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Rumination as a Psychological Risk Factor for Body Dissatisfaction in Middle-Aged Women

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Rumination as a Psychological Risk Factor for Body Dissatisfaction in Middle-Aged Women

by

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A THESIS

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Abstract

In a society that promotes anti-aging, sociocultural pressures for a young and thin body type negatively affects body image and mental health in aging women. However, little is known about how women in middle adulthood experience body dissatisfaction. Given that cognitive appraisal is a component of body dissatisfaction, this study aimed to investigate whether perseverative negative thinking about one's body, assessed by ruminative brooding and reflection, contributed to body dissatisfaction in midlife women. In order to better understand the link between rumination and body dissatisfaction, depression, trait anxiety, self-esteem, and quality of life were utilized as mediators. A sample of 351 women between 40 to 65 years of age from the United States were recruited from Amazon Mechanical Turk and completed several self-report measures. The findings revealed that ruminative brooding significantly predicted body dissatisfaction, compared to ruminative reflection. Additionally, depression, trait anxiety, self-esteem, and quality of life partially mediated the relationship between ruminative brooding and body dissatisfaction. The findings suggested that ruminative brooding might be an underlying mechanism of body dissatisfaction in middle-aged women. Implications for counselling and research highlight the importance of addressing negative self-focused thinking about one's body and its potential consequences.

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Chapter One: Introduction

There has been significant growth in the field of body image research over the past 70 years. Body image is a prominent construct in Western societies that is increasingly becoming appearance-focused (Cash & Smolak, 2011). A commonly accepted definition of body image is a multidimensional construct that reflects perceptual, affective, behavioural, and cognitive facets about one's physical appearance (Cash, Ancis, & Strachan, 1997; Cash & Smolak, 2011). Perceptual body image refers to the accuracy one perceives their body size (Cash & Smolak, 2011). The affective component of body image involves the feelings a person has towards their body, while the behavioural component includes the engagement of specific actions (e.g., body checking) as a result of one's body and appearance (Cash & Smolak, 2011). The cognitive aspect of body image involves thoughts and beliefs that individuals hold concerning their body appearance (Cash & Smolak, 2011). Body image can be divided into two core facets of investment and evaluation (Cash, Phillips, Santos, & Hrabosky, 2004). Body image investment is characterized as the cognitive and behavioural importance that is allocated to one's physical appearance (Cash et al., 2004). This is also extended to engagement in behaviours that are linked to the maintenance or augmentation of appearance, such as exercise or dieting. Body evaluation refers to the evaluative thoughts and beliefs one holds about their appearance, such as the level of satisfaction or dissatisfaction with their body. Body image is considered a subjective, rather than objective, evaluation of one's appearance or body and is subject to change (Grogan, 2006). In fact, the image held about one's body might be distinct from the reality of a person's body shape (Tatangelo, McCabe, & Ricciardelli, 2015). This divergence between one's actual body and one's ideal body appearance can result in body dissatisfaction (Tatangelo et al., 2015).

Body dissatisfaction can be found on a spectrum from a mild dislike about a certain body part to distress linked with a desire to change the body (Tatangelo et al., 2015). This

dissatisfaction can be narrowed down to a particular body part or overall physical appearance, shape, and weight (Burke, Schaefer, & Thompson, 2012; Tatangelo et al., 2015). Other terms that are used interchangeably with body dissatisfaction are negative body image, body image distortion, body esteem, body image concerns, and body image disturbance (Robert-McComb, 2008). It is important to distinguish between body dissatisfaction and body image disturbance (Burke et al., 2012). In body image disturbance, individuals can experience disruptions in cognitive, emotional, or behavioural dimensions of their body image. Such individuals experience significant emotional distress due to body dissatisfaction and might develop eating disorders, such as anorexia nervosa, bulimia nervosa, or body dysmorphic disorder (Burke et al., 2012; Hrabosky et al., 2009). Body dissatisfaction, independent of such disturbances, is not sufficient for a dysfunction or disorder (Cash et al., 2004).

Body image is deeply rooted within our historical and sociocultural environment (Cuccio, 2017). Therefore, in order to fully understand body image, an examination of the social context underlying the development of body image needs to be considered (Tatangelo et al., 2015). In Western cultures, women are subjected to sociocultural pressures that promote and reinforce the thin-body ideal, wherein appearance is viewed as desirable, attractive, and praised (Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999). Such unrealistic expectations and standards of body shape, weight, and size are nearly impossible for most women to achieve (Tatangelo et al., 2015). Consequently, women develop negative thoughts and feelings about their bodies (Tatangelo et al., 2015).

In the past 40 years, research on body image was biased towards younger women, due to a history in clinical psychology and psychiatry that focused on eating disorders in adolescents and younger females (Orbach, 1993; Tiggemann, 2004). Body image is well-documented as

negatively affecting adolescent and younger adult females (aged 18 to 25) within Western societies (Grogan, 1999; Rozin, Bauer, & Catanese, 2003). Consequently, this reinforced the notion that body image issues were only pertinent to younger women and limited to weight and shape concerns (Cash et al., 2004). Very little research has examined the impact of aging on body image among women. There is limited evidence available regarding how women feel towards their bodies as they age (Bedford & Johnson, 2006). However, there is a consensus that body image concerns do not dissipate with age (Kilpela, Becker, Wesley, & Stewart, 2015). Rather, studies have revealed that women in their 40's and older experience body dissatisfaction (Tiggemann, 2004; Tiggemann & Lynch, 2001; Webster & Tiggemann, 2003). Indeed, there are psychosocial, cultural, physiological, behavioural, and medical factors that are implicated with the experience of body dissatisfaction among aging women (Kilpela et al., 2015). However, an area that has received limited attention is the cognitive component of body dissatisfaction, particularly the mechanism underlying dysfunctional thoughts about one's body size, shape, and weight.

Self-reflection is the process of focusing on one's thoughts, feelings, and experiences, which had gained attention in the literature nearly 30 years ago (Ingram, 1990). Research within this area was concerned with maladaptive self-reflection among individuals vulnerable to depression, anxiety, and other psychopathologies (Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008). In a meta-analysis on self-reflection, Mor and Winquist (2002) argued that rumination was the strongest form that was linked to depressive symptoms. Habitual negative thinking or rumination and its association with body dissatisfaction has been largely overlooked in the literature and is non-existent among middle-aged women. An awareness of the etiology and development of body dissatisfaction is crucial for clinicians, counselling psychologists, and

health care educators, in order to provide appropriate care and education for women who present concerns of body dissatisfaction (Gowers & Shore, 2001; Littleton, Axsom, & Pury, 2005; Weiss, 2004). Rumination is argued to contribute to the etiology of body dissatisfaction (Clark & Wilson, 2005a, 2005b), yet the nature of this relationship remains unclear. Therefore, a gap in the literature that needs to be addressed is how rumination is linked with body dissatisfaction in middle-aged women.

The Current Study

The aim of the present study was to investigate how dysfunctional thinking, specifically rumination, is associated with body dissatisfaction in midlife women in order to better understand the processes involved with the negative evaluation of one's physical appearance. The subsequent chapters in this thesis will address the literature review, methodology, results, and discussion for this study. Chapter Two comprises of the literature review which summarizes the current knowledge available on body dissatisfaction in aging women. The focus of this review will consist of: (1) theoretical perspectives towards body image and body dissatisfaction, (2) an examination of body dissatisfaction across the female lifespan from adolescence to middle adulthood, (3) an exploration of the discrete factors that are pertinent to body dissatisfaction among aging women, (4) the association between body dissatisfaction and mental health factors, and (5) an overview of rumination and its link with body dissatisfaction. Chapter Three will outline the research questions, hypotheses, measures, procedures, and proposed statistical analyses. Chapter Four presents the results of the statistical analyses, and Chapter Five will provide an interpretation of the findings in relation to the existing literature, along with a discussion of limitations, counselling implications, and directions for future research.

Chapter Two: Literature Review

There is extant literature on body image amongst younger female populations, yet research with middle-aged women remains largely a neglected area, despite documentation that adult women face a distinct myriad of factors that might lead to body dissatisfaction (Kilpela et al., 2015). Body dissatisfaction can be defined as the negative subjective evaluation of one's physical appearance (Stice & Shaw, 2002). The high prevalence of body dissatisfaction among women in Western society has become a "normative discontent," wherein disliking one's body is expected (Rodin, Silberstein, & Striegel-Moore, 1984). Body dissatisfaction has been linked with poor mental health (Griffiths et al., 2016; Mond, Rodgers, Hay, & Owen, 2011), low self-esteem (Tiggemann & Stevens, 1999), depressive affect (Reboussin et al., 2000), anxiety (Cash et al., 2004), disordered eating (Tylka, 2004), fear of aging (Gupta, 1990), and reduced quality of life (Baker & Gringart, 2009). Women who experience body dissatisfaction might feel body shame, which in turn could lead to avoidance of social situations and isolation (McLaren & Kuh, 2004). Therefore, individuals who are dissatisfied with their bodies are at a greater risk for psychological dysfunction (Peat, Peyerl, & Muehlenkamp, 2008). However, much less is understood about the perspectives of middle-aged women in relation to body image or body dissatisfaction (Hofmeier et al., 2017). Although the boundaries of what constitutes middle adulthood varies, it is commonly defined as the age period between 40 and 65 years (Penny, Bennett, & Herbert, 1994). Women in middle adulthood might be particularly vulnerable to body dissatisfaction as the aging body shifts further away from the unrealistically thin and youthful body ideal among Western culture (Saucier, 2004). The limited research has indicated that women in middle adulthood may develop or maintain body dissatisfaction (Hofmeier et al., 2017), but it is unclear how such processes occur, particularly at a cognitive level.

This chapter will provide a broad overview of body dissatisfaction among women, with a particular emphasis on cognition. An examination of prominent theoretical perspectives about body dissatisfaction will be reviewed, specifically the sociocultural and cognitive-behavioural theories. Then, literature about body dissatisfaction across the lifespan will illustrate age-related changes from childhood, adolescence, emerging adulthood, into middle adulthood. Subsequently, an understanding of aging in the context of body dissatisfaction will be explored. This will be followed with an overview of rumination, its theoretical components, and its association with body dissatisfaction in the limited available research.

Theoretical Underpinnings of Body Dissatisfaction

In the early 1900s, neurologists investigated the phenomena that altered body perception and experience due to brain injury or insult (Cash & Smolak, 2011). Henry Head was a pioneer in early body image research with his work on body schemas (Cash & Smolak, 2011). However, little consideration was given to the psychological factors that compose the crucial elements of body image during these early years of body perception research (Cash & Smolak, 2011).

Schilder (1950) argued that body image is not solely perceptual, but a psychological and sociological construct that consists of a reflection of attitudes and interactions with others. His work also focused on understanding changes in perceived body size and the effects of social interaction on body image. Schilder (1950) defined body image as the picture one formulates in the mind and how the body appears to oneself. Since the 1950s, the definition of body image broadly expanded to different meanings, including weight satisfaction, appearance satisfaction, appearance evaluation, size perception accuracy, appearance orientation, body esteem, body concern, body schema, body percept, and body satisfaction (Thompson et al., 1999). In a wider sense, body image can also incorporate one's physical, functional, and biological capabilities, including health and fitness (Cash, 2012). The construct of body image can draw upon a wide

range of theories and perspectives, most notably the sociocultural and cognitive-behavioural model.

Sociocultural Perspectives

The sociocultural theoretical model can be viewed as a general framework for understanding body image, based on the values of society, that holds four main components: (1) there are societal standards of beauty within a specific culture, that are (2) transmitted through different sociocultural channels, (3) such beauty ideals are then internalized by people, which will produce (4) a satisfaction or dissatisfaction with physical appearance as a function of whether individuals meet or do not meet those societal standards (Cash & Smolak, 2011). In current Western society, there is a consensus that in order to meet standards of beauty, women must be young, tall, large-breasted, mildly tanned, with clear skin, and, most importantly, thin. These ideals are reinforced through the media, family, and peers. Although this thin-youthful ideal is largely unattainable by realistic and healthy means, it has become an accepted norm within society (Cash & Smolak, 2011). Such internalization is present from early childhood and increases into early adolescence (Harter, 2006). These unrealistic beauty expectations create a losing battle for women to achieve, leaving them to feel perpetually disappointed, which might lead to body dissatisfaction. The sociocultural model is not limited to body shape and weight, but can also be applied to other attributes of the body (Cash & Smolak, 2011).

The sociocultural perspective also extends to other models, including social comparison theory (Saunders & Frazier, 2017). Festinger's (1954) social comparison theory suggests that individuals participate in continuous comparisons of their abilities and opinions with others in their social environment that inform them about their position or standing on certain dimensions, including body image. Individuals might perform upward or downward social comparisons, on

body image or other characteristics. In upward comparisons, individuals compare themselves to others that are perceived as better, producing negative affect and body dissatisfaction (Festinger, 1954). Conversely, downward comparisons consist of individuals who compare themselves to others that are perceived as worse, provoking positive affect and greater self-esteem (Festinger, 1954). In the context of body image, individuals will compare body shape, weight, and overall physical appearance to others (Burke et al., 2012). The tendency to engage in social comparisons is found to be a contributor of body dissatisfaction (Halliwell & Harvey, 2006). Peat and colleagues (2008) argued that middle-aged and older-women might engage in downward comparison to their less attractive peers, in turn, boosting their self opinions, while those who take part in upward comparison with younger women experience body dissatisfaction. Kozar and Damhorst (2009) showed that women aged 30 to 80 engaged in less comparisons with fashion models with increasing age. However, women with higher levels of body dissatisfaction were more likely to engage in comparisons (Kipela et al., 2015). Slevec and Tiggemann (2011) found that in a sample of women aged 35 to 55, social comparison, aging anxiety, and appearance investment mediated the negative effects of media exposure on body image. Thus, aging women who internalize the thin-ideal and perform comparisons with others are at greatest risk for body dissatisfaction (Kipela et al., 2015). However, past research has largely taken a sociocultural lens in regards to pressure for thinness and has ignored the cognitive processes that are implicated in body dissatisfaction (Saunders & Frazier, 2017).

Cognitive-Behavioural Perspectives

In 2002, Thomas Cash proposed a cognitive-behavioural model of body image development. According to Cash (2012), the appearance component of body image entails attitudes towards one's appearance and perceptions of aspects of one's appearance (e.g., mental

representations of one's size, shape, weight, and facial features). The perceptual aspect of body image refers to the degree to which an individual can evaluate their appearance accurately on some physical dimension. Body image attitudes are viewed as multifaceted and complex. Similar to any attitude, body image-related attitudes are dispositional ways of thinking, feeling, and behaving in relation to one's physical appearance (Cash, 2012). Body dissatisfaction can refer to a specific part of one's body, for instance legs, waist, or hips, and/or how one's body is viewed holistically (Knight, 2002).

From a cognitive behavioural model, there is no singular theory but rather interrelated concepts and empirical evidence. According to this viewpoint, Cash (2012) conceptualized body image holistically as encompassing historical and developmental factors, along with proximal factors. The distinction between historical and proximal factors is the former's emphasis on social learning about the importance of physical appearance and the latter's focus on cognition and emotion (Cash & Smolak, 2011). Historical and developmental influences are characterized by socialization about the meaning of physical appearance and a person's body-related experiences in childhood and adolescence (Cash, 2012). Historical factors refer to past events, experiences, and attributes that can predispose or affect cognition, emotion, and behaviour towards the body (Cash & Smolak, 2011). This influence is seen as an interaction between the individual and environment that occurs in the context of social, emotional, cognitive, and physical development (Cash, 2012). There are four major categories of historical and developmental determinants: (1) cultural socialization about the meaning of physical appearance and one's body, (2) interpersonal experiences from family and peer influences, (3) physical attributes and changes (both genetic and environmental), as well as (4) personality factors that indirectly influence how a person views and reacts to their own body (Cash, 2012). Around the

world, cultures convey messages regarding values and standards about physical appearance. These messages express ideas about physical attractiveness and unattractiveness, as well as gender-based expectations about feminine and masculine attributes (Cash & Smolak, 2011). As a result, cultural messages are internalized by individuals and impact how individuals construct and respond to their appearance (Cash & Smolak, 2011). The transmission of these cultural messages is beyond solely media exposure and extends to social interactions; the verbal and non-verbal communication of opinions and expectations from family, friends, peers, and strangers (Cash & Smolak, 2011). Body image evaluation is also influenced by one's actual physical attributes and how they meet societal standards. Moreover, body image evaluation is mediated by social feedback (e.g., more physically attractive people are treated more favourably). It is important to note that physical characteristics undergo physiological changes accompanied with aging. Lastly, personality factors can serve either as risk or resiliency factors for body image development. For instance, poor self-esteem might increase one's vulnerability to negative body image (Cash & Smolak, 2011).

Proximal body image factors comprise of precipitating and preserving influences on body image, consisting of internal dialogue, emotions, and self-regulatory actions (Cash & Smolak, 2011). Certain external situations or internal events might activate self-schemas about one's appearance, which are defined as cognitive generalizations about self that organize and guide information about the self (Markus, 1977, p. 64). Individuals that attend to their self-schemas might concentrate or place greater value on physical appearance. In turn, internal dialogues are formed that comprise of thoughts, emotions, and interpretations about one's appearance (Cash & Smolak, 2011). Individuals might develop disruptions in their body image attitudes and self-schemas that are flawed and habitual. This might reflect cognitive distortions or errors in

thinking. In order to cope with potentially distressing body image thoughts and emotions, individuals can engage in either healthy, proactive behaviours not to conceal or fix one's physical appearance, while others might react with avoidant and body-concealing behaviours (Cash & Smolak, 2011).

In summary, the sociocultural perspective describes body image in the context of societal standards of beauty within culture and how those messages are transmitted and internalized. The social comparison theory posits that individuals will compare their body shape and weight with others (Burke et al., 2012), which can contribute to body dissatisfaction (Halliwell & Harvey, 2006). Cognition is one of the central features of body image attitude and how individuals think and evaluate their body and self. The cognitive-behavioural model encompasses two major components: First, historical and developmental factors that highlight the interplay between the individual and environmental forces (cultural socialization, interpersonal relationships, and personality traits) and secondly, proximal factors regarding one's internal dialogue and self-schemas about physical appearance (Cash & Smolak, 2011). The cognitive-behavioural model is widely accepted as an explanation for body image dissatisfaction (Burke et al., 2012).

Body Dissatisfaction Across the Lifespan

Research suggests that women's attitudes towards their own body is established early in life and it becomes a stable facet of their identity, regardless of age-related differences (Paxton & Phythian, 1999). There is strong evidence to suggest that body dissatisfaction is present in childhood, adolescence, young adulthood, and middle adulthood among women.

Childhood

As early as age 3, children have begun to internalize body size stereotypes (Harringer, Calogero, Witherington, & Smith, 2010; Spiel, Paxton, & Yager, 2012) and have negative attitudes towards a larger body, showing preference for a thinner body shape (Harringer et al.,

2010; Tremblay, Lovsin, Zecevic, & Lariviere, 2011). By 5 years of age, children begin to express body dissatisfaction (Davison, Markey, & Birch, 2000). Harriger and colleagues (2010) found that girls between 3 to 5 years old linked negative adjectives with heavier figures and positive adjectives with thinner figures, providing support for the notion that girls as early as 3 years old are becoming emotionally invested in the thin-body ideal. These findings are echoed in other studies, wherein preschoolers aged 4 or younger preferred thinner over larger body types (Holub, 2008; Spiel et al., 2012) and girls aged 3.5 and 5.5 years old exhibited more positive attitudes toward thin or averaged-shape dolls than fat dolls (Worobey & Worobey, 2004). It is noted that an examination of body dissatisfaction among preschool children is challenging due to developmental differences in their capability to accurately perceive their body size and how it compares to an idealized model (Dunphy-Lelii, Hooley, McGivern, Guha, & Skouteris, 2014). Yet, other researchers argued that young children can perceive their body image as accurately as adults (Tremblay et al., 2011). Furthermore, it is suggested that children's inaccuracies about their perception of body image is not an outcome of developmental limitations (Tremblay et al., 2011). Such unhappiness with physical appearance continues in children aged 6 to 12 (McCabe & Ricciardelli, 2005; Ricciardelli & McCabe, 2001; Ricciardelli, McCabe, Holt, & Finemore, 2003). There are mixed findings regarding gender differences in body dissatisfaction during childhood, wherein some studies argued that girls experience greater body dissatisfaction than boys (Ambrosi-Randic, 2000; Tremblay et al., 2011), while others suggested there are no gender differences (Hendy, Gustitus, & Leitzel-Schwalm, 2001; Lowes & Tiggemann, 2003). Regardless, this internalization of the thin-ideal remains stable into adolescence (Brown & Slaughter, 2011; Sands & Wardle, 2003).

Adolescence

Adolescence is the transition from childhood to adulthood. Among adolescent girls, it signals bodily changes following the onset of puberty that can influence body image (Wertheim & Paxton, 2011). Additionally, there are considerable cognitive and social changes that heighten awareness of body shape and weight-related concerns among adolescent girls (Alta, Ludden, & Lally, 2007). There is substantial empirical evidence that body dissatisfaction is highly prevalent in adolescent girls compared to boys (Eisenberg, Neumark-Sztainer, & Paxton, 2006; Muth & Cash, 1997). Adolescent girls are found to internalize and accept the thin-body standards presented through media exposure (Kostanski, Fisher, & Gullone, 2004). Body dissatisfaction is observed to increase from early adolescence through middle adolescence (Bearman, Martinez, & Stice, 2016; Holsen, Kraft, & Roysamb 2001; Gardner, Stark, Friedman, & Jackson, 2000; Tiggemann, 2005). However, studies yielded mixed evidence of the trajectory of body dissatisfaction from middle adolescence into early young adulthood. Researchers have argued that body dissatisfaction increases into young adulthood (Bearman et al., 2016; Gardner et al., 2000; Rosenblum & Lewis, 1999), while others have suggested consistent levels of dissatisfaction (von Soest & Wichstrom, 2009) or reduced body dissatisfaction (Eisenberg et al., 2006; Holsen et al., 2001). Bucchianeri, Arikian, Hannan, Eisenberg, and Neumark-Sztainer (2016) conducted a 10-year longitudinal study of 1902 early adolescent girls and boys (average age of 12.8) into young adulthood (average age of 23.2), who were ethnically and socioeconomically diverse. The researchers found that body dissatisfaction increased from middle school to high school and continued to increase into young adulthood. When controlling for body mass index (closely linked with body dissatisfaction), body dissatisfaction remained prevalent among females and males. In addition, females reported higher body dissatisfaction

than males (Bucchianeri et al., 2016). Other longitudinal studies focused on alternative predictive factors of body dissatisfaction among adolescent girls and boys and revealed that socioeconomic status, friend dieting and teasing, depression, and self-esteem were associated with dissatisfaction (Paxton, Eisenberg, & Neumark-Sztainer, 2006). The thin-ideal internalization was not found to be a risk factor for body dissatisfaction in some studies (Wojtowicz & von Ranson, 2012), while other research provided support for dissatisfaction (Stice & Whitenton, 2002).

Emerging Adulthood

Arnett (2004) suggested that emerging adulthood is considered a separate period of life for individuals aged 18 to 24 characterized by transitions of increased autonomy in decision making and adult responsibilities. This developmental period also denotes exploration of self-identity and ideology (Nelson, Story, Larson, Neumark-Sztainer, & Lytle, 2008). Poor body image might hinder a healthy transition into young adulthood (Quick, Eisenberg, Bucchianeri, & Neumark-Sztainer, 2013). Women in emerging adulthood typically reported higher body dissatisfaction in comparison to men (Muth & Cash, 1997). Previous studies have shown that exposure to media images of thin bodies promoted negative feelings in women about their bodies, markedly when women desire and internalize the thin-body ideal (Dittmar, Halliwell, & Stirling, 2009; Grabe, Ward, & Hyde, 2008). Research has demonstrated that body dissatisfaction increases during the freshman year of college (Delinsky & Wilson, 2008; Vohs, Heatherton, & Herrin, 2001). The current body ideal is not only thin, but also exceptionally fit (Grogan, 2006), with defined muscular features in the abdominals and upper body (Lenart, Goldberg, Bailey, Dallal, & Koff, 1995). Homan, McHugh, Wells, Watson, and King (2012) found in a sample of 128 undergraduate women that exposure of thin and fit body ideals was

linked with body dissatisfaction, however the ultra-fit body alone did not produce body dissatisfaction. The researchers suggested that body dissatisfaction induced by fitness model exposure is likely due to thinness than physique (Homan et al., 2012). Moreover, cross-sectional research indicated that body dissatisfaction in women continues from young adulthood to late adulthood (Montepare, 1996; Webster & Tiggemann, 2003; Wilcox, 1997), while other studies illustrated higher levels of body dissatisfaction in middle-adulthood compared to younger women (Davison & McCabe, 2005).

Middle Adulthood

Researchers have shown that women's dissatisfaction with their bodies is relatively stable across the lifespan (Grogan, 1999; Stevens & Tiggemann, 1998; Tiggemann & Lynch, 2001; Webster & Tiggemann, 2003). Runfola and colleagues (2013) investigated age-related differences in current and ideal body silhouettes and body dissatisfaction in 5868 women aged 25 to 89. In figural rating scales, otherwise known as silhouette scales, several silhouettes that range from very thin to very large are presented and participants are generally asked to select the silhouette closest to their own body size and one that represents their ideal size. The discrepancy between current and ideal body size is an indicator of body dissatisfaction. The researchers found that 91% of women indicated a discrepancy between their current and ideal body shape, suggesting a high prevalence of body dissatisfaction. Additionally, the researchers highlighted that women aged 35 to 44 had the highest scores for body dissatisfaction. Several studies have shown that younger and older women experience similar levels of body dissatisfaction (Lewis & Cachelin, 2001; Tiggemann & Lynch, 2001; Webster & Tiggemann, 2003). Stevens and Tiggemann (1998) used silhouette drawings and found that women aged 18 to 59 years old reported a desire to be significantly thinner than their current body shape. Other researchers have

found that middle-aged women are more dissatisfied with their bodies (Boisevert & Harrell, 2009; McKinley, 2006) and have greater concern about their appearance (Montepare, 2006) in comparison to younger women. McLaren and Kuh (2004) examined body dissatisfaction in 1026 women aged 54 years old and found that about 80% of participants reported being dissatisfied with their body weight or physical appearance. Women also reported being most dissatisfied with their current body, compared to their younger years. Other researchers have argued that body dissatisfaction decreases with age (Borland & Akram, 2007). Deeks and McCabe (2001) found that middle-aged women (aged 35 to 65) were not more dissatisfied with their bodies than younger women. Similarly, Ross and colleagues (1989) had found that older adults (aged 62 to 79) were more conscious of their physical appearance than younger adults (aged 17 to 28), however older adults evaluated their bodies more positively than younger adults. Specifically, older women might experience less body dissatisfaction due to maturity, reduced sexual objectification, life experiences that increases self-worth (Tiggemann & Lynch, 2001), and more tolerance of body diversity (Hetherington & Burnett, 1994). Thus, aging might be accompanied with a shift in priorities, where health becomes more important than appearance (McLaren, Hardy, & Kuh, 2003). These studies suggested that older women demonstrated greater contentment or acceptance of their own bodies (Grogan, 2012). Therefore, the literature on body dissatisfaction among women in middle adulthood is mixed. To add, our understanding about midlife women and their experiences of body image in relation to aging is limited (Peat et al., 2008), indicating a need to examine more closely body dissatisfaction in middle-aged women.

To summarize, there is evidence to support the presence of body dissatisfaction among women across the lifespan. From 3 to 5 years of age, girls exhibited a preference for thinner body shapes, held negative attitudes towards their own bodies, and began to show body

dissatisfaction (Davison et al., 2000; Harriger et al., 2010; Tremblay et al., 2011). Adolescence marks a period of significant bodily, cognitive, and physical changes that enhances awareness to body concerns, while media exposure and internalization of the thin-body ideals negatively impacts body evaluation (Alta et al., 2007; Kostanski et al., 2004). This negative body image is also prominent in emerging adulthood, wherein women continue to internalize not only the thin-body ideal but also a fit body standard (Grogan, 2006). Moving into middle adulthood, body dissatisfaction is still present among women, with some research demonstrating that it increases with age (Montepare, 2006; Stevens & Tiggemann, 1998; Tiggemann & Lynch, 2001).

Aging Women and Body Dissatisfaction

Normative age-related body changes are considered particularly problematic for women, due to a “double standard of aging” (Tiggemann, 2004). Indeed, women in Western society gain status and value based on physical appearance, while men gain status through wealth, intelligence, or power (Wilcox, 1997). Thinness is a desirable attribute and is associated with youth and attractiveness (Orbach, 1993). In a society that promotes anti-aging, there are greater sociocultural pressures placed on older women. The standards of beauty for women have changed continuously across time, however one aspect that has remained constant is the need for women to conform to current trends regarding their shape and weight (Grogan, 2006). As a result, women undergo cosmetic procedures, strict diets, and spend money on various cosmetics in the goal of achieving such culturally defined standards of beauty (Grogan, 2006). Research has shown that middle-aged women between 40 to 55 years old are the largest consumer group of cosmetic surgery, with some of the most common procedures including liposuction and abdominoplasty (i.e., “tummy tuck”; American Society of Plastic Surgeons, 2009). Early studies showed that body dissatisfaction was the driving impetus for surgical solutions to body manipulation and enhancement in middle-aged pre-operative women (Sarwer, Whitaker,

Wadden, & Pertschuk, 1997). Frederick and colleagues (2007) revealed that women between 18 to 65 years of age who were interested in cosmetic procedures reported poorer self-rated attractiveness, greater discomfort in a bathing suit, and frequent mirror checking. Harris (1994) found in a sample of 268 adults (aged 18 to 80) that signs of aging in both women and men were characterized as unattractive, but more so in women. Participants in this study expected women more than men to take steps to conceal signs of aging and women were more likely than men to use anti-aging products. Thus, older women might experience conflict between age and weight concerns due to societal pressures to appear slender and youthful, which can result in a fear of aging and a loss of sexuality and attractiveness (Gupta, 1990). There is a large disconnect between contemporary beauty standards portrayed in the media and the body size, weight, and shape of real women (Spitzer, Henderson, & Zivian, 1999), thus it is not surprising that most women have negative body experiences. The underlying message from advertisements can have deleterious effects for the aging person, whose body might not mirror a younger adult (Knight, 2002).

In an early study, Lamb and colleagues (1993) administered silhouette scales to 34 undergraduate students and 42 older women between 40 to 60 years of age. The researchers found that older women perceived themselves to be heavier than the younger adults. Both groups reported a thinner ideal body size than their perceived body size and both reported body dissatisfaction. Together, the research indicated that there is a disconnect between how women perceived themselves and how they believed they should look. How women think and feel about their bodies as they age is a complex interaction of internal and external changes (Hofmeier et al., 2017). Normative aging is accompanied with physical and functional changes to the body, including weight gain, hair loss, muscle atrophy, and wrinkles (Goodpaster et al., 2006). These

age-related changes in the body become incongruent with Western cultures' ideas of thinness, beauty, and youthfulness (Lamb, Jackson, Cassidy, & Priest, 1993). During pregnancy, the female body undergoes physical changes, largely marked by an increase in weight as women typically gain 25 to 35 lbs (Heinberg & Guarda, 2002). In the postpartum period, women are susceptible to an increase in fat deposition (Rodin et al., 1984). The majority of women have reported being dissatisfied with their shape and weight post-partum (Baker, Carter, Cohen, & Brownell, 1999). A possible explanation is that women hold an expectation that they will return to their pre-pregnancy body (Tiggemann, 2004). Transition into middle adulthood among women is also associated with psychological, social, and biological changes, which are akin to, in certain respects, puberty and menarche (Lewis & Cachelin, 2001), producing or maintaining eating and weight-related concerns (Gupta, 1990). During menopause (12 consecutive months without menses), there is a change in hormonal levels along with a decrease in metabolic rate, which are linked with weight gain, and a redistribution of weight to the waist and hips (Voda, Christy, & Morgan, 1991). Along with these bodily changes during menopause, there is a modification in the way women think about their bodies (Chrisler & Ghiz, 1993; Grogan, 2012). Women might be expected to be less positive about their postmenopausal bodies (Grogan, 2012). However, the literature on the influence of menopausal status on body image has been both limited and mixed (Slevec & Tiggemann, 2011). Deeks and McCabe (2001) found that post-menopausal women reported significantly fewer positive attitudes about their physical appearance than pre-menopausal women. However, the researchers did not examine whether menopausal status or age contributed to the results. In contrast, McLaren, Hardy, and Kuh (2003) found that women who were post-menopausal or who started hormone replacement therapy before menopause were more satisfied with their weight than pre-menopausal women. However, the findings were

partially explained by the women in the sample being thinner. As well, middle-aged adults are more likely to experience significant life stress (e.g., death of a loved one or empty nest) and depression (Midlarsky & Nitzburg, 2008).

Together, women in middle adulthood experience a multitude of events that are distinct to this developmental period, including menopause and major life transitions and events (e.g., divorce). Because of age-normative physiological, social, and psychological changes, coupled with a Western culture that promotes anti-aging and youthfulness, middle-aged women might be particularly vulnerable to body dissatisfaction (Hofmeier et al., 2017).

Body Dissatisfaction and Psychological Functioning

Body image plays a pivotal role in the development of psychological health (Tatangelo et al., 2015). Positive body image can nurture mental health and well-being, while in contrast, negative body image contributes to dysfunctional behavioural patterns and psychological concerns (Tatangelo et al., 2015). Behaviourally, body dissatisfaction can lead to weight control strategies, including dieting, excessive exercise, and restricted food intake (Tatangelo et al., 2015). Research supports the link between body dissatisfaction and mental health among women (Haines & Neumark-Sztainer, 2006) including depression, anxiety, self-esteem, and quality of life, each of which will be discussed next.

Depression

Body dissatisfaction is associated with depressed mood, wherein greater reported body dissatisfaction is typically linked with greater depressive symptomatology (Bearman & Stice, 2008; Chen, Guo, Gong, & Xiao, 2015). There is substantial empirical support in younger female populations that revealed an association between depression and body dissatisfaction (Bearman & Stice, 2008; Dooley, Fitzgerald, & Giollabhui, 2015; Murray, Rieger, & Byrne, 2015; Stice, Hayward, Cameron, Killen, & Taylor, 2000). However, the association between body

dissatisfaction and depression in middle-aged women is less understood due to lack of research. This is particularly important because the prevalence of depression and anxiety is highest in younger and middle-aged adults (Reeves et al., 2011). Jackson and colleagues (2014) were the first to assess the link between body dissatisfaction and depression in 405 midlife women (42 to 52 years of age), who completed a figure-rating scale and a measure of depression. The researchers found that women with body dissatisfaction and perceived unattractiveness also reported clinically significant depressive symptoms compared to women who were satisfied with their bodies (Jackson et al., 2014).

Researchers have proposed two models to explain the interrelationship between body dissatisfaction and depressive symptoms: the body dissatisfaction-driven hypothesis and the internalizing-driven hypothesis (Patalay, Sharpe, & Wolpert, 2015). The body dissatisfaction-driven hypothesis, rooted in sociocultural models of body image, posits that body dissatisfaction is a risk factor for subsequent depression through direct mechanisms (e.g., appearance is a factor of self-concept) and indirect mechanisms (e.g., manipulating appearance by dieting; Stice & Bearman, 2001; van den Berg, Thompson, Obremski-Brandon, & Covert, 2002). According to the internalizing-driven hypothesis, depression and other internalizing symptoms, such as anxiety, are risk factors for later body dissatisfaction (Presnell, Bearman, & Stice, 2004). This hypothesis suggests that negative self-evaluation might lead to negative body image (Presnell et al., 2004). The aforementioned hypotheses are not mutually exclusive (Sharpe et al., 2018). Additionally, there is the possibility of a bidirectional hypothesis, wherein body dissatisfaction and depression are mutually reinforced and the directionality changes over the course of development (Sharpe et al., 2018). However, little is known about the association between body dissatisfaction and depression in midlife women (Jackson et al., 2014).

Anxiety

Anxiety can induce unpleasant feelings, including worry, uncertainty, distress, fear, and loss of control (Turel et al., 2018). There is evidence to suggest that anxiety about the body might be a significant factor in eating disturbances, wherein populations with eating disorders have elevated anxiety levels (Leon, Carrol, Chernyk, & Finn, 1985; Orleans & Barnett, 1984; Wallach & Lowenkopf, 1984). There is also evidence to support the notion of body image anxiety, akin to generalized anxiety, as comprised of two levels: trait and state anxiety (Reed, Thompson, Brannick, & William, 1991; Spielberger, 1966, 1983). Trait anxiety is a stable tendency or trait to experience and report negative emotions, such as worry, across different situations, while state anxiety is a transient psychological and physiological response to adverse situations (Leal, Goes, Ferreira da Silva, & Teixeira-Silva, 2017). General body image disturbance is found to be associated with eating disturbance, depression, and poorer self-esteem (Cash & Pruzinsky, 1990). Anxiety is also linked with body image disturbance, which is higher among college women than men (Cash et al., 2004). In general, the notion of aging produces more anxiety for women than men (Cummings, Kropf, & DeWeaver, 2000; Lynch, 2000). Such anxiety might be rooted in several possibilities, including changes in physical appearance, fertility loss, and health complications (Barrett & Robbins, 2008). Cameron and Ferraro (2004) found that higher levels of trait anxiety were linked with greater body dissatisfaction. A distinct factor relevant to women in middle adulthood is aging anxiety (Slevec & Tiggemann, 2010). Aging anxiety is characterized as the anticipatory loss related to aging, which largely focuses on the perceived changes to physical appearance (Lasher & Faulkender, 1993). Anxiety about aging is distinct from general anxiety, wherein the latter is linked with psychological and physiological distress (Lasher & Faulkender, 1993; Lynch, 2000). A fear of aging is linked with maladaptive

weight-related behaviours in middle-aged women, such as disordered eating (Gupta, 1995). Aging anxiety acts on a larger, systemic level that includes sociocultural factors, such as mass media (Thompson et al., 1999). Slevic and Tiggemann (2010) found that, in women aged 35 to 55, aging anxiety was a unique predictor of cosmetic surgery. However, these findings are not consistent with findings of a study conducted by Barrett and Robbins (2008), who found that older women experienced less anxiety than their younger counterparts about the consequences of aging, specifically health, reproductive potential, and attractiveness. Research has also suggested that greater body image disturbance is linked with body dissatisfaction and poorer quality of life (Cash et al., 2004). Therefore, age-normative changes in women is associated with anxiety (Lynch, 2000), and women who experience more anxious personality traits might experience greater body dissatisfaction (Cameron & Ferraro, 2004).

Self-Esteem

Self-esteem is considered to be a pivotal component in the development of body image (Cash, 2002). Self-esteem can be described as the overall affective evaluation of one's self-worth (Blascovich & Tomaka, 1991). Past studies have found an association between body image and self-esteem in women older than 30 years old (Baker & Gringart, 2009; Paa & Larson, 1998; Paxton & Phythian, 1999; Pliner, Chaiken, & Flett, 1990; Webster & Tiggemann, 2003; Wilcox, 1997). Robins and colleagues (2002) conducted a large cross-sectional study of 326,641 individuals between 9 to 90 years of age and found that, among adult women and men, self-esteem gradually increased until 65 years of age and then sharply declined after age 70. Paxton and Phythian (1999) found that physical appearance is linked with self-esteem in women aged 40 to 79 years old. Tiggemann and Stevens (1999) examined the relationship between body dissatisfaction and self-esteem across the adult lifespan and found that middle-aged women

between 30 to 49 years old showed a stronger negative relationship than their younger and older counterparts. The researchers suggested that body appearance-related self-esteem changes with age (Tiggemann & Stevens, 1999). In contrast, Webster and Tiggemann (2003) found, in a sample of 106 women between 20 to 65 years of age, that body dissatisfaction was associated with self-esteem, yet the strength of the relationship diminished with increasing age. The authors concluded that women might develop cognitive strategies as protective factors to their self-esteem against body dissatisfaction (Webster & Tiggemann, 2003). Similarly, Wilcox (1997) found, in a sample of 144 women and men aged 20 to 80 years old, that self-esteem did not differ according to age or gender, providing support that body attitudes might be stable across the lifespan. Despite contrary evidence regarding the relationship between self-esteem and body dissatisfaction with increasing age, it is argued that self-esteem and body image plays a significant role in one's general well-being (Cash & Fleming, 2002).

Quality of Life

The World Health Organization (WHO; 1996) characterizes quality of life as an individuals' evaluation of their position as a function of values, culture, goals, standards, and concerns. Research has increasingly shown that an individual's well-being and quality of life is beyond physical health but also relies on psychological functioning (Camfield & Skevington, 2008; Hoffman & Driscoll, 2000; Skevington, Lotfy, & O'Connell, 2004). Past studies demonstrated that body dissatisfaction negatively impacts quality of life across different domains, specifically, psychosocial functioning and mental health (Liimakka, 2014; Mond et al., 2013; Pimenta, Sanchez-Villegas, Bes-Rastrollo, López, & Martínez-González, 2009). In a study conducted by Wilson, Latner, and Hayashi (2013), higher body dissatisfaction was linked with poorer physical and mental health-related quality of life and psychosocial functioning in a

sample of 414 undergraduate men and women. Mond and colleagues (2013) conducted a large-scale study on 5,255 women between 18 to 42 years of age and found that 86.9% of participants reported a degree of dissatisfaction with their body weight and shape and 39.4% reported moderate to marked body dissatisfaction. The researchers also found that higher levels of body dissatisfaction were linked with poorer quality of life (Mond et al., 2013). Few studies have investigated the link between quality of life and body image in middle-aged women or how reduced quality of life uniquely concerns midlife women (Minniti et al., 2004). In addition, the mechanisms underlying the link between reduced quality of life and negative evaluations of one's body image remain unknown (Duarte, Ferriera, Trindade, & Pinto-Gouveia, 2015).

To summarize, body dissatisfaction negatively influences mental health status in middle-aged women (Haines & Neumark-Sztainer, 2006). Specifically, greater reported body dissatisfaction is associated with greater depressive symptomatology (Bearman & Stice, 2008; Jackson et al., 2014). As women age, anxiety towards changes in physical appearance might be present (Lynch, 2000). Indeed, body dissatisfaction is found to be linked with anxiety, specifically trait anxiety or a general tendency towards worrying (Cameron & Ferraro, 2004). Research on self-esteem in middle-aged women has received much attention, however there are contrasting views about reduced and stable self-esteem in relation to body dissatisfaction and age (Tiggemann & Stevens, 1999; Webster & Tiggemann, 2003). Lastly, there is preliminary support for a link between reduced quality of life and body dissatisfaction in middle-aged women (Minniti et al., 2004; Mond et al., 2013).

Rumination and Body Dissatisfaction

Although the literature provides some support for body dissatisfaction and its negative psychological outcomes in midlife women, less is known about the process involved in women's negative thinking and evaluation of their bodies. It is argued that the effects of contextual factors

on body dissatisfaction affect individuals differently based on their cognitive styles or biases (Rodgers & Dubois, 2016). Schemas related to shape, weight, and appearance influence the processing of information about body image (Cash & Smolak, 2011). Body image schemas might involve selective attention to body image information in the environment. It is argued that these selective cognitive processes lead to increased negative emotions regarding body image and unhealthy behaviours in order to change weight and shape, such as disordered eating (Cash & Smolak, 2011). However, there is a lack of emphasis on how dysfunctional thinking itself contributes to body dissatisfaction.

Fat Talk

There is evidence that negative conversation about appearance, or “fat talk”, that occurs in the context of female relationships, is linked to body dissatisfaction and conformity to social norms of thinness (Nichter & Vuckovic, 1994; Warren, Holland, Billings, & Parker, 2012). Fat talk is considered an extension of women’s confirmation in social conversations, wherein they are aware that physical appearance is important (Nichter & Vuckovic, 1994). Additional research has examined fat talk and co-rumination, which combines rumination, or a dwelling on negative thoughts and feelings, with friendships that engage in mutual self-disclosure about negative appearance dialogue (Rudiger & Winstead, 2013). Co-rumination has been linked with increased depression, anxiety, and emotional maladjustment among female children, adolescents, and younger adults (Rose, 2002; Rose, Carlson, & Waller, 2007; Rudiger & Winstead, 2013; Starr & Davila, 2009). These studies extended to research in “old talk”, a form of negative body image talk in relation to aging (e.g., “I look so old”). Becker, Diedrichs, Jankowski, and Werchan (2013) assessed old talk in 781 women between 18 to 87 years of age and found that old talk was significantly correlated with ageing appearance anxiety, body image disturbance, and eating

disorder pathology, which increased with age. Similarly, internal dialogue or dysfunctional and negative thoughts towards the body can also increase body dissatisfaction (Jones, Leung, & Harris, 2007). Having negative body-related thoughts might not be sufficient to indicate body dissatisfaction, however habitual or repetitive negative thinking may serve as a vulnerability to body dissatisfaction (Verplanken & Tangelder, 2011). In line with this, one area of research that has received limited attention is rumination.

Rumination

According to response styles theory (RST; Nolen-Hoeksema, 1991), rumination is defined as a form of repetitive and passive response to symptoms of emotional distress and the potential causes and consequences of that emotional distress. Based on RST, rumination is considered a stable, trait-like pattern of maladaptive responding to emotional distress (Nolen-Hoeksema, 2000). Individuals who ruminate remain fixated on problems and their feelings instead of actively problem-solving to change these symptoms. Based on Nolen-Hoeksema, Wisco, and Lyubomirsky (2008), rumination is a process of thinking redundantly about one's feelings and problems instead of the content of those thoughts. Rumination is considered to be associated with various maladaptive cognitive styles, such as negative attributional styles, dysfunctional attitudes, hopelessness, neuroticism, self-criticism, and pessimism (Nolen-Hoeksema et al., 2008). There are two subtypes of rumination: brooding and reflection (Treyner, Gonzalez, & Nolen-Hoeksema, 2003). Brooding refers to passive thinking about negative themes, while reflection refers to intentional thinking in relation to problem-solving. Ruminative brooding involves a negative, perseverative emphasis on self and one's problems (Nolen-Hoeksema et al., 2008). Moreover, individuals who engage in ruminative reflection attempt to gain insight into the meaning of their problems and emotions (Nolen-Hoeksema et al., 2008).

Thus, ruminative brooding is considered to be a more maladaptive form of rumination than reflection (Burwell & Shirk, 2007). Rumination over one's negative mood can contribute to the development and maintenance of depression, particularly ruminative brooding (Burwell & Shirk, 2007; Nolen-Hoeksema, 1991). There is also research that has shown an association between rumination and eating disorder pathology. For example, rumination is linked with the etiology of bulimic behaviours (Nolen-Hoeksema, Stice, Wade, & Bohon, 2007). Additionally, individuals who engage in ruminative response styles might use maladaptive behaviours to avoid self-directed ruminations, for instance binge eating (Abramson, Bardone-Cone, Vohs, Joiner, & Heatherton, 2006; Nolen-Hoeksema et al., 2007). Moreover, rumination has been shown to be a predictor of body dissatisfaction. In one study conducted by Etu and Gray (2010), 99 undergraduate women read a body image related scenario that contained negative emotions. Afterwards, the participants were randomized into two conditions, rumination or distraction. In the rumination group, participants focused on their thoughts and feelings related to the scenario, while the distraction group focused on thoughts and feelings to an unrelated event for 8 minutes. Participants also completed baseline and post-treatment measures of depression and body image distress. The researchers found that participants in the rumination group reported more state body image dissatisfaction and anxiety, providing rudimentary support for a ruminative response style in the body image domain. In another related study, Maraldo and colleagues (2016) investigated the dual-pathway model for eating disorder development and examined multiple factors, including rumination. The researchers recruited 296 female university students (average age of 19.44) and a community sample of 313 women between 18 to 65 years of age (average age of 34.74). The researchers found that rumination predicted body dissatisfaction among women and

concluded that rumination might act as a vulnerability factor for disordered eating by increasing negative affect.

Body dissatisfaction can be a product of negative thoughts about one's body appearance (Verplanken & Tangelder, 2011). The content of negative thinking about body image can be extensive, varying from negative evaluations of specific body features to beliefs that other people dislike your body (Verplanken & Velsvik, 2008). In a study conducted by Verplanken and Tangelder (2011), 303 university students (151 men and 152 women) completed several pen-and-paper questionnaires. Participants were administered a thought-listing task where they were instructed to write down negative thoughts they had about their body and asked to rate the negativity of each thought. Participants also completed the habitual index of negative thinking (HINT), which is used to measure the frequency and automaticity of negative thoughts (Verplanken, Friberg, Wang, Trafimow, & Woolf, 2007; Verplanken & Velsvik, 2008). Additional measures included explicit and implicit body dissatisfaction, eating disturbance propensity, self-esteem, snacking behaviour, and body mass index. The researchers found that habitual negative thinking about body appearance predicted implicit body dissatisfaction, and accounted for eating disturbance propensity, low self-esteem, and restrained snacking behaviour over and above cognitive content. Together, rumination specific to body image might contribute to the etiology and maintenance of body image dissatisfaction (Clark & Wilson, 2005a, 2005b; Etu & Gray, 2010).

To this end, the effects of body dissatisfaction uniquely affects individuals based on their cognitive styles (Rodgers & Dubois, 2016). According to the RST, rumination is a stable tendency toward maladaptive responding to emotional distress (Nolen-Hoeksema et al., 2008). Rumination can be further subdivided into brooding (negative, perseverative thinking about self),

and reflection (gaining insight into one's emotions and problems; Nolen-Hoeksema et al., 2008). Research has provided some support for an association between rumination and body dissatisfaction (Etu & Gray, 2010; Maraldo et al., 2016). Yet, there is a lack of research that has focused on rumination and body dissatisfaction in middle-aged women and has been able to distinguish ruminative brooding and reflection in relation to body dissatisfaction.

Summary

Middle-aged women face several risk factors that might leave them vulnerable to body dissatisfaction, including sociocultural factors (e.g., social media exposure), aging, menopause, negative life events (death of a loved one), stress, as well as changes in social relationships with family and friends (Marshall, Lengyel, & Utioh, 2012). More research is needed to elucidate the underlying mechanisms of body dissatisfaction in middle-aged women (Runfola et al., 2013). In particular, less is known about how dysfunctional thinking, particularly ruminative brooding and reflection, could contribute to body dissatisfaction. Increasing attention about rumination has been given to younger adults (Etu & Gray, 2010; Verplanken & Tangelder, 2011), while there is a paucity of research that has examined rumination in women in middle adulthood.

Chapter Three: Methods

The literature review in the previous chapter emphasized how middle-aged women are vulnerable to body dissatisfaction. However, more research is needed to elucidate the underlying mechanisms of body dissatisfaction in middle-aged women. In particular, there is a scarcity of research that has examined dysfunctional thinking, specifically ruminative brooding and reflection, and how it can contribute to body dissatisfaction. The current study investigated this gap in the literature and to the best of my knowledge has not been previously studied.

Research Question and Hypotheses

This study will address two overarching research questions: 1) *does rumination predict body dissatisfaction in midlife women?* and 2) *based on the link between body dissatisfaction and psychological factors, is depression, anxiety, self-esteem, and quality of life among women in middle adulthood a better predictor of body dissatisfaction than rumination?* The goal of this study will be to extend the current understanding about rumination and body dissatisfaction in middle-aged women. First, the current literature available on rumination in the context of body image has focused on adolescents and younger adults. Thus, this study investigated rumination in middle-aged women, which has not been previously examined in the body image field. Second, rumination was divided into its two subscales: brooding and reflection, to gain a better understanding of the cognitive processes involved in body dissatisfaction. Third, this study took into consideration psychological factors related to body dissatisfaction, specifically, depression, anxiety, self-esteem, and quality of life and its potential association with rumination.

In order to address the research questions, two hypotheses were examined. It was hypothesized that;

- a. Ruminative brooding will be a stronger predictor than ruminative reflection of body dissatisfaction in middle-aged women, and

- b. Depression, anxiety, self-esteem, and quality of life will mediate the relationship between ruminative brooding and body dissatisfaction.

Participants

Sample

A sample of 360 middle-aged women were recruited from Amazon's online experimental platform Mechanical Turk (MTurk). MTurk is a popular crowdsourcing platform where researchers and businesses can hire anonymous "workers" to complete diverse tasks or behavioural experiments (Williamson, 2016). MTurk has been utilized in experimental studies across various disciplines, including sociology, economics, computer science, and psychology (Mao et al., 2012). It has been commonly used for conducting survey experiments (Williamson, 2016). MTurk is highly desirable for several reasons: it is largely accessible to a large pool of workers that is cost and time effective, it is an automatic and streamlined process, it allows human computation through real-time interactions between workers and MTurk (Mao et al., 2012), and is shown to encompass more culturally diverse populations than commonly seen in university samples (Buhrmester, Kwang, & Gosling, 2011). Additionally, past research has been conducted on weight and shape-related issues using MTurk for recruitment and data collection (Gardner, Brown, & Boice, 2012; Pearl & Dovidio, 2014). A recent study completed on the demographics of 39,461 MTurk workers have found that 75% are from the United States, followed by 16% from India, and only 1.1% from Canada (Difallah, Filatova, Ipeirotis, 2018). Due to the predominant number of MTurk workers from the United States and to increase the generalizability of the research findings, the inclusion criteria consisted of female participants from the United States.

Recruitment

Participants were recruited from MTurk on March 6, 2019 and data was collected by March 17, 2019. A short description of the study was provided on MTurk, which outlined a 20-minute online survey about body image among middle-aged women between 40 to 65 years of age, which comprised of several questionnaires to complete. The keyword search terms that were used to describe this study were: body image, psychology, women, survey, data collection, and questionnaire. Participants who were eligible for the study were able to view the description of the study or HIT (human intelligence task) and decide whether or not they were interested in participating in the HIT (see Appendix A). Once a participant completed the HIT, the researcher authorized compensation, which is completed anonymously through the MTurk website. The qualification or inclusion criteria for all MTurk workers were female, from the United States, and a HIT approval rate (%) for all requesters' HITs greater than 90. The latter refers to MTurk workers who received a 90% or higher approval rating for completion of past HITs. Another inclusion criterion for MTurk workers was between 40 to 65 years of age. Due to the structure of the qualification requirements provided by the MTurk website, recruitment was conducted in three batches. In the first batch, 120 MTurk workers that fell within the "Age 35-45" bracket, specific to MTurk, were eligible to preview and accept the survey. Participants who viewed the study description were informed that the study is specific to women between 40 to 45 years old. In the second batch, 120 MTurk workers that fell within the "Age 45-55" bracket, another specific qualification criterion provided by MTurk, were eligible to preview and accept the survey. Since the MTurk workers in this batch met the inclusion criteria for the study, there were no revisions made to the study description. In the third batch, 120 MTurk workers that met criteria for "Age 55 or older", a criterion offered by MTurk, were able to preview and accept the

survey. The study description within this batch detailed that the study was interested in collecting data from women between 55 to 65 years of age. The purpose of modifying the study description to each batch was to improve the likelihood that participants who met the age criteria would complete the study and MTurk workers who did not fall in the age criteria would not accept.

Measures

Participants were asked to complete seven questionnaires in the online MTurk survey, which comprised of a background self-report (Health and Demographic Questionnaire), questionnaires on rumination (Ruminative Response Scale for Eating Disorders) and body dissatisfaction (Body Shape Questionnaire), and four questionnaires on psychological functioning (The Center for Epidemiologic Studies Depression Scale, Rosenberg Self-Esteem Scale, The Australian Quality of Life Instrument, and the Physical Appearance State and Trait Anxiety Scale). The details of each measure are outlined below, along with the calculated coefficient of internal consistency for items of a psychometric test that measures an underlying construct. It is suggested that an internal consistency measure of 0.8 and higher is acceptable (Kline, 2008).

Health and demographics questionnaire. This background questionnaire was used to collect data in better understanding the characteristics of the sample. Participants responded to questions about age, health, country of origin, socioeconomic status, ethnicity, marital status, and level of education (see Appendix B).

Ruminative response scale for eating disorders. The Ruminative Response Scale for Eating Disorders (RRS-ED; Cowdrey & Park, 2011) is a 9-item measure that evaluates rumination over weight, shape, and eating. This questionnaire was adapted from a 10-item subset from the Ruminative Response Scale (Nolen-Hoeksema & Morrow, 1991; Treynor et al., 2003).

There are two subscales: brooding and reflection. Six-items are used to assess brooding (e.g., “Think about a recent meal time wishing it had gone better”), and three-items that measure reflection (e.g., “write down what you think about your eating, weight and/or shape and analyse it”). Each item is assessed on a 4-point Likert scale, ranging from 1 (almost never) to 4 (almost always). All items were summed and higher scores represented greater rumination.

In a principal component analysis conducted by Cowdrey & Park (2011), 375 participants completed the RRS-ED and other eating disorder-related measures. The findings revealed two factors: brooding and reflection. These factors are consistent with the original RRS (Treyner et al., 2003). The RRS-ED demonstrated good internal consistency for the brooding factor ($\alpha = 0.89$) and moderate for the reflection factor ($\alpha = 0.63$). In test-retest reliability, 62 participants completed the assessment for a second time, which ranged from 3 to 12 weeks. The test-retest correlation coefficient for the brooding subscale was moderate to strong ($r = .65$) and moderate for the reflection subscale ($r = .48$). Convergent validity was evaluated by correlating the RRS-ED with the Eating Disorder Examination-Questionnaire (EDE-Q; Fairburn & Cooper, 1993). The results revealed positive correlations between mean brooding scores and subscales of the EDE-Q, specifically: weight concerns ($r = .70$); shape concerns ($r = .71$); eating concerns ($r = .68$); and restraint ($r = .77$). The reflection subscale had significant positive correlations with the EDE-Q subscales and the Clinical Impairment Assessment (CIA; Bohn et al., 2008).

Body shape questionnaire. The Body Shape Questionnaire (BSQ; Cooper, Taylor, Cooper, & Fairburn, 1987) is a 34-item questionnaire that evaluates dissatisfaction regarding one’s shape and weight. Participants are asked to rate on a 6-point Likert scale how often they have experienced body shape/weight-related concerns (e.g., “Have you felt ashamed about your

body?”), from 1 (never) to 4 (always). Higher BSQ scores are indicative of greater body dissatisfaction.

In the validation of the BSQ conducted by Cooper and colleagues (1987), the questionnaire was administered to four samples of women: 19 female patients with bulimia nervosa; 331 women attending two-family planning clinics, 119 female occupational therapy students; and 85 female undergraduate students. Based on the 34-item BSQ, concurrent validity was established through significant correlations between the BSQ and the EAT (Garner & Garfinkel, 1979) for bulimia nervosa patients and occupational therapy students ($r = .35$ to $.61$, respectively) and EDI ($r = .66$; Garner, Olmstead, & Polivy, 1983) for bulimia patients. In a confirmatory factor analysis (Pook, Tuschen-Caffier, & Brähler, 2008), a sample of 1080 non-clinical and 43 clinical (with a diagnosis of bulimia nervosa) females completed a German full-length version of the BSQ and seven shortened versions (Waadt, Laessle, & Thompson, 1992). The findings revealed a strong reliability among all eight versions of the BSQ (average $\alpha = 0.88$). The BSQ demonstrated high internal consistency among females, concurrent validity with other body dissatisfaction measures, and discriminated between clinical and non-clinical individuals (Cooper et al., 1987). Other research conducted by Rosen, Jones, Ramirez, and Waxman (1996), has shown that the BSQ demonstrated good test-retest reliability ($\alpha = 0.88$) and concurrent validity with several body-image measures among clinical patients (body image therapy patients and obese dieters) and non-clinical patients (undergraduate students and university staff) among men and women.

The center for epidemiologic studies depression scale. The Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977) is a 20-item measure of self-reported symptoms of depression designed for non-clinical populations. Participants are asked how they

felt and behaved in the past week (e.g., “I felt depressed”, “My sleep was restless”). Items were rated from rarely or none of the time (less than 1 day), some or a little of the time (1-2 days), occasionally or a moderate amount of time (3-4 days), and most or all of the time (5-7). Items were summed, with a possible range of scores from 0 to 60, with higher scores indicative of more depressive symptomatology.

Several studies have performed factor analysis using the CES-D. In an initial investigation, Radloff (1977) identified 4 factors: depressed affect, positive affect, somatic and delayed activity, and interpersonal difficulties. These findings were replicated by Hertzog and colleagues (1990). However, other researchers have found that a 3-factor (Manson, Ackerson, Dick, Baron, & Fleming, 1990) or 5-factor structure (Thorson & Powell, 1993) was a better fit for the data. One potential explanation for this difference is the ethnic variability of the samples utilized (Knight, Williams, McGee, & Olan, 1997). In regards to psychometric properties, the CES-D was found to have high internal consistency ($\alpha = 0.90$) among middle-aged adults from the community, aged 24 to 74 (Cosco, Prina, Stubbs, & Wu, 2017). In a similar sample of middle-aged women aged between 36 and 67, Knight and colleagues (1997) revealed a high level of reliability ($\alpha = 0.88$). Within this study, the 4-factor structure originally proposed by Radloff (1977) fit the data moderately well.

Rosenberg self-esteem scale. The Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965) is a 10-item questionnaire used to measure general feelings about oneself (e.g., “I feel that I have a number of good qualities). Items are rated on a 4-point Likert scale, ranging from 1 (strongly agree) to 4 (strongly disagree). Five items are used to measure self-competence and 5-items that measure self-liking. All the scores were summed and higher scores represented more positive self-esteem.

In a factor analysis study conducted by Alessandri and colleagues (2015), two competing models were compared. The first model is a 1-factor model of a general self-esteem factor, while the second model suggested a 2-factor structure of positive- and negative-worded items. In a sample of 11,028 men and women (aged between 15 to 85), the findings revealed that the RSES does not have a 1-factor structure, but rather three dominant latent factors: a general self-esteem factor, positive-worded items, and negative-worded items. Schmitt and Allik (2005) administered the RSES to 16,998 respondents across 53 countries and found a moderate mean reliability ($\alpha = 0.81$), which ranged from 0.45 to 0.90. The study also showed adequate mean internal reliability using split-half reliabilities of 0.73, ranging from 0.53 to 0.86.

The Australian quality of life instrument. The Australian Quality of Life Instrument (AQoL-4D; Hawthorne, Richardson, & Osborne, 1999) is a 12-item questionnaire that measures quality of life in four categories: independent living, relationships, mental health, and senses. This questionnaire was previously known as the AQoL-1 or the AQoL-15, which originally comprised of 15-items (Hawthorne, Richardson, Day, 1997). Participants are asked to rate their experience in the abovementioned categories over the past week. The ratings for each question are unique. For example, one question asked, “Thinking about your relationships with other people” and the possible ratings are “I have plenty of friends, and am never lonely”, “Although I have friends, I am occasionally lonely”, “I have some friends, but am often lonely for company”, or “I am socially isolated and feel lonely”. Each item is scored on a 5-point Likert scale and summed, with lower scores indicative of better quality of life.

In regard to psychometric properties, Hawthorne and colleagues (1997) found the AQoL-4D has appropriate internal consistency ($\alpha = 0.80$). In addition, the AQoL-4D showed content validity, construct validity, and criterion validity (Hawthorne et al., 1997).

The physical appearance state and trait anxiety scale. The Physical Appearance State and Trait Anxiety Scale (PASTAS; Reed et al., 1991) is a 32-item measure that examines anxiety about 8 weight-related (e.g., thighs) and 8 non-weight-related body sites (e.g., ears). Items are rated on a 5-point Likert scale, ranging from 0 (not at all) to 4 (exceptionally so). The state version of the questionnaire (PASTAS-State) measures current or immediate changes in the body related to anxiety, while trait (PASTAS-Trait) measures how participants generally experience anxiety about their body. Items were summed and higher scores represented greater state and trait body-related anxiety.

In an initial investigation about the validity of the PASTAS, Reed and colleagues (1991) conducted a study on 205 female undergraduate students who were administered the PASTAS and several other body-image related measures. Principal component analysis revealed two constituents: weight and non-weight scales. The weight-related items correlated with body dissatisfaction, drive for thinness, and bulimia subscales of the Eating Disorders Inventory (Garner et al., 1983), while non-weight items did not. A second sample of 53 female undergraduate students were recruited to determine test-retest reliability, which was found to be high ($r = .87$). For weight-related items and non-weight-related items, reliability was high (.89 and .80, respectively).

Body mass index. Height and weight were assessed through the health and demographic questionnaire. These measures were combined to obtain a body mass index (BMI) by dividing weight (kg) by height (m²).

Procedure

Participants were recruited through the online platform Amazon Mechanical Turk. Participants who met eligibility criteria were able to decide whether they were interested in

completing the online survey by reading the study description. If participants chose to complete the online study, a separate survey link was provided to complete the aforementioned questionnaires. The consent form, questionnaires, and debriefing form were all generated through Qualtrics. After clicking the survey link, participants were first directed to the consent form (Appendix C). The consent form outlined that participant responses would be kept confidential and anonymous. Participants could either click the option to agree to participate in the study or click the option to not participate. Participants who clicked to agree to participate indicated informed consent and then were able to move to the first questionnaire. Participants were able to withdraw from the survey by closing their browser. Once participants completed the online survey, they were provided with a debriefing page (see Appendix D), followed by a numerical code that they needed to copy into the MTurk website and hit submit in order to complete a HIT. The researcher then accepted all completed and partially completed surveys. The total completion time for this study was approximately 20 minutes. Participants received \$1 as compensation for their participation in this study, which was automatically transferred from the researchers pre-purchased HITS to the MTurk workers account. This study received approval from the Research Ethics Board at the University of Calgary.

Proposed Data Analysis

First, descriptive statistics were performed in order to summarize the characteristics of the sample on all the measured variables. To address the first hypothesis, multiple regression was performed. Multiple regression is used to predict the value of the dependent or outcome variable from several independent variables (Meyers, Gamst, & Guarino, 2013). A multiple regression is an expansion of a simple linear regression, which utilizes a single independent and dependent variable (Meyers et al., 2013). The goal of multiple regression was to produce a linear equation

model that identifies the optimal weighted linear combination of independent variables in the study to predict the outcome variable (Meyers et al., 2013). This relationship can be measured through the R^2 statistic, which is indicative of the proportion of variability in the outcome variable that is accounted for by the independent variables (Tabachnick & Fidell, 2013). In comparison to univariate methods, multivariate methods allow for more complex analyses, which in turn, provides conclusions with lower error and more validity than if variables were analyzed in isolation (Harlow, 2005). A hierarchical multiple regression was utilized to assess whether ruminative brooding and ruminative reflection (independent variables) are predictors of body dissatisfaction (outcome variable) in midlife women. In a hierarchical multiple regression, body mass index (BMI) will be used as a covariate and entered in the first step. Research suggests that women with a higher BMI are not necessarily dissatisfied with their bodies (Rosewall, Gleaves, & Latner, 2018), therefore it is used as a covariate in this study. Ruminative brooding and ruminative reflection will be entered in the equation together in step 2. In this model, the hierarchical regression focused on the unique contribution of each independent variable, while statistically controlling for the covariate (Meyers et al., 2013).

To address the second hypothesis, a mediation analysis was conducted. According to Baron & Kenny (1986), “a given variable may be said to function as a mediatory to the extent that it accounts for the relation between the predictor and the criterion” (p. 1176). In an unmediated model, there is a direct effect between the predictor “X” and the outcome variable Y, through a direct path *c*, see Figure 3.1.

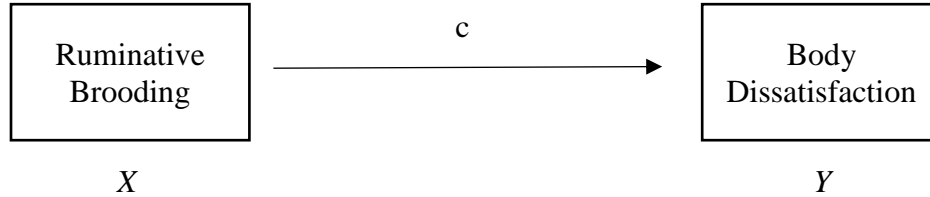


Figure 3.1. An unmediated model that demonstrates a direct effect represented by c , between the predictor, ruminative brooding, and outcome variable, body dissatisfaction.

In a mediated model, the mediator M acts as a third variable that accounts for the link between the predictor X and outcome variable Y , through an indirect path c' , refer to Figure 3.2 (Meyers et al., 2013). The mediator is considered a middle variable, which has an indirect effect between the predictor and outcome variable. In an indirect effect, the dependent variable changes when the independent variable is held fixed and the mediator variable changes to the level it would have attained had the independent variables increased by one unit (Meyers et al., 2013). The mediator can be used to explain the strength and direction between the predictor and outcome variable (Meyers et al., 2013). In a mediation analysis, these strengths are represented by the regression coefficients through regression analyses (Meyers et al., 2013). In a mediated model, the direct path c is compared with the indirect path c' (Meyers et al., 2013). If the relationship between the predictor and outcome variable is reduced to zero in a mediation model, mediation is characterized as full or complete (Tabachnick & Fidell, 2013). However, if the relationship is lowered but not to zero, mediation is considered partial (Tabachnick & Fidell, 2013).

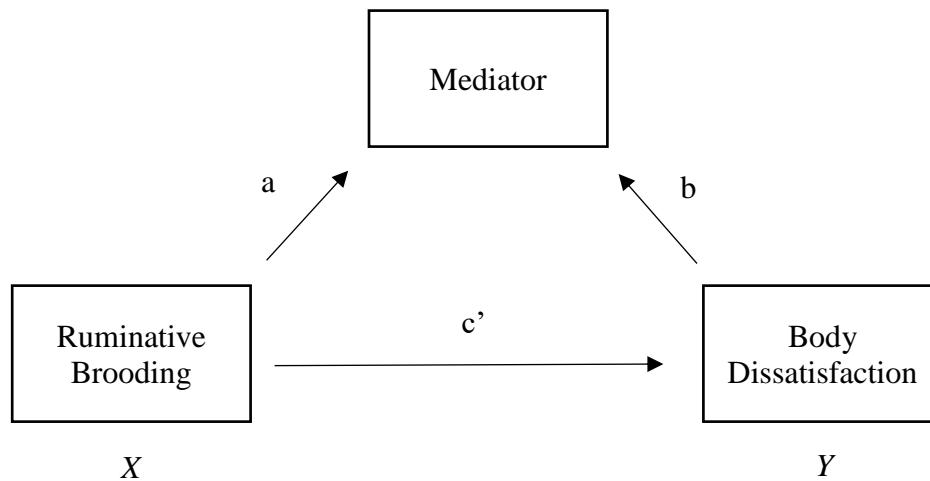


Figure 3.2. A mediated model that illustrates the indirect effect represented by c' , between the predictor, ruminative brooding, and the outcome variable, body dissatisfaction. In this model, the predictive power of the independent variable is evaluated with the effects of the mediator.

In this study, the Kenny approach will be followed (Baron & Kenny, 1986). In Step 1, a linear regression will be performed between the predictor and outcome variable. In Step 2, a linear regression will be conducted with the mediator as the outcome variable with the original predictor as the independent variable. In Step 3, a linear regression will be performed with the mediator as the predictor on the outcome variable. In Step 4, a comparison of c with c' will be performed to examine whether the middle variable completely mediates the relationship between the predictor and outcome variable. If so, the effect of c' should be zero (Meyers et al., 2013). The Sobel test will be used to test the statistical significance of the mediation analysis (Sobel, 1982, 1986). The Sobel test equation is presented as the following:

Sobel Test Equation:
$$z\text{-value} = \frac{a * b}{\sqrt{(b^2 * s_a^2 + a^2 * s_b^2)}}$$

It is important to note that the Sobel test is designed for larger samples and holds the assumption that the sampling distribution of the indirect effect is normal (Meyers, 2013). However, researchers have found that this distribution has a tendency to be skewed and this test has relatively low statistical power (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). Thus, mediation analysis will be utilized to examine whether self-reported depression, anxiety (state and trait), self-esteem, and quality of life will mediate the relationship between ruminative brooding (predictor) and body dissatisfaction (outcome variable).

Assumptions of Multiple Regression

Prior to any analyses, assumptions for multiple regression were examined in order to assess the integrity of the data. It is critical to present evidence that the data meets the assumptions of a statistical test, otherwise conclusions based on the *p*-value might be untrustworthy and inaccurate (Kline, 2008). Furthermore, if assumptions are violated, it can increase the risk for Type I or Type II error, along with the misinterpretation of effect sizes (Osborne & Waters, 2002).

The main assumptions of a multiple regression include: a) multivariate normality, b) linearity, c) homogeneity of variance, and d) mutually exclusive groups or no multicollinearity (Osborne & Waters, 2002). In multivariate normality, the assumption is that variables in a regression have normal distributions. To address normality, skew and kurtosis are statistics used to examine whether a distribution is normal. A skew above 2.0 would be considered extremely skewed, while a kurtosis more than 4.0 would be problematic. Additionally, visual inspection of normality can be performed through histograms, box-plots, and P-P plots. However, it is

important to note that assumptions of normality might be non-robust to non-Gaussian (or non-normal) distributions (Micceri, 1989). As such, there is no ideal normal distribution in real data, thus researchers must use their decision-making to evaluate if assumptions are acceptable and the findings can still be meaningful and interpretable (Micceri, 1989). The second assumption is that the relationship between the independent and dependent variables are linear. If the assumption is met, the residuals plots (plots of the standardized residuals as a function of standardized predicted values) are linear. The assumption of homogeneity of variance or homoscedasticity, refers to the notion that the variance of errors is the same across all variables. It is suggested that slight differences in variance of error or heteroscedasticity has little influence on significance tests (Tabachnick & Fidell, 2013). The assumption of homoscedasticity is met when the residuals are randomly scattered around the horizontal line, demonstrating an even distribution. Lastly, a multiple regression requires the assumption of absence of multicollinearity, which suggests that the observations must be mutually independent from each other. In other words, the independent variables must not be highly correlated with one another. Multicollinearity is assessed through an examination of a correlation matrix; whereby highly correlated variables suggest the presence of multicollinearity. Multicollinearity is problematic because it is uncertain which variable is driving the shared variance with the dependent variable (Meyers et al., 2013).

Mediation analysis utilizes regression; thus, it follows the same general assumptions as abovementioned. In addition, there are three conditions that must be met for mediation (Meyers et al., 2013). In the mediation model, there must first be a significant relationship between the predictor and outcome variables. Second, the independent variable predicts the mediator, which in turn, predicts the outcome variable. Third, the mediator must significantly predict the outcome variable in the mediation model (Meyers et al., 2013).

Summary

A total sample of 360 middle-aged women were recruited from Amazon Mechanical Turk. Participants completed several online questionnaires, including a demographic and background self-report, one questionnaire on rumination, one questionnaire on body dissatisfaction, and four questionnaires on psychological functioning. A multiple regression was performed to test the first hypothesis that ruminative brooding will be a better predictor of body dissatisfaction in middle-aged women than ruminative reflection. A mediation analysis was also conducted to test the second hypothesis that depression, anxiety, self-esteem, and quality of life mediates the relationships between ruminative brooding and body dissatisfaction.

Chapter Four: Results

This chapter will present the findings of this study, based on the research hypotheses and proposed analyses. First, a detailed account of data cleaning and testing of assumptions for multiple regression will be addressed. Second, demographic and descriptive information about the sample will be described. Subsequently, the findings for the first hypothesis using multiple regression are presented. Afterwards, the results for the second hypothesis using mediation analysis will be shown. All data analyses have been performed using SPSS 25.0 statistical software.

Data Cleaning and Assumption Checking

Prior to data analysis, multivariate data cleaning was performed to reduce the likelihood of Type I and Type II error, as well as to enhance the meaningfulness of the data (Osborne & Waters, 2002). Additionally, it is recommended to perform data cleaning before any subsequent analysis to reduce potential bias (Tabachnick & Fidell, 2013).

Data inspection for any missing, out-of-range values, and outliers was performed. A missing values analysis was performed, which revealed 0% of missing data. Therefore, no transformations to the data was completed. In terms of out-of-range values, nine participants were removed from the dataset because they did not meet the age criterion. The presence of univariate outliers was assessed through boxplots, which showed no outliers present across all variables. The most recommended approach for multivariate outlier detection is the Mahalanobis Distance (D^2). D^2 is a chi-square variable (χ^2), with degrees of freedom equal to the number of independent variables and provides direct hypothesis testing about outlier status (Tabachnick & Fidell, 2013). In the present data set, no extreme values were evident through D^2 . In order to examine normality, a frequency analysis was performed, which revealed skewness less than 2.0 and kurtosis less than 4.0 across the variables, see Table 4.1.

Table 4.1

Skewness and Kurtosis of the Independent and Dependent Variables

Variable	Skewness	Kurtosis
RRS-ED - Brooding	.72	-.33
RRRS-ED- Reflection	1.50	1.79
BSQ	.26	-.90
CESD	1.05	.90
RSES	-.74	-.11
AQoL-4D	.90	.52
PASTAS-Trait	.44	-.37
PASTAS-State	.87	.10

Note. RRS-ED-Brooding = Ruminative Response Scale for Eating Disorders – Brooding Subscale, RRS-ED-Reflection = Ruminative Response Scale for Eating Disorders – Reflection, BSQ = Body Shape Questionnaire, CES-D = The Center for Epidemiologic Studies Depression Scale, RSES = Rosenberg Self-Esteem Scale, AQoL-4D = The Australian Quality of Life Instrument – 4D, PASTAS-Trait = The Physical Appearance State and Trait Anxiety Scale – Trait Version, PASTAS-State = The Physical Appearance State and Trait Anxiety Scale – State Version.

An examination of z -scores for each variable was conducted to further examine the presence of outliers, with z -scores greater than ± 3.29 standard deviations from the mean suggesting an outlier. A review of z -scores revealed 4 potential outliers: CES-D ($z = 3.79$), AQoL-4D ($z = 3.74$ and $z = 3.32$), and PASTAS-State ($z = 3.37$). To address these potential outliers, the winsorizing method was used, wherein the extreme values were converted using the equation: $x = M + 3.25(SD)$. Histograms, scatterplots, and Q-Q plots were also generated to visually inspect the data for normality. Graphical representations revealed a slight negative skew for RRS-ED subscales, AQoL-4D, PASTAS-Trait, and PASTAS-State, while a slight positive skew was found for RSES. As previously mentioned, a normal distribution does not

exist in real data, thus the assumption of normality was considered met. To examine linearity, residual plots were analyzed, which revealed linear relationships. For homoscedasticity, a scatterplot of the residuals revealed a slightly non-random distribution of PASTAS-Trait. To inspect for multicollinearity, bivariate zero-order correlations were conducted, which demonstrated high correlations between the PASTAS-Trait and the BSQ ($r = .81, p < .001$), and the PASTAS-Trait and PASTAS-State ($r = .86, p < .001$), see Table 4.2 for the correlation matrix. It is suggested that bivariate correlations above .90 are too high and indicate multicollinearity or singularity (Tabachnick & Fidell, 2013), although a more conservative heuristic for multicollinearity is 0.80. Therefore, PASTAS-State was removed from the dataset for subsequent analyses, while PASTAS-Trait remained in the dataset due its marginal acceptability for non-multicollinearity and because past literature provided support for a link between trait anxiety and body dissatisfaction (Cameron & Ferraro, 2004).

Once data cleaning and assumption checking was performed, a reliability analysis of each measure was conducted. Internal consistency for the RRS-ED, BSQ, RSES, AQoL-4D, PASTAS-State, and PASTAS-Trait in the present study was acceptable ($\alpha = 0.90, 0.97, 0.93, 0.81, 0.91, \text{ and } 0.91$, respectively). For this study, internal consistency for the CES-D was slightly below acceptable levels ($\alpha = 0.74$), thus findings that are reported using the CES-D should be interpreted with caution.

Table 4.2

Correlation Matrix for Independent and Dependent Variables

Variable	RRS-ED-Brooding	RRS-ED-Reflection	BSQ	CES-D	RSES	AQoL-4D	PASTAS-Trait	PASTAS-State	BMI
RRS-ED-Brooding	-								
RRS-ED-Reflection	.65**	-							
BSQ	.78**	.51**	-						
CES-D	.32**	.25**	.44**	-					
RSES	-.37**	-.19**	-.55**	-.59**	-				
AQoL-4D	.31**	.24**	.46**	.65**	-.65**	-			
PASTAS-Trait	.60**	.40**	.81**	.47**	-.59**	.52**	-		
PASTAS-State	.51**	.38**	.75**	.47**	-.55**	.49**	.86**	-	
BMI	-.01	.02	.00	.03	-.01	.02	-.03	-.03	-

Note. RRS-ED-Brooding = Ruminative Response Scale for Eating Disorders – Brooding Subscale, RRS-ED-Reflection = Ruminative Response Scale for Eating Disorders – Reflection, BSQ = Body Shape Questionnaire, CES-D = The Center for Epidemiologic Studies Depression Scale, RSES = Rosenberg Self-Esteem Scale, AQoL-4D = The Australian Quality of Life Instrument – 4D, PASTAS-Trait = The Physical Appearance State and Trait Anxiety Scale – Trait Version, PASTAS-State = The Physical Appearance State and Trait Anxiety Scale – State Version, BMI = Body Mass Index. $p < .05^*$, $p < .01^{**}$

Participant Demographics

A total of 360 female participants recruited from MTurk completed this study. Nine participants were excluded from data analysis because of age criteria ineligibility. Thus, a final sample of 351 participants was used for all analyses. Participants age ranged from 40 to 65 ($M = 51.76$, $SD = 7.75$). Refer to Table 4.3 for all demographic information. Based on participants self-reported height and weight, their calculated BMI on average was 28.56 kg/m^2 ($SD = 7.12$), which ranged from 15.24 kg/m^2 to 50.37 kg/m^2 .

Table 4.3

Demographic Data

Demographic Variable	Frequency	Percentage
<i>Body Mass Index</i>		
Underweight (<18.5)	3	0.9
Normal (18.5 to 24.9)	130	37.0
Overweight (25 to 29.9)	96	27.4
Obese (Over 30)	122	32.8
<i>Marital Status</i>		
Single	62	17.7
Married	190	54.1
Separated	11	3.1
Divorced	77	21.9
Widowed	11	3.1
<i>Ethnicity</i>		
African	25	7.1
Caribbean	5	1.4
East and Southeast Asian	6	1.7
European	270	76.9
Indigenous	2	0.6
Latin, Central, and South American	11	3.1
Middle Eastern	2	0.6
Pacific Islands	25	7.1
South Asian	1	0.3
Other	1	0.3
<i>Highest Degree Completed</i>		
High School	75	21.4
College Diploma	8	2.3
Undergraduate Degree	172	49.0
Master's Degree	59	16.8
Did Not Disclose	37	10.5
<i>Retired</i>		
Yes	52	14.8
No	272	77.5
Semi	25	7.1
<i>Annual Income</i>		
Less than \$20,000	68	19.4
\$20,000 to \$34,999	61	17.4
\$35,000 to \$49,999	70	19.9
\$50,000 to \$74,999	40	11.4
\$75,000 to \$99,999	84	23.9
Over \$100,000	28	8.0

Hypothesis One

To address hypothesis one, a multiple regression was performed with ruminative brooding and reflection as the predictors and body dissatisfaction as the outcome variable, with BMI as the covariate. See Table 4.4 for descriptive information about the measures of interest. The Durbin-Watson statistic was reviewed, which is a measure of auto-correlation of errors with order of cases that examines independence of the residuals (Tabachnick & Fidell, 2013). The heuristic rule is that the Durbin Watson statistic should be between 1.75 and 2.25, which indicates no autocorrelation in the data (Tabachnick & Fidell, 2013). The Durbin Watson statistic in this analysis was 2.04, which was within the acceptable range. The Tolerance Statistic and the Variance Inflation Factor (VIF) statistic was also inspected to further assess multicollinearity in the dataset. The Tolerance and VIF statistics were 1.00, which are both considered within acceptable ranges (Tabachnick & Fidell, 2013).

In model 1, the analysis of variance (ANOVA) revealed that the covariate did not significantly explain the model, $F(1, 349) = 0.00, p = .995$. In model 2, the addition of ruminative brooding and ruminative reflection accounted for 60.2% of the variability in body dissatisfaction. The ANOVA showed that model 2 significantly predicted body dissatisfaction, $F(3, 347) = 175.13, p < .001$. Furthermore, the results indicated that ruminative brooding significantly predicted 59.29% ($t = 17.36, p < .001$) of the variance in body dissatisfaction, while ruminative reflection did not significantly predict body dissatisfaction ($t = 0.21, p = .834$). Since ruminative brooding significantly predicted body dissatisfaction over ruminative thinking, it was used as the predictor for all subsequent analyses.

Table 4.4

Descriptive Statistics for Variables of Interest

Variable	<i>M</i>	<i>SD</i>
RRS-ED-Brooding	10.94	4.31
RRS-ED-Reflection	3.97	1.40
BSQ	94.10	35.89
CES-D	18.86	7.64
RSES	19.36	6.88
AQoL-4D	18.28	4.71
PASTAS-Trait	32.86	11.21
PASTAS-State	27.52	10.48
BMI	28.43	7.14

Note. RRS-ED-Brooding = Ruminative Response Scale for Eating Disorders – Brooding Subscale, RRS-ED-Reflection = Ruminative Response Scale for Eating Disorders – Reflection, BSQ = Body Shape Questionnaire, CES-D = The Center for Epidemiologic Studies Depression Scale, RSES = Rosenberg Self-Esteem Scale, AQoL-4D = The Australian Quality of Life Instrument – 4D, PASTAS-Trait = The Physical Appearance State and Trait Anxiety Scale – Trait Version, PASTAS-State = The Physical Appearance State and Trait Anxiety Scale – State Version. BMI = Body Mass Index.

Hypothesis Two

To address hypothesis two, four mediation analyses with Bonferroni corrections (α/K) were performed to examine whether depression, trait anxiety, self-esteem, and quality of life mediated the link between ruminative brooding and body dissatisfaction. For all mediation analyses, the Durbin-Watson statistic ranged from 1.90 to 2.12, which is within the norm. For the depression regression analyses, the tolerance values for Steps 1 to 4 were 2.04, 2.01, 2.03, and 2.02, respectively. For the trait anxiety regression analyses, the tolerance statistics for Steps 1 to 4 were 2.04, 2.07, 2.11, and 2.08, respectively. The tolerance statistics for the self-esteem regression analyses Steps 1 to 4 was 2.04, 2.02, 1.92, and 2.12, respectively. Lastly, the tolerance values for the quality of life regression analyses were 2.04, 2.07, 1.90, and 2.06 for Steps 1 to 4, respectively.

Depression. Following Kenny's approach (Baron & Kenny, 1986), in Step 1, a simple regression between ruminative brooding (independent variable) and body dissatisfaction (outcome

variable) was performed. The ANOVA revealed that ruminative brooding significantly predicted body dissatisfaction, $F(1, 349) = 528.21, p < .001$. The findings showed that 60.1% of the variance in body dissatisfaction was predicted by ruminative brooding. This also provides information about the direct path, c , between ruminative brooding and body dissatisfaction. In Step 2, the mediator, depression, as measured by the CES-D, was used as the criterion variable and ruminative brooding as the predictor in a simple regression to determine path a . The ANOVA results showed that ruminative brooding significantly predicted the CES-D scores, $F(1, 349) = 39.55, p < .001$. The findings revealed that 9.9% of the variance in CES-D was predicted by ruminative brooding. In Step 3, another simple regression was performed with the mediator, CES-D, as the predictor and body dissatisfaction as the outcome variable, to determine path b , which was statistically significant, $F(1, 349) = 85.86, p < .001$. The results demonstrated that 19.5% of the variance in body dissatisfaction was predicted by CES-D. In the final Step 4, a multiple regression analysis was performed with ruminative brooding as the predictor and body dissatisfaction as the outcome variable, while controlling for the mediator, CES-D. This provides us with the indirect path of c' . When controlling for the mediator, ruminative brooding significantly predicted body dissatisfaction, $F(2, 348) = 316.50, p < .001$, and accounted for 64.3% of the variance in body dissatisfaction. See Table 4.5 for the results of all 4 steps.

Table 4.5

Results of Depression Mediation Analysis

Path	b	SE of b	β	t	p	R^2
Step 1	6.47	.28	.78	22.98	.001	60.1
Step 2	.52	.09	.32	6.29	.001	9.9
Step 3	2.09	.23	.44	9.27	.001	19.5
Step 4	5.88	.28	.71	20.96	.001	64.3

The difference between c and c' was examined, which revealed that $\beta = .78$ of Step 1 (path c) was higher than $\beta = .71$ of Step 4 (path c'). Therefore, based on a visual inspection of β , there is tentative support for a partial mediation. The Sobel test yielded a value of 4.88, $p < .001$, thus the mediation was statistically significant. See Figure 4.1 for the mediation model.

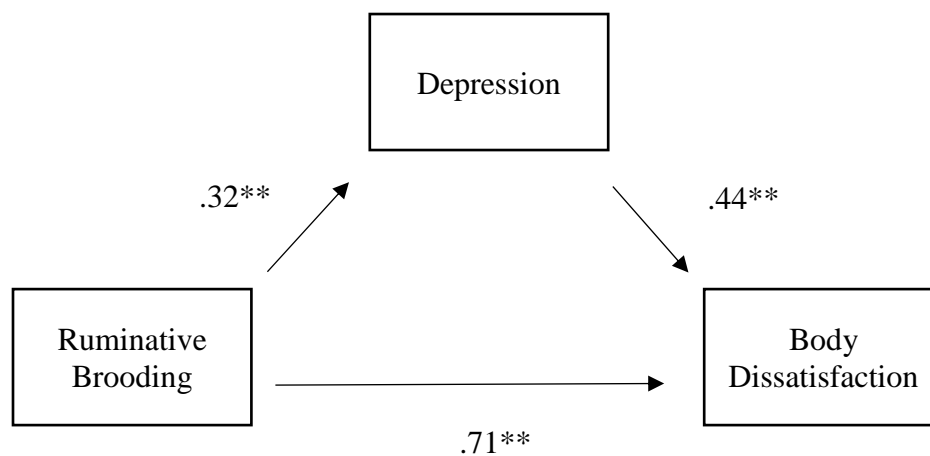


Figure 4.1. The partial mediation model for depression, as measured by the CES-D, on the relationship between ruminative brooding and body dissatisfaction. The paths between variables are represented by beta coefficients, which are statistically significant at the $p < .01^{**}$ level.

Trait anxiety. To examine whether trait anxiety, measured by PASTAS-Trait, was a mediator between ruminative brooding (independent variable) and body dissatisfaction (outcome variable), a simple regression was performed. As previously reported, in determining path c , ruminative brooding significantly predicted 60.1% of the variance in body dissatisfaction, $F(1, 349) = 528.21$, $p < .001$. In Step 2, PASTAS-Trait was treated as the outcome variable with

ruminative brooding as the independent variable. The findings showed that ruminative brooding significantly predicted the PASTAS-Trait, $F(1, 349) = 196.87, p < .001$, and accounted for 35.9% of the variance in PASTAS-Trait. In Step 3, PASTAS-Trait was treated as the independent variable and body dissatisfaction as the outcome variable. The results from the ANOVA demonstrated that PASTAS-Trait significantly predicted body dissatisfaction $F(1, 349) = 662.64, p < .001$. The results showed that PASTAS-Trait accounted for 65.5% of the variance in body dissatisfaction. In the final step to determine path c' , PASTAS-Trait was used as the covariate, with ruminative brooding as the criterion variable and body dissatisfaction as the outcome variable. The findings demonstrated that when controlling for PASTAS-Trait, ruminative brooding significantly predicted body dissatisfaction, $F(2, 348) = 641.01, p < .001$, and accounted for 78.5% of the variance in body dissatisfaction. See Table 4.6 for a summary of all steps for this mediation.

Table 4.6

Results of Trait Anxiety Mediation Analysis

Path	b	SE of b	β	t	p	R^2
Step 1	6.47	.28	.78	22.98	.001	60.1
Step 2	1.56	.11	.60	14.03	.001	36.1
Step 3	2.59	.10	.81	25.74	.001	65.4
Step 4	3.78	.26	.45	14.64	.001	78.5

The direct path c was contrasted with the indirect path c' , which illustrated that $\beta = .78$ of Step 1 (path c) was higher than $\beta = .45$ of Step 4 (path c'). Based on a visual inspection of β , there is tentative support for a partial mediation. The Sobel test was utilized to test the statistical significance of this mediation model. The Sobel test yielded a value of 12.44, $p < .001$, which

indicated that the mediation was statistically significant. See Figure 4.3 for the mediation model with trait anxiety.

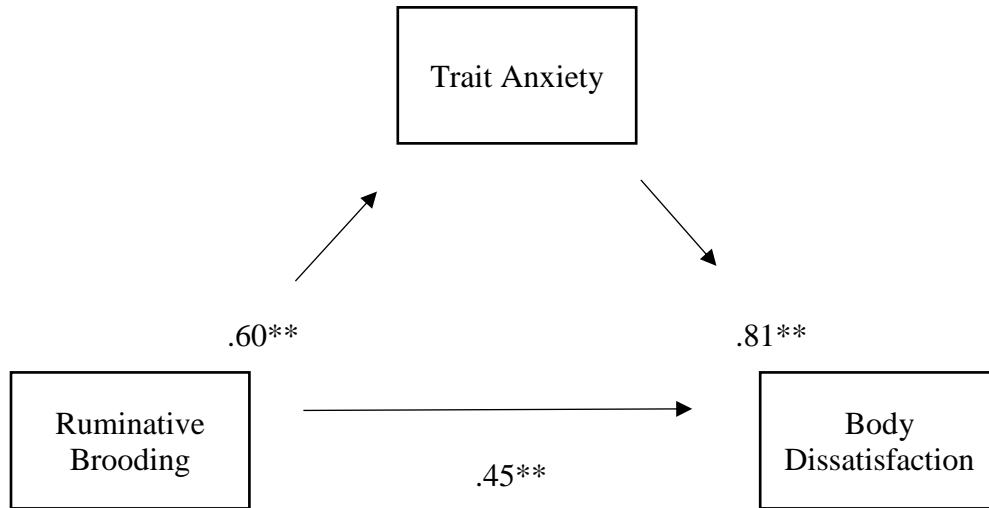


Figure 4.2. The partial mediation model for trait anxiety, as measured by PASTAS-Trait on the relationship between ruminative brooding and body dissatisfaction. The paths between variables are represented by beta coefficients, which are statistically significant at the $p < .01^{**}$ level.

Self-esteem. To investigate whether self-esteem, as measured by the RSES, was a mediator between ruminative brooding and body dissatisfaction, a simple regression analysis was conducted. As reported in the previous models in Step 1 for identifying path c , ruminative brooding significantly accounted for 60.1% of the variance in body dissatisfaction, $F(1, 349) = 528.21, p < .001$. In Step 2, ruminative brooding was entered as the independent variable and RSES as the outcome variable. Results from the ANOVA indicated that ruminative brooding significantly predicted the RSES, $F(1, 349) = 54.00, p < .001$. The findings showed that ruminative brooding accounted for 13.2% of the variance in RSES. In Step 3, RSES was entered as the independent

variable and body dissatisfaction as the outcome variable. RSES significantly accounted for 29.7% of the variance in body dissatisfaction, $F(1, 349) = 148.59$ $p < .001$. In Step 4, to examine the indirect path c' , RSES acted as the covariate with ruminative brooding as the independent variable and body dissatisfaction as the outcome variable. The ANOVA findings revealed that ruminative brooding significantly predicted body dissatisfaction, $F(2, 348) = 372.59$, $p < .001$, and when controlling for RSES, ruminative brooding accounted for 68.0% of the variance in body dissatisfaction. Refer to Table 4.7 for a summary of the 4 steps for this mediation.

Table 4.7

Results of Self-Esteem Mediation Analysis

Path	b	SE of b	β	t	p	R^2
Step 1	6.47	.28	.78	22.98	.001	60.1
Step 2	-.59	.08	-.37	-7.35	.001	13.2
Step 3	-2.85	.23	-.55	-12.19	.001	29.7
Step 4	5.54	.27	.67	20.46	.001	.68

The direct path, c , was contrasted with the indirect path, c' , which illustrated that $\beta = .78$ of Step 1 (path c) was higher than $\beta = .67$ of Step 4 (path c'). Based on a visual inspection of β , there is tentative support for a partial mediation. The Sobel test was utilized to test the statistical significance of this mediation model. The Sobel test yielded a value of 6.34, $p < .001$. See Figure 4.4 for the mediation model using self-esteem.

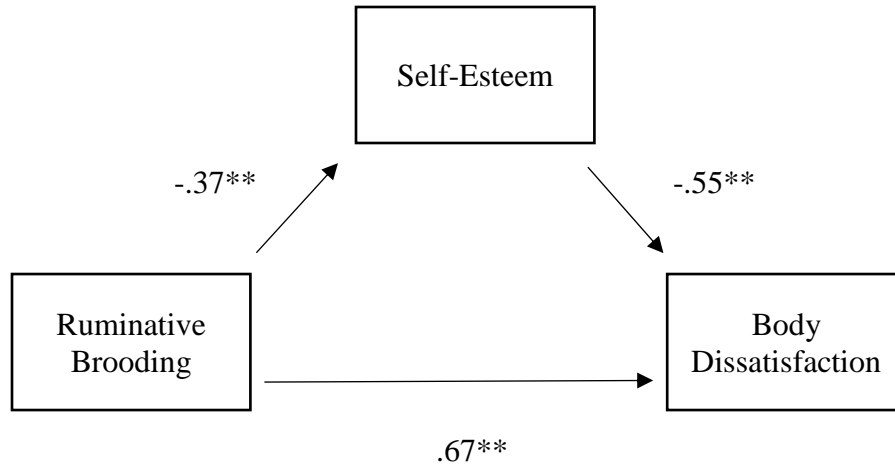


Figure 4.3. The partial mediation model for self-esteem, as measured by the RSES, on the relationship between ruminative brooding and body dissatisfaction. The paths between variables are represented by beta coefficients, which are statistically significant at the $p < .01^{**}$ level.

Quality of life. In order to examine whether quality of life, measured by the AQoL-4D, acts as a mediator between ruminative brooding (independent variable) and body dissatisfaction (dependent variable), a simple regression was performed. As seen in previous models for Step 1 to determine path c , ruminative brooding significantly accounted for 60.1% of the variance in body dissatisfaction, $F(1, 349) = 528.21, p < .001$. In Step 2, ruminative brooding entered the model as the independent variable and AQoL-4D as the dependent variable. Based on the findings, 9.6% of the variability in AQoL-4D was significantly accounted to ruminative brooding, $F(1, 349) = 38.28, p < .001$. In Step 3, AQoL-4D was entered in the model as the independent variable and body dissatisfaction as the dependent variable. Results from the ANOVA indicated that AQoL-4D significantly predicted body dissatisfaction, $F(1, 349) = 93.31, p < .001$. The results showed that 20.9% of the variance in body dissatisfaction was accounted for by AQoL-4D. In Step 4, AQoL-

4D was entered into the model as the covariate, with ruminative brooding as the independent variable and body dissatisfaction as the outcome variable. The findings showed that while controlling for AQoL-4D, 65.2% of the variability in body dissatisfaction was significantly accounted for by ruminative brooding, $F(2, 348) = 328.31, p < .001$. Refer to Table 4.8 the summary of the results for all 4 steps in this mediation.

Table 4.8

Results of Quality of Life Mediation Analysis

Path	<i>b</i>	SE of <i>b</i>	β	<i>t</i>	<i>p</i>	R^2
Step 1	6.47	.28	.78	22.98	.001	60.1
Step 2	.34	.06	.31	6.19	.001	9.6
Step 3	3.50	.36	.46	9.66	.001	20.9
Step 4	5.84	.28	.70	21.09	.001	65.2

The difference between *c* and *c'* was examined, which revealed that $\beta = .78$ of Step 1 (path *c*) was higher than $\beta = .70$ of Step 4 (path *c'*). Based on a visual inspection of β , there is tentative support for a partial mediation. The results of the Sobel test yielded a score of 4.90, $p < .001$, thus the mediation was statistically significant. Refer to Figure 4.5 for the quality of life mediation model.

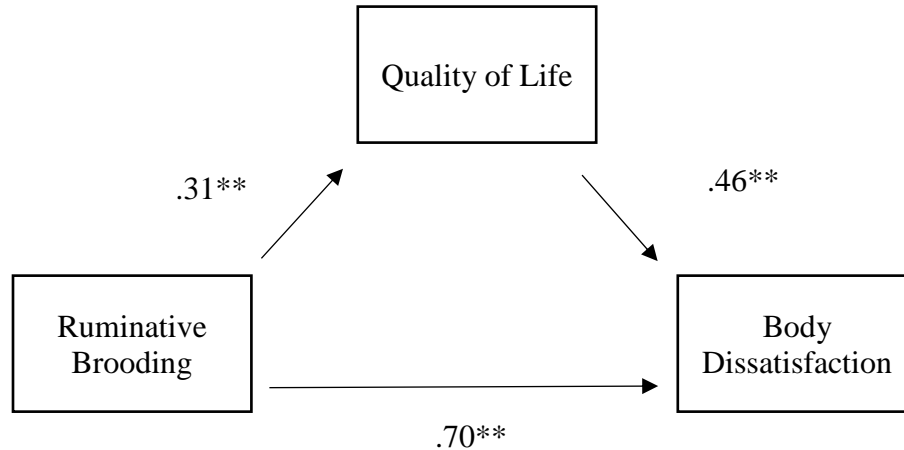


Figure 4.4. The partial mediation model for quality of life, measured by the AQoL-4D, on the relationship between ruminative brooding and body dissatisfaction. The paths between variables are represented by beta coefficients, which are statistically significant at the $p < .01^{**}$ level.

Summary

A total sample of 351 middle-aged women between 40 to 65 years of age from the United States were utilized for all analyses. Multiple regression and mediation analyses were used to test the two hypotheses of the research. Results of the first hypothesis revealed that ruminative brooding significantly predicted body dissatisfaction, while ruminative reflection did not. The results of the second hypothesis showed that depression, trait anxiety, self-esteem, and quality of life partially mediated the relationship between ruminative brooding and body dissatisfaction.

Chapter Five: Discussion

The purpose of this study was to examine how rumination, categorized into brooding and reflection, are linked to body dissatisfaction in middle-aged women and the degree to which depression, anxiety, self-esteem, and quality of life mediate this relationship. To the author's best knowledge, this is the first study to investigate how rumination, particularly ruminative brooding and reflection, contribute to body dissatisfaction among women in middle adulthood. A sample of 351 women between 40 to 65 years of age were recruited from Amazon Mechanical Turk. Participants completed a demographic and background questionnaire, one measure of rumination, one measure of body dissatisfaction, and four measures of psychological factors (depression, anxiety, self-esteem, and quality of life). It was hypothesized that ruminative brooding would be a better predictor of body dissatisfaction than ruminative reflection because of the negative and repetitive thinking involved in the former. It was also hypothesized that given the link between depression, anxiety, self-esteem, and quality of life and body dissatisfaction, these factors would mediate the association between ruminative brooding and body dissatisfaction.

The first part of this chapter will focus on the interpretation of the findings and how this research corresponds to, and extends, past research. Following this discussion, the limitations of this study will be presented. To conclude this chapter, implications for counselling psychology and future research will be outlined.

Hypothesis One

The findings provided support for hypothesis one, wherein ruminative brooding significantly predicted body dissatisfaction in middle-aged women, over and beyond body mass index, while ruminative reflection did not. The results of the current study are congruent with past research that has found rumination, in general, to predict body dissatisfaction in younger female populations (Etu & Gray, 2010; Maraldo et al., 2016). It has been argued that rumination might be

considered a vulnerability or risk factor for disordered eating due to repetitive negative thinking about one's body image (Maraldo et al., 2016). Body dissatisfaction consists of predominately negative thoughts about one's body image. The nature of rumination as a repetitive and negative form of self-focused attention might be an important feature to body dissatisfaction. The presence of negative body-related thoughts might not be sufficient for problematic body dissatisfaction (Verplanken & Velsvik, 2008), however ruminating over one's body shape, weight, and eating might potentially be a crucial factor in its development.

One potential explanation for how rumination about one's body might manifest into body dissatisfaction is by body image-related schemas (Cash et al., 2004). Schemas in general are characterized by mental structures that contain an organized set of cognitions (Altabe & Thompson, 1996). According to Altabe and Thompson (1996), body image schemas contain a self-discrepancy component that evaluates one's ideal and actual body image. Greater discrepancy between the actual and idealized self can be linked to distress (Altabe & Thompson, 1996). The degree of importance that one places on body image might alter appearance-related information that is processed by these schemas (Altabe & Thompson, 1996). Individuals with established negative body image schemas might encounter cues or events in the environment (such as social feedback) that activate such schemas and, in turn, trigger negative self-evaluations about one's physical appearance (Cash & Smolak, 2011). Furthermore, women who are less satisfied with their bodies might show attentional biases to body-relevant stimuli, such as images of thin models (Withnell, Sears, & von Ranson, 2019). Research has found that women with maladaptive body image-related schemas display attentional biases to fat- and thin-related information (Rodgers & DuBois, 2016; Tobin, Sears, Zumbusch, & von Ranson, 2018). Consequently, individuals engage in internal dialogues that are emotion-laden interpretations and automatic thoughts about one's

appearance. Those with poor body image attitudes and self-schemas might have habitually negative inner dialogue (Cash & Smolak, 2011). Over time, this might develop into rumination over one's body shape, weight, and eating habits, which can latter potentially lead to body dissatisfaction. Therefore, negative body image-related schemas might be a potential process involved in the initiation of rumination.

Additionally, the current findings are in line with previous studies that have shown ruminative brooding to be more maladaptive than reflection (Burwell & Shirk, 2007; Pearson, Watkins, Mullan, & Moberly, 2010; Treynor et al., 2003). There is less research available in distinguishing between ruminative brooding and reflection. However, studies that have examined rumination from a broader perspective have typically focused on more aspects of ruminative brooding than reflection (Nolen-Hoeksema et al., 2008). It is important to note that other studies suggest that brooding and reflection perpetuate each other, which blurs the boundaries between adaptive and maladaptive coping styles (Joormann, Dkane, & Gotlib, 2006). In ruminative brooding, individuals have passive and perseverative thoughts about negative themes, whereas reflection involves actively gaining insight into problems and problem-solving (Cowdrey & Park, 2012). It is possible that participants might have engaged in problem-solving to change their body shape and weight but not their way of thinking. On the RRS-ED, items in the brooding subscale consisted of discrepancies between an ideal state and one's current state (Cowdrey & Park, 2011). This largely fits with the construct of body dissatisfaction, which is the divergence between one's actual body and one's ideal body appearance (Tatangelo et al., 2015). Thus, ruminative brooding might be specific to the thoughts and beliefs one holds concerning their body appearance and their cognitive appraisal of their appearance, with respect to degree of satisfaction or dissatisfaction with one's body shape and weight (Cash & Smolak, 2011). The dwelling and repetitive negative

thoughts about one's body image might potentially be one factor involved in the etiology and development of body dissatisfaction. These findings are an extension of existing research that has examined ruminative brooding and reflection within the scope of eating disorder symptomology (Cowdrey & Park, 2011). However, given that body dissatisfaction plays a significant role in the development and maintenance of eating pathology in women (Stice & Shaw, 2002), important parallels can be drawn about the similarities in the role of rumination.

It is also important to consider the findings of this study within the context of women in middle adulthood. As seen in the results and previous research, negative thoughts about one's body image can be exhibited in middle adulthood (Robert-McComb, 2008). There are distinct challenges that women face within this period of life. For instance, menopause can result in significant changes in the physiology, anatomy, and cognitive function in women due to fluctuating hormonal levels of estrogen and progesterone (Robert-McComb, 2008). Significant life transitions or events can also influence a women's thoughts or attitudes about her body image, such as divorce, disability, and caregiver burden (Midlarsky & Nitzburg, 2008). The inability to effectively cope or manage stressful life transitions or major life events might cause psychological distress (Marshall et al., 2012). When combined with other pre-existing risk factors, such distress might create vulnerability to body dissatisfaction (Midlarsky & Nitzburg, 2008). There are also risk factors that are associated with body dissatisfaction among women regardless of age, including media and societal pressures in Western culture (Marshall et al., 2012). Furthermore, there is a double standard of aging, whereby women face greater social pressures and are criticized more harshly on physical appearance than men (Sontag, 1979).

To this end, ruminative brooding was found to significantly predict body dissatisfaction in midlife women, over and beyond BMI, while ruminative reflection did not. This finding is

consistent with previous research that has shown rumination, in a broader context, to predict body dissatisfaction in younger female populations (Etu & Gray, 2010; Maraldo et al., 2016). Individuals with disrupted body image-related schemas might process information about appearance in a manner that activates negative self-evaluation and habitually negative internal dialogue (Cash & Smolak, 2011).

There is a lack of research that has distinguished between ruminative brooding and reflection in the context of body dissatisfaction. The ruminative brooding subscale utilized in this study measured the discrepancy between body shape, weight, and eating patterns between one's ideal and current state, which is congruent with the construct of body dissatisfaction (Tatangelo et al., 2015). Thus, ruminative brooding might be a vulnerability or risk factor for body dissatisfaction due to its negative and perseverative cognitive style of thinking toward one's body shape and weight.

Hypothesis Two

The findings of the current study revealed that the link between ruminative brooding and body dissatisfaction is partially accounted for by the mediating roles of depression, trait anxiety, self-esteem, and quality of life. In addition, the results also showed that ruminative brooding directly influences body dissatisfaction, beyond the role of these mediating factors. Therefore, there is partial support for hypothesis two.

Depression

Based on the findings, ruminative brooding was found to significantly predict depression, which is consistent with prior experimental and correlational studies that have found rumination is predictive of greater depressive symptoms, the onset of major depressive episodes (Just & Alloy, 1997) and is involved in the maintenance (Lara, Klein, & Kasch, 2000) and recurrence of depression (Watkins et al., 2007). According to response styles theory (Nolen-Hoeksema, 1991),

rumination can maintain, exacerbate, and prolong the symptoms of distress through negative thinking, disrupted problem-solving, and diminished instrumental behaviour. These symptoms of distress were originally discussed in the context of depression. It has been argued that rumination facilitates the effects of depressed mood on thinking, increasing the likelihood that individuals will utilize their negative thoughts and memories activated by their depressed mood to comprehend their situation (Nolen-Hoeksema, 1991). Nolen-Hoeksema & Morrow (1991) postulated that rumination amplifies existing maladaptive cognitive styles by making these cognitions more readily available and accessible, which enhances vulnerability towards depression. Moreover, Nolen-Hoeksema and Davis (1999) proposed that individuals who regularly ruminate might have impaired social supports due to family and friends who become frustrated with their persistent negative thinking, which can increase depressive symptoms. The consequences of rumination might trigger depression or increase the severity of initial symptoms of depression (Nolen-Hoeksema, 1991). Research has shown that distressed individuals who engaged in ruminative tendencies have more prolonged episodes of depression and are more vulnerable to the development of depressive disorders (Just & Alloy, 1997; Kuehner & Weber, 1999; Nolen-Hoeksema, 2000).

Rumination is considered to be a relatively stable trait among individuals (Nolen-Hoeksema, 2000), even if levels of depression are reduced (Nolen-Hoeksema & Davis, 1999). Diary and longitudinal studies have shown that individuals were consistent in their tendency to ruminate about their distress and emotions (Nolen-Hoeksema & Morrow, 1991; Nolen-Hoeksema, Morrow, & Fredrickson, 1993). This view was supported by other research that suggested rumination was relatively stable across fluctuating mood states and different severity levels of depression (Bagby & McBride, 2004). Rumination might be a potential mechanism underlying

chronic depression (Bagby & Mcbride, 2004), as well serve as a risk factor for new episodes among individuals who might be vulnerable to recurrent depression (Segal, Gemar, & Williams, 1999). Based on the findings in this study, ruminative brooding predicted depression, which is line with researchers who argued that rumination might be one potential underlying factor of depression (Bagby & Mcbride, 2004).

Depression, in turn, was also found to significantly predict body dissatisfaction in middle-aged women, which is in line with previous research (Jackson et al., 2014). The findings are also congruent with the internalizing-driven hypothesis, whereby depression is a risk factor for body dissatisfaction (Presnell et al., 2004). Therefore, negative self-evaluation might lead to negative body image (Presnell et al., 2004). Middle-aged women might experience not only societal pressures for the thin-youthful body ideal but are also bombarded with anti-aging messages. Women who fail to meet such body standards might engage in self-criticism, leading to body dissatisfaction (van den Berg et al., 2007). Alternatively, individuals who experience depressed mood might potentially distort the way they evaluate or view their body in a negative manner, which may influence body dissatisfaction.

Depression was found to partially mediate the relationship between ruminative brooding and body dissatisfaction. Individuals with depression who are induced to spontaneously ruminate will retrieve more negative memories and recall negative events as occurring more frequently in their life than counterparts who were induced to distractions away from negative thoughts and discuss more positive situations (Nolen-Hoeksema et al., 2008). Participants with depression were also found to be more likely to be self-critical, displaying more self-blame over their current problems, and exhibited lower self-confidence (Lyubomirsky, Caldwell, & Nolen-Hoeksema, 1998; McFarland & Buehler, 1998; Pyszczynski, Hamilton, Herring, & Greenberg, 1989). In other

research, individuals with depression that were presented with hypothetical negative life events showed a greater inclination to negatively biased and distorted interpretations of those events (Lyubomirsky & Nolen-Hoeksema, 1995, Lyubomirsky, Tucker, Caldwell, & Berg, 1999). Together, this research suggested that women who exhibited depressive symptomology, which can be exacerbated or triggered by ruminative brooding, might show a greater negative bias regarding their body shape, weight, and eating patterns.

The results also suggested that there is a direct effect between the two variables. Rumination has been studied within the framework of anorexia nervosa, wherein there is a disorder-specific preoccupation on eating, weight, and shape (Park, Dunn, & Barnard, 2011). It is argued that such disorder-specific rumination might be an exclusive mental focus on eating and food (Cowdrey & Park, 2012). Thus, one possibility is that body and weight-related rumination as measured in this study predicted body dissatisfaction in middle-aged women. Furthermore, research has shown that rumination on eating, shape, and weight significantly predicted eating disorder symptomology after controlling for depression (Cowdrey & Park, 2012). Rawal, Williams, and Park (2011) conducted an experimental study wherein individuals who were diagnosed with, or at-risk for, eating disorders were induced to ruminate before an imaginary meal. The researchers found that participant responses to such provoking situations largely depended on the manner in which self-material was processed and that analytical self-focus can increase dysfunctional cognitive reactivity (Rawal et al., 2011). These findings suggested that the manner which information about the self is processed may influence cognition and behaviour (Rawal et al., 2011). In regards to the results of the present study, the way women in middle adulthood process information about themselves may influence their cognitions that can later manifest into body dissatisfaction. That is, middle-aged women who perseverate and dwell about their body

shape, weight, and eating patterns can have a negative impact on their cognitive beliefs about self-appearance, thus promoting body dissatisfaction.

Trait Anxiety

Results from this study revealed that ruminative brooding predicted trait anxiety. Individuals who ruminate might engage in worrying about their distress (Lyubomirsky et al., 1998). As anxiety symptoms are highly comorbid with depressive symptoms (Clark, 1989), rumination linked with depression is also likely associated with anxiety, which is consistent with past research (Nolen-Hoeksema, 2000; Watkins, 2004; Watkins, Moulds, & Mackintosh, 2005). The distinction between anxiety and depression is worry, a different type of perseverative thought that is seen in the former (Nolen-Hoeksema et al., 2008). According to Borkovec, Robinson, Pruzinsky, and DePree (1983), worry is defined as a “chain of thoughts and images, negatively affect-laden and relatively uncontrollable” (p. 10). Rumination might involve thoughts that emphasize an uncertainty regarding control over a particular situation (Lyubomirsky et al., 1999). As well, individuals who ruminate might experience apprehension about their solutions to complex problems in comparison to non-ruminators (Ward, Lyubomirsky, Sousa, & Nolen-Hoeksema, 2003). Uncertainty might be a key factor that maintains the repetitive and negative thinking patterns evident in rumination (Nolen-Hoeksema et al., 2008), as well as a central component underlying anxiety (Grupe & Nitschke, 2013). In a study conducted by Nolen-Hoeksema (2000), ruminators were compared to non-ruminators on anxiety and depressive symptomatology. The researcher found that rumination predicted both anxiety and depression, along with combined anxiety and depression. It has been argued that individuals who ruminate experienced difficulty in accepting a solution to a problem (Ward et al., 2003) and as a result, this uncertainty might contribute to symptoms of anxiety (Nolen-Hoeksema, 2000). Rumination and worry both share a

similar pattern of repetitive thoughts about self (Barlow, 2002) and an over-generalized thinking style (Watkins & Teasdale, 2001). Furthermore, rumination and worry are also linked with cognitive inflexibility, difficulty in attention switching from negative stimuli (Davis & Nolen-Hoeksema, 1999), difficulty in attention, and poor problem solving (Lyubomirsky & Nolen-Hoeksema, 1995; Lyubomirsky et al., 1999; Ward et al., 2003; Watkins & Moulds, 2005). Lastly, rumination and worry are also linked with exacerbation of anxiety (Abbott & Rapee, 2004; Barlow, 2002).

Although there are overlapping similarities between rumination and worry, there are distinguishable features. For instance, worrying can be considered more future-oriented, focusing on anticipated threats and taking conscious action to prepare for possible threat (Borkovec et al., 2004; Nolen-Hoeksema et al., 2008). Moreover, the unconscious aspect of worry is avoidance of negative affect, which reinforces the worrying (Borkovec et al., 2004). In contrast, rumination is largely past- and present-focused, wherein individuals repeat past events, thinking about the meaning and context of those events (Lyubomirsky et al., 1999; Watkins, 2004). Rumination also involves gaining insight into the meaning of one's feelings and solving problems, even if the content is negative (McLaughlin, Borkovec, & Sibrava, 2007). Nolen-Hoeksema and colleagues (2008) argued that rumination allows individuals to reach the conclusion that they are facing a hopeless and uncontrollable situation by building evidence which in turn, justifies their withdrawal and inactivity.

Additionally, in this study, trait anxiety predicted body dissatisfaction in middle-aged women, which is congruent with previous research in younger female populations (Cameron & Ferraro, 2004). Trait anxiety is considered a relatively stable level of susceptibility towards anxiety (Spielberger, Vagg, Barker, Donham, & Westberry, 1980). In the present study, a general feeling

of anxiety towards various aspects of the body, for example thighs and stomach, was linked with body dissatisfaction in middle-aged women. Individuals with general anxiety might experience worry and uncertainty about their ability to control different parts of their body and physical appearance (Barlow, 2002). Although this perception of uncertainty and uncontrollability about the body might be more stable, less is known about how exactly trait anxiety influences body dissatisfaction among aging women. More research has focused on anxiety about aging and its impact on physical appearance (Barrett & Robbins, 2008). Anxiety about aging is not limited to changes to physical appearance but is also linked to health decline and loss of fertility (Barrett & Robbins, 2008). Other research has shown that greater aging anxiety was associated with higher body dissatisfaction (Gupta, 1995; Midlarsky & Nitzburg, 2008). However, aging anxiety is dissimilar from general anxiety, as the latter is associated with psychological distress (Lasher & Faulkender, 1993; Lynch, 2000), which may coincide with the nature of rumination, that is, focusing on the symptoms and causes of psychological distress.

The results also showed that anxiety partially mediated the relationship between ruminative brooding and body dissatisfaction among middle-aged women. Thus, rumination about one's body shape, weight, and eating patterns might create a general sense of worry and uncertainty about one's body and whether one can control their body appearance. Consequently, such anxiety might lead to body dissatisfaction. Since there was only partial support for this hypothesis, the findings suggest that there is a direct influence of ruminative brooding on body dissatisfaction in middle-aged women. Thus, ruminative brooding about one's body shape and weight might be a unique form of preservative thinking and might act as a vulnerability for body dissatisfaction among women in middle adulthood. It is possible that ruminative brooding, apart from trait anxiety, might

also be an underlying mechanism in body dissatisfaction. Ruminative brooding might exacerbate the negative cognitive appraisals regarding one's body, leading to body dissatisfaction.

Self-Esteem

In this study, ruminative brooding was found to predict lower self-esteem in middle-aged women, which is in line with past research that has shown habitual negative thinking was linked with body dissatisfaction and poor self-esteem among university students (Verplanken & Tangelder, 2011). Individuals who engage in rumination might allow negative cognitions about the self to become more available, which might precede a decrease in self-esteem in those prone to depression (Lyubomirsky et al., 1998). Researchers have argued that the effects of rumination might be greater among individuals that possess negative cognitive styles, for instance beliefs of worthlessness, in comparison to those with more positive cognitive styles (Ciesla, Felton, & Roberts, 2011; Ciesla & Roberts, 2007). In Teasdale's (1988) differential activation hypothesis, negative beliefs about the self are triggered by dysphoric mood and negative thinking stems from low mood in individuals who are vulnerable to depression. Such negative self-focused thinking and increased access to negative cognitions and beliefs about the self can result in low self-esteem (Roberts, Porter, & Vergara-Lopez, 2016). Roberts and colleagues (2016) proposed that rumination, rather than dysphoric mood as suggested in the differential activation hypothesis, might activate this process that leads to the depletion in self-esteem. Moreover, rumination heightens negative self-focused attention about one's mood and bodily sensations, as well as attention to the consequences and meanings of those experiences (Roberts et al., 2016). As an outcome, rumination activates negative cognitions and beliefs about the self (Roberts et al., 2016). In the present study, ruminative brooding predicted lower self-esteem, which suggests that this

form of perseverative and negative thinking about one's body shape, weight, and eating patterns might activate negative cognitions about self, resulting in low self-esteem.

Furthermore, the results illustrated that self-esteem was predictive of body dissatisfaction among midlife women, which is also congruent with past studies in middle and older adult populations (Baker & Gringart, 2009; Paxton & Phythian, 1999; Tiggemann & Stevens, 1999; Webster & Tiggemann, 2003). Self-esteem is found to be stable across the lifespan and does not differ based on age (Wilcox, 1997). Since self-esteem is tied to an evaluation of one's self worth (Blascovich & Tomaka, 1991), women might place high value or importance on their physical appearance. In Western society, there is a large emphasis on women's attractiveness and its importance to self-image (Rodin et al., 1984). A woman's body weight and shape and her satisfaction associated with it can be considered a significant factor to self-image and worth (Tiggemann, 1991). If self-esteem is reduced, individuals will devalue self and it may be linked with negative evaluation of one's body, potentially leading to body dissatisfaction. It is well-documented that how one feels towards their own body is related to self-worth, particularly in women, wherein reduced satisfaction with one's body is linked with lower self-esteem (Franzoi & Shields, 1984; Rosen & Alan, 1986; Tiggemann, 2004).

The results from this study revealed that self-esteem partially mediated the link between ruminative brooding and body dissatisfaction in midlife women. That is, ruminative brooding might trigger negative self beliefs that reduce self-esteem, which in turn, might hinder self worth related to body image. Consequently, women experience body dissatisfaction through the mediating effects of self-esteem. However, since only a partial mediating role for self-esteem was found in this study, ruminative brooding still has a direct impact on body dissatisfaction. It is proposed that ruminative brooding might activate negative beliefs and cognitions about self, which

might be underlying mechanisms in both low self-esteem and body dissatisfaction in middle-aged women.

Quality of Life

Another factor that was considered as a potential mediator between ruminative brooding and body dissatisfaction in middle-aged women was quality of life. It is important to note that all quality of life measures are subjective to a certain degree and there are no universally accepted definitions of this construct (Katschnig, 2006). In this study, ruminative brooding significantly predicted quality of life in participants. There is a lack of research that has investigated rumination and its link with quality of life. Yet, specific aspects of quality of life can be examined to gain a better understanding of this construct. Specifically, quality of life (as measured in this study) is comprised of mental health, relationships, senses, and independent living. With aging, middle-aged women experience life transitions and life stress, such as the death of a loved one or divorce, that negatively impacts one's social activity and mental health (Midlarsky & Nitzburg, 2008). There is increasing literature that demonstrates rumination is detrimental to psychological well-being (Emmons & King, 1988; Nolen-Hoeksema, 2000; Nolen-Hoeksema et al., 2008; Watkins, 2004). A characteristic feature of rumination is an emphasis on distress and the consequences and causes of that distress. As found in this study, rumination is associated with depression, trait anxiety, and poor self-esteem, factors that negatively affect one's mental health. In addition, ruminators are more likely to have disrupted social supports than non-ruminators (Nolen-Hoeksema & Davis, 1999). In particular, individuals who ruminate might not receive the social support that they need (Nolen-Hoeksema & Davis, 1999). Ruminators might violate social boundaries by continuing to discuss their distress more than expected by others (Nolen-Hoeksema & Davis, 1999). As a consequence, family and friends might become agitated and withdraw from

ruminators (Nolen-Hoeksema & Davis, 1999). Social isolation and lack of social support is found to be linked with reduced quality of life (Cohen-Mansfield, Hazan, Lerman, & Shalmon, 2016). Nonetheless, ruminators are more likely to seek out social support in order to deal with their distressing thoughts and emotions, in comparison to non-ruminators (Nolen-Hoeksema & Davis, 1999). Moreover, ruminators are more likely to benefit from obtaining positive emotional support than non-ruminators (Nolen-Hoeksema & Davis, 1999).

Less is known about how rumination potentially influences other aspects of quality of life, such as senses or independent living. However, it is evident that individual differences in quality of life vary across the lifespan (Wrosch, Bauer, & Scheier, 2005). For instance, aging is related to decline in sensory functioning and, potentially, health complications that could impair independent living. In regard to senses, age-normative hearing loss can disrupt communication with others and individuals often experience frustration tied to these complaints, which can lead to cessation of social activity and subsequent social isolation (Pichora-Fuller, 2003). Hearing loss, or presbycusis, is reported to reduce quality of life and can result in a loss of independence in older adults (Shumway-Cook, Baldwin, Polissar, & Gruber, 1997). Thus, individuals who engage in ruminative brooding repetitively focusing on negative self evaluation in regards to their body might also view other aspects of their life through the lens of rumination. Rumination might also potentially exacerbate social withdrawal or avoidance of social situations, negatively impacting quality of life among aging women.

The results also demonstrated that quality of life was linked with body dissatisfaction among midlife women, which is consistent with past research (Chang, Yang, & Chen, 2019, de Moraes et al., 2017; Mond et al., 2013; Nayir et al., 2016). Age-related physical changes may alter the perception and evaluation of one's body, which can have negative consequences on health and

quality of life (de Morais et al., 2017). Body dissatisfaction can also negatively impact job opportunities, socioeconomic status, and social activity (Mintem, Gigante, & Horta, 2015). In one study conducted by de Morais and colleagues (2017), body dissatisfaction was linked to worsened scores on emotional, sexual, and health domains of quality of life in middle-aged women, in comparison to women who were satisfied with their bodies. Therefore, there is a clear link between women who have a negative self evaluation or appraisal of their body and have a negative assessment of their life (Nayir et al., 2016).

Quality of life was found to partially mediate the relationship between ruminative brooding and body dissatisfaction. Ruminative brooding about body image might activate negative cognitive themes and appraisal in other life categories, which in turn, leads to a dissatisfaction with one's body. Women in middle adulthood experience stressful life transitions that can be distinct to this developmental period (Midlarsky & Nitzburg, 2008), which could be worsened by ruminative brooding. Nonetheless, ruminative brooding also directly influences body dissatisfaction. One potential explanation is that this form of negative body-specific thinking becomes internalized and such negative cognitive appraisal leads to body dissatisfaction among middle-aged women.

To summarize, the results from the present study provided partial support for the mediating role of depression, trait anxiety, self-esteem, and quality of life, in the link between ruminative brooding and body dissatisfaction in middle-aged women. Thus, ruminative brooding had a direct role in influencing body dissatisfaction. Specifically, ruminative brooding demonstrated a direct influence on body dissatisfaction, wherein women who engage in ruminative brooding might have greater negative bias about their physical appearance, leading to body dissatisfaction. Trait anxiety partially mediated the link between ruminative brooding and body dissatisfaction, such that perseverative thinking creates a general sense of worry, which in turn leads to body dissatisfaction.

Yet, ruminative brooding also directly impacts body dissatisfaction, suggesting it might be a unique form of thinking that acts as a vulnerability for body dissatisfaction. Self-esteem partially acts as a third variable between ruminative brooding and body dissatisfaction, however ruminative brooding directly influences body dissatisfaction by possibly activating negative beliefs about self. Quality of life was also a partial mediator, however there is a direct effect of ruminative brooding on body dissatisfaction.

Limitations and Strengths

There are several main limitations in this study, which include the following: (1) ethical challenges with Amazon Mechanical Turk, (2) representativeness of the sample, (3), data collection, (4) self-report measures, (5) bidirectionality of variables, and (6) problems with mediation. Each limitation is described in greater detail below.

First, there are multiple ethical concerns about the online experimental platform used to recruit participants, Amazon Mechanical Turk. MTurk's model consists of workers accepting tasks at a specified rate of payment and workers are able to refuse tasks if they deem the rate too low (Williamson, 2016). However, it is argued that MTurk can be exploitative of workers because they are not provided with fair compensation (Ross, Irani, Silberman, Zaldivar, & Tomlinson, 2010). For some MTurk workers, this crowdsourcing website provides their main source of income (Williamson, 2016). According to Ross and colleagues (2010), 18% of workers utilize MTurk to make ends meet, averaging nearly \$2.00/ per hour. To overcome this ethical dilemma regarding low wages, it is recommended that experimenters set minimum wages for their research (Williamson, 2016). Yet, substantially increasing wages might distort the pool of MTurk workers, their performance, and consequently, research findings (Williamson, 2016). In contrast, Buhrmester, Kwang, and Gosling (2011) suggested that compensation rates do not affect data quality, but lower rates and survey length might reduce performance speed of workers. As well,

the researchers argued that workers will complete tasks for as low as 1 cent, suggesting they are not entirely motivated by financial incentives. Another alternative to higher payment at the possible cost of data integrity is by providing bonuses to MTurk workers (Williamson, 2016). Another important consideration to increasing compensation rates to workers is that it becomes more expensive and unfeasible for poorly funded and young researchers, due to wages paid to workers and associated Amazon fees (Williamson, 2016). Therefore, although MTurk allows researchers to collect data rapidly and inexpensively, they might be unknowingly contributing to the economic hardship and exploitation of real people who rely on the website as a source of income. To balance the limitations of the MTurk platform, the minimum wage for this study was set to \$1.00 for approximately 20 minutes of online survey completion. The compensation provided in this study is higher in comparison to past research that paid participants \$0.20 for a 30-minute task (Gardner et al., 2012), without potentially distorting worker performance by large financial incentive (Williamson, 2016), while at the same time allowing a cost-effective solution for data collection.

The representativeness of the sample recruited in this study using MTurk also contributes to the limitations of the results. Research suggested that MTurk contains a large, diversified pool of workers from over 100 countries (Pontin, 2007). However, 80% of tasks are completed by approximately 20% of workers who spend more than 15 hours per week on MTurk, thus different researchers might be recruiting the same participants (Fort, Adda, & Cohen, 2011). Difallah, Filatova, and Ipeirotis (2018) collected demographic information from 84,511 respondents from MTurk and found that the majority of workers (75%) are from the United States, followed by India (16%), Canada (1.1%), Great Britain (0.7%), Philippines (0.35%), and Germany (0.27%). The decision to recruit women from the United States was based on the proportion of MTurk workers

from this country that represented a Western society, in comparison to other countries. However, this also suggests that the pool of MTurk workers is not necessarily diversified.

In addition, the population of MTurk workers is typically younger, with 20% of workers born after 1990, 60% born after 1980, and 80% born after 1970 (Difallah et al., 2018). Therefore, the sample of middle-aged women recruited for this study from MTurk might not be representative of the general population. As well, the majority of middle-aged women in this study were of European descent, thus the study was lacking cultural diversity, which further contributes to the challenges of the representativeness of this sample. However, MTurk is argued to have more cultural diversity in their participant pool than typically seen in university samples (Paolacci, Chandler, & Ipeirotis, 2010).

The use of an online survey also limits the integrity of the dataset. For instance, online experiments or surveys might allow participants to become inattentive or distracted, adding uncertainty about the quality of results (Buhrmester et al., 2011). Thus, having a question during the survey that measures inattention is a helpful screening tool for discarding participant data (Oppenheimer, Meyvis, & Davidenko, 2009). Also, having a 95% approval rate or higher is also highly effective at targeting inattention (Peer, Vosgerau, & Acquisti, 2014), which is slightly higher than the 90% approval rate or higher criteria used in this study. Additionally, non-naïveté and dishonesty are also limitations to the use of an online participant sample (Buhrmester et al., 2011). One general issue is that MTurk workers might share information about tasks to other workers on forums. As well, due to the nature of online participation, participants can be dishonestly responding to survey questions (Buhrmester et al., 2011). In addition, participants could potentially be dishonest about their identity, allowing them to meet study inclusion criteria

(Buhrmester et al., 2011). Thus, it is recommended that researchers be explicitly honest about study criteria and expectations in order to help reduce this problem (Clifford & Jerit, 2016).

There are also limitations surrounding the use of self-report measures. Participants might engage in response bias, wherein they respond in a particular way to questions. For example, participants might be more conservative on their answers on depression or other personal questions. Some questions might be difficult to understand or interpret, thus participants might not be correctly responding to questions. There are also accessibility issues to online surveys, such as individuals must have access to a device in order to complete the survey. Furthermore, participants can experience fatigue during survey completion. The duration of this online survey was approximately 20 minutes, which could be sufficient time for participants to start to feel less motivated to complete the study because of fatigue.

Another potential limitation is the potential bidirectionality of the variables measured in this study. Although not tested in this study, the body dissatisfaction-driven hypothesis postulates that body dissatisfaction is a risk factor for depression through direct mechanisms (e.g., thin-ideal internalization) and indirect mechanisms (e.g., dieting; Stice & Bearman, 2001; van den Berg et al., 2002). Although the results of this study provide support for the internalizing-driven hypothesis, the two hypotheses are not mutually exclusive, wherein body dissatisfaction and depression might be mutually reinforced, with changes to directionality (Sharpe et al., 2018). This potential bidirectionality might also be present between body dissatisfaction and trait anxiety, self-esteem, or quality of life. In addition, other studies have shown that rumination might also serve as a mediator (Nolen-Hoeksema et al., 2008), which was not investigated in this study. Therefore, the results presented in this study might be an oversimplification of a more highly complex and interacting model.

Lastly, the Baron and Kenny (1986) approach to mediation is well-known in the literature, however there are limitations to this model. Most importantly, mediation analysis cannot support causal inference because typically cross-sectional designs are utilized in research that lack time precedence (Kline, 2015). Cross-sectional studies can still provide useful knowledge about indirect effects if the model has strong rationale (Kline, 2015). One proposed alternative is an experimental design for a manipulation-of-mediational model, wherein the mediator is the manipulated variable allowing for time precedence (Bullock, Green, & Ha, 2010). Furthermore, bootstrapping is recommended as an alternative to the use of the Sobel test for mediation analysis (Kline, 2015).

Despite the limitations in this study, there are several strengths. Nonetheless, this is the first study to investigate rumination and body dissatisfaction in a population of middle-aged women with a reasonable sample size. Furthermore, this was the first study that distinguished between ruminative brooding and reflection in the context of body dissatisfaction, highlighting the importance of negative and perseverative self-focused thinking about body shape, weight, and eating patterns in midlife women. To add, this study was able to extend the existing literature on rumination by providing preliminary support about how ruminative brooding is linked with depression, trait anxiety, lower self-esteem, and reduced quality of life in middle-aged women.

Counselling Psychology Implications

The findings from this study illustrate that ruminative brooding influences negative cognitions on body shape, weight, and eating, which can lead to body dissatisfaction in middle-aged women. Depression, trait anxiety, self-esteem, and quality of life all partially mediated the relationship between ruminative brooding and body dissatisfaction. Rumination can potentially worsen or activate depression, trait anxiety, poor self-esteem, and lower quality of life. Thus, a maladaptive cycle between rumination and body dissatisfaction, with the aforementioned mediating factors, can create a positive feedback mechanism (Ciesla & Roberts, 2012; Teasdale,

1988). In this model, clinical improvement would require intervention that directly targets rumination. One recommended intervention to address rumination is cognitive-behavioural therapy (CBT; Nolen-Hoeksema et al., 2008). In accordance with CBT, individuals experience dysfunctional thinking and unrealistic cognitive appraisals of events, which explains maladaptive behaviours and negative emotions (Beck, 2005). CBT would allow ruminators to challenge these negative, perseverative thoughts instead of passively accepting them or replaying them (Nolen-Hoeksema et al., 2008). Moreover, CBT provides cognitive restructuring of negative cognitions to rational and helpful thoughts (Beck, 2005). By reducing ruminative brooding, it might also diminish body dissatisfaction and other consequences, such as depression. The success of CBT has been demonstrated by Kertz and colleagues (2015) who provided patients in a partial hospitalization program with brief CBT with group and individual sessions that focused on the reduction of repetitive negative thinking. The researchers found that decreases in repetitive negative thinking was associated with a reduction in depression and anxiety symptomology. It is suggested that rumination is a critical but understudied mechanism that underlies symptoms in emotional disorders (Kertz et al., 2015). CBT has been demonstrated to be an effective intervention in changing negative body image (Jarry & Ip, 2005). This has been seen by the research conducted by McLean and colleagues (2011) who found that following an 8-session facilitated group CBT intervention, middle-aged women between 30 to 60 years of age demonstrated significant improvements in body dissatisfaction, disordered eating, and body image attitudes in comparison to a control group.

Another alternative intervention for rumination is mindfulness therapy, often described as the adaptive counterpart of rumination and avoidance (Bishop et al., 2004). Mindfulness allows individuals to become aware of their present-moment experiences, thoughts, and feelings in a non-

judgemental manner (Segal, Williams, & Teasdale, 2002). Additionally, mindfulness involves noticing sensory experiences, labeling internal experiences, and non-reactivity towards thoughts and feelings (Baer, Fischer, & Huss, 2005). Cowdrey and Park (2012) demonstrated that rumination on body weight and shape, and eating was linked with low mindfulness in a non-clinical sample of women with eating disorder symptomology. The researchers suggested that addressing rumination is crucial and a more accepting cognitive style about one's body and mindfulness should be cultivated (Cowdrey & Park, 2012). Therefore, counselling psychologists could consider mindfulness interventions to address rumination among midlife women with body dissatisfaction.

Counselling psychologists should also take into consideration that people who ruminate have difficulty with problem-solving, instrumental behaviour, and social relationships (Nolen-Hoeksema et al., 2008). Short periods of positive or neutral distractions, such as jogging or social activities, can improve thinking patterns and problem-solving among ruminators (Jacobson et al., 1996). Through these distractions, one's mood becomes elevated, allowing individuals to become involved with problem-solving to address the circumstances or context contributing to their negative mood (Nolen-Hoeksema et al., 2008). Improving close relationships with others can also help build social support systems among ruminators. In addition, counselling psychologists need to have awareness of the potential negative consequences of rumination, including body dissatisfaction, depression, trait anxiety, poor self-esteem, and reduced quality of life. With this, it is also important to be cognizant that body dissatisfaction in women does not have age-defined boundaries.

Counsellors and other health care practitioners should also be conscious of their own perceptions and ideas about body image and how this might potentially bias or influence patient care (Robert-McComb, 2008). In particular, mental health professionals and physicians could be

affected by their patient's physical appearance and, consequently, treat individuals differently (Sarwer, Grossbart, & Didie, 2003). Schwartz, O'Neal Chambliss, Brownell, Blair, & Billington (2012) found that health care professionals specializing in obesity displayed a pro-thin and anti-fat implicit bias, suggesting that medical practitioners might have weight biases. Therefore, counselling psychologists should be aware of potentially negative attitudes and biases and its impact on the client-therapist relationship and the working alliance.

Lastly, counselling psychologists should be aware that body dissatisfaction is generally stable across the female life span (Tiggemann, 2004). Furthermore, body dissatisfaction is closely linked with age-normative physiological, social, and psychological changes in women (Tiggemann, 2004). Counselling psychologists should focus on issues and situations that trigger and maintain body dissatisfaction in middle-aged women (McLean et al., 2011). For instance, menopause is considered a high-risk developmental period for the onset or redevelopment of eating disorders symptoms due to reproductive hormone changes (Baker & Runfola, 2016). Life transitions during midlife can create environmental stressors that add to physical changes, which might lead to body dissatisfaction. For instance, midlife women often experience the "sandwich phenomenon", whereby middle-aged women must balance caregiving roles between children and aging parents, that can affect roles and identity in women (Samuels, Maine, & Tantillo, 2019). Therefore, there are midlife-specific factors in women that affect self-evaluation and perceptions of their body and counselling psychologists must address these specific needs as body dissatisfaction is still a relevant concern in this age group (McLean et al., 2011).

Future Directions in Research

Given that there is limited research that has examined rumination in the context of body dissatisfaction and among middle-aged women, replication of the findings is highly recommended (Kline, 2008). Although the RRS-ED measure utilized in this study was originally developed to

target eating disorder symptoms, it contains items that uniquely capture rumination that is distinct from depression seen by existing questionnaires (Cowdrey & Park, 2011). Future research might consider developing measures, such as rumination, that are more specific to body dissatisfaction. Researchers may also consider validation of rumination measures that are specific to non-clinical populations, such as the general population.

Another important research question that should be addressed is whether ruminative brooding helps to maintain body dissatisfaction, rather than simply predict body dissatisfaction. Rumination has also been viewed as a possible moderator and mediator, one that can prolong and increase depressed mood (Nolen-Hoeksema, 2000). Therefore, future research in this area could help elucidate the directionality of rumination with depression. Given that rumination might act as a potential mediator for other psychological factors, it would be helpful to examine whether rumination mediates the relationship between trait anxiety, self-esteem, and quality of life with body dissatisfaction in middle-aged women. This would allow for a more comprehensive model of rumination that would not only provide knowledge about its role as a possible vulnerability factor in depression, trait anxiety, poor self-esteem, and reduced quality of life, but whether it also prolongs or maintains these factors. Future research might consider using experimental designs, wherein rumination is induced and manipulated to understand how it might influence body dissatisfaction.

In addition, it would be beneficial to conduct a study that has greater cultural representation in the sample to better understand how cultural differences among women living in a Westernized society influence rumination about one's body image and its impact on body dissatisfaction. Although the focus of this study was middle-aged women, there is also evidence to suggest that men might also experience changes in their body image attitudes as a function of age (Liechty,

Ribeiro, Sveinson, & Dahlstrom, 2014; Paxton & Phythian, 1999). Therefore, it would be important to consider how gender and sociocultural pressures experienced by men could potentially affect rumination and body dissatisfaction.

Conclusion

This study represents, to the best of the author's knowledge, the first examination of rumination over one's body shape, weight, and eating patterns in relation to body dissatisfaction among women in middle adulthood. The findings from the current investigation demonstrated that ruminative brooding, not reflection, was a significant predictor of body dissatisfaction in midlife women, while controlling for BMI. The results also revealed that depression, trait anxiety, self-esteem, and quality of life partially mediated the relationship between ruminative brooding and body dissatisfaction. This research suggests that there might be a form of ruminative brooding that is specific to body dissatisfaction in middle-aged women. Ruminative brooding might also be a potential risk factor for future maladjustments, such as depression, trait anxiety, low self-esteem, and poor quality of life, as well as body dissatisfaction in middle-aged women. The findings from this study shed light on the cognitive processes, specifically ruminative brooding, involved in body dissatisfaction. Clinicians, health care educators, and researchers should be aware of effective intervention and management programs, such as CBT or mindfulness, to help guide practice, education, and research about body dissatisfaction among aging women. The findings from this study highlight the need for midlife women to develop positive body images and enhance their overall mental health, at every size and shape.

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Appendix A

Amazon Mechanical Turk – First Participant Contact

The following information is what participants will be initially exposed to on the Amazon Mechanical Turk website. If participants are interested in the study, they will be then provided with the consent form, followed by the questionnaires.

Title: Body Image in Women Aged 40-65 Survey

Description: The following 20-minute survey is to collect information about body image among middle-aged women between 40 to 65 years of age. Participants will be given several questionnaires and asked to select a choice to the best of their ability.

Keywords: body image, psychology, women, survey, data collection, questionnaire

Reward per response: \$1.00

Time allotted per worker: 1 day

Survey expires in: 7 days

Require that workers be Masters to do your tasks: No

Qualifications workers must meet to work on your tasks:

- Gender – Female
- HIT Approval Rate (%) of all Requesters' HITs greater than 90
- Location is United States
- Age is 35 - 45
- Age is 45-55
- Age is 55 and older

Appendix B

Health and Demographic questionnaire

The following questions ask about your history and overall health.

1. **Age:** _____

2. **Height:** _____

3. **Weight:** _____

5. **Present marital status:**

- (A) Single – never married
- (B) Married
- (C) Separated
- (D) Divorced
- (E) Widowed

6. **Please indicate your ethnic origin by choosing one of the ten categories listed below. Ethnic origin refers to the ethnic or cultural group(s) to which your recent ancestors belonged. If you have multiple ethnic origins, then please select the one with which you most strongly identify; if this is not possible, then please choose option 10.**

- (A) – European (including British Isles)
- (B) – East and Southeast Asian (e.g., China, Japan, Korea, Vietnam)
- (C) – South Asian (e.g., India, Pakistan, Bangladesh, Sri Lanka)
- (D) – Middle Eastern
- (E) – African
- (F) – Latin, Central, and South American
- (G) – Caribbean
- (H) – Pacific Islands
- (I) – Aboriginal
- (J) – Other

5. **Country of Birth:** _____

6. **What country did you grow up in?** _____

11. **How many years of formal education do you have at this time? (i.e., what is the highest level achieved?)**

12. List of degrees obtained (e.g., BA, MA): _____

13. What is or was your main occupation? _____

14. Are you retired? NO / SEMI / YES

Date when you retired: _____ (year) _____ (month)

15. What is your annual income?

(A) Less than \$20,000

(B) \$20,000 to \$34,999

(C) \$35,000 to \$49,999

(D) \$50,000 to \$74,999

(E) \$75,000 to \$99,999

(F) Over \$100,000

16. Please rate your general health:

(A) Excellent

(B) Good

(C) Fair

(D) Poor

17. When was your last menstrual period? _____

18. Are your periods regular? YES / NO

Appendix C

Consent Form



Principal Investigator:

Dr. Shelly Russell-Mayhew, Professor/Researcher, Werklund School of Education,
mkrussel@ucalgary.ca

Primary Researcher:

Victoria Nieborowska, MSc Student, Werklund School of Education,
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Title of Project:

Body Image in Middle-Aged Women

Sponsor:

Social Sciences and Humanities Research Council of Canada

This consent form is the only part of the process of informed consent. If you want more details about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully and to understand any accompanying information.

The University of Calgary Conjoint Faculties Research Ethics Board has approved this research study.

Background

Body dissatisfaction is the negative evaluation of one's appearance. Research on body dissatisfaction has largely focused on younger female populations (aged 18-25), while much less is understood about the experiences of middle-aged women (aged 40-65). With aging, the female body shifts further away from the Western society standards of the thin and youthful body ideal. Thus, midlife women might be more vulnerable to body dissatisfaction. Body dissatisfaction is based on negative thinking or appraisal about the body, yet little is known about the underlying cognitive process.

Purpose of the Study

The goal of this study is to investigate how habitual negative thinking is associated with body dissatisfaction in middle-aged women. This study will also examine how habitual negative thinking is linked with depression, anxiety, self-esteem, and quality of life among women in middle adulthood.

What Type of Personal Information Will Be Collected?

No personal identifying information will be collected in this study, and all participants shall remain anonymous. Should you agree to participate, you will be asked to provide your age, gender, weight, height, marital status, ethnicity, country of origin, country you were raised in, education, occupation, annual income, and menstrual history.

What Will I Be Asked To Do?

You are invited to participate in 7 brief questionnaires. This study will take approximately 20 minutes to complete. Once the survey link is opened, it will remain open for 24 hours to allow for enough completion time.

1. **Health and Demographic Questionnaire (2-3 minutes)**
You will be asked to complete a brief self-report about your age, height, weight, ethnicity, country born and raised in, education, occupation, income, general health, and menstrual history. This information will help better understand our sample.
2. **Cognitive Questionnaire (2-3 minutes)**
You will be asked to complete a questionnaire consisting of 9 questions about negative thinking in regards to eating, weight, and shape.
3. **Body Image Questionnaire (5 minutes)**
You will be asked to complete a questionnaire consisting of 34 questions about one's dissatisfaction with their body.
4. **Psychological Questionnaires (10 minutes)**
You will be asked to complete questionnaires about depression, anxiety, self-esteem, and quality of life. There might be some sensitive questions asked. For example, "I felt depressed", "At times, I think I am no good at all".

In the depression questionnaire, there are 20 questions that ask about one's thoughts, feelings, and behaviours. The anxiety questionnaire contains 32 questions about how anxious or nervous you feel in general about your body and how anxious you feel about your body right now. The self-esteem questionnaire consists of 10 questions about how you feel about yourself. In the quality of life questionnaire, there are 12 questions that ask you to rate your current situation in independent living, mental health, relationships, and senses.

Participation in this study is completely voluntary, you may refuse to participate altogether, or may refuse to participate in parts of the study, and may decline to answer any and all questions, and may withdraw from the study at any time without any penalty.

Are there Risks or Benefits if I Participate?

There is potential that while answering questions in this study that you may feel a range of emotions, including negative feelings, such as discomfort. If any negative feelings persist and you wish to seek mental health services, such as counselling, the following website can be visited to help you connect with local services;

National Institute of Mental Health: <https://www.nimh.nih.gov/health/find-help/index.shtml>.

If you wish to speak with someone, the following crisis hotline number will help connect you with resources near you;

Substance Abuse and Mental Health Services Administration (SAMHSA) National Helpline: 1-800-622-HELP (4357)

If you agree to participate in this study there may or may not be a direct benefit to you, however the data that is collected will further our understanding about how middle-aged women might experience body dissatisfaction. For the completion of the study, you will be paid \$1.00.

What Happens to the Information I Provide?

Participation is completely voluntary, anonymous and confidential. You are free to discontinue participation at any time during the study. In the event that you choose to withdraw during the survey, your information provided will be electronically removed from the data and electronically destroyed through deletion from any laptop and hard drive device. No one except the primary researcher and her supervisor will be allowed to see any of the answers to the questionnaire. All participants will be provided with a unique ID code that will keep their identity anonymous and confidential. There will be no names on the consent form or questionnaires. All data will be kept on a personal, password-protected laptop. Data will be backed-up on an external hard drive that will be kept in a locked filing cabinet on the University of Calgary campus. This anonymous data will only be accessible by the primary researcher and principal investigator for this study. The anonymous data will be stored for five years on an external hard drive, at which time, will be permanently erased. Only grouped information will be summarized for any presentation or publication of results.

Signatures

By submitting the completed or partially-completed survey you are indicating that 1) you understand to your satisfaction the information provided to you about your participation in this research project, and 2) you agree to participate in the research project.

In no way does this waive your legal rights nor release the investigators, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from this research project at any time without penalty. If you choose to withdraw from the study, you will still receive full payment. You should feel free to ask for clarification or new information throughout your participation.

Questions/Concerns

If you have any further questions or want clarification regarding this research and/or your participation, please contact:

Ms. Victoria Nieborowska, Hon. BSc, MA
Werklund School of Education, University of Calgary
416-822-7688, victoria.nieborow1@ucalgary.ca

and

Dr. Shelly Russell-Mayhew,
Werklund School of Education, University of Calgary
403-220-8375, mkrussel@ucalgary.ca

Appendix D

Debriefing Form



Debriefing Form

Thank – you for participating in this study!

This form provides further background about our research to help you learn more about this study. Please feel free to contact Dr. Shelly Russell Mayhew (mkrussel@ucalgary.ca) or Victoria Nieborowska (victoria.nieborow1@ucalgary.ca) if you have any questions or to comment on any aspect of the study.

The purpose of this study was to better understand how habitual negative thinking or rumination contributes to body dissatisfaction in middle-aged women. Having negative body-related thoughts might not be sufficient to indicate body dissatisfaction, however rumination might serve as a vulnerability to body dissatisfaction. Rumination has been shown to be associated with the development and maintenance of body dissatisfaction in adolescents and young adult women. However, this is an area of research that has received little attention and is non-existent among aging women. Rumination is also shown to be linked with depression and low self-esteem. Thus, this study also addressed how rumination is associated with depression and self-esteem, as well as anxiety and quality of life (which are found to be connected to body dissatisfaction), among women in middle adulthood.

If any negative feelings persist and you wish to seek mental health services, the following website can be visited to help you connect with local services;

National Institute of Mental Health: <https://www.nimh.nih.gov/health/find-help/index.shtml>.
If you wish to speak with someone, the following crisis hotline number will help connect you with resources near you;

Substance Abuse and Mental Health Services Administration (SAMHSA) National Helpline: 1-800-622-HELP (4357)

If you experienced any adverse reaction as a result of your participation in this study, please contact the University of Calgary CFREB at cfreb@ucalgary.ca or 403-220-4960.

If you have any concerns about the way you've been treated as a participant, please contact the Research Ethics Analyst, Research Services Office, University of Calgary at (403) 220-6289/220-4283; email cfreb@ucalgary.ca.