtained via inference by eye analysis and clinical significance analysis are summarised below in Table 24. Changes in scores that were deemed to be moderate or substantial by the visual inspection analysis and also showed to be reliable and clinically significant are considered to be meaningful changes identified by a tick in the table. No change is characterised by a cross. In addition, the participants that scored in the unexpected direction are marked with two asterisks to indicate this result was unexpected. The results shown in Table 24 are analysed according to domains below.

Table 24
Summary of Individual Participants Scores in Both CBT-M-BID and MAT-BID groups.

Variables	CBT-M-BID					MAT-BID			
	1	2	3	4	5	6	7	8	9
<i>Body Image Measures</i>									
BSQ	✓	✓	✓	-	-	-	✓	✗	-
BIQ	✓	✗	✗	✗	✓	✗	✓	✓	✓
BIDQ	✓	✗	✗	✗	✓	✗	✓	✓	✓
ASI-R	✓	✗	✗	✗	✗	✗	✓	✓	✓
SIBID	✓	✓	✗	✗	✗	✗	✓	✓	✓
ABCD A	✓	✓	✗	✗	✓	✗	✓	✓	✓
ABCD B	✓	✓	✗	✗	✗	✗	✓	✓	✓
MBAS	-	-	-	✗	✗	✗	-	-	✓
Muscularity	-	-	-	✗	✓	✓**	-	-	✓
Body Fat	-	-	-	✗	✗	✓	-	-	✗
Height	-	-	-	✗	✗	✗	-	-	✓
BCQ	✓	✗	✓	✗	✗	✓**	✗	✗	✓
BIAQ	✓	✗	✗	✗	✗	✗	✗	✗	✗
<i>Individuals' Relationship to Self, Thoughts and Feelings</i>									
Mindfulness	✗	✓**	✗	✓**	✗	✗	✗	✗	✓
CFQ	✓	✗	✗	✗	✗	✗	✗	✓	✓
Acceptance	✓	✓	✗	✓	✓	✓**	✗	✗	✓
SCS	✓	✗	✓	✗	✓**	-	✓	✓	✓
<i>Psychological Wellbeing</i>									
Self-esteem	✓	✓	✓	✓	✓	✓	✓	✓	✓
<i>Eating Disorder Symptomatology</i>									
EDEQ	✓	✓	✓	✗	✗	✓**	✓	✓	✗
SC	✓	✓	✓	✗	✗	✗	✓	✓	✗

*Note. ** = changes in scores in the opposite to expected direction. BSQ = Body Shape Questionnaire; BIQ = Body Ideals Questionnaire; BIDQ = Body Image Disturbance Questionnaire; ASI-R = Appearance Schema Inventory Revised; SIBID = Situational Inventory of Body Image Dysphoria; ABCD = Cognitive Distortions; MBAS = Male Body Attitudes Scale; BCQ = Body Checking Questionnaire; BIAQ = Body Image Avoidance Questionnaire; MAAS = Mindful Attention and Awareness Scale; CFQ = Cognitive Fusion Questionnaire; SCS = Self-Compassion Scale; EDE-Q = Eating Disorder Examination Questionnaire; SC = Shape Concern.

Body Image Measures

Participant 1 in the CBT-M-BID group demonstrated improvements in all nine of the BI measures for females, including BI dissatisfaction, BI disturbance, BI dysphoria, and body shape dissatisfaction. For BI measures, participant 2 indicated improvements in four out of

nine measures, including body shape dissatisfaction, BI dysphoria, and cognitive distortions. Moreover, for participant 3, improvements were evident in two out of nine measures (body shape dissatisfaction and body checking behaviours). It is evident by the difference in improved measures, that not all of the female participants experienced the same outcomes with regard to BI measures. These results are surprising for participants 2 and 3, as it would be expected that to see improvements on more of the BI measures. However, all of the female participants showed improvements on the body shape dissatisfaction measure, which is a widely used female only measure of BI dissatisfaction, pertinent specifically to body shape.

The male participants in the CBT-M-BID group displayed limited improvements in their BI measures. Participant 4 showed no improvements. Participant 5 improved on four out of 13 BI measures, including BI dissatisfaction, BI disturbance, cognitive distortions, part A and muscularity dissatisfaction. On the other hand, participant 6 displayed improvements in height dissatisfaction only. He also displayed changes in the undesired direction for muscularity dissatisfaction and body checking behaviours (indicating increases in these measures at the end of treatment, instead of displaying decreases). The limited improvements found for the male participants are inconsistent with expectations that significant improvements would be found. However, given that there is limited research of BI interventions for males, it is unclear how men may respond to these interventions.

In the MAT-BID group, participant 7 showed improvements in seven out of nine measures, including BI dissatisfaction, body shape dissatisfaction, BI disturbance, BI dysphoria, BI investment, and cognitive distortions. In addition, for participant 8, improvements were evident in six out of nine measures (i.e., BI dissatisfaction, BI disturbance, BI dysphoria, BI investment, and cognitive distortions). Lastly, the only male participant in the MAT-BID group demonstrated improvements in 11 out of 13 BI measures, excluding body fat dissatisfaction subscale for males and body avoidance behaviours. The

results found for the MAT-BID participants differ to those of the CBT-M-BID group.

Overall, it appears that the MAT-BID participants displayed more improvements in their BI measures than did the CBT-M-BID participants.

Individuals' Relationship to Self, Thoughts and Feelings

As can be seen from inspection of Table 24, out of the CBT-M-BID group, participant 1 showed the most improvements in her ability to defuse from thoughts, accept her thoughts and feelings about her BI, and experience self-compassion toward herself, compared to the other participant in the group. In addition, no participants in this group experienced improvements in their mindfulness levels. In fact, two participants showed decreases in their level of attention and awareness (i.e., mindfulness). Only participant 1 demonstrated improvements in their level of cognitive fusion. Participants 1, 2, 4, and 5 showed more acceptance at the end of treatment, whereas participant 6 experienced a worsening of his acceptance of BI thoughts and feelings. Self-compassion improved for participants 1 and 3, and worsened for participant 5.

Psychological Wellbeing

Only one measure for this domain is reported, which is self-esteem. As can be seen in Table 24, all of the participants improved in their self-esteem levels, from both the CBT-M-BID and the MAT-BID group.

Eating Disorder Symptomatology

Similarly to the psychological wellbeing domain, only two subscales of the eating disorder examination questionnaire are reported. Female participants from both groups (CBT-M-BID and MAT-BID) improved their overall disordered eating symptomatology and concerns with their shape. However, the results were different for the males in the two groups. In the CBT-M-BID group, no changes in scores were evident for all participants except participant 6. He displayed an increase in scores on the global eating disorder

symptomatology subscale. The male participant in the MAT-BID group also did not display any changes in his scores on the global EDEQ or shape concern. These results are to be expected given that eating disorder symptomatology was not directly addressed in the groups.

Qualitative data analysis

Along with the visual inspections of the data, qualitative analysis of verbal and written information provided by participants was analysed. Thematic Analysis (TA; Braun & Clarke, 2006) was used to ascertain any meaningful themes from the qualitative data. The data analysed includes feedback provided on two feedback forms, parts of the screening interview information, and the three-month follow-up phone call information provided by participants. The following sections present the main findings and themes that were discovered from the sources of information mentioned above. Data extracts in the form of quotes are also provided to further elucidate the themes.

A summary of the main themes is presented in Table 25.

Table 25
Summary of Themes Derived From Qualitative Analysis of Screening Interview Data, Evaluation Data, and Follow-up Phone-Call Data

Main Theme	Subthemes
Program Evaluation	<ul style="list-style-type: none"> a. Volume of content presented b. Positive aspects of interventions c. Most beneficial skills d. Attitude toward mixed gender groups
Relationship to Body Image	<ul style="list-style-type: none"> a. Relationship to BI prior to intervention b. Relationship to BI post intervention c. Relationship to BI at 3-month follow-up
Relationship to thoughts	<ul style="list-style-type: none"> a. CBT-M-BID b. MAT-BID
Discoveries about self	<ul style="list-style-type: none"> a. CBT-M-BID b. MAT-BID
Overall experience of the group	<ul style="list-style-type: none"> a. CBT-M-BID b. MAT-BID
Continued improvement and use of skills from the group – three-month follow-up	<ul style="list-style-type: none"> a. CBT strategies –challenging assumptions and new inner voice b. Ongoing mindfulness practice

Theme 1 – Program Evaluation

The qualitative data obtained gathered from evaluation forms completed at the end of the program. This theme provides insights into how participants evaluated the respective programs they were allocated to as well as what they found the most helpful in the programs. Four subthemes were identified and these are reported below.

Subtheme 1 – Volume of content presented

Overall, participants evaluated both the CBT-M-BID and the MAT-BID programs favourably. However, participants consistently identified the amount of information presented in both groups to be substantial and at times difficult to complete within the time constraints. Despite the content volume, participants found it relevant and useful. To illustrate this theme, the following quotes from participants are provided:

CBT-M-BID

“Lots of information - not necessarily to take in, but sometimes too much to work through during the week. Really enjoyed the step-by-step breakdowns, though! Made lots of sense and challenged just that little bit more each week. Have taken away a lot which I'll use and can always return to the rest.”

“I always found the content useful and easily digestible but some weeks too much. The tasks were helpful and again sometimes a lot to get through.”

“There was a lot of work to attempt and at times was difficult to achieve. However, it was apparent how beneficial the exercises were.”

MAT-BID

“Lots of information - too much for me to manage within a week - busy life - but all worthwhile and I will look over it again”

“Fantastic. Very insightful and helpful. The information was plentiful but manageable. Language was plain and understandable.”

Subtheme 2 – Positive aspects of the interventions

Overall, participants found both groups beneficial and useful for various reasons. Some of the positive aspects participants referred to include engagement with the group facilitators, powerful group discussion regarding BI, development of BI, and

the impact of BI on participants' lives, and the opportunity to have individual exercises to complete on their own, furthering reflection, understanding, and acceptance of BI. To elucidate participants' experiences in their own words, the following extracts are provided.

CBT-M-BID

"It was great having my feelings and experiences validated by others in the group. The exercises were great for building the skills needed to improve the relationship I have with my body."

"Really useful. Group activities interesting to hear the ways others viewed and judged themselves and the work outside was important to 'finding the words' for how I've always felt about myself."

"The group discussions were most beneficial for me but I found all the activities were beneficial."

MAT-BID

"The exercises for being honest with myself."

"Discussion was a powerful tool"

"Group exercises on the board which allowed for new thoughts and ideas to be discussed which may not have been possible on my own or in smaller groups."

Subtheme 3 – Most beneficial skills

Provided that many exercises and interventions were used in both groups, it appeared that the majority of participants found a select few as the most beneficial in their BI journey through the group. Slight variations are observed between the two groups, which are to be expected given the different foci in the groups in terms of interventions and skills taught. The following quotes illustrate the participants' thoughts on the skills learned:

CBT-M-BID

"The group discussions were most beneficial for me but I found all the activities were beneficial."

"Group exercises on the board which allowed for new thoughts and ideas to be discussed which may not have been possible on my own or in smaller groups."

"Appearance assumptions and inner voice/private body talk with facing body image avoidance a close second".

“I found the mindfulness exercises helpful. Exercises where we all contributed to things being written on the whiteboard were the most beneficial for me as seeing and reading the input from the group helped me form a more holistic view of certain topics and understand them better.”

“Appearance assumptions and inner voice/private body talk with facing body image avoidance a close second. I really needed help breaking those inner voice patterns which kept me in a vicious cycle. Becoming aware of my appearance assumptions and realising others had them was quite shocking (in a good way) for me. Facing body image avoidance is something I've never known/realised I did, or its effects.”

“Reflecting on my assumptions and challenging them, because it helped me to hear and talk about them out loud and realise that they shouldn't be my absolute truths.”

“Finding a inner voice to counter negative body thoughts - Give another perspective and help to feel more positive. In the past have just felt feeling of hopelessness.”

MAT-BID

“Developing self-compassion and letting go. Mindfulness practice. Letting emotions pass. Recognizing thoughts aren't necessarily true and more”.

“Acceptance techniques and developing self-compassion. Both were the most impactful to my progression and both were techniques I never practice or ever thought about. The whole course in entirety: Classes as intro into topic and personal progression in the course; theory notes to formalise it; exercises to put it all into practice and make it personal.”

“Thoughts are not true - conveyer belt. Mindfulness meditations Tendency to follow and dwell on thoughts and being able to disregard them and move on very helpful. All of it. The order that the content was delivered was very methodical and allowed a seamless opportunity to build on every week. Putting it all together in the final two weeks was very effective”

Subtheme 4 – Attitude toward mixed gender groups

The design of this study implemented a new approach whereby both men and women were allocated to the same group. This is a novel idea, as previous research to date has not incorporated both men and women together when targeting BI. Understandably, at times and within certain populations, this may not be ideal; however, there was no indication that this may be an issue in the current sample. Participants provided their opinions and impressions of this phenomenon. To elucidate their responses, the following extracts are provided:

CBT-M-BID

“Great. I think it worked well and I don't think I'd have felt as comfortable if the group was single gender”.

“I actually found it beneficial to hear the differences and similarities between the pressures put on both genders”.

“Felt it helped keep us ladies taking over the conversation and dragging it in 'fat talk'. Enjoyed the perspective the men could give to the group”.

MAT-BID

“Ok. I initially was taken aback but in the long run it was eye opening.”

“Great. Loved the difference of opinion and multiple viewpoints and people's situations. You often think that yours is the only issue out there, until someone else tells their story. Thank you so much.”

“Absolutely no problem. It was great to share the experience with a wide range of people to get their collective experiences. Gender was not an issue for me at all.”

Theme 2 – Relationship to body image

One of the themes that emerged from the evaluations was the participants' experience of their relationship with their body and themselves. This was a theme in the screening interview, the evaluation at the end of the groups, and at the three-month follow-up. This is an important theme and required evaluating given the aim of the groups in creating a greater acceptance of self and BI. Subthemes were created to illustrate the difference in the relationship toward BI at the three time points. The responses from participants from both groups indicate an improvement in their relationship with the BI and this is demonstrated below. For this theme, quotes are presented in order for each participant so that changes may be observed across different time points.

Subtheme 1 – Relationship to body image prior to intervention

CBT-M-BID

“Not very healthy. There is a need to cover up. I try and hide bits and feel violent toward my body when I get angry with my body. I tend to force my body to do more than it can”.

“Fluctuates depending on weight. Tend to hate myself more when weight is higher”.

“I've let my body down. There is a lot of guilt and I feel that I'm starting all over again”.

“I feel self-conscious in social situations. My body image tends to be a trigger and I feel I need to leave, not being in control, I need air”.

“It could be better. At the moment it's a love/hate relationship”.

“Awkward”.

MAT-BID

“Hate-hate relationship. Not very good, disappointed”.

“Love-hate. I don’t like to see myself naked”.

“Love-hate relationship. I feel strong and robust but hate my genetics and I don’t have a realistic ideal”.

Subtheme 2 – Relationship to body image post intervention

CBT-M-BID

“Coming into this group I was actually struggling with suicidal thoughts and severe self-loathing. Being part of this group gave me some hope for myself. I have become more accepting of myself, flaws and all - that acceptance doesn't necessarily mean I'm happy with my body but I'm getting somewhere there. I definitely have a kinder attitude towards it.”

“Pre group – I was lighter in weight but more anxious. Post group – I am thinking a lot but I am able to move on from thoughts and less judgemental”.

“I am more forgiving of my body given the journey I’ve been on over the last two years or so. I developed some destructive habits that have resulted in the current shape I am in, but I also feel I am accepting this as part of the process toward feeling good about myself and my body again. I know I won’t judge myself so harshly nor expect more than I can deliver and I feel that I’ve stopped desiring my 14 year old self and accepted that I have the body of a 31 year old and that’s ok”.

“Not that much change except for a more positive feeling for the future. “

“I’ve has a difficult relationship with my body but post my involvement in the group that has changed drastically. I hadn’t realised how much impact my negative thoughts about my body were having and thanks to the mindfulness and CBT that relationship will only get better leading to full acceptance of my body”.

Note participant 6 did not provide feedback at post-intervention.

MAT-BID

“I'm much more accepting or at least much less loathing of my body and myself (the things which I did to cause my current shape). I am more kind to myself and less scathing of mistakes/hiccups. Certainly less "alone" in feelings of self-disappointment, or lack of achievement- I'm not the only one who has such feelings.”

“My relationship with my body is more respectful now. I appreciate it much more, am able to respond positively to how it feels when I do or consume certain things, and I have been able to acknowledge and break vicious habits that were contributing to negative behaviour.”

“I despised my body. I had no appreciation for it. I believed my body impacted on my image as a person. I let my physique define me as a person. All of these are now addressed and I appreciate myself, accept my body. I am now a lot more than my looks. “

Subtheme 3 – Relationship to body image at three-month follow-up

CBT-M-BID

“Relationship is a lot better. I am working with my body and it’s a give and take relationship. I appreciate a lot about my body now and I am more positive. I am able to try different things (e.g., with exercise) and notice physical differences. I am not caught up with emotions about appearance, but appreciate just working with my body differently. So it’s more positive overall.”

“Healthy and balanced. I can’t believe this is how I feel, but it’s good. No difficulties at the moment.”

“Relationship is getting better (7/10). The group was useful, intensive but helpful.”

“My relationship with my body is positive and my body image is positive. I feel I’ve improved 100%. The group has certainly been very beneficial.”

“Body image is okay now, but it’s still harder in summer. Relationship is same as usual, but the course has been definitely useful.”

“Relationship is a lot better, not really caring. More relaxed I guess. It just doesn’t seem all that important anymore.”

MAT-BID

“Forgiving, accepting, better. It used to be self-loathing, but I don’t feel defeated anymore.”

“Improved. More satisfied and I have a new food ethic, mindful when eating, not eating when bored, lost some weight as a result. This has had a positive effect on relationship with body. Satisfied with how I look.”

“Relationship - no negative emotion. Neutral /mutual response. Seeing what I see in the mirror, no judgement, no comparisons.”

Theme 3 – Relationship to Thoughts

How one relates to thoughts - whether relating to BI or in general is an important aspect of an individual’s overall experience of their BI. As has been described, thoughts and cognitive distortions in particular form a significant part of the attitudinal component of BI. Therefore, assessing participants’ own understanding and opinion of changes in their experience and relationship to thoughts is warranted. An evident theme among the feedback provided was that most participants began to develop a different understanding of their BI and how they related to themselves and their thoughts about their appearance. Further, it was also evident that many of the participants experienced a change in how they related to their thoughts, how strongly they believed their thoughts, and the impact their thoughts had on their behaviour. While no subthemes emerged, responses are divided into the two groups to illustrate any differences that may be present. As can be observed, the CBT-M-BID group demonstrated changes in their thought patterns by experiencing less frequent negative thoughts about BI and feeling they had more control over their thoughts. On the other hand, the MAT-BID group demonstrated that they became more mindful of their thought processes,

less judgemental, and more able to let go of negative thoughts, instead of engaging in rumination. Examples are provided below:

CBT-M-BID

“My thoughts no longer control me! I used to get buried in my thoughts, find dead ends, get lost, become too stressed to be able to handle where the thoughts were taking me – overload. Now, I don’t get that overload, or if I feel I’m headed that way, I have the power to stop my thoughts overpowering me. I can deal with painful thoughts better, now that I know they won’t always be there, I think CBT really helped with this, as it gave me steps to deal with what mindfulness brought up”.

“I couldn’t really control those negative thoughts prior to the group and dealt with them the best I could but now I can still ‘deal’ with them but through much more constructive methods (CBT+M). My negative thoughts are already starting to dissipate dramatically. Lots has changed in my mind in relation to my negative body image thoughts and I now realise how much time I wasted in the past worrying about my body when there was nothing wrong with it”.

“Thoughts are more flexible. I have put them in perspective. They are less aggressive and hateful”.

MAT-BID

“I didn't really acknowledge or realise how negative I was thinking about my body and because I had been doing them so long, it was a part of me and I didn't realise. Now, I'm a lot more compassionate, mindful, and present when thinking and feeling anything to do with my body. “

“My thoughts used to constantly cloud my judgement. I was forever stuck in a loop of thought processes. My thoughts about myself turned to feelings and judgements. “

“I feel as if my thought processes are much clearer less scattered than before. I am quick to disregard unhelpful and critical thoughts and move on.”

Theme 4 – Discoveries about self

Another theme that emerged was that participants made discoveries about themselves through their participation in the groups. Given these discoveries are personal and may not be easily grouped into a common theme, they are provided separately but divided into the two groups. Examples are provided below:

CBT-M-BID

“That my negative body image has had a bigger impact on me than I cared to admit and that I am not defined by my appearance. I also learned how much I'd been comparing myself to others.”

“I have learned that I am far more critical of myself than I am of others and despite my view as being 'centre of the universe' I am more human and less unique when it comes to anxiety about my body image/perfection that I knew and that this knowledge is actually very liberating. “

“I feel more connected to people from meeting strangers and hearing their stories. I feel more confident – not just in my body image (still working) but in public speaking, not as self-conscious.“

“That I have valuable things to contribute, as a person. Also, that I carry the stresses of other people and burden myself with these before attending to my own problems. “

MAT-BID

“I tended to allow other's opinions of me to influence how I was feeling about my body. I have been too critical of my body 'defects' and not appreciating all the amazing things it does for me. How bad vicious cycles made me feel.”

“That I was far too quick to pass judgement against myself for how I looked. That I am naturally a kind and compassionate person and that I denied myself of it when I felt down on myself. That I am very receptive to mindfulness when it comes to helping alleviate a self-prescribed negative body image of myself.”

“That I can change and that I am a valuable and valued person who is strong and good. That my thoughts can be destructive in so far as I believe them to be the truth.”

Theme 5 - Overall experience of the group

Even though specific strategies were used in the interventions and that specific measures were used to evaluate change, it is also important to ascertain participant's qualitative experience of their involvement in the research. Their overall experience was provided on the evaluation forms. Although no specific subthemes emerged, the experiences are divided into the experiences of the two groups CBT-M-BID and MAT-BID:

CBT-M-BID

“It's been positive! Some weeks left me exhausted, bringing up some deep-seated issues (a good 1/2 of my drives home were quite emotional), but I knew it was all helpful, and that I couldn't begin to feel better until I'd dealt with the bad stuff. I felt I got on well with all the participants, though I realise I may not have been quite to everyone's taste. Having the group to bounce ideas off, watch their progress and tell my stories knowing they'd all experienced similar problems of their own, really helped. I'm actually nervous, not having the group support each week, now.”

“My overall experience in the group was incredibly beneficial and cathartic I was quite sceptical prior to starting but soon realised I had a lot to gain by being in the group. I enjoyed all aspects of the group and was very grateful for the opportunity to participate in the group.”

“I started with openness to the process - but didn't think it would change my thoughts. However at this point in my life it has been very helpful in putting things into perspective. To talk with others has been very inspiring!”

“Deciding to participate in the group was part of an overall process of self-reflection I've been undertaking for a few months but has probably been the most beneficial and I'm really glad I made the decision to do so.”

MAT-BID

“Life-changing. Originally I was attending for myself, but mainly for my partner. I found that the course, theories, exercises, and group interaction have changed the way I look at myself into a state of compassion and respect. Identifying self-defeating behaviours has allowed me to break the cycles and to do more things positively and with appreciation. “

“I thoroughly enjoyed attending the groups. I felt very comfortable amongst the other group members and that my opinion and input was valued. It was very encouraging to apply what we learned in the groups and modules and notice subtle changes to our thought process and behaviours. “

“This group was an incredibly tricky thing for me to do from a time perspective and each week I felt bad that I hadn't completed all of the homework. My apologies. However, I am glad that I put in the effort to come each week and have benefited greatly from the things I have learned.”

Theme 6 – Continued improvement and use of skills from the group – three-month follow-up

Another theme that emerged from the three-month follow-up data from phone-calls to participants was that there appeared to be continued and ongoing improvements made with regard to BI. Whilst the majority of participants did not continue to use the worksheets or the manual provided to them in the interventions, they continued to use the skills they learned through their participation in the research. For CBT-M-BID group this appeared to be primarily appearance assumptions and the inner voice and some mindfulness. For the MAT-BID, it appears that mindfulness practice was ongoing and benefits with this practice were noted. Two subthemes were identified to represent the different ongoing improvements and practices of the two groups. These are further represented by the quotes below:

Subtheme 1 – CBT strategies including challenging assumptions and new inner voice

CBT-M-BID

“Bits of the course I have continued to use. Inner voice stuff and list of situations to expose myself to and confidence lists.”

“I am surprised that there is no judgement with my body image. I still sometimes have the negative thoughts but they are less prominent and there is less judgment. I can certainly move on from my thoughts without much distress. Definitely challenging assumptions. It has been beneficial to do and I continue to challenge them. Mindfulness has also been useful and I continue to use it, being aware of thoughts and letting go of thoughts. It has increased my insight and knowledge. My thoughts don't snowball and they are less hateful and angry. Behaviours have continued to change as well. I am accepting social outings instead of exercise. I have challenged what I used to believe and it's surprising that these beliefs and thoughts have changed. I didn't think they would.”

“I am still using the inner voice – rephrasing. Also, beating down distortions and automatic thoughts. I haven't used any of the worksheets, but I do use the inner voice and challenging the most.”

“I have not gone through exercises step by step. CBT and mindfulness is still part of what I do. I feel less distress overall especially when looking at body in the mirror. There is less reactivity. I have noticed my thought patterns are different. Haven't gone back to the old thought patterns.”

“Haven't practiced goals or strategies. I am noticing the triggers have been less and I am using the new voice, and that helps. The group provided perspective. I have also noticed less comparison or comparison with everyone, not just specific people.”

Subtheme 2 – Ongoing mindfulness practice

MAT-BID

“Bit of mindfulness practice - would benefit from more practice. 1-2 times a day becoming aware and mindful. Reminder to be present. Couple of occasions where I have reacted better than in the past, less upset in regard to body image. Use "notice I'm feeling...." Body image doesn't feel terrible anymore. I am embracing a "new me", it's different, it's a long term thing. Less likely to slip back into old habits. Different type of self - control now, have choice. More tools to use, I am much more aware and more accepting of myself.”

“Not actively using exercises. Principles coming through daily - continuing to use mindful mirror at work. Not same amount of time though. Drastically improved perception of body image - see it differently. I am more accepting and appreciative - there is less criticism. I have positives in mind, there are less negative thoughts. Areas of body still not happy with but I am more accepting. There's no guilt. Reminding self - thoughts are thoughts.”

“Practicing mindfulness and also doing meditation now. Mindfulness has been useful with so many things - relaxation, calming, body image. I'm exploring this a bit more now. I do mindfulness at least 10 minutes a day. Mindful shopping etc. Have made changes around the house to reflect a more peaceful environment and to make it more relaxing. Mindfulness group - taken focus off body and onto everything else - skills provided in the group are for life.”

Discussion

Building upon study one, the aim of the current study was to develop and test a mindfulness and acceptance based intervention for BI dissatisfaction and disturbance.

Specifically, the study aimed to evaluate the effectiveness of two pilot interventions (CBT

and mindfulness, CBT-M-BID, Cash, 2007; and mindfulness and acceptance, MAT-BID, intervention developed by the researcher) in improving men and women's BI dissatisfaction and related attitudinal and behavioural components, their relationship to themselves, their thoughts, and their feelings, self-esteem, and disordered eating symptoms. Given the current research is an investigation of pilot interventions; a purpose of the study was also to obtain evaluation and feedback regarding the content and delivery of the groups. The results from the current study are summarised below in sections, addressing each domain individually and discussing the results from both groups.

Body Image Experiences

Results regarding changes in BI scores were mixed for both groups. When comparing the groups, it appears that the MAT-BID group displayed greater improvements on all of the BI measures than did the CBT-M-BID group. However, two participants stood out in terms of their improvements on the BI measures. Participant 1 (CBT-M-BID) and participant 9 (MAT-BID) consistently showed improvements on more BI measures than the rest of the participants. Seven out of nine participants displayed improvements in BI dissatisfaction, which was the main variable investigated. These results suggest that both the CBT-M-BID and MAT-BID groups are effective in improving BI dissatisfaction.

With regard to differences between the two groups on any of the measures, inspection of the means at the three-month follow-up and the norms for the BI measures indicated that for the male attitudes, participant 9 from the MAT-BID consistently showed lower scores than the participants in the CBT-M-BID group, except for the height subscale which was higher compared to the norms. For females, the body shape dissatisfaction was lower for the CBT-M-BID group compared to the norms and the MAT-BID group. For the BI investment measure, the MAT-BID group showed lower scores than the norms, whereas the CBT-M-

BID group showed expected results; that is, within the expected levels for a community sample. Compared to the norms, body checking was higher for CBT-M-BID group and lower for the MAT-BID group. In addition, compared to the norms, CBT-M-BID group scored above the norms for BI dysphoria, BI dissatisfaction, BI disturbance, and cognitive distortions, whereas the MAT-BID group scored below the norm on all of these measures. Taken together, these results suggest that overall the MAT-BID group scored lower at follow-up than the CBT-M-BID group on measures including BI dissatisfaction, BI disturbance, BI investment, BI dysphoria, body checking behaviours, cognitive distortions, and male body attitudes (except height dissatisfaction). Contrary to these results, it was evident that the CBT-M-BID group showed greater improvements on body shape dissatisfaction compared to the MAT-BID group.

Most of the results found in the current study are consistent with previous research that has examined CBT interventions for BI dissatisfaction and has found overall improvements in BI dissatisfaction and disturbance, investment in BI, fewer cognitive distortions, less affective disturbance or dysphoria, less checking and avoidance behaviours (Cash & Pruzinsky, 2002; Cash & Strachan, 2002; Farrell, et al., 2005; Jarry & Ip, 2005; Lewis & Devaraj, 2010). The results of the current study indicate that the MAT-BID group displayed better results consistently for all of the BI measures, except dissatisfaction with body fat for the male participants, body checking and body shape dissatisfaction for the female participants, and BI avoidance for all participants. Overall, the MAT-BID showed greater and more consistent improvement on BI measures. This may have been due to a number of reasons. Firstly, the group consisted of a smaller number of participants and different group dynamics could have influenced the outcomes. Further, with smaller group numbers, individuals in the group may have received greater attention and time spent on individual experiences, allowing for greater reflection, exploration, and practice of skills, all

of which could have contributed to greater improvements.

Despite the attitudinal aspects of BI not being directly challenged or changed in the MAT-BID group, improvement was demonstrated. This may have been due to mindfulness skills and practice, providing participants with greater awareness, understanding, acceptance and distance from internal experiences, leading to an overall reduction in dissatisfaction, investment, cognitive biases, and dysphoria. The cultivation and practice of mindfulness has been conceptualised as exposure to emotions and internal experiences, which may explain the decreases in BI dysphoria for the MAT-BID group participants. Furthermore, for the MAT-BID group, the cognitive distortions measure reduced significantly for all participants, despite a lack of active challenging or cognitive restructuring of these thoughts and beliefs. It is likely that the process of cultivating mindfulness and increasing awareness of internal experiences (thoughts, feelings, sensations, and habitual responses) led to a processing of information with reduced cognitive bias and influence of schemas which is consistent with suggestions from previous research (Stewart, 2004). In addition, mindfulness practice over time leads to less reactivity to emotional states and a greater recognition and awareness of triggers before they occur (Stewart, 2004), which was supported in this study by qualitative reports provided by participants from the MAT-BID group at follow-up.

However, despite these results, it cannot be conclusively argued that the MAT-BID group was more effective in improving BI experiences. It is important to note that both groups experienced substantial improvements on some of the BI measures, making comparisons difficult. Further to this, because a case series design was used, it is impossible to determine whether the differences observed between the two groups are statistically significant.

Furthermore, it is difficult to determine whether the changes observed in the CBT-M-

BID group were improved by the teaching and use of mindfulness. It could be that the CBT component alone contributed to greater effects or improvements overall, particularly given the lack of substantial improvements on the mindfulness measures for participants in this group. However, qualitative feedback provided by some of the CBT-M-BID participants suggest that they found the mindfulness skills beneficial and continued to use the skills at three-month follow-up, indicating perhaps that the adjunct of mindfulness was beneficial to this intervention. Specifically, the adjunct of mindfulness practice may have provided participants with skills to enhance their awareness of internal experiences, making it easier to then challenge and change their cognitions, feelings, and biases.

Contrary to previous research, which suggests that the behavioural component of BI (checking and avoidance behaviours) tend to improve most strongly (Jarry & Ip, 2005; Jarry & Berardi, 2004), results of the current study indicate that the checking and avoidance behaviours did not alter substantially or meaningfully for most participants. This may be due to a number of reasons. Primarily, the lack of significant change in checking and avoidance behaviours may be that insufficient time was provided to participants to work on and challenge their checking and avoidance behaviours. Despite the content being covered in the CBT-M-BID group, only two sessions of the program were dedicated to the behavioural aspects, which may not have been enough time to put into practice what was learned in the group. This is consistent with some of the reports provided by participants whereby they felt that a lot was covered in the group and that it was difficult to find the time to implement what was learned into daily life. On the contrary, checking and avoidance behaviours were not directly targeted in the MAT-BID groups, which may explain a lack of change in these measures for participants in the MAT-BID group.

Individuals' Relationship to Self, Thoughts and Feelings

The results obtained for how an individual relates to himself or herself, their thoughts, and their feelings were also mixed. No participants in the CBT-M-BID group showed any improvements in their levels of mindfulness, despite mindfulness being taught in the group. In fact, it was found that two participants (2 and 4) demonstrated a worsening in mindfulness by the end of the treatment. Surprisingly, two out of three participants in the MAT-BID group also did not show any improvements in their levels of mindfulness. These results are unexpected, especially given that mindfulness was a core skill taught in both groups. The results suggest that except for one participant (9), there were no improvements evident in mindfulness. Furthermore, cognitive fusion decreased for a total of three participants, one from CBT-M-BID and two from the MAT-BID group. Participant 7 from the MAT-BID group surprisingly, showed no changes in scores for mindfulness, cognitive fusion, acceptance of thoughts and feelings around BI. The quantitative results contradict the qualitative results, whereby participant 7 reported that mindfulness skills, letting go of thoughts, and sitting with emotions was the most helpful in the program. The results found for the other two participants in the MAT-BID group were consistent with their qualitative feedback whereby participant 8 reported that acceptance techniques and self-compassion were the most useful and participant 9 indicating the usefulness of mindfulness and letting go of thoughts. It is not surprising that most of the participants in the CBT-M-BID group did not show any improvements in their levels of cognitive fusion, given that this was not a concept or intervention taught in that group. Further to these results, most of the participants from both groups displayed improvements in their level of acceptance regarding their BI thoughts and feelings. Specifically, participants 1, 2, 4, 5, and 9 appeared to be more accepting of their BI by the end of the program. Surprisingly, only one of the MAT-BID participants displayed these substantial results. It was also unexpected that participant 6 showed a reduction in

acceptance at the three-month follow-up. Lastly, improvements in self-compassion were evident in all of the MAT-BID participants and only two out of six CBT-M-BID participants (1 and 3). In fact, participant 5 displayed a reduction in self-compassion at the end of the program, which was unexpected. The improvements observed for the MAT-BID participants are to be expected given that self-compassion was taught as part of the intervention.

When comparing the means of both groups to community norms, it was evident that the CBT-M-BID group scored lower on mindfulness compared to the norms and the MAT-BID group. However, this group also scored higher on cognitive fusion, acceptance of BI thoughts and feelings, and self-compassion compared to community norms. However, compared to the MAT-BID group, CBT-M-BID means are lower on mindfulness, acceptance of thoughts and feelings, and self-compassion; and higher on cognitive fusion. On the other hand, the MAT-BID group participants showed higher on mindfulness, acceptance of thoughts and feelings around BI, and self-compassion when compared to community norms.

The findings with regard to mindfulness and acceptance of BI are inconsistent with some of the previous research, which suggests that an increase in mindfulness should be observed following a mindfulness intervention (Brown & Ryan, 2004; Dekeyser et al., 2008; Dijkstra & Barelds, 2011; Lavender et al., 2012; Sobczak & West, 2011; Stewart, 2004). The MAT-BID mindfulness scores did not increase significantly; however, slight increases were observed from baseline to post-treatment and to follow-up. The lack of significant change in mindfulness scores for MAT-BID participants may be due to a number of reasons. Some of the mindfulness levels at the beginning of the intervention were already within the expected norm, which does not allow for great improvements or changes in overall mindfulness levels. The level of practice of mindfulness completed outside of the group is unclear, as this was not monitored. Therefore, participants in this group may have practiced varying levels, which

would have influenced their overall results. In addition, mindfulness levels or practice may not have been adequately measured in terms of the aspects of mindfulness practice that was targeted and that may have improved. Mindfulness levels were consistently higher for the MAT-BID group at post-treatment. These results decreased over three-month follow-up, indicating that perhaps greater practice over time is needed and that a booster session may have been useful a month after the intervention program finished. Some of the changes may have been reflected in other measures, including acceptance of thoughts and feelings around BI, levels of cognitive fusion and self-compassion. The results indicated that the MAT-BID group displayed significant reductions in cognitive fusion over time, implying that they became less entangled with thoughts and feelings, believed their thoughts and feelings less, and acted less based on their negative thoughts and feelings. In addition, their acceptance levels were higher indicating overall greater acceptance regarding thoughts and feelings about their BI and less reactivity and behavioural response influenced by negative BI thoughts and feelings. The findings for the CBT-M-BID group were slightly different, and less of the participants displayed these changes, indicating perhaps that the levels of cognitive fusion and acceptance did not alter significantly for this group of participants. This is in line with previous research, which has suggested that changes in levels of acceptance and cognitive fusion should be observed when mindfulness practice is taught (Baer, 2003; Brown & Ryan, 2004; Stewart, 2004).

Self-compassion

Although self-compassion was not directly taught or discussed in the CBT-M-BID group, research has suggested that mindfulness and meditation can lead to self-compassion, which may explain some of the increase in self-compassion that was evident in participants from this group (Birnie, et al., 2010). BI experiences have been linked to self-compassion in

previous research (Wasyliw, et al., 2012). This may also explain that with a decrease in BI dissatisfaction and disturbance, individuals may feel greater self-compassion. The participants in the study who experienced reduction in overall BI dissatisfaction tended to also display greater self-compassion scores at the end of the program and at follow-up as compared to individuals that did not show many improvements in BI dissatisfaction. Self-compassion was also reported as an important benefit for the participants in the MAT-BID group. Self-compassion may serve as a buffer for shame and self-judgement that is often associated with BI dissatisfaction (Ferreira, et al., 2013).

Self-esteem

Participants in both the CBT-M-BID and the MAT-BID group showed improvements in their levels of self-esteem, which was the only measure that improved consistently for all participant involved. The improvement in self-esteem is a result that is consistent with previous research, which has found that self-esteem increases when BI dissatisfaction is addressed (Jarry & Berardi, 2004; Shea & Pritchard, 2007; Olivardia et al., 2004; Strachan & Cash, 2002). It is surprising that this was the only result that improved for all of the participants. Despite the improvements, the scores for all of the participants remained lower when compared to community norms. It appears that both CBT based and mindfulness based interventions can result in the improvement of self-esteem, despite a lack of direct targeting of self-esteem concept and feelings.

Eating Disorder Symptomatology

The results from this study showed that all of the females in the research (CBT-M-BID and MAT-BID participants) experienced improvements in their overall disordered eating symptomatology and their concerns regarding their shape. This is consistent with previous research, which has found that disordered eating symptoms decrease when BI dissatisfaction

improves (Jarry & Berardi, 2004; Levine & Piran, 2004; Nicolino et al., 2001). When compared to community norms, the females in the CBT-M-BID group scored in the expected range for a community sample at the end of the treatment, whereas the participants in the MAT-BID scored lower than community norms at the end of treatment for shape concern. On the other hand, both groups scored higher than community norms on disordered eating symptoms even at post-treatment. In addition, males in the sample demonstrated no substantial changes in shape concern or disordered eating scores. In contrast, participant 6, who was male scored in the unexpected direction for disordered eating, implying that his scores worsened at the end of treatment. This may be due to the participant experiencing more dissatisfaction with his body due to a number of personal challenges that came up for the participant at the end of treatment.

Previous research has found that BI dissatisfaction tends to predict and be associated with disordered eating (Levine & Piran, 2004). This was supported in the current study, with greater disordered eating evident among the females in the sample as compared to the norms or expected level of disordered eating within an Australian community sample. The reduction in disordered eating over the course of the programs is also consistent with previous research which has found that improvement in BI within a BI intervention also tends to improve disordered eating attitudes and behaviours (Jarry & Berardi, 2004; Levesque & Vichesky, 2006; Levine & Piran, 2004; Nicolino et al., 2001). In addition, previous pilot studies have found that mindfulness and acceptance-based interventions have provided promising reductions in overall disordered eating in women (Baer et al., 2006). This was less so for the males in this sample; however, their scores were lower to begin with and within the norms at the end of the program, indicating no concerns regarding their levels of disordered eating. However, this research is also in its infancy and provides valuable information regarding the experience of disordered eating among males.

Limitations, Implications, and Future Research

The interpretation and understanding of the study's results should be undertaken in light of several limitations. As previously mentioned, many have argued that case series or single case designs reduce the potential to draw conclusive inferences about the effectiveness of treatment and pose threats to internal validity. However, case series and single case designs also provide useful information about the individual performance of each individual and can provide access to information, particularly qualitative data that is frequently lost in large-scale studies. A limitation of the current study is that no comparison or control group was utilised, making it difficult to compare the effects of the interventions or determine that the changes in scores were a direct result of the either intervention (CBT-M-BID or MAT-BID). In this study, each participant acted as their own control by comparing their results at baseline, post-treatment and three-month follow-up. Another limitation of the study was the small number of participants, which was reduced further by a number of participants dropping out. This is specifically a limitation for the second pilot intervention, MAT-BID. The group consisted of only 3 participants by the end of the program. Individuals leaving or entering a group at different time points can and does influence the overall dynamics of the group and can therefore influence the participation and involvement of the members of the group that stay. Further, any comparison between the groups is made difficult given the small number of participants. A limitation of the study was also participants not having sufficient time to put skills into practice or have enough time between sessions to read, reflect, and implement any changes. This was also supported by the feedback provided from participants, who reported a great volume of content that may have resulted in little time to implement skills outside of session. The skills taught in the intervention groups including cognitive restructuring, exposure and prevention, mindfulness, relaxation, mirror exposure, and acceptance; time to practice, learn, and develop these skills is essential to then be able to see

meaningful change. Lastly, a limitation of the study was that only a three-month follow-up was conducted. In order to establish longer effects, further follow-ups at six, and 12 months may have been useful.

Along with limitations, it is important to note strengths of the current study. A particular strength of the study was the use of registered and highly experienced psychologist and provisional psychologist as facilitators of both groups. The involvement of the researcher in the development, screening, and delivery of the programs was strength as it provided consistency and maintained integrity to the treatment. Furthermore, the involvement of both men and women in the groups was another strength of the study as no research to date has included men and women in groups for BI dissatisfaction and disturbance. In addition, this is the first study that had evaluated a CBT and mindfulness based intervention for BI in men, providing new information and insights into the experience of BI in men and also potential effective interventions.

It is important to understand the applications of this research and implications for clinical practice. Dr Thomas Cash's program (2007) is designed as a self-workbook that is accessible for all individuals and to be worked through at their own pace. The workbook is also designed in such a way that therapists working with eating disorders or BI concerns can adapt and use the program within clinical practice. Likewise, the mindfulness and acceptance program is designed to be accessible by individuals and easily understood. Any individual and therapist can use the workbooks provided to participants when addressing BI dissatisfaction. Research has shown that mindfulness is effective in improving a number of psychiatric disorders but also general wellbeing. The results of this study indicate that mindfulness and acceptance skills may also be useful in improving BI experiences and overall BI dissatisfaction. The results of the study provide support for the clinical utility of mindfulness skills within BI treatment.

The results of this study have been informative about BI experiences and how to address BI dissatisfaction in the general community for men and women. However, there are a number of areas that can be improved in future research. In particular, future research would benefit from further investigating the effectiveness of the MAT-BID intervention within a larger randomised control experimental design research. Similarly, the CBT-M-BID group would also benefit from further research support and further investigations into its effectiveness. It may be beneficial for future research to examine how much the adjunct mindfulness skills add to the effectiveness of the CBT component of the intervention. Underlying mechanisms of how mindfulness operates requires further research. Further, it may be useful for future research to incorporate a measurement of engagement as this may be an important aspect of any intervention – that is, the level of engagement and openness the participant has to the information presented and the level at which they commit to the practice outside of sessions. Assessing the participant's motivation to change and establishing the stage of change they are at may also prove to be useful in future research. Previous research has found that these are important factors (Beandell, Nason, Stafford, Rosengren, & Daugherty, 2012; Bucker & Schmidt, 2009; Macdonald, Hibbs, Corfield, & Treasure, 2012); however, the research has predominantly investigated the use of motivation in substance abuse related interventions, social anxiety, and EDs. Although motivation to change was assessed qualitatively via the screening interview, a quantitative and reliable measure of motivation to change may be beneficial in future research. Taking into consideration the feedback provided by participants about the delivery and content of the groups, future research should consider running the groups over a longer period of time with a week or more in between to allow for greater practice and reflection. A booster session a month after the intervention is complete may further help participants with practicing the skills and continuing to use the strategies learned in the group. Understanding BI experiences in daily

life and how this may change is important and therefore, greater baseline data taken over a longer period of time would be valuable. Furthermore, independent raters assessing how closely the group facilitators adhere to the session manual would establish greater treatment integrity.

Conclusion

In summary, the current study featured several aims. In particular, the aim was to investigate the effectiveness of two pilot interventions (CBT-M-BID and MAT-BID). The aim of the study was also to evaluate the efficacy of these interventions in reducing BI dissatisfaction, disturbance, investment, and dysphoria; improve mindfulness, cognitive fusion, acceptance of thoughts and feelings, and self-compassion; improve disordered eating and self-esteem. Mixed results were obtained for both the CBT-M-BID and MAT-BID groups in terms of improvements and significant and clinically meaningful changes in scores. Most participants showed some improvements, with participant 1, 2, 7 and 9 showing the greatest improvements. Overall, despite the small number of participants in MAT-BID group, the participants consistently displayed improvements. Improvements in most of the domains were evident including BI measures, disordered eating, mindfulness, cognitive fusion, acceptance, and self-compassion. The results found in this study suggest that the addition of mindfulness to CBT or mindfulness alone as an intervention to BI is valuable and warrants further investigation.

Chapter 4: General Discussion

Summary of Findings

The prevalence of BI dissatisfaction is increasing in the community and there is increasing recognition of the negative consequences associated with BI dissatisfaction (Fallon et al., 2014; Frederick, et al., 2006; Galioto & Crowther, 2013; Grammas & Schwartz, 2009; Jarry & Berardi, 2004; Lavender et al., 2012; Neighbors & Sobal, 2007). While some level of BI dissatisfaction is considered to be ‘normal’, chronic and high levels of BI dissatisfaction can lead to a plethora of negative consequences. Individuals with BI dissatisfaction are at risk of developing maladaptive compensatory strategies (e.g., use of performance and muscle enhancing drugs, strict dieting, excessive exercise, disordered eating behaviours); developing EDs; and developing psychological problems, such as depression, anxiety, stress, and low self-esteem (Blashill, 2010; Grammas & Schwartz, 2009; Hildebrandt et al., 2010; Jarry & Barardi, 2004; Lavender et al., 2012; Lewis & Devaraj, 2010; Strachan & Cash, 2002). BI dissatisfaction is difficult to treat due to its pervasive subclinical nature and its social acceptability (Pearson et al., 2012). Given the risks associated with unidentified and unaddressed BI disturbance, it is evident that the need for effective BI interventions is paramount, particularly programs that are effective, easily accessible, and can be used to promote healthier BI in the wider community.

The study set out to explore the relationship between components of BI dissatisfaction and how an individual relates to themselves, their thoughts and feelings (i.e., mindful attention and awareness, self-compassion, acceptance, and distancing from thoughts). The study also set out to investigate how a range of factors (i.e., perfectionism, self-esteem, disordered eating, and psychological wellbeing) relate to BI dissatisfaction. Two studies were conducted in order to address salient gaps in the BI literature, including the lack of current interventions options for men, the need for a better understanding of the relationship between

BI dissatisfaction and mindfulness, and a pressing requirement to validate the effectiveness of mindfulness training in improving BI dissatisfaction.

Findings of the first study indicated that men and women who displayed higher levels of mindfulness, acceptance, and self-compassion also displayed less BI dissatisfaction, negative emotions related to their BI, importance placed on BI as a measure of self-worth, and showed less disturbance associated with their BI. Findings regarding the relationship between mindfulness and BI dissatisfaction lend support for findings from previous research (Dekeyser et al., 2008; Dijkstra & Barelds, 2011; Lavender et al., 2012). Furthermore, the significant results for BI measures and cognitive fusion, provides support for previous research, which has found that overall, higher levels of BI dissatisfaction tend to be related to ruminative thoughts, less acceptance of thoughts, and greater reactivity based on negative thoughts (Baer, 2003; Bishop et al., 2004; Gordon et al., 2012; Pearson et al., 2012; Trindale & Ferreira, 2014). These results provided an avenue for investigating the utility of mindfulness practice to address these thought processes, reduce BI dissatisfaction, and improve the relationship individuals have with their internal experiences.

The results of this study suggest that the relationship between focused attention and awareness (i.e., mindfulness) and the experience of BI dissatisfaction is significantly and strongly mediated by cognitive fusion and acceptance of body related thoughts and feelings. These mediation models offer new insights into the factors and mechanisms that may underlie or influence the relationship between mindfulness and BI dissatisfaction. Further, the significant associations between BI dissatisfaction and self-esteem, depression, and anxiety suggest that BI is important to men's and women's psychological wellbeing and deserves focus in future BI research and BI interventions.

Consistent with previous research (Levine & Piran, 2004; Nicolino, et al., 2001; Levesque & Vichesky, 2006; Olivadia et al., 2004), this study showed significant associations between BI dissatisfaction and eating disorder symptomatology. These results indicated that the more dissatisfied individuals are with their BI, they are more likely to experience disordered eating thoughts, feelings, and behaviours. Another important result that emerged from this study was that more perfectionistic self-presentation traits, nondisplay and nondisclosure of imperfection beliefs and behaviours were significantly associated with more BI dissatisfaction, BI disturbance, BI investment, and BI dysphoria. These results imply that individuals who are more perfectionistic may be more likely to also be dissatisfied with their appearance, use their BI as a measure of self-worth, be prone to negative and dysphoric emotions, and experience more disturbance in their daily life as a result. These findings provide further support for perfectionism as an important factor in BI experiences (Grammas & Schwartz, 2009; McGee, et al., 2005; Sherry et al., 2009) and require further attention in the literature. It is important to address these factors in treatment (perfectionism, self-esteem, negative affect), as these have been linked with the development on BI dissatisfaction and EDs and present as risk factors (Stice, 2002; Lewis & Devaraj, 2010; Rosenstrom et al., 2013).

Taken together, these results highlighted the need for effective treatment of BI dissatisfaction, in both men and women. Psychological wellbeing, perfectionistic tendencies, disordered eating, negative affect, and rigid and negative thoughts were all related to the experience of BI dissatisfaction, emphasising the complexities of this issue for men and women. Without addressing these issues appropriately, the costs to individuals' physical and psychological health, as well as the costs to community are likely to endure.

Treatment Outcomes

Many interventions have been developed and tested to combat BI dissatisfaction (Farrell et al., 2006; Jarry & Berardi, 2004; Jarry & Ip, 2005). Most of these interventions have been based on CBT principles. These programs have often been aimed at adolescent girls or young women (Strachan & Cash, 2002), leaving BI dissatisfaction unaddressed for men. Interventions incorporating mindfulness skills and principles have shown to be effective with a number of disorders and psychological issues (Baer, 2003; Brown & Ryan, 2003; Chambers et al., 2009; Kabatt-Zin, 2003), but remain largely untested in the field of BI dissatisfaction. This is despite accumulative evidence suggesting a significant association between mindfulness and components of BI dissatisfaction (Baer et al., 2005; Dekeyser et al., 2008; Dijkstra & Barelds, 2011; Fink et al., 2009; Lavender et al., 2009; Lavender et al., 2012; Manjrekar & Berenbaum, 2012; Masuda & Wendell, 2010; Stewart, 2004).

As previously mentioned, the first study generated results with important implications for the development and implementation of intervention programs for individuals with BI dissatisfaction and disturbance, with the potential for intervention programs to be specifically tailored to teach mindfulness, acceptance, cognitive fusion, and self-compassion, and address psychological wellbeing, self-esteem, and disordered eating attitudes and behaviours.

The significant findings of the first study, informed the development and implementation of two pilot interventions in the second study, targeting BI dissatisfaction and disturbance in both men and women. One of the interventions was a CBT plus mindfulness (CBT-M-BID) BI program developed by Cash (2007); whereas, the other intervention was specifically developed by the researchers and comprised mindfulness and acceptance strategies. The two eight week programs both incorporated elements of mindfulness practice in order to increase awareness of thoughts, feelings, and habitual responses. The mindfulness intervention (MAT-BID) contained elements of mindfulness practice, acceptance strategies,

cognitive defusion techniques, and self-compassion techniques. Together, these strategies were aimed at assisting individuals in changing the relationship they had with their thoughts and feelings, reducing judgments and distress, increasing awareness of habitual responses, and improving overall BI dissatisfaction. The participants were assessed at three points in time: baseline, post-intervention, and at 3-month follow-up.

The results of this second study were very promising; however, the lack of a control group and the small sample size meant that all findings needed to be interpreted with caution. As a group (both CBT-M-BID and MAT-BID), the participants showed improvements in BI dissatisfaction, BI disturbance, body shape dissatisfaction, and male body attitudes. BI ratings improved substantially from baseline to post-treatment, and for some participants continued to improve at the three-month follow-up. This indicated that not only had they consolidated what they had learnt, and were maintaining those new skills, but they were also continuing to make improvements after the end of the intervention program. The qualitative analysis of the data supported most of the findings for each participant. Participants indicated that overall they found both of the interventions helpful, particularly with the use of mixed-gender groups. Further to this, qualitative data showed that the description of the relationship participants had to their body changed during the course of the intervention. For most participants, their descriptions changed from *“unhealthy, guilt, self-conscious, awkward, love-hate”* to *“more accepting of myself, more forgiving of my body, positive, more kind, less disappointment, more respectful, more appreciative”* at post-interventions, and to *“better relationship, working with my body, healthy and balanced, positive, forgiving, accepting, improved, more satisfied, and no judgement or comparisons”* at follow-up. Participants' relationships to their thoughts also altered as evidenced by qualitative feedback, indicating increased flexibility with thoughts, not being controlled by thoughts, and a reduction in negative thoughts.

Participants in the MAT-BID group consistently showed greater improvements in BI measures, with improvements in body shape dissatisfaction, BI dissatisfaction, BI disturbance, BI investment, BI dysphoria, and BI cognitive distortions, despite some of these not being directly addressed or challenged within the group. This may have been due to the MAT-BID group engaging in mirror exposure on a weekly basis, whereas, the CBT-M-BID group only engaged in this exercise once. Repeated mirror exposure may result in decreased distress associated with BI dissatisfaction. Repeated exposure to the image in the mirror is likely to activate underlying schemas, which in turn decreases in intensity with the habituation process that occurs through the repeated mirror exposure (Delinsky & Wilson, 2010; Hildebrandt et al., 2012; Jansen et al., 2008; Farrell et al., 2006; Trentowska et al., 2013). Overall, the behavioural component of BI (checking and avoidance behaviours) improved the least for both groups, contrary to what has been found in previous research (Jarry & Ip, 2005).

Theoretical & Clinical Implications

The current research is the first to investigate the combined effect of a range of factors on BI dissatisfaction. The mixed-methodology is a strength of this study and offers many insights into the relationships that exist between BI dissatisfaction and other factors, but also into skills and techniques that may provide antidote to this pervasive and at times debilitating issue. The study shows promise for the utility of mindfulness training and the use of acceptance, self-compassion, and cognitive fusion strategies in improving dissatisfaction and disturbance of appearance, shape, and weight.

The results also provide useful information regarding the implications for clinical practice. The results of the first study provide further support for the utility of mindfulness within BI research. Similarly, the results of the second study provide support for the clinical utility of mindfulness in the treatment of BI dissatisfaction. Mindfulness skills are easily

taught and tend to be easily accessible. Clinical training programs, universities, and even workplaces could incorporate the training of mindfulness so that it may be accessible by more individuals. Furthermore, training more professionals in facilitating and teaching mindfulness may be beneficial. Dr Thomas Cash's workbook (2007) is designed as a self-help program and is accessible by individuals and can be worked at their individuals pace. The development of the mindfulness intervention as a workbook may be useful in making the intervention and practice of these skills accessible to the public.

Methodological Issues & Recommendations for Future Research

Recruitment issues. A common problem encountered in intervention research is the difficulty with recruitment, or accessing individuals who require the help. This would also appear to be the case in the current research. Despite several months of advertising and recruitment, and despite the prevalence of BI dissatisfaction in the community, a small number of participants were obtained for the intervention study. The most apparent barrier to the recruitment of participants in need of a BI dissatisfaction intervention was location of the groups, time constraints, and a lack of response from individuals expressing interest in participating, once contacted. This may be due to a number of reasons, such as amotivation, fear of engaging, perceiving BI dissatisfaction as less important than other issues in their life, and there may have been a level of stigmatisation attached to the program conducted by (provisional) psychologist and being run in a psychology clinic.

Generalisability of findings. Several limitations of both studies make the generalisability of the results difficult and require consideration. The sample obtained was purely Australian, limiting the generalisability of the results across to other cultures and nations. Further to this, a lack of clinical comparison group (e.g., individuals with EDs or BDD) limits the generalisability of the first study. The generalisability, particularly of Study

2's findings, is limited due to a number of factors. First and foremost is the small sample size and lack of a control group. The significant findings in this study could have been due to any number of other factors besides the program; therefore, making it difficult to extrapolate the findings to the wider, general BI dissatisfied population.

Recommendations. Future research recommendations include the investigation of the effectiveness of the pilot interventions explored in this study with a larger sample using an experimental design (randomised control trials). This would enable conclusive inferences to be drawn about the overall effectiveness of these interventions and their usefulness in improving BI dissatisfaction for men and women. Further, randomised control trials of these two interventions with larger samples would enable for the interventions to be compared and inferences made about their effectiveness and whether one intervention is more effective than the other. Accompanying this type of investigation, it would be important to evaluate which components of the interventions (CBT components versus mindfulness components) result in the greatest improvements of BI dissatisfaction. For example, it would be important to ascertain the combined and independent contributions of treatment components including psycho-education, cognitive restructuring, exposure and response prevention, mindfulness practice, cognitive defusion, acceptance, self-compassion, and mirror exposure. Establishing potential differences in how men and women respond to these intervention components is also of vital importance. The incorporation of psycho-education and strategies to address disordered eating and dieting in the BI interventions is also worth considering in furthering this research and improving the BI interventions.

Future research should also incorporate a measure of engagement and motivation to determine whether these factors contribute to better outcomes at the end of the intervention. Previous research has suggested that readiness or motivation to change does improve treatment outcomes (Geller, Cockell, & Drab, 2001). Measures of treatment integrity and

different measures of mindfulness may also be included in future research, to allow for a more comprehensive understanding of which aspects of mindfulness practice and the intervention lead to improvements in BI dissatisfaction.

Previous research has established that BI dissatisfaction represents a key factor in the development and relapse of eating disorders (EDs). Therefore, this research field would benefit from evaluating the two pilot interventions investigated in this study, using an ED sample. Very few studies have compared the effectiveness of a BI intervention for an ED sample and a community sample. Further, it is worth considering the use of CBT-M-BID and MAT-BID interventions with males suffering from EDs and evaluating their effectiveness in improving BI dissatisfaction.

Given the use of mindfulness, cognitive defusion, and acceptance in the MAT-BID intervention and the positive results obtained regarding these strategies in improving BI dissatisfaction, future research may consider the development and evaluation of Acceptance and Commitment Therapy in improving BI dissatisfaction. Research into the use and effectiveness of ACT to improve BI dissatisfaction is limited and warrants further investigation.

The assessments used in the first study were comprehensive and long. This may have altered the quality of the results provided due to the length of time required to complete the questionnaires. In future, it may be valuable to evaluate the different BI components separately to reduce the possibility of participant fatigue and overload.

Taking into consideration the feedback provided by participants about the delivery and content of the groups, future research should consider running the groups over a longer period of time with a week or more in between sessions to allow for greater practice of skills and reflection on learning. A longer treatment would provide optimum opportunity to discuss

concerns, fears, and obstacles in completing the exercises such as exposure, mirror exposure, challenging thoughts, and mindfulness practice. It is reasonable to conclude that longer, more intensive BI treatment may be beneficial and necessary in eradicating long-standing BI dissatisfaction in men and women.

Conclusion

The first study of this research established that a significant relationship between mindfulness and many of the BI measures exists; suggesting that lower levels of attention and awareness of internal stimuli (i.e., mindfulness) is related to higher overall dissatisfaction with BI, BI disturbance, investment, dysphoria, and self-defeating behaviours (checking and avoidance). This research also found a significant attenuation of BI dissatisfaction and disturbance for most participants in the CBT-M-BID and MAT-BID intervention groups. The overall relationship participants had with their body improved during the course of the intervention. Most of the changes in scores evident at post-treatment were maintained at follow-up for most participants. The combined results of the current research suggest that group interventions, including both CBT and mindfulness, and mindfulness and acceptance stand-alone interventions may have a valuable role in improving BI dissatisfaction within the community. However, it is imperative that further research continues to explore and determine the effectiveness of mindfulness for BI dissatisfaction via experimental research.

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Appendix B – Participant Information and Consent Form – Study One.

Letter of invitation and plain language statement to participants

INVITATION TO PARTICIPATE IN A RESEARCH PROJECT PROJECT INFORMATION STATEMENT

Project Title: *Mindfulness and Body Image: The role of focused attention and awareness in body image satisfaction*

Investigators:

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trish.altieri@rmit.edu.au

Dear Participant,

You are invited to participate in a research project being conducted by RMIT University. This information sheet describes the project in straightforward language, or ‘plain English’. Please read this sheet carefully and be confident that you understand its contents before deciding whether to participate. If you have any questions about the project, please ask one of the investigators.

Who is involved in this research project? Why is it being conducted?

The current research is being conducted by Amanda Cvetanovski as partial fulfilment of the Doctor of Clinical Psychology degree at RMIT University, under the supervision of Associate Professor David Smith and Ms Patricia Altieri. This research has been approved by the RMIT University Human Research Ethics Committee.

Why have you been approached?

We are interested in investigating body image in males and females between the age of 18 and 65 years and factors that contribute to the development and maintenance of body image dissatisfaction. Individuals who fit the above age range have been approached and invited to participate.

What is the project about? What are the questions being addressed?

The present study aims to examine factors (such as thoughts and feelings about body shape and weight, self-esteem, and overall well-being) that contribute to body image among men and women. In addition, the present study aims to examine focused attention and awareness or what we call “mindfulness” and its relationship with body image.

If I agree to participate, what will I be required to do?

As a participant in this study, you must first complete a consent form agreeing to participate in the study. You will then be asked to fill in a questionnaire package that will require approximately 45 minutes to complete. The questionnaire package contains several demographic questions regarding your age, gender, sexual orientation, weight and height, and ethnicity. The questions also address thoughts about shape and weight, behaviours related to body image, and mindfulness. You are

encouraged to examine or browse through the questionnaire package as it may aid in your decision to participate in the study. If you agree to participate, you may complete the online questionnaire.

What are the risks associated with participation?

It is not thought that participation in this study will lead to any negative outcomes. However, the potential risk of becoming upset or distressed due to the nature of the questionnaires is present. In addition, some questions may be confronting and some distress may arise from reflecting on your own body image, traits, characteristics, and behaviours. If you are unduly concerned about your responses to any of the questionnaire items or if you find participation in the project distressing, please contact Associate Professor David Smith on (03) 9925 7523 or Ms Patricia Altieri on (03) 9925 7722 as soon as convenient. A/Prof Smith or Ms Altieri will discuss your concerns with you confidentially and suggest appropriate follow-up. Alternatively, you may contact your GP to discuss your concerns and obtain a referral to a psychologist if required. In addition, you may call one of the following services for further information, to discuss your concerns, or to obtain a referral for treatment if necessary:

- Counselling Service at RMIT University if you are an RMIT university student, on 9925 4365
- The Australian Psychological Society on 1800 333 497
- Lifeline on 13 11 14
- Eating Disorder Foundation of Victoria Helpline 1300 550 236
- SANE helpline 1800 18 SANE
- Body Image Eating Disorders Treatment and Recovery Service (BETRS) 9854-1700.

What are the benefits associated with participation?

Whilst there are no direct benefits for participating in this study, you will provide vital information regarding factors involved in body image. These findings will hopefully contribute to the knowledge base regarding adequate interventions for people with body image concerns and provide information regarding the promotion of body image satisfaction within the wider community.

What will happen to the information I provide?

All data will be kept strictly confidential and will be secured at all times during the research, with only the project investigators having access to the information. Once research is complete, data will be stored in the locked archives at the RMIT University Bundoora West Campus for the standard 5 year period, and then be destroyed. Any information that you provide can be disclosed only if (1) it is to protect you or others from harm, (2) a court order is produced, or (3) you provide the researchers with written permission. The data obtained from this project will form part of the Primary Investigator's Doctoral Thesis and may also feature in journal publications, presentations and conferences, however only the group data will be used and under no circumstances will individual scores be reported.

What are my rights as a participant?

As a participant in this research, you have the right to withdraw from this study at any time, without prejudice. You also have the right to have any questions answered at any time. Due to the completely anonymous nature of this study, no identifying information will be placed on your completed questionnaire package. As such, it will not be possible to withdraw your questionnaire from the study

once it has been returned or submitted. Please read through this information sheet and look through the questionnaire prior to deciding whether you would **like to participate**.

Who should I contact if I have any questions?

If you have any questions regarding this study, please feel free to contact Amanda Cvetanovski via email at amanda.cvetanovski@rmit.edu.au . Alternatively, you may contact Associate Professor David Smith on 9925 7523 or via email at david.smith@rmit.edu.au or Ms Patricia Altieri on 9925 7722 or via email at trish.altieri@rmit.edu.au.

If you have any complaints or queries that the researcher has not been able to answer to your satisfaction, you may contact the Executive Officer Peter Burke at RMIT Human Research Ethics Committee, Research and Innovation, RMIT University, Melbourne, 3001 (Ph: 9925 6597, e-mail: peter.burke@rmit.edu.au).

Yours sincerely,

Amanda Cvetanovski
B.Sc.Sc. (Psych)
B.A.Sc (Hons)

A/Prof David Smith
B.B.Sc (Hons),
MPsych (Clin)

Patricia Altieri
B.B.Sc., MPsych

PhD

Any complaints about your participation in this project may be directed to the Executive Officer, RMIT Human Research Ethics Committee, Research & Innovation, RMIT, GPO Box 2476V, Melbourne, 3001. The telephone number is (03) 9925 2251.

Details of the complaints procedure are available from the above address.

Appendix C – Further Information for Participants – Study One.

Thank you for participating. We appreciate your time and answers.

If you are unduly concerned about your responses to any of the questionnaire items or if you find participation in the project distressing, please contact Associate Professor David Smith on (03) 9925 7523 or Ms Patricia Altieri on (03) 9925 7722 as soon as convenient. A/Prof Smith or Ms Altieri will discuss your concerns with you confidentially and suggest appropriate follow-up. Alternatively, you may contact your GP to discuss your concerns and obtain a referral to a psychologist if required. In addition, you may call one of the following services for further information, to discuss your concerns, or to obtain a referral for treatment if necessary:

- Counselling Service at RMIT University if you are an RMIT university student, on 9925 4365
- The Australian Psychological Society on 1800 333 497
- Lifeline on 13 11 14
- Eating Disorder Foundation of Victoria Helpline 1300 550 236
- SANE helpline 1800 18 SANE
- Body Image Eating Disorders Treatment and Recovery Service (BETRS) 9854-1700.

Appendix D - Ethics Approvals - Study One.

4 May 2011

Amanda Cvetanovski

Dear Amanda

HREC 20/11: Mindfulness and body image

Thank you for submitting your application for consideration by the Human Research Ethics Committee of RMIT University.

Your application was considered at meeting 04/11 and an extract of the minutes of meeting are included for your information:

Ethical issues

- Participants – Non-specific group.
- Topic of research – Sensitive personal or cultural issue; investigation of mental disorder; eating disorders;
- Procedures/research methods – Anonymous surveys.

Unresolved issues

The study proposes the use of social media sites for recruiting participants. More information is required about which sites will be used and how these sites will be used. How will emails be used? If questionnaires are emailed back to the researcher then the data is then identifiable. Please give more information about the use of this medium for collecting data and how identities will be protected.

More information is required in the application about the proposed use of online surveys.

It was noted that much of this clarification was provided to the committee at the meeting by the supervisor Dr Adrian Schembri. However, this information must now be included in the amended ethics application.

The applicants should recognise that the research may reveal vulnerability in the participants and that a range of appropriate mitigation strategies need to be developed in response to this likelihood. The participants if they are alarmed or concerned at any outcome are currently asked to contact supervisors who are trained psychologists. The committee notes that this would mean that the anonymity of the participants would most likely be removed. Researchers need to provide other mitigation strategies for the participants whose vulnerability is exposed via self-identification as suffering an eating disorder. A range of options should be provided to the participants - including

contacting supervisors. Options may include a list of appropriate support services and references to contact own doctors, etc.

Plain Language Statement

There could be more specific identification of risks in the PLS similar to those outlined in the application. A short statement could be included about the risks of distress if the participant already has negative thoughts about appearance or body image.

The flyer states that all you have to do is complete a 'short' online survey. However, the number of surveys is quite high and in total could not be classified as 'short'. The flyer should provide a reasonable estimate of the time required to complete the surveys.

The flyer reproduction quality is quite poor.

Procedural matters

Nil.

Approved subject to minor amendments

The Committee considers this to be a **more than Low Risk** proposal (formerly level 3) and **that it is approved subject to minor amendments**. To expedite the final review process the committee recommends that you address each point raised by the committee and place the point/s and the response/s into a table and highlight the changes / amendments throughout your document.

Please note that if the committee does not receive a response to this letter within six weeks from the date of the letter, it will be assumed that you are no longer seeking approval for your project and your application will be withdrawn.

For your information your application number is **HREC 20/11** please refer to this number in any future correspondence to the committee

Yours sincerely

Associate Professor Barbara Polus

Chair, Human Research Ethics Committee

RMIT University

cc A/Prof David Smith (Senior Supervisor)

Notice of Approval

Date: **9 May 2011**
Project number: **20/11**
Project title: **Mindfulness and body image**
Risk classification: **More than low risk**
Investigator: **Amanda Cvetanovski**

Approved: From: **9 May 2011** To: **31 December 2013**

Terms of approval:

1. Responsibilities of investigator

It is the responsibility of the above investigator to ensure that all other investigators and staff on a project are aware of the terms of approval and to ensure that the project is conducted as approved by HREC. Approval is only valid whilst investigator holds a position at RMIT University.

2. Adverse events

You should notify HREC immediately of any serious or unexpected adverse effects on participants or unforeseen events affecting the ethical acceptability of the project.

3. Plain Language Statement (PLS)

The PLS and any other material used to recruit and inform participants of the project must include the RMIT university logo. The PLS must contain a complaints clause including the above project number.

4. Amendments

To amend any approved documents or other aspects of the approved project (including changes in personnel) requires the submission of a request for amendment form to HREC. Amendments must not proceed without approval from HREC. Substantial variations may require a new application.

5. Annual reports

Continued approval of this project is dependent on the submission of an annual report.

6. Final report

A final report must be provided at the conclusion of the project. HREC must be notified if the project is discontinued before the expected date of completion.

7. Monitoring

Projects may be subject to an audit or any other form of monitoring by HREC at any time.

8. Retention and storage of data

The investigator is responsible for the storage and retention of original data pertaining to a project for a minimum period of five years.

In any future correspondence please quote the project number and project title above.

A/Prof Barbara Polus

Chairperson

RMIT HREC

cc: Dr Peter Burke (Ethics Officer/HREC secretary), A/Prof David Smith (Supervisor).

Appendix E – Screening Interview Schedule - Study Two.

**Accepting Your Body with Mindfulness and Cognitive Behavioural Therapy
Skills
Screening Interview**

<p>Body Image Groups Assessment</p> <p>Referred by: _____</p> <p>Assessed by: _____</p> <p>Date of assessment: _____</p>	<p>Name: _____</p> <p>Address: _____</p> <p>_____</p> <p>Telephone: _____</p> <p>D.O.B: _____ Age: _____</p>
<p>Introduction:</p> <p>Say: <i>“Thank you for coming in for this interview. We will spend an hour or so discussing your interest in the research, what the research involves, and questions around your experience of body image and related psychological health. Your eligibility for the study will be determined at the end of the interview based on the answers you provide. If you are eligible to participate in the groups, and you are still interested in taking part, you will be asked to complete a set of questionnaires at the end of the interview or to take home and complete – these will take about 30 minutes to complete. Does this sound ok?”</i></p> <p><i>“Before we begin, I would like for you to read through the consent form and sign it if you agree with the content of the form. If you have questions, please ask and I’ll do my best to answer them”.</i></p> <ul style="list-style-type: none"> • Provide consent form. <p><i>“Have you read through the plain language statement? Do you have any questions about the information provided in the document?”</i></p> <p><i>“I will be asking you some direct questions. Please be as honest as possible when answering the questions. The information you provide will not be used in any other way than to determine whether participation in the groups is appropriate for you and whether they would be beneficial for you. If you are not eligible for the study, all information you provide will be destroyed immediately following the interview. If any of the questions are distressing for you, please let me know. Do you have any general questions before we begin?”</i></p> <p>Demographic Information:</p> <p>(1) Gender – tick one</p> <p><input type="checkbox"/> Male</p> <p><input type="checkbox"/> Female</p> <p>(2) Date of birth and Age</p> <p><input type="checkbox"/> Other (please specify): _____</p> <p>(3) Ethnicity: _____</p> <p>(4) Occupation: _____</p> <p><input type="checkbox"/> Full time</p> <p><input type="checkbox"/> Part-time</p> <p><input type="checkbox"/> Casual</p> <p>(5) Weight in kg’s: _____</p> <p>(6) Height in cm: _____</p> <p>(7) Sexual Orientation –</p> <p><input type="checkbox"/> Heterosexual</p> <p><input type="checkbox"/> Homosexual</p> <p><input type="checkbox"/> Bisexual</p> <p>(8) Marital status: _____</p>	

Group and Body Image Related Information

Presenting Problem

“Say: Given that the groups focus on facilitating an acceptance of one’s body and improving body image satisfaction, I will be asking you some questions about your overall body image. Please be as open as possible”.

Q. What are your main concerns regarding your body and body image at the moment?

Q. What aspects of your body image would you consider problematic or an issue? What makes this an issue for you?

Q. How long has this been an issue for you?

Q. How would you describe your relationship with your body? How satisfied do you feel at the moment with your body image? (rate out of 10, 0 being completely dissatisfied and 10 being completely satisfied?)

Q. Why are you interested in participating in one of the groups? What do you hope to gain through participating in one of the groups? What are your expectations? The group goes for 8 weeks and requires a commitment of 2 hours plus some potential activities outside the group. Can you commit to this?

Q. Have you had group experience or group therapy before? If so, please could you provide some details.

Q. Have you had any individual therapy before, including CBT and mindfulness? If so, what was that like for you?

Q. How familiar are you with both of these modalities? If not familiar, let client know that detailed information will be provided in the groups.

Q. Do your thoughts about your body prevent you from engaging in activities? Activities can include things such as: going to work, shopping for clothing, going out with friends/family, going to new places, activities that expose the body such as the beach, things that are enjoyable etc.

Q. Do these thoughts contribute to how you evaluate yourself as a person- based on your appearance?

Q. How long do you spend thinking about your appearance? How many times in a day? How many times in a week?

Q. Do you perceive any obstacles that may prevent you from engaging in the groups if you decide to participate?

Q. Anything else regarding your body image or body related that we need to be aware of or that you would like to share?

General Worries

Say " Thank you for providing all of that information. Now I will be asking you some questions regarding your day to day experiences and your history of any psychological health issues".

Q. Is there anything causing you worry or stress at the moment?

Q. Are you feeling frightened or concerned about the future? If so, what about?

Psychiatric History

General Mood: (How is your mood? How discouraged do you feel at the moment?).

Q. Have you ever had times where you've been overly concerned about embarrassing or humiliating yourself in front of others? YES NO

Q. Are there particular situations that would make you feel so anxious, fearful or nervous that you would try and avoid them?

Parties Meetings Public Speaking Meeting new people Eating in public
Writing in public Talking to people in authority

Being assertive Initiating a conversation Other _____

Currently?

Q. Most recent time?

Q. Have you previously been hospitalised or provided with a diagnosis by a GP or psychiatrist regarding your mental health?

Q. Are you *currently* taking any medication, including antidepressants, anti-anxiety, or antipsychotic medication? What ones? Have you *previously* taken any such types of medication? What ones?

Q. Have you ever been diagnosed with an Eating Disorder? If so, please provide some details – do you have a current diagnosis of an Eating Disorder?

Q. Have you dieted before? Provide details. Including, restricting food, going on special diets to lose weight, leaving out food groups etc. Are you dieting currently?

Q. Do you exercise? How often? What is your motivation for exercise?

Q. Do you or have you used body-enhancing drugs to help you achieve the body you want? Have you used laxative before? Diet pill? Do you use any protein powders etc?

Q. Do you currently use any drugs or alcohol? If so, how often? How many standard drinks/grams do you use per use?

Q. Does the alcohol or drug use cause you any difficulties in maintaining you work and social relationships?

Q. How do you usually deal with conflict? What do you do in an argument?

Q. Have you ever been involved in physical fights or aggression in the past? If so, what were the circumstances around this?

Q. What are you social supports? Who is in your life at the moment?

Mental State Exam – clinician to complete**Appearance**

(Physical appearance? [age, gender, race/ethnicity, posture, grooming, clothing, signs of AOD use, nutritional status])

Behaviour

(General behaviour? Behaviour to situation and to examiner? Eye contact? [angry/hostile, unco-operative, withdrawn, inappropriate, fearful, hypervigilant])

Mood and Affect

(Reported mood and affect during the screening interview? Low, euthymic, elated? Affect reactive, blunted, flat, congruent, appropriate?)

Speech

(Rate, volume, tone, quality and quantity of speech?)

Language (form of thought)

(Incoherence/illogical/irrelevant thinking? Amount? Rate?)

Thought content

(Delusions, suicidality, paranoia, homicidality, depressed/anxious thoughts?)

Perception

(Hallucinations? Depersonalisation? Derealisation?)

Cognition

(Level of consciousness? Attention? Memory? Orientation? Abstract thoughts? Concentration?)

Insight and judgement

(Awareness? Decision making?)

Say: *“That completes the interview and all of the questions that I had for you. Do you have any questions for me at this stage?”*

“Ok. Allow me a couple of minutes to review the information you have provided and then I will let you know whether you are eligible for the group and where to from here.”

**** Tick the inclusion and exclusion criteria checklist below. Determine if client is eligible. If unsure, please excuse yourself for a couple of minutes while you call Amanda (researcher) to briefly discuss. If eligible follow script. If not, follow alternative script****

Inclusion criteria checklist:

- Body Image concerns are evident and present an issue for client. Client avoid activities because of body image concerns. Considers themselves as dissatisfied with their body image.
- Aged between 18 and 65 years.
- Ability to commit to the group for 8 weeks and complete questionnaires. Readiness for change is present.

Exclusion criteria checklist:

- Current diagnosis of an Eating Disorder, Personality Disorder, Psychosis or Bipolar Dis.
- Under the age of 18
- Cognitive impairment or intellectual disability
- Violent or aggressive behaviours/ history

If client is eligible to participate in the study, please provide them with questionnaire package to complete. Allow 30 minutes to complete questionnaires or give them the questionnaires to take home including an envelope. Collect questionnaires and ensure that client’s name is on them if completed in session. Leave the room if client wants to complete questionnaires then.

Say: *“Thank you for providing all that information. I’ve reviewed your information and you are eligible to participate in the group and the study overall. I will now provide you with a questionnaire package that I would like you to complete now if possible. The questionnaires have their own instructions. Please follow these. If you have any questions, feel free to ask”.*

“The group facilitator, Amanda, will be in contact over the next week via phone. She will discuss with you your participation, starting date and time, and any other important information regarding the groups. You will also be informed about the particular group you will be in and what will be covered in that group. Any questions or concerns you have you will be able to discuss with her at this time. Do you have any questions before you complete the questionnaire package?”

**** Provide questionnaire package** Answer any questions. Once completed, ensure client name is written on questionnaires. Leave all information for Amanda.**

If client is not eligible for the research groups, say the following:

“Based on the information, it appears that unfortunately you do not meet the eligibility criteria for the groups. Given that the body image groups are research based groups, some strict criteria has to be followed. Unfortunately your (_____ insert reason) makes you

ineligible for the groups. Thank you for attending the interview and providing information about yourself. The information you have provided will be destroyed and we apologise for any inconvenience.”

“If you are interested in individual psychology sessions/therapy, we can certainly offer you alternative options. One option for you may be to seek individual therapy and this can be done via the RMIT University Psychology Clinic.”

- Explain about the clinic
- Ask if they're like to be placed on the waitlist
- Provide a list of alternative options
- Follow-up as required.

“Thank you once again. We wish you the best of luck. Feel free to contact the researcher, Amanda Cvetanovski if you have further questions or would like to discuss anything. Her details are on the form provided to you”.

Appendix F – Program Evaluation Form – Study One.**Cognitive Behaviour Therapy and Mindfulness Skills for Body Image****Program Evaluation**

We invite you to provide us with some feedback regarding your experience in the group. We thank you for your time and effort in providing this feedback.

Please provide comments for the following:

- (1) The content covered in the groups, both within the group and handouts (e.g., comment on what was helpful/unhelpful/insightful; comment on the amount of information provided i.e., too little or too much):**
- (2) The facilitator's approach to the group (e.g., comment if open, friendly, approachable, knowledgeable, good fit to the group etc).**
- (3) Group exercises completed in the group and also outside of the group (e.g., useful/skill building/too much/too little/clear etc).**
- (4) What was most beneficial?**
- (5) Which aspects of the group could be improved? How?**
- (6) How did you find being in a mixed gender group? Any suggestions on how it can be improved?**



Mindfulness Skills for Body Image

Program Evaluation

We invite you to provide us with some feedback regarding your experience in the group. We thank you for your time and effort in providing this feedback.

Please provide comments for the following:

- (1) The content covered in the groups, both within the group and handouts (e.g., comment on what was helpful/unhelpful/insightful; comment on the amount of information provided i.e., too little or too much):**

- (2) The facilitator's approach to the group (e.g., comment if open, friendly, approachable, knowledgeable, good fit to the group etc).**

- (3) Group exercises completed in the group and also outside of the group (e.g., useful/skill building/too much/too little/clear etc).**

- (4) What was most beneficial?**

- (5) Which aspects of the group could be improved? How?**

- (6) How did you find being in a mixed gender group? Any suggestions on how it can be improved?**

Appendix G – Group Evaluation Form – Study Two.**Cognitive Behaviour Therapy and Mindfulness Skills for Body Image**

Thank you for completing all of the questionnaires. We sincerely appreciate your time and effort in doing so and appreciate that they take a little while. In addition, we would also like to gain some more insight from you in regards to the following questions. Please comment as appropriate:

- (1) What topic was the most useful for you out of the 8 weeks?**

- (2) Why?**

- (3) What was most beneficial to you about the group?**

- (4) What was not useful or beneficial to you about the group?**

- (5) How did you find the exercises we did within the group? Which were of most benefit? Which need improvement?**

- (6) Describe your relationship with your body and body image and any changes pre and post your involvement in the group?**

- (7) Please comment on your overall experience in the group:**

- (8) Any other comments about your body image or anything else related to the group?**



Mindfulness Skills for Body Image

Thank you for completing all of the questionnaires. We sincerely appreciate your time and effort in doing so and appreciate that they take a little while to complete. In addition, we would also like to gain some more insight from you in regards to the following questions. Please comment as appropriate:

- (1) What topic was the most useful for you out of the 8 weeks?**
- (2) Why?**
- (3) What was most beneficial to you about the group? What have you gained?**
- (4) What was not useful or beneficial to you about the group?**
- (5) How did you find the exercises we did within the group? Which were of most benefit? Which need improvement?**
- (6) Describe your relationship with your body and body image and any changes pre and post your involvement in the group?**
- (7) How satisfied are you with your body currently. Please rate on a scale from 0-10, 0 being completely dissatisfied and 10 being completely satisfied.**
- (8) What did you notice about your thoughts and thinking process before and after the group? Has anything changed? If so, what? If not, why do you think this is?**
- (9) What skills have been the most useful that you will continue to practice?**
- (10) What have you learned about yourself in the process of attending the group?**
- (11) Please comment on your overall experience in the group:**
- (12) Any other comments about your body image or anything else related to the group that you would like to share?**

Appendix H – Ethics Approvals - Study Two.

22 December 2011

Amanda Cvetanovski

School of Health Sciences

RMIT University

Dear Amanda

HREC 78/11: Mindfulness and cognitive behavioural therapy skills for accepting your body image

Thank you for submitting your application for consideration by the Human Research Ethics Committee of RMIT University.

Your application was considered at meeting 12/11 and an extract of the minutes of meeting are included for your information:

Ethical issues

Participants - Power dependency relationship between researcher and participant

Topics – Investigation of mental disorder.

Procedures/Research methods – Audio recording; surveys; psychological intervention; confidentiality.

Ethical issues not addressed adequately

1. *Participants will be recruited also from RMIT clinic. There must be a recognition that clients are being recruited via the clinic. It must be made clear to potential participants that treatment and research are separate, unrelated activities.*
2. *There is a potential risk of no benefit in the project. This must be addressed in PICF so that participants are aware of possible outcomes.*
3. *Length of PICF may be an issue. It should be simplified and made more accessible to the sample population.*

Administrative issues

The RMIT HREC must sight approvals from other institutions where this study will be advertised

The RMIT HREC must sight and approve all advertisements in local newspapers, social networking sites and other networking sites

Approved subject to amendments

The Committee considers this to be a **more than Low Risk** proposal (formerly level 3) and **that it is approved subject to amendments**. To expedite the final review process

the committee recommends that you address each point raised by the committee and place the point/s and the response/s into a table and highlight the changes / amendments throughout your document.

Please note that if the committee does not receive a response to this letter within six weeks from the date of the letter, it will be assumed that you are no longer seeking approval for your project and your application will be withdrawn.

For your information your application number is **HREC 78/11** please refer to this number in any future correspondence to the committee

Direct any correspondence or requests for further information direct to the HREC secretary, Dr Peter Burke.

Yours sincerely

Associate Professor Barbara Polus

Chair, Human Research Ethics Committee

RMIT University

cc A/Prof David Smith (Senior Supervisor)

Appendix I – Participant Recruitment Advertisement - Study Two.



Accepting Your Body with Mindfulness and Cognitive Behaviour Therapy: An 8-Week Group Program





Do you dislike parts of your appearance?
Do you worry about what others think of your looks?
Do you avoid activities/situations because you feel self-conscious?
Do you have difficulty accepting the body you live in?

If your Body Image presents some difficulty in your day to day life and you would like to learn to accept your Body Image, then you may be interested in joining one of the 8-Week Group Programs for Body Image Acceptance that are being offered by RMIT University.

We are looking for participants aged between 18 and 65 years, both males and females.

The groups are part of a Doctorate research project examining the benefits of cognitive behavioural therapy and mindfulness in facilitating a greater acceptance of one's Body Image.

If you are interested in participating in one of the research Body Image Groups, please call the RMIT University Psychology Clinic on 9925 7603 for more information. Alternatively, you may e-mail the researcher at bodyimage.rmit@gmail.com



WARNING:

Reflections in this mirror may be distorted by socially constructed ideas of 'beauty'



Appendix J – Media Release – Study Two.

24 April, 2012

Body image research volunteers sought

Forty volunteers aged 18 and 65 are being sought for an RMIT University study to help accept and improve body image satisfaction in men and women.

Psychology researcher Amanda Cvetanovski said the prevalence of body image dissatisfaction had increased dramatically in recent years and many adults were experiencing problems in maintaining a healthy body image and accepting their bodies.

Ms Cvetanovski said individuals with body image dissatisfaction had increased risk of experiencing low self-esteem, depression and anxiety, eating disorders, and a greater avoidance of activities and situations because of their dislike, or discomfort in their body.

She said body image dissatisfaction could lead to several health problems including negative psychological consequences.

“While some options for improving your body image exist for adults, few are readily available for individuals who do not suffer from an eating disorder and there are even fewer results in sustained body image satisfaction,” Ms Cvetanovski said.

The eight week study, which would involve regular two hour group sessions, aims to evaluate:

- The effectiveness of two group programs for improving body image satisfaction.
- Any improvement in self-esteem, self-compassion, and mindfulness.
- Any decrease in body image avoidance and discomfort associated with thinking about one’s body.

Ms Cvetanovski said the group programs would focus on building skills to use in everyday life that focus on the physical, social, cognitive and emotional aspects of body image satisfaction.

“The aim is to increase participant’s knowledge and skills in each of these areas so that they are better able to accept their bodies and improve their satisfaction with their bodies,” she said.

“The results will help in the further development of programs to prevent and promote a positive body image in the wider community.”

For more information or to take part in the study bodyimage.rmit@gmail.com

For interviews or comment: Amanda Cvetanovski (03) 9925 7603, _____ home landline or

_____.
For general media enquiries: RMIT Kevin Slack, (03) 9925 1639
or

Appendix K – Participant Information - Study Two.



Letter of invitation and plain language statement to participants

INVITATION TO PARTICIPATE IN A RESEARCH PROJECT PROJECT INFORMATION STATEMENT

Project Title: Accepting Your Body with Mindfulness and Cognitive Behavioural Therapy Skills: An 8-Week Group Program

Investigator:

Primary Investigator:
Amanda Cvetanovski
Division of Psychology,
RMIT University
amanda.cvetanovski@rmit.edu.au

Project Supervisors:

Associate Professor Dr David Smith
Division of Psychology, RMIT University
david.smith@rmit.edu.au

Dr Patricia Altieri,
Division of Psychology, RMIT University
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Dear Participant,

Thank you for your interest in the research project titled “Accepting your body with Mindfulness and CBT Therapy Skills: An 8-Week Group Program”. As a follow-up to our previous conversation, I am inviting you to participate in the project being conducted by RMIT University. This information sheet describes the project in straightforward language, or ‘plain English’. Please read this sheet carefully and be confident that you understand its contents before deciding whether to participate. If you have any questions about the project, please ask one of the investigators.

Who is involved in this research project? Why is it being conducted?

The study is being undertaken by Miss Amanda Cvetanovski as partial fulfilment of the Doctor of Clinical Psychology degree at RMIT University, under the supervision of Associate Professor Dr David Smith and Dr Patricia Altieri. This research has been approved by the RMIT University Human Research Ethics Committee.

Why have you been approached? Why is the project being conducted?

You have received this information letter following your enquiry about the project. The prevalence of body image dissatisfaction and related problems has increased dramatically in recent years. Individuals with body image dissatisfaction have an increased risk of low self-esteem, depression and anxiety, self dislike, and the development of a range of psychological and medical disorders. Treatment options and other ways to deal with body image dissatisfaction and increase acceptance of one’s body are lacking in the community. Given the prevalence of body image dissatisfaction, the aim would be to create useful ways to provide information about positive body image promotion to the wider community.

What is the project about? What are the questions being addressed?

The main aim of this project is to determine the best way to assist adults to accept their body image and to promote healthy body images in the wider community. We are interested in understanding factors such as eating behaviours, thoughts, mindfulness and body related evaluations that contribute to accepting your body.

If I agree to participate, what will I be required to do?

If you decide to participate in this program there are a number of procedures that are involved:

Assessment

All participants are required to complete the assessment process. Assessment allows us to see if the program is appropriate for you; it helps us determine how best to meet your needs, and finally it provides details about your body image so we can see if the program helps you.

1. **Initial interview:** All participants will be asked to attend an assessment interview which will take approximately 1 hour. During this session we will discuss your eligibility to participate in the groups and ask you questions about your personal history related to your experience of your body.
2. **Questionnaires:** Participants will be also asked to complete a questionnaire booklet which will take approximately 30 minutes to complete. This comprehensive questionnaire package is necessary to measure factors implicated in body image development and maintenance, and to assess group program outcomes. These questionnaires will be administered prior to participating in the groups, half way through group participation (4 weeks) and at the end of the program. You will also be asked to complete the set of questionnaire 3 months following the completion of the group program. These questionnaires will be mailed to you with a paid reply envelope.

Group Allocation

Once you are deemed to be eligible to participate in the study and you agree to participate, you will be randomly allocated to one of two groups.

Participants allocated to both the Combined CBT and Mindfulness Skills Group and the Mindfulness Skills Group will be offered an 8-week program incorporating CBT and mindfulness skills and mindfulness only exercises specific to accepting your body and improving your body image satisfaction. The groups will be facilitated by a provisional psychologist and a clinical psychologist who are trained in the use of CBT and Mindfulness for accepting your body and improving overall psychological well-being. Both programs will consist of eight, 2 hour session conducted on a weekly basis.

What are the risks associated with participation?

It is possible that you may not benefit at all from participation in one of the groups. However, it is anticipated that no harm will come from participating in the groups. It is anticipated that risks and disadvantages with participating in the study will be limited as the study has been designed to reduce any obvious risks associated with participation. The skills that will be taught in the groups are aimed at improving overall knowledge and awareness of one's body and improving the overall satisfaction with your body image. Cognitive behavioural therapy skills and

mindfulness skills have been used extensively in research and in clinical practice and have shown to be effective for a number of day to day difficulties experienced. Reflection and engagement in some of the group activities and sharing information within a group can at times be anxiety-provoking and although unlikely may induce some distress. If any of the activities or completing of any questionnaires becomes distressing, you should speak to one of the group facilitators and researchers; Amanda Cvetanovski, Dr Trish Altieri, or Associate Professor David Smith as soon as possible. They will be able to discuss your concerns confidentially and suggest appropriate follow-up if required. If the assessment or involvement in the group elicits any serious risk you will be contacted immediately and appropriate referrals for needed assistance will be made.

What are the benefits associated with participation?

There are a number of benefits associated with participating in one of the groups. The assessment will allow for a better understanding of your well-being, thoughts and beliefs about your body, and areas which you can work on. In addition, you will be provided with accurate and thorough information about body image, how it develops, factors that contribute to developing a positive or negative body image and the impact body image dissatisfaction can have on your day to day life. By participating in one of the research groups, you will also learn new skills (CBT and mindfulness skills) that will help you accept your body and improve your satisfaction. Also, these skills are transferable and can be used to deal with a number of life stressors that often present themselves in day to day life. You will learn more helpful ways of dealing with unpleasant and difficult thoughts and facilitate greater acceptance of yourself and others.

What will happen to the information I provide?

All data will be kept strictly confidential and will be secured at all times during the research, with only the project investigators having access to the information you provide. The names of people participating in the study will not be associated with either answers to questionnaires or information gathered throughout the intervention. Data will be stored in the locked archives at the RMIT University Bundoora West Campus for the standard 5 year period, and then it will be destroyed. Any information that you provide can be disclosed only if (1) it is to protect you or others from immediate and identifiable harm, (2) a court order is produced, or (3) you provide the researchers with written permission. The data obtained from this project will form part of the Primary Investigator's Doctoral Thesis and may also feature in journal publications, presentations and conferences, however only the group data will be used and under no circumstances will individual scores be reported.

What are my rights as a participant?

Your participation in this program is completely voluntary. Please note that you can withdraw from the project at any time. If you do choose to withdraw, all unprocessed information already obtained from you will not be used. You can also expect any questions you have about the study to be answered at any time throughout the study.

Who should I contact if I have any questions?

If you have any questions regarding this study, please feel free to contact Amanda Cvetanovski via email at amanda.cvetanovski@rmit.edu.au . Alternatively, you may contact Associate Professor Dr David Smith on 9925 7523 or via email at david.smith@rmit.edu.au or Dr Patricia Altieri on 9925 7722 or via email at trish.altieri@rmit.edu.au.

If you have any complaints or queries that the researcher has not been able to answer to your satisfaction, you may contact the Executive Officer Peter Burke at RMIT Human Research Ethics Committee, Research and Innovation, RMIT University, Melbourne, 3001 (Ph: 9925 6597, e-mail: peter.burke@rmit.edu.au).

Yours sincerely,

Amanda Cvetanovski
B.Sc.Sc. (Psych)
B.A.Sc (Hons)

A/Prof David Smith
B.B.Sc (Hons),
MPsych (Clin)

Dr Trish Altieri
B.B.Sc., Mpsych
PhD

PhD

Any complaints about your participation in this project may be directed to the Executive Officer, RMIT Human Research Ethics Committee, Research & Innovation, RMIT, GPO Box 2476V, Melbourne, 3001. The telephone number is (03) 9925 2251.

Details of the complaints procedure are available from the above address.

Appendix L – Informed Consent Form - Study Two.

Consent forms for participant copy

Participant Copy

Prescribed Consent Form For Persons Participating In Research Projects Involving Interviews, Interventions, Questionnaires or Disclosure of Personal Information

Portfolio	Science, Engineering and Health		
School of	Health Sciences		
Name of participant:			
Project Title:	Mindfulness and Cognitive Behavioural Therapy Skills for Accepting your Body: An 8-Week Group Program		
Name(s) of investigators:	Amanda Cvetanovski	Phone:	99257603
	A/Prof Dr David Smith	Phone:	99257523
	Dr Patricia Altieri	Phone:	99257722

1. I have received a statement explaining the interview/questionnaire involved in this project. I have received a statement explaining the group sessions involved in this project that I would like to participate in.
2. I consent to participate in the above project, the particulars of which - including details of the interviews, group sessions, or questionnaires - have been explained to me.
3. I authorise the investigator or his or her assistant to interview me or administer a questionnaire.
4. I acknowledge that:
 - (a) Having read Plain Language Statement, I agree to the general purpose, methods and demands of the study.
 - (b) I have been informed that I am free to withdraw from the project at any time and to withdraw any unprocessed data previously supplied.
 - (c) The project is for the purpose of research and/or teaching. It may not be of direct benefit to me.
 - (d) The privacy of the personal information I provide will be safeguarded and only disclosed where I have consented to the disclosure or as required by law.
 - (e) The security of the research data is assured during and after completion of the study. The data collected during the study may be published. Any information which will identify me will not be used.

Participant:

Date:

(Signature)

Any complaints about your participation in this project may be directed to the Executive Officer, RMIT Human Research Ethics Committee, Research & Innovation, RMIT, GPO Box 2476V, Melbourne, 3001. The telephone number is (03) 9925 2251. Details of the complaints procedure are available from the above address.

Appendix M: Inference by Eye Visual Inspection Instructions and Criteria

Dear Rater,

Thank you again for volunteering to participate as a visual inspector for this research project. Please find below the instructions on how to complete the visual inspection task.

Each graph represents the 1 participant's scores on one particular variable (42-45 variables in total). Each participant has three scores, which represent their obtained score at pre-intervention (baseline), post-intervention, and 3-month follow-up. Standard Error of Measurement (SEM) bars have also been included. These show the range in which we can be 95% confident that the participant's true score lies. You are required to assess the level of change from:

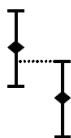
- a) Baseline to Post-intervention
- b) Post-intervention to Follow-up
- c) Baseline to Follow-up

Please use the criteria below to assess the level of change each participant has achieved on each of the variables.

Substantial change in data shows that the intervention resulted in a significant increase or decrease in the variable (increase towards the maximum possible score; decrease towards the minimum possible score). There is a gap between the Standard Error of Measurement bars.



Moderate change in data shows that the intervention resulted in a clear increase to decrease in the variable; but the change is not sufficient to be considered substantial. There is minimal overlap between the Standard Error of Measurement bars (i.e., the end of one SEM bar does not overlap past the mid-point of the other SEM bar).



No change in data shows that the intervention resulted in no change in the variable across time. There is significant overlap between the Standard Error of Measurement bars (i.e., the end of one SEM bar does overlap past the mid-point of the other SEM bar).



Please complete the attached sheets for each variable (1 to 42-45), indicating the level of change you believe the data best represents. Thank you.