Body Image Across the Adult Lifespan: A Focus on Developmental and Cohort Effects, Midlife Women, and Romantic Relationships

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Abstract

Body image disturbance has permeated Western society and is experienced by women and men of all ages and life stages (Grogan, 2016). Further, body dissatisfaction is associated with behavioural, psychological, physical, and interpersonal consequences (Cash, 2012; Grogan, 2016; Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999). Accordingly, body image literature has expanded exponentially over the past 30 years. However, prominent gaps remain within the literature, three of which are considered in this thesis. These are: the trajectory, prevalence and cohort effects of body image disturbance across the adult lifespan for women and men, body dissatisfaction in midlife women, and the role body image disturbance plays in romantic relationships.

The first of the three empirical papers examined patterns of developmental change and cohort effects in body image across the male and female adult lifespan. Body satisfaction was assessed in longitudinal data spanning six years, from 2010 to 2015. Cohort sequential latent growth curve modelling was utilized to assess patterns of mean-level change due to both aging and cohort effects in 15264 participants (62.9% women) aged between 19 – 74 years (M= 46.55, SD= 14.24). Results demonstrated a slight increase in body satisfaction across the lifespan for both men and women. Examination of cohort effects revealed that for women aged 54 years and below, all but two cohorts (24 – 29 & 34 – 39 years) displayed an upward trajectory in their body satisfaction over the 5-year period of assessment. No consistent cohort effects were evident for men. Finally, men consistently displayed higher levels of body satisfaction compared to women across the lifespan. This study provided insights into the trajectory of body image across the lifespan for men and women. The findings also suggest that body image may be improving for women in recent years.
The second of the three empirical papers investigated the applicability of the Tripartite Influence Model (TIM) to midlife women. Female participants (N=206) aged 40-55 years (M = 46.75, SD = 4.54) completed measures related to sociocultural pressures, thin-ideal internalisation, appearance comparison, body dissatisfaction, bulimic symptoms, restrained eating, and psychological distress. Structural equation modeling was used to evaluate the model. As predicted, greater peer and media pressure were associated with greater appearance comparison which in turn was associated with greater body dissatisfaction. Also as predicted, greater body dissatisfaction was associated with greater restrained eating and bulimic symptoms, which in turn were associated with greater psychological distress. Contrary to predictions, none of the sociocultural influences were associated with thin-ideal internalization, and family pressure was not associated with appearance comparison. Furthermore, appearance comparison was not associated with body dissatisfaction. A number of unpredicted associations also emerged. Family and media pressure were directly associated with body dissatisfaction, and peer pressure was directly associated with psychological distress. Furthermore, unpredicted direct associations were also found between thin-ideal internalisation and disordered eating, and between appearance comparison and both bulimic symptoms and psychological distress. Overall, the findings provided partial support for applicability of the TIM for midlife women.

The third of the three empirical papers sought to advance understanding of the associations between body image and relationship outcomes within heterosexual romantic relationships. In two studies (Study 1: N = 197 couples, Mage = 22.99; Study 2: N = 97 couples, Mage = 25.36), both members of dating and/or married couples reported on their body image, perceptions of partner’s attraction to the self, own attraction toward the partner, and relationship satisfaction. Study 2 also incorporated measures of participants’ body mass index (BMI) and
sexual satisfaction. Across both studies, women who had poorer body image perceived their partner to be less attracted to them (irrespective of their partners’ actual attraction to them or how attracted they were to their partner), which in turn was associated with lower relationship and sexual satisfaction. For men, attraction to their partner was consistently associated with their own relationship satisfaction. Results demonstrated that projection biases are a possible mechanism through which body image is associated with romantic relationship outcomes.

In sum, the results of this compendium of research speak to important aspects within the body image literature. Namely, results suggest that body dissatisfaction appears to improve across the female and male lifespan, and appears to be improving in younger cohorts. Further, we find that the Tripartite Influence Model (Thompson et al., 1999) is partially applicable to midlife female populations. Finally, the last two studies suggest that projection biases are a potential mechanism through which body image may impede upon romantic relationship outcomes.
Statement of Originality

This work has not previously been submitted for a degree or diploma in any university. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

(Signed)_____________________________ (Date) 23/10/20

Allanah Hockey
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ALL PAPERS INCLUDED ARE CO-AUTHORED

Acknowledgement of Papers included in this Thesis

Included in this thesis are papers in *Chapters 3, 4, and 5* which are co-authored with other researchers. My contribution to each co-authored paper is outlined at the front of the relevant chapter. The bibliographic details for these papers including all authors, are:


Appropriate acknowledgements of those who contributed to the research but did not qualify as authors are included in each paper.

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SECTION 1

Introduction
Overview of Theoretical Background and Thesis Aims

Body image is a multidimensional construct that encompasses perceptions, attitudes, cognitions, behaviours, and affect about appearance and the body as a whole (Robert-McComb & Massey-Stokes, 2014; Thompson et al., 1999; Tiggemann & Lynch, 2001). It also encompasses an evaluative component, or an emotional assessment of the size, shape and attractiveness of the body (Grogan, 2006; Muth & Cash, 1997). Thus, body image affects various domains within an individual’s life, including their emotional and physical wellbeing, interpersonal relationships, sexual experiences and behaviours, grooming choices, learning and career development, self-esteem, confidence, and eating and exercise behaviours (Cash & Fleming, 2002b; Grogan, 2016).

Across the Western world, beauty is seen as central to an individuals’ worth, where it symbolises desirability, success, motivation, health, and fertility (Langlois et al., 2000; Schaefer et al., 2006; Thornhill & Gangestad, 1993). This is particularly relevant for women, given research which suggests that individuals place a greater emphasis on appearance in evaluations of worth for women, as opposed to men who are often evaluated more wholistically (i.e., there is a double standard of ageing for men and women; Tiggemann, 2004; Wilcox, 1997). Central to beauty is the shape and size of an individual’s body (Thompson et al., 1999). For Western women, an extremely thin physique has been upheld as the epitome of attractiveness for decades (Grogan, 2016; Thompson et al., 1999). For men, the prevailing epitome of an attractive body relates to extreme musculature coupled with low levels of body fat (McCabe & Ricciardelli, 2004). Contemporary scholarship has demonstrated that each of these appearance ideals are exceedingly difficult for the average man or woman to obtain (Cash, 2012; Grogan, 2016;
Thompson et al., 1999), and as a result, body dissatisfaction (also referred to as body image dissatisfaction and body image disturbance) is pervasive across the Western world (Cash, 2012; Grogan, 2016; Thompson et al., 1999).

Body dissatisfaction is prevalent among both genders and has been shown to have detrimental consequences (Grogan, 2016; Thompson et al., 1999) that permeate the lives of women and men of all ages (Grogan, 2016; Pope, Pope, Phillips, & Olivardia, 2000). Accordingly, body image and body image dissatisfaction have become increasingly researched domains during the last 30 years. Such research has been invaluable in informing the research and clinical intervention fields (Grogan, 2006). To date however, prominent gaps remain within the literature. Three of these gaps are addressed in the current thesis: the trajectory, prevalence and cohort effects of body image disturbance across the adult lifespan for women and men, body dissatisfaction in midlife women, and the role body image disturbance plays in romantic relationships. Research in each area has important clinical and empirical implications. Thus, the aim of this thesis is to address each of these gaps within the literature across three empirical studies (Chapters 3, 4, and 5) to further contemporary understanding of each domain.

**Orientation to the Thesis**

This Thesis is divided into three sections. The first section contains one chapter (Chapter 1) that provides a comprehensive literature review. This broad review focuses on the relevance of beauty and how the concept has evolved in Western society, ultimately resulting in a high prevalence of body dissatisfaction and detrimental consequences for people who struggle with body dissatisfaction. First, Chapter 1 outlines the value of beauty in the Western world, including the relevance of contemporary societal beauty ideals. Chapter 1 then outlines three prominent beauty ideals across Western society: the thin-ideal, the fit-ideal, and the muscular-ideal. It then
discusses the discrepancy between these ideals and the appearance of the general population, thus leading to an outline of the prevalence of body dissatisfaction for women and men. Next, the chapter discusses the broad psychological, physiological, behavioural, and interpersonal consequences of body dissatisfaction, before finally outlining a prominent model of body dissatisfaction within the literature (the Tripartite Influence Model; Thompson et al., 1999). Having comprehensively engaged with the body image literature, including health outcomes associated with body dissatisfaction, and prominent models of body image, the second section moves on to the novel empirical work that makes up the present thesis.

Section 2 of the thesis consists of four chapters. Chapter 2 provides a rationale for the program of research undertaken, and a brief overview of the studies that make up the thesis. Chapter 3 presents the first empirical research study, which investigates cohort effects and the normative developmental trajectory of body image across the male and female adult lifespan. Chapter 4 outlines the second empirical study of this program of research that examines the applicability of a longstanding sociocultural model of body image (the Tripartite Influence Model; Thompson et al., 1999) to a midlife female population. Chapter 5 presents the third and fourth empirical studies of the series, which investigate body image projection biases within romantic relationships. Finally, Section 3 of the thesis contains one chapter (Chapter 6). This final chapter provides an overall discussion of the program of research. More specifically, it summarises the key findings, discusses the clinical and future research implications, highlights the strengths and limitations of the series of studies, and provides final conclusions from the program of research.
Chapter 1: Body Image in the Western World

Before delving into the empirical components of this thesis, Chapter 1 presents a comprehensive review of the body image literature to date, to demonstrate the relevance and importance of body dissatisfaction as a research topic. Within Western culture (including countries both geographically Western, and culturally Westernized such as Australia, the United States, and the United Kingdom), appearance is typically upheld as being central to an individual’s worth, particularly for women. Notably, research suggests that social advantage is often afforded to attractive individuals. In their research comprising 11 meta-analyses, Langlois et al. (2000) reviewed research that included evaluations of facial attractiveness (subjective to each rater, although there was often considerable inter-rater agreement) and concluded that attractive children and adults are judged more positively, treated more positively (even by those who know them), and exhibit more positive behaviours and traits in comparison to their less attractive counterparts. While effects were small, they were meaningful, highlighting the role that attractiveness judgements can play in how we are treated and behave. The social advantage of attractiveness has been well documented for decades, with research demonstrating that attractive individuals are typically perceived by others to have happier marriages, be more competent spouses (Dion, Berscheid, & Walster, 1972), and go on more romantic dates (Berscheid, Dion, Walster, & Walster, 1971). Further, attractive individuals are more likely to be hired than their less attractive peers (Cash & Kilcullen, 1985; Chiu & Babcock, 2002). Attractiveness has also been linked to social judgements relating to crime, whereby more attractive individuals typically pay lower bail (Downs & Lyons, 1991) and are viewed as less culpable of violent crimes (Forgas & Laham, 2016; Sigall & Ostrove, 1975). Aptly put, Langlois et al. (2000) suggested that “beauty is more than just in the eye of the beholder; people do judge
and treat others with whom they interact based on attractiveness”. To elaborate on how beauty is understood in the modern world, three prominent sociocultural beauty ideals upheld across Western cultures will be outlined below.

**Appearance Ideals in Western Culture**

Central to Western cultural ideals of beauty is body size and shape. For women, the ‘thin body ideal’ has prevailed for decades as the epitome of female beauty, although there has also been a relatively recent emergence of a ‘fit body ideal’ (Uhlmann et al., 2018). The thin-ideal is defined as an excessively thin female physique that has been likened to a prepubescent physique with large breasts, which is extremely difficult for the average woman to obtain (Brownell, 1991b; Phelps et al., 1993; Thompson et al., 1999). The fit-ideal similarly upholds the importance of thinness, yet simultaneously emphasises the value of lean muscle tone in addition to it (Bozsik, Whisenhunt, Hudson, Bennett, & Lundgren, 2018). With respect to men, society considers a lean, muscular body to be ideal. The muscular-ideal emphasises a mesomorphic male physique that is characterised by simultaneously low body fat and well-developed musculature, further typified by broad shoulders, large biceps, and a narrow waist (Cohane & Pope, 2001). Each of these ideals will now be discussed in more detail.

**The Thin-Ideal**

As noted above, the thin female body ideal refers to an excessively thin female physique that is typically unobtainable for the average woman (Thompson et al., 1999). The thin-ideal has resulted in an inextricable link between beauty and thinness, whereby low body weight is considered a central evaluative component of physical attractiveness in the Western world for women (Klaczyński, Goold, & Mudry, 2004; Stice, Hayward, Cameron, Killen, & Taylor, 2000). Indeed, academics have postulated that the body fat percentage required to reach the thin body
ideal is typically half of that required for a healthy woman (Brownell, 1991a). Further, research indicates that body mass index (BMI: weight in kilograms divided by height in metres squared; Health Direct, 2018), a widely used indicator of individual weight range, is the single most important determinant of female attractiveness perceived by women and men (Puhl & Boland, 2001). So deeply ingrained is this view that approximately 24% of American women report that they would sacrifice three years of their life in order to live at their desired weight (Garner, 1997). Further, ratings of attraction have been found to vary between 50 – 75% for women (Smith et al., 2007; Swami & Tovee, 2005) and 70% for men, based on BMI alone (Swami, Knight, Tovee, Davies, & Furnham, 2007). Concerningly, this weight bias is also evident in young children. In their study of 55 preschool girls (aged 3-5 years), Harriger, Calogero, Witherington, and Smith (2010) found that the children attributed more negative adjectives to overweight targets and more positive adjectives to thin targets. The children were also less likely to select an overweight target as their playmate or best friend, were more likely to select a thin target as a playmate or best friend, were more likely to attribute positive characteristics to thin targets compared to average size targets, and were more likely to choose a thin playmate and best friend compared to an average sized playmate. Similarly, children aged 10 – 11 years demonstrated a preference for other children with various physical disabilities over an obese child, regardless of their own social, economic or racial background (Richardson, Goodman, Hastorf, & Dornbusch, 1961).

Of note, research suggests that the ideal female figure has become increasingly slender over time. Between 1959 – 1978, declines in body weight were identified in Miss America beauty pageant contestants (Garner, Garfinkel, Schwartz, & Thompson, 1980), with this trend found to continue in follow-up research conducted between 1979 – 1988 (Wiseman, Gray,
Mosimann, & Ahrens, 1992). An increasing prevalence of diet-related articles targeting girls and women was also identified during this period (Garner et al., 1980; Wiseman et al., 1992), and evidence suggests that women depicted in mainstream media have become significantly thinner over the past few decades (Hawkins, Richards, Granley, & Stein, 2004). So severe is this shift, that more than half of female media personalities have been said to meet criteria for anorexia nervosa based on apparent body weight (Wiseman et al., 1992). Given that media platforms are indicative of sociocultural trends, it would seem that the thin-ideal has not only increased in popularity, but also in severity over time.

Media appears to play an ever-increasing role in the perpetuation of the thin ideal, with the average person now spending several hours each day consuming various types of media (e.g. social, online, tv, music video, print; Sensis, 2017; Twenge, Martin, & Spitzberg, 2019). As a result of the increased mainstream media consumption, and in turn, thin-ideal media images, women have accordingly demonstrated reduced capacity to identify other women of a healthy weight. Indeed, Ahern, Bennett, and Hetherington (2008) found that women frequently mislabelled images of underweight women as normal weight, and normal weight women as overweight. These misperceptions are similarly depicted in women’s assumptions about men’s preferences, whereby women often report that men desire a much thinner female physique than men actually do (Swami, Neto, Tovée, & Furnham, 2007). In sum, so normative is the excessively thin depiction of the female figure, that the average woman no longer appears aware of what constitutes an “average” female physique.

The Fit-Ideal.

As previously noted, the fit-ideal emphasises a female physique that comprises both thinness and muscle tone. Research has demonstrated an increasing desire among women to
attain both thinness and musculature, with the fit beauty ideal becoming increasingly prominent and popular over the past two decades (Fallon, Harris, & Johnson, 2014; Kelley, Neufeld, & Musher-Eizenman, 2010). McVey, Tweed, and Blackmore (2005) found that while 57% of young adolescent women were exercising to lose weight, 70% were exercising to look more muscular. Similarly, Kelley et al. (2010) found that young women drawn from a university sample had a greater desire to appear both thin and muscular (31.6%), as opposed to thin (17.8%) or muscular (23%) in isolation. Further, in their two-part study, Bozsik et al. (2018) found that beauty pageant winners over the past 15 years have not only become increasingly thin, but also increasingly toned. In their second study, the authors found that undergraduate women had a strong preference for thin and toned models, as opposed to models who were thin without muscle tone. Such findings demonstrate the growing preference for a thin and toned body in modern-day women.

Preference for the fit-ideal is further evident in the growing depictions of, and engagement with, fitness trends on social media. Content depicting health foods, muscular models, and workouts are now commonplace on social media and are part of an online fitness inspiration trend, allegedly designed to promote healthy lifestyles via exercise and healthy food consumption (Tiggemann & Zaccardo, 2015). So prevalent is this movement, that a quick search on Instagram reveals that there are over 91 million posts utilising the hashtags ‘fitspiration’ and ‘fitspo’ as of October 2020 (Instagram, 2020a, 2020b). Content analysis suggests that such posts frequently praise low body weight (42%), stigmatise overweight (46.5%), and promote aesthetically motivated exercise behaviour (74 – 92%; Boepple & Thompson, 2016; Carrotte, Prichard, & Lim, 2017; Tiggemann & Zaccardo, 2016). Given that within Australia, 79% of adults utilise social media, 59% access it daily (Sensis, 2017), and endorsement of fitness
inspiration is greater among women than men (Carrotte et al., 2017; Raggatt et al., 2018), the influence of social media on women’s body image is strong (Tiggemann, 2014). For example, women who engage more with media (e.g. television and magazines) have also demonstrated worse body image compared to those who are not frequently exposed to the media (Tiggemann, 2003). It appears that the fit-ideal has permeated Western culture, and demonstrated itself as an increasingly desirable sociocultural appearance ideal for women.

**The Muscular-Ideal.**

The muscular-ideal appears to be the prevailing sociocultural standard of attractiveness for men in Western societies (Cohane & Pope, 2001; Grogan, 2016; Grogan & Richards, 2002), and emphasises a male physique that is lean yet highly muscular (Griffiths, Murray, & Touyz, 2013; Grogan & Richards, 2002). The ideal male body has become increasingly more muscular over time, demonstrating a cultural shift in more rigid depictions of the attractive male stereotype over the past 30 years (Grogan & Richards, 2002; Pope Jr, Olivardia, Gruber, & Borowiecki, 1999). Such portrayals of the ideal male physique are further depicted in contemporary action figure toys, which possess greater musculature than even the largest bodybuilders (Pope et al., 2000). Thus, it is unsurprising that around 90% of Western men report a desire to gain muscle (Frederick et al., 2007), and 47% of adolescent boys have expressed a desire to gain muscle (Ricciardelli & McCabe, 2003). Further, research suggests that men in Western cultures typically report their ideal body size as approximately 12.7 kilograms heavier in muscle than their actual body size, and perceive that women desire a male physique that is on average 13.6 kilograms heavier in muscle than their actual size (Pope et al., 2000). Thus, evidence supports the notion that a mesomorphic male physique is becoming increasingly propagated in Western society as the body ideal to emulate. Interestingly however, although the muscular ideal stereotype has
become increasingly popular, there remains greater diversity in what is considered to be an attractive male body in mainstream media compared to typical female representations (e.g. men can be lean and muscular or stocky and muscular; Grogan, 2016; Strahan, Wilson, Cressman, & Buote, 2006). Thus, although men are increasingly confronted with prescriptively lean and muscular sociocultural appearance ideals, it would appear that less rigidity surrounds the contemporary depictions of male appearance ideals as opposed to those imposed upon Western women.

Having discussed the prevailing thin, fit, and muscular ideals of the West, in the following section the consequence of pursuing the prevailing attractiveness stereotypes that are both rigid and difficult to achieve will be examined. In the section below research is summarised that demonstrates that such rigid ideals lead to discrepancies between what a person looks like, and what they wish they looked like, with consequences for body image, health, and wellbeing.

**Appearance Ideal Discrepancies**

Body ideals are so prevalent that people often pursue them; such pursuits, however, are likely to be fruitless due to the unrealistic nature of each ideal (Cash, 2012; Grogan, 2016; Thompson et al., 1999). With respect to the female thin-ideal, content analysis suggests that fashion models depicted in mainstream media are typically thinner than 98% of American women (Grogan, 2016). Likewise, similarities have been identified between fitspiration and pro-anorexia websites (Boeppe & Thompson, 2016), indicating unhealthy parallels in exercise and diet methods required to achieve the fit ideal. For men, a significant discrepancy is also apparent between the average man and the muscular-ideal. Between the 1950s and 1990s male BMI was found to significantly increase for men in the general public and men represented in the media. However, the BMI increase was attributable to adiposity in the general male population and due
to increased muscle mass in men represented in the media (Spitzer, Henderson, & Zivian, 1999). Such results demonstrate notable differences between the appearance of the average man compared to that upheld as aesthetically ideal.

The thin, fit and muscular societal body ideals are clearly vastly discrepant from the bodies of average men and women. Further, the rise of these body ideals, all of which emphasise leanness (or lack of body fat), has coincided with a worldwide increase in overweight and obesity (Callahan, 2013). Overweight and obesity are defined by BMI (Demerath et al., 2006; Health Direct, 2018), with medical classifications considered to be: underweight (below 18.5), “healthy” weight range (18.5 – 24.9), overweight (25 – 29.9), and obese (30 and above; Health Direct, 2020). According to the World Health Organisation (2020), worldwide obesity has nearly tripled since 1975, with 39% of adults being categorised as overweight and 13% considered obese in 2020. Thus, the typical adult is now arguably further removed from the thin, fit and muscular ideals than ever before. It is hardly surprising therefore, that the majority of men and women do not feel they ‘measure up’ to societal depictions of the perfect body, and that as a consequence, body image disturbance has become increasingly prominent in recent years (Grogan, 2016). Below, the thesis moves to considering body dissatisfaction.

**Body Dissatisfaction**

The past 30 years have seen a noticeable increase in body image related literature (Grogan, 2006; Grogan, 2016), and for good reason. Within the Western world, negative body image among women is prevalent enough to be referred to as ‘normative discontent’ among academics (Cash & Henry, 1995; Feingold & Mazzella, 1998; Markey & Markey, 2005; Rodin, Silberstein, & Streigel-Moore, 1984). Body dissatisfaction (also referred to as negative body image and body image disturbance), refers to one’s negative thoughts and feelings about his or
her body, and in particular its appearance (Grogan, 2016). Given the common occurrence of body dissatisfaction across the Western world (Grogan, 2016), the conversation now turns to the prevalence of body image disturbance across the lifespan.

**Prevalence**

Traditionally, body dissatisfaction has been considered an issue primarily relevant to adolescent and young adult women (Burrowes, 2013). However, recent years have seen increasing body image disturbance amongst male populations (Goins, Markey, & Gillen, 2012; Tager, Good, & Morrison, 2006), and older adult women (Mellor, Fuller-Tyszkiewicz, McCabe, & Ricciardelli, 2010; Tiggemann, 2004). This pattern appears to begin early in life for women and men. In their cross-sectional examination of body dissatisfaction and dieting in young children, Lowes and Tiggemann (2003) found that girls aged 6-8 years rated their ideal figure as thinner than their current figure. In another study assessing children between grades three to six (N = 62), up to 50% of children reported wanting to weigh less and expressed concerns about weight gain, and 16% reported previous attempts to lose weight (Schur, Sanders, & Steiner, 2000). Similarly, in a cross-sectional investigation of body image in 204 American children aged 8 – 10 years, Wood, Becker, and Thompson (1996) found that 55% of girls and 35% of boys were dissatisfied with their size. Comparable findings were identified within cross-sectional research in a sample of Australian children of the same age (N = 202, 8 – 10 years), in which 46.4% of girls and 25.7% of boys reported regularly thinking about being thinner, and 66% of girls and 42.9% of boys reported fears of becoming overweight (Thomas, Ricciardelli, & Williams, 2000). Such findings align with Ricciardelli and McCabe’s (2001a) review of the body image literature in children aged 6 to 11 years where it was concluded that up to 55% of girls and 30% of boys desired a thinner body.
Extending into adolescence, longitudinal research suggests that up to 44% of adolescent girls and 23% of adolescent boys (N = 428, 12-16 years) express body dissatisfaction (Bearman, Martinez, Stice, & Presnell, 2006), and close to 25% of adolescent girls report clinically significant levels of body dissatisfaction (Stice & Whitenton, 2002). Such findings align with research conducted on an Australian representative sample of 600 children aged 10 to 14 years, where it was found that 41% of children expressed concerns about their appearance and 35% reported concern about being overweight (Tucci, Mitchell, & Goddard, 2007). Similarly, in an examination of body image among 239 adolescents (54% female, Mage= 16 years), Lawler and Nixon (2011) found that 80.8% of girls reported a desire to alter their body size, with more than half of boys also wanting to alter their body size (54.8%). Further, in an examination of body satisfaction in 300 adolescents aged 10 – 12 years, nearly 70% of male participants demonstrated dissatisfaction with their muscles. Finally, in an investigation of body dissatisfaction among adolescent girls (n = 1135) and boys (n = 531) aged 12 to 18 years, it was found that although body dissatisfaction was higher among girls, body dissatisfaction was adversely related to quality of life for both sexes (Griffiths et al., 2017). The authors concluded that body dissatisfaction should be considered a public health concern for adolescents in its own right. Together, these findings highlight the high prevalence rate of body dissatisfaction among adolescents.

Body image concerns, however, are not just evident in younger people. In her comprehensive literature review, Tiggemann (2004) concluded that there is relative stability of body dissatisfaction across the female adult lifespan, challenging the notion of body dissatisfaction as an age-dependant phenomenon. Indeed, from her review, Tiggemann (2004) found that the desire to be thinner, concern about eating and weight, body esteem, preoccupation with being overweight, satisfaction with appearance, and satisfaction with body parts did not
differ across the female life span. In a later empirical study of 3300 women aged between 15 to 64 years, it was found that 67% of all women assessed withdrew from life-engaging activities due to feeling badly about their appearance, with this effect particularly pronounced for adolescents (Etcoff, Orbach, Scott, & D'Agostino, 2006). Contemporary research further supports the stability of body dissatisfaction across the lifespan for women. In a study of 1,327 women aged 16-88 years, Quittkat et al. (2019) found that body dissatisfaction remained stable across ages for women. Similarly, Fallon et al. (2014) examined body dissatisfaction in participants aged 18 to 90 years (N = 1893). Findings revealed that up to 31.8% of women suffered from body dissatisfaction and around 34.5% of women were dissatisfied with their muscle tone. Taken together, these findings contradict the supposition that body dissatisfaction is a phenomena limited to younger women, and further underscore the importance of better understanding the role of body image across the female lifespan.

In support of the notion that body dissatisfaction is not only for the young, there is evidence suggesting that midlife women may be particularly vulnerable to the experience of body image disturbance. It is acknowledged that multiple definitions of midlife exist within the literature (Tiggemann, 2004). However, within the current research, midlife is defined as women aged 40 – 55 years of age. Note, however, that in conducting our literature review, we considered papers with women who fell slightly below or above the criterion cut-off to ensure a thorough and comprehensive review of the literature. Gagne et al. (2012) examined weight and shape concerns and eating disorder symptoms and attitudes in midlife women (aged 50 years and over, N= 1849). It was found that 79.1% of women reported that the role of body weight and shape had a moderate to important influence on their self-perception, and over 70% reported dissatisfaction with their current weight and shape. Moreover, 61.8% of women reported that
concerns about eating, weight, or shape negatively impacted their lives occasionally to often, and
83.9% reported dissatisfaction with their stomach. Further, 63.9% of women reported thinking
about their weight daily or more, and 63.7% stated that they felt moderately to extremely upset if
they gained approximately two kilograms, and greater weight and shape concerns were apparent
among women with high BMIs. Similarly, Jackson et al.’s (2014) cross-sectional research of 405
Caucasian and African American midlife women (aged 42 – 52 years) found that 47% of women
reported dissatisfaction with their appearance, and 73.3% reported some level of dissatisfaction
with their weight; with no differences between African American and Caucasian women.

Beyond weight and shape concerns, other age-related changes to appearance, such as greying
and thinning of hair, loss of skin elasticity, and concerns such as aging anxiety have also been
established as risk factors for body dissatisfaction for midlife women (Tiggemann, 2004). Such
age-related changes are discussed in greater depth within Chapter 2 of this manuscript. Research
also supports the presence of body dissatisfaction in elderly women. Evidence suggests that as
few as 12 percent of older women (60 years and over) are satisfied with their body size
(Cameron, Ward, Mandville-Anstey, & Coombs, 2019), and that women aged into their 80s and
90s continue to report body dissatisfaction (Clarke, 2002; Quittkat et al., 2019). It would seem
therefore, that body dissatisfaction exists at all ages for women.

Although body dissatisfaction exists in older female cohorts, it appears that older women
may be less concerned about this dissatisfaction relative to younger women (Tiggemann, 2004).
For example, Reboussin et al. (2000) conducted a study on body satisfaction among middle-aged
and older adults; with findings suggesting that older adults tend to value body function over body
appearance. Similarly, Janelli (1993) found that elderly women (Mage 76 years) were most
dissatisfied with their eyes, hands, fingers and legs (in addition to their weight); suggesting a
potential focal shift to the more functional aspect of their bodies with age. In her literature review, Tiggemann (2004) concluded that decreasing the emphasis placed on physical appearance provides protection for self-concept in a cohort that is increasingly deviating from societal beauty ideals. In support of these findings, Lewis and Cachelin (2001) found that, although equally dissatisfied with their bodies, elderly women were less likely to engage in weight-related behaviours (such as restrained eating) when compared to their middle-aged counterparts. In sum, extant literature suggests that poor body image remains well into old age for women, although the outcomes associated with poor body image in elderly women may be less consequential than those faced by women in younger age cohorts. However, it must be acknowledged that reduced consequences do not equate to no consequences within the cohort, as will be outlined in later sections of this review. Having discussed body dissatisfaction in women throughout the lifespan, the review will now briefly cover body dissatisfaction in men.

Men are unfortunately not exempt from the experience of body dissatisfaction. In a review of the literature, Fiske, Fallon, Blissmer, and Redding (2014) found that the prevalence of body dissatisfaction in the United States was up to 61% for men (aged over 18 years). Similar findings were identified in a sample of Western college students aged between 17 – 48 years (Mage= 22.6; N = 287) where 27% of men expressed a desire to be thinner, 26% wanted to be less thin, and 85% wanted to be more muscular (Vartanian, Giant, & Passino, 2001). Further, Thompson and Cafri (2007) found that more than 80% of young men were dissatisfied with their overall body size, and in particular, their upper body. In their exploratory research on 153 college men with a mean age of 21.43 years, Daniel and Bridges (2013) found that 95% of men were dissatisfied with their bodies to some extent. Further, Tager et al. (2006) found that 20% of young men’s (N = 101, Mage = 19.45 years) psychological self-acceptance was associated with
evaluations of their own appearance. Together, these findings highlight the pervasive nature of body dissatisfaction in adult women and men.

For men, the prevalence of body image disturbance across the lifespan is less researched and understood than for women. It would seem that as men age, body dissatisfaction appears to become complex due to the muscular ideal consisting of a ‘big’ body that is high in muscle and low in fat. Due to the vast differences in actual male bodies, there is a relatively even divide between men who desire to lose weight (i.e., those who are ‘big’ but have high adiposity) and those wanting to gain weight (i.e., they are low in both musculature and adiposity; McCabe & Ricciardelli, 2004). For example, Drewnowski, Kurth, and Krahn (1995) found that 32% of 18-year-old men (N = 2,088) wanted to lose weight, while 46% wanted to gain weight. Similarly, Murray and Lewis (2014) found that while younger men (N = 156, aged 17 - 29) demonstrated greater muscle and height dissatisfaction, body-fat dissatisfaction was similar across all participants (aged 17 – 71 years).

With respect to body dissatisfaction across the male lifespan, the evidence appears to be mixed. Peat, Peyerl, Ferraro, and Butler (2011) found significant differences between younger and older men’s body dissatisfaction, whereby younger men reported greater dissatisfaction despite having a lower BMI. Thus, the authors surmised that younger men may be at greater risk of body dissatisfaction than older men. Conversely however, more recent cross-sectional research has suggested the relative stability of male body image across the lifespan (Quittkat et al., 2019). In their examination of body dissatisfaction among 385 men aged 16 to 88 years, Quittkat et al. (2019) found that body image disturbance did not differ between participants of different ages.

Complicating the male body image field further are societal pressures for men to be
unconcerned with body image. Indeed, contemporary scholarship suggests that quantitative research is likely to underestimate body image disturbance in male populations (Grogan, 2006; Hargreaves & Tiggemann, 2004; Ricciardelli & McCabe, 2001a) as body dissatisfaction remains highly stigmatised for males due to gender socialisation maintaining views of body image as a feminine issue (Griffiths, Mond, Murray, & Touyz, 2014; Grogan, 2006; Hargreaves & Tiggemann, 2004; O'Gorman, Sheffield, Clarke, & Griffiths, 2020). Indeed, it appears that boys and men remain hesitant to openly discuss body image disturbances and consequently are less likely to disclose, be aware of, or seek help for, body image problems (Grogan, 2006; Hargreaves & Tiggemann, 2004; O'Gorman et al., 2020).

Collectively, the available research to date suggest that for women, body dissatisfaction remains relatively stable across the lifespan. For men however, this relationship is less clear and requires further investigation. Nevertheless, evidence demonstrates that body image disturbance is prevalent for both women and men at varied stages across the lifespan. Furthermore, body dissatisfaction in midlife women appears to be remarkably similar to that of young adults, such that older women appear to be influenced by perceived pressure in a similar way to their younger counterparts. However, it is important to keep in mind that current research frequently utilises invalidated measures and fails to include broad ethnicities, thus limitations exist within the research. This normative discontent needs to be taken seriously; body dissatisfaction is associated with a range of detrimental outcomes for both men and women, as will be discussed below.

**Consequences of Body Dissatisfaction**

Body image is central to self-concept and thus carries with it important implications for health and wellbeing (Bucchaneri & Neumark-Sztainer, 2014; Cash & Pruzinsky, 2002; Cash,
Theriault, & Annis, 2004). Given the high prevalence of body image disturbance within the Western world, it is unsurprising that extensive research has been conducted on the negative behavioural, psychological, physical, and interpersonal consequences of body dissatisfaction, particularly in women (Grogan, 2016; Thompson et al., 1999). Accordingly, the below sections will first discuss the broad behavioural consequences of body dissatisfaction. A more specific, yet common, behavioural consequence of body dissatisfaction, dieting, will then be outlined. Next, a specific form of psychological illness, clinical eating disorders, will be reviewed before the discussion turns to general psychological consequences of body dissatisfaction. Finally, the physical and interpersonal consequences of body dissatisfaction will be addressed.

**Behavioural Consequences.** Broadly, body dissatisfaction has been linked to unhealthy weight control behaviours such as excessive exercise (Donovan, Chew, & Penny, 2014; White & Halliwell, 2010), purging (Rieder & Ruderman, 2001), and body checking (Dakanalis, Favagrossa, et al., 2015; Hildebrandt, Walker, Alfano, Delinsky, & Bannon, 2010). Negative body image has also been linked to risk factors associated with weight gain, such as binge eating, emotional eating (Johnson & Wardle, 2005), lower levels of physical activity, and decreased fruit and vegetable intake (Neumark-Sztainer, Paxton, Hannan, Haines, & Story, 2006). It has also been implicated in behaviours beyond those centred around physical appearance. For example, Crow, Eisenberg, Story, and Neumark-Sztainer (2008) found that body dissatisfaction was associated with higher rates of reported suicide attempts in adolescents, even when controlling for depressive symptoms and demographic variables. Similarly, longitudinal consequences of body image concerns (in adolescence) relate to risky health behaviours, including smoking, drug use, high alcohol consumption, and self-harm (Bornioli, Lewis-Smith, Smith, Slater, & Bray, 2019). Further, negative body image has been associated with engagement in unnecessary
cosmetic surgical intervention (Bolton, Pruzinsky, Cash, & Persing, 2003; Didie & Sarwer, 2003). Taken together, it is evident that body dissatisfaction has the capacity to impact individual behaviours in diverse and detrimental ways. However, one of the most widely assessed and empirically validated behavioural consequences of body dissatisfaction is that of dieting. Despite dieting being stereotyped as a female consequence of body dissatisfaction, dieting has been documented in a broad array of individuals who perceive a discrepancy between their own appearance and that of the sociocultural beauty ideals (Grogan, 2016; Thompson et al., 1999). Thus an outline of the literature will be reviewed below.

**Dieting.** Vast evidence supports dietary restriction as a consequence of body dissatisfaction in women and men, and dieting appears to start early in life. Damiano et al.’s (2015) examination of dietary restraint in 5-year-old girls (N = 111) revealed that 35% reported a moderate level of dietary restraint. Similarly, Schur et al. (2000) found that around 16% of third through to sixth grade boys and girls (N = 62) reported previous attempts to lose weight. Further, Shapiro, Newcomb, and Burns Loeb’s (1997) assessment of eating and weight attitudes and behaviours in eight to 10 year olds (N = 239) found that up to 29% of boys and 41% of the girls reported use of dieting and exercise to lose weight. Similar patterns have been identified in adolescent populations. Daee et al.’s (2002) review of adolescent dieting indicated that 41% to 66% of teenage girls and 20% to 31% of teenage boys had attempted to lose weight through dieting in the past. Similarly, in their longitudinal research, Neumark-Sztainer, Wall, Larson, Eisenberg, and Loth (2011) examined dieting and disordered eating from adolescence through to young adulthood over a 10 year period in over 2000 participants. It was found that the prevalence of dieting and disordered eating was high and remained constant or increased from adolescence into young adulthood, and that these behaviours were more prevalent among girls
than boys. Such findings align with research indicating that the use of dieting typically persists or worsens as individuals progress from adolescence into young adulthood (Herzog et al., 1999; Kotler, Cohen, Davies, Pine, & Walsh, 2001).

Moving from research conducted with adolescents into that conducted with young adult populations, Eisenberg, Berge, and Neumark-Sztainer (2013) found that 42.6% of their young adult sample (N = 1294, Mage = 25.3, 55% female, 50% male) reported using unhealthy weight control behaviours, such as dietary restriction, in the past year. Dietary restriction was more common among females (51.2%) than males (29.9%). Likewise, in their cross-sectional research with 104 men with a mean age of 25.88 years, Markey and Markey (2006) found that over 36% reported participation in at least one unhealthy dieting behaviour during the past year. Further, in summarising the research conducted on Western men, Fairburn and Brownell (2002) concluded that approximately 21% of men reported that they were currently trying to lose weight.

Extending into middle adulthood, an examination of 376 women with an average age of 34.90 years (range = 19 – 68 years) from the United Kingdom, found that 70.9% of women had attempted dieting to change their body shape and that 29.5% stated that they would utilise cosmetic surgery to change their body if they could afford it (Diedrichs, Paraskeva, & New, 2011). Similar findings were reported by Gagne et al. (2012) in their examination of weight and shape concerns and eating disorder symptoms and attitudes in midlife women (aged 50 years and over, N= 1849); 71.2% of women reported current attempts to lose weight, and 35.6% reported spending more than half of the past five years dieting.

Consistent with findings that body dissatisfaction exists throughout the female lifespan, it would appear that dieting does too. Hetherington and Burnett’s (1994) investigation of dietary behaviours in an older female sample found that the majority of elderly women (60-78 years)
who had dieted did not start until they reached their 40’s. Further, three separate studies examining dietary habits across the female lifespan identified no differences in disordered eating symptoms across different age groups ranging from 18-87 years (Bennett & Stevens, 1996; Hetherington & Burnett, 1994; Stokes & Frederick-Recascino, 2003). Together, these findings reveal a high prevalence of dieting across the lifespan for women.

For men, the relationship between traditional types of dieting (i.e., restriction of food intake) and body image appears to be complex, due to the requirement for both leanness and musculature in order to conform to the muscular-ideal (Labre, 2002). Unsurprisingly, there has been an increase in male behaviours focused on muscle-building such as training frequency (Dakanalis, Timko, et al., 2015), anabolic and androgenic steroid use, and other performance enhancing supplement use (Blouin & Goldfield, 1995; Dakanalis, Timko, et al., 2015; Komoroski & Rickert, 1992). Nevertheless, despite the relative scarcity of dietary research pertaining to men, extant literature underscores a high prevalence of dietary restraint across the male lifespan. For example, in their assessment of dieting across the lifespan (N = 31,636, 60.2% female), Slof-Op’t Landt et al. (2017) found that dieting was most frequently reported by 35 to 65-year-old women (56.6–63%), and 45 to 65-year-old men (31.7–31.9%). Such findings are perturbing given that a multitude of risks are associated with prolonged dietary restriction, as will be outlined below. Furthermore, research suggests that muscular-oriented dieting frequently includes: very high protein consumption, restriction of nonprotein foods, frequent eating which may interrupt important activities, eating beyond satiation, and regular consumption of high calorie liquids (Mosley, 2009; Murray et al., 2012). Such behaviours sit in contrast to traditional views of dieting, which typically centre around weight loss, and thus caloric restriction (Griffiths et al., 2013).
As can be seen above, dieting is a common response to body dissatisfaction. While dieting carries with it important implications for health and wellbeing, a more extreme consequence of body dissatisfaction is the development of clinical eating disorders. Given the significance of eating pathology, and its close association with body dissatisfaction and dieting, it is to these disorders that the conversation now turns.

**Clinical Eating Disorders.** Body dissatisfaction has been established as one of the strongest predictors of eating disorders and related symptomatology (Dakanalis et al., 2016; Dakanalis, Zanetti, Riva, & Clerici, 2013; Phelps, Johnston, & Augustyniak, 1999; Polivy & Herman, 2002). More specifically, it has been linked to anorexia nervosa, bulimia nervosa (Polivy & Herman, 2002), binge eating disorder (Stice, Presnell, & Spangler, 2002), and other/unspecified feeding and eating disorders (Todisco, 2018). Moreover, body dissatisfaction has also been established as a maintenance factor for eating pathology (Thompson et al., 1999). Accordingly, given the pervasive nature of body dissatisfaction across the Western world, it is unsurprising that eating pathology has become increasingly prevalent during the past 30 years (da Luz et al., 2017; Hay, Mond, Buttner, & Darby, 2008).

**Definitions of Feeding and Eating Disorders.** The fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association, 2013) lists six specific feeding and eating disorders: pica, rumination disorder, avoidant/restrictive food intake disorder, anorexia nervosa (AN), bulimia nervosa (BN) and binge eating disorder (BED). Of these disorders, AN, BN, and BED have received the most empirical attention, and a number of clinical features must be present for an individual to receive a diagnosis. According to the DSM-5, seven core features should be considered: 1) weight / shape and eating concern or fear, 2) dietary restraint, 3) undue weight loss (or weight gain in the case of binge eating disorder), 4)
nutritional deficiency, 5) body image disturbance (e.g., disturbance in the way one’s body is experienced, or undue influence of body weight/shape on self-evaluation), 6) compensatory behaviour (e.g., laxative and diuretic use, excessive exercise, vomiting) to prevent weight gain, and 7) uncontrollable binge eating behaviour (American Psychiatric Association, 2013; Wade, Bergin, Tiggemann, Bulik, & Fairburn, 2006). A diagnosis of AN requires an individual to meet the first five to six of these criteria, whereas a diagnosis of BN requires an individual to meet criteria five to seven, and finally a diagnosis of BED primarily requires an individual to meet criteria seven (American Psychiatric Association, 2013). The DSM-5 additionally includes two diagnoses of Other Specified Feeding or Eating Disorder (OSFED) and Unspecified Feeding or Eating Disorder (UFED), which describes individuals with disordered eating patterns that fail to meet full diagnostic criteria for one of the other clinical disorders, but which nevertheless are impairing or lead to distress (American Psychiatric Association, 2013).

**Prevalence of Eating Disorders.** Contemporary research suggests that the global rate of eating disorder prevalence doubled between 2000 to 2018 (from 3.4% to 7.8%, respectively; Galmiche, Déchelotte, Lambert, & Tavolacci, 2019). Within Australia, at any given time, is estimated that around 1 million people, or 4% of the population, are living with an eating disorder (Butterfly Foundation, 2012). Females comprise approximately 64% of people with an eating disorder (Butterfly Foundation, 2012). Further, for women and men who have an eating disorder, BED is the most common (47%), followed by BN (12%), and AN (3%), with the remainder of eating disorders (38%) typically falling under the category of OSFED or UFED (Butterfly Foundation, 2012; Mulders-Jones, Mitchison, Girosi, & Hay, 2017). While eating pathology continues to disproportionately affect young women (Fairburn, Cooper, Doll, Norman, & O'Connor, 2000; Lewinsohn, Striegel-Moore, & Seeley, 2000), research has increasingly
recognised eating disorders in male populations (Butterfly Foundation, 2020; Strother, Lemberg, Stanford, & Turberville, 2012). In one cross-sectional population survey conducted over 10 years, disordered eating behaviours (e.g. purging and extreme dieting) were found to increase at a greater rate for men than women (Mitchison, Hay, Slewa-Younan, & Mond, 2014). Further, within Australia, men comprise over one third of individuals experiencing an eating disorder: 40% of individuals with BED are men, and 40% of people aged 11 to 17 years experiencing disordered eating are male (Butterfly Foundation, 2020). Moreover, between 1999 to 2009, hospitalisations involving eating disorders for male patients increased by 53% (Zhao & Encinosa, 2011). Due to enduring cultural biases and assessments which focus primarily on weight loss however, men are less likely to seek treatment or be recognised as suffering from eating disorders (National Eating Disorder Collaboration, 2013; Strother et al., 2012). Thus, evidence suggests that current approximations underestimate prevalence rates of eating disorders in men (National Eating Disorder Collaboration, 2013).

Although most common among adolescents and adults, there is evidence for the presence of eating pathology in other age samples. For example, AN has been documented in children as young as 7 years old (Nicholls, Chater, & Lask, 2000). Although eating pathology is rare in young children, such disturbances may be misdiagnosed due to current diagnostic criteria that are designed for adults (Nicholls et al., 2000). Returning to adult samples, results from an Australian community-based survey (N = 3 001, Mage = 46 years, range = 15 – 94 years, 60% female) revealed that 3.2% of respondents had regular episodes of binge eating, 1.6% regularly fasted or adhered to a strict diet, 0.8% regularly purged, an estimated .3% had BN, and an estimated 1% had BED. Notably, binge eating was most common in participants who were in their early to mid-thirties, and purging was most common in 35 – 44 year olds (Hay, 1998).
As previously noted, body dissatisfaction appears to continue into midlife for women (Quittkat et al., 2019; Tiggemann, 2004). Research conducted by Mangweth-Matzek, Hoek, and Pope Jr (2014) found that middle-aged women (N = 715, 40 - 60 years) exhibited symptoms associated with both BED and eating disorder not otherwise specified (EDNOS, now OSFED/UFED). Similarly, a large community study (N = 1807) identified no differences in bulimic symptomatology between younger cohorts and middle-aged women (Perez, Hernandez, Clarke, & Joiner, 2007). Ackard, Richter, Frisch, Mangham, and Cronemeyer (2013) examined eating disorder hospital admissions in young adult (18 – 39 years) and midlife (40+ years) women (N = 1 040) between 1989 and 2006. Findings indicated an increase in the prevalence of inpatient admissions among middle-aged women, but not young adult women. Moreover, researchers have cautioned that eating pathology may be exacerbated in middle-aged women dealing with menopause, which has been likened to the vulnerable pubertal period of adolescence (Baker & Runfola, 2016).

Research also supports the occurrence of eating disorders in elderly samples. In a review of the literature, Lapid et al. (2010) identified 48 published cases of eating disorders in people aged over 50 years (Mage= 68.6 years, range = 50 – 95 years), of which 88% of cases were female. The majority of cases were identified to have either AN (81%) or BN (10%). Notably, the authors found that within their sample late onset eating pathology (i.e. typically commencing at 65 years and over) was far more common (69%) than early onset eating disorders, and there was a high mortality rate (21%).

Eating disorders have one of the highest mortality rates of any mental illness, and AN has the highest mortality rate of all eating disorders (Smink, van Hoeken, & Hoek, 2012). Current mortality rates vary, and findings are further complicated by comorbidities. However, current
estimates suggest that across Australia each year, approximately 450 people die from AN and 200 from BN (Institute for Eating Disorders, 2020). To put this into perspective, when matched for age and sex, mortality is five times higher in individuals with AN compared to the general population (National Eating Disorder Collaboration, 2013). For BN and BED, the rate of mortality is much lower than AN, yet remains significantly higher than the general population (National Eating Disorder Collaboration, 2013) and is higher for men than women (Raevuori, Keski-Rahkonen, & Hoek, 2014). Furthermore, the growing prevalence of eating disorders is of particular concern, given that eating disorders are typically characterised by chronicity and high rates of relapse (Stice & Shaw, 2002).

Together, these findings highlight a growing prevalence of eating disorders, and the importance of considering eating pathology across the lifespan and in varied populations. Moreover, research speaks to the seriousness of eating disorders, given the chronic nature and severe ramifications associated with the disease. To complicate matters further, the majority of individuals with an eating disorder typically present with at least one other psychiatric disorder across the lifespan, the most common of which are mood, anxiety, and substance use disorders (National Eating Disorder Collaboration, 2013). These more generalised psychological consequences have also been directly associated with body dissatisfaction, as will be seen below.

**Psychological Consequences.** Poor body image has been associated with a plethora of general mental health concerns beyond those specifically related to eating pathology. For example, poor body image has been linked to negative self-esteem and diminished ratings of self-worth (Dakanalis et al., 2013; Grabe, Ward, & Hyde, 2008; Martin, 2010; Webster & Tiggemann, 2003; Yean et al., 2013), as well as increased stress (Johnson & Wardle, 2005), negative affect (Stice, 2002; Thompson & Stice, 2001), depression (Grabe et al., 2008; Johnson
& Wardle, 2005; Simon et al., 2008), social anxiety (Dakanalis et al., 2013), suicidal ideation (Brausch & Muehlenkamp, 2007; Kim & Kim, 2009), emotional dysregulation, and insecure-anxious attachment (Dakanalis, Favagrossa, et al., 2015). Further, poor body image has been associated with other appearance related pressures, such as a drive for muscularity (Dakanalis, Favagrossa, et al., 2015; Dakanalis, Zanetti, et al., 2015), as well as lower subjective quality of life (Mond et al., 2013) and higher perfectionism (Dakanalis, Favagrossa, et al., 2015; Nigar & Naqvi, 2019; Sherry et al., 2009), which is a variable frequently linked with various forms of psychopathology (Limburg, Watson, Hagger, & Egan, 2017).

Body dissatisfaction has also been linked with more specific body oriented psychological illnesses. For example, body image impairment has been associated with Body Dysmorphic Disorder (BDD; Hrabosky et al., 2009), a disorder characterised by a preoccupation with slight or imagined physical defects in appearance (American Psychiatric Association, 2013). Those with BDD typically think about their perceived deficit for many hours each day and engage in time-consuming behaviours, such as checking and reassurance seeking to mitigate the distress (Rief, Buhlmann, Wilhelm, Borkenhagen, & Brahler, 2006; Schneider, Turner, Mond, & Hudson, 2017; Veale, Gledhill, Christodoulou, & Hodsoll, 2016). The prevalence of BDD is not well understood. However, current estimates suggest that approximately 1.8% of the population are afflicted (Rief et al., 2006). Notably, BDD has been associated with higher rates of suicidal ideation and suicide attempts (Rief et al., 2006), as well as shame, depression, and poor quality of life (Veale et al., 2016).

In line with the rise of the fit and muscular-ideals, recent years have seen an increase in the prevalence of Muscle Dysmorphia (MD; Grogan, 2016; Pope et al., 2000), a specific form of BDD in which individuals are preoccupied with their body’s build and muscularity (American
Psychiatric Association, 2013). Those with MD frequently engage in harmful behaviours, such as exercising to exhaustion, lifting weights while injured, and using anabolic steroids, in order to address their perceived deficit (Olivardia, Pope, & Hudson, 2000). It has been suggested the MD may be the male equivalent to AN, and that it is characterised by a drive for muscularity as opposed to thinness (Murray, Rieger, Touyz, & De la Garza García, 2010). In line with this assertion, MD has been associated with eating disorder symptoms (Giardino & Procidano, 2012; McFarland & Kaminski, 2009), and neurocognitive deficits similar to those recognised in AN (Griffiths et al., 2013). Further, evidence suggests that men with MD have greater rates of psychopathology and psychosocial impairment compared to men with BDD alone (Pope et al., 2005). Taken together, the research to date suggests that there are pervasive and profound negative impacts of body image disturbance on the psychological wellbeing of both women and men.

**Physical Consequences.** As with the behavioural and psychological consequences of poor body image, adverse physical consequences have also been linked to body dissatisfaction. Indeed, body dissatisfaction has been found to be a stronger predictor of physical health than BMI (Muennig, Jia, Lee, & Lubetkin, 2008). Body dissatisfaction has been directly associated with reduced likelihood of cancer screening (Ridolfi & Crowther, 2013) and reduced physical health-related quality of life (Wilson, Latner, & Hayashi, 2013).

Secondary physical consequences of body dissatisfaction also stem from the behavioural and psychological consequences of dieting. For example, extreme dieting practices can result in electrolyte imbalances, cardiac dysrhythmias, and cardiac death (Daee et al., 2002), as well as nutritional deficiencies, decreased bone density, fatigue, and physical injury (Manore, 1996). Somewhat ironically, long term dieting has also been demonstrated to predict weight gain and
overweight status (Field, Haines, Rosner, & Willett, 2010; Neumark-Sztainer et al., 2007), which are in turn associated with reduced health status (Tukker, Visscher, & Picavet, 2009). Body dissatisfaction has also been indirectly associated with increased risk of coronary heart disease, kidney and liver damage, reduced immune function (Korkia & Stimson, 1997; Perry, Wright, & Littlepage, 1992), and type 2 diabetes (McCreary & Sasse, 2000) through supplement and steroid use, a consequence of attempts to achieve the fit and muscular ideals.

As noted above, body dissatisfaction is associated with the clinical eating disorders which in turn are associated with a myriad of physical health consequences. Enlarged cerebral ventricles, heart murmurs, liver abnormalities, collapsed vertebrae, shrunken uteri, osteoporosis, limb weakness, and marrow suppression are all common physical consequences of eating disorders; many of which may result in death (Wolfi & Treasure, 2011). Finally, poor psychological health has also been associated with secondary physical health consequences. Compared to the general population, individuals with mental illness have a greater risk of developing metabolic diseases, cardiovascular diseases, viral diseases, respiratory tract diseases, musculoskeletal diseases, sexual dysfunction, pregnancy complications, and stomatognathic diseases (De Hert et al., 2011). Taken together, it is evident that negative body image can detrimentally impact individual physical wellbeing both directly and indirectly. However, it is not solely individuals that are affected by their body image disturbance. As will be outlined below, social or interpersonal deficits are also common consequences of body dissatisfaction.

**Interpersonal Consequences.** Among adolescents, poor body image has been associated with problematic opposite sex relationships among boys, and poor same-sex friendships among girls (Davison & McCabe, 2006). In middle-aged men (30 – 49 years), body dissatisfaction has been related to problematic social functioning (Davison & McCabe, 2005).
Further, Cash et al. (2004) found that greater body image disturbance was linked to less secure attachment and more anxious romantic attachment for both sexes. Similarly, negative body image has been associated with poorer social self-esteem and greater social-anxiety, each of which have demonstrated the capacity to impede upon interpersonal relationships (Cash & Fleming, 2002a). Furthermore, Nezlek (1999) found that those who evaluated their body more positively reported more intimate interactions with others, as well as greater confidence in those interactions.

Romantic relationships may be particularly vulnerable to the influence of body dissatisfaction. In their cross-sectional investigation of more than 16000 participants, Friedman, Dixon, Brownell, Whisman, and Wilfley (1999) found a significant positive association between body image satisfaction and marital satisfaction, even when controlling for age, BMI, self-esteem and gender. Similarly, research suggests that women who have negative body image and engage in more dieting tend to have partners who are less satisfied within the relationship (Boyes, Fletcher, & Latner, 2007). Further, Meltzer and McNulty (2010) found that wives’ perceptions of their own sexual attractiveness accounted for 19% of their own marital satisfaction and 6% of their husband’s.

Research suggests that sexual satisfaction is a central element in relationship satisfaction and success (Butzer & Campbell, 2008; Kisler & Scott Christopher, 2008; Yeh, Lorenz, Wickrama, Conger, & Elder Jr, 2006), and therefore the influence of body image disturbance on sexual satisfaction should not be overlooked. For women, poor body image has been linked to sexual consequences. For example, women’s body dissatisfaction has been associated with reduced sexual functioning and satisfaction (Pujols, Meston, & Seal, 2010), and more specifically increased discomfort undressing, reduced initiation of sex, less sexual activity, lower
likelihood of orgasm, avoidance of sex with lights on, avoidance of new sexual behaviours, and lower perceptions of partner sexual satisfaction (Ackard, Kearney-Cooke, & Peterson, 2000). Consistent patterns have been demonstrated in the literature, whereby body satisfaction has been linked to quality of sexual experience for men and women (Ambwani & Strauss, 2007; Gillen, Lefkowitz, & Shearer, 2006; Meltzer & McNulty, 2010; Weaver & Byers, 2006). Further, body image disturbances have been associated with problematic sexual function in middle-aged men (Davison & McCabe, 2005) and fear of intimacy in women (Cash et al., 2004). Moreover, in their cross-sectional investigation of 151 heterosexual couples, van den Brink, Vollmann, Smeets, Hessen, and Woertman (2018) found that positive body image was linked to greater perceptions of romantic relationship quality through greater sexual satisfaction. Thus, there is evidence to support the importance of positive body image for healthy interpersonal functioning, and conversely, the damaging nature of body dissatisfaction for interpersonal wellbeing.

Together, the literature reviewed to date underscores the high prevalence and consequence of body dissatisfaction across ages and genders. Thus, it is unsurprising that extant research has established numerous theoretical models to better understand body image disturbance. Evolutionary theorists highlight the importance of appearance as a signal of health and fertility, and in turn, lineage survival (Thornhill & Gangestad, 1993). Accordingly, such theories can be useful when understanding distal causes of poor body image, although it is less useful when trying to understand the consequences and immediate contextual factors that may give rise to body dissatisfaction. Further, feminist theories (such as Objectification Theory: Fredrickson & Roberts, 1997) in relation to body image, perceive body dissatisfaction as arising from social conditioning and objectification, rather than individual discontent (Murnen & Smolak, 2009). While feminist themes a drawn upon throughout the thesis, the current thesis is
not focussed solely on broad societal factors, but rather a combination of societal factors in conjunction with women’s everyday interactions with those closest to them. One such model that investigates body image more broadly is the Dual Pathway Model (Stice, Nemeroff, & Shaw, 1996). The Dual Pathway Model proposes that individuals receive messages from sociocultural factors (peers, family, media) that reinforce desirability of the thin ideal as central to women’s beauty. These factors are then said to influence body dissatisfaction, and in turn lead to dieting, negative affect, and ultimately bulimic symptoms (Stice et al., 1996). Accordingly, the Dual Pathway Model is valuable in providing insights into both the predictors and consequences of body dissatisfaction. However, a similar sociocultural model, the Tripartite Influence Model (TIM; Thompson et al., 1999) assesses additional predictors of body image disturbance. Accordingly, within the current thesis the TIM is adopted to allow a broad investigation of the predictors and consequences of body image disturbances. In the section below, therefore, the TIM is discussed in detail.

The Tripartite Model

In line with the evidence presented to date, it is apparent that body image disturbance is both prevalent and consequential. Thus, understanding its antecedents and consequences of body dissatisfaction is important, given that targeted interventions for poor body image cannot be reliably developed without such knowledge. Accordingly, the creation and examination of theoretical models of body image disturbance has been extremely important to contemporary scholarship. To date, one of the best known and empirically validated of these models is the TIM (Thompson et al., 1999). Thompson et al. (1999) developed the TIM as a means to organise and incorporate many of the variables hypothesised to influence body image and eating pathology. Accordingly, the current research utilised the TIM due to its continued prominence and relevance
within the body image literature and its capacity to elucidate risk factors and consequences of body image. The TIM (see Figure 1 below) was developed in relation to the female thin body ideal, and proposes that societal ideals of beauty (i.e. thinness) are transmitted and reinforced by three primary sociocultural influences: peers, family and the media. The model further contends that these influences contribute to an individual’s engagement in ‘appearance-related social comparisons’ and ‘thin-ideal internalisation’.

Appearance related social comparisons (also referred to as appearance comparisons) are one form of social comparison, which may be best understood with respect to Festinger’s (1954) Social Comparison Theory. This theory holds that humans have an innate drive to evaluate themselves in relation to others within their environment. Research suggests that there are two types of social comparison: upward social comparison, and downward social comparison (Bessenoff, 2006; Lin & Kulik, 2002). Downward social comparisons are comparisons to someone perceived as inferior within the domain being assessed, and typically serve to enhance mood and feelings of self-worth (Wills, 1991). In contrast, upward social comparisons, the comparison of oneself to another perceived as superior in the domain being assessed, typically result in negative mood and diminished evaluations of one’s own worth (Bessenoff, 2006; Collins, 1996; Lin & Kulik, 2002; Taylor & Lobel, 1989). Upward appearance comparisons have been particularly well documented within the body image literature, where appearance-based social comparisons have been shown to influence body dissatisfaction both directly and indirectly (Lin & Kulik, 2002).

As previously noted, thin-ideal internalisation (also referred to as ‘internalisation’) is the extent to which individuals buy into, incorporate, and accept sociocultural beauty ideals (Thompson et al., 1999). Thus, internalisation plays a central role is mediating the relationship
between beauty-ideals and their associated outcomes (Thompson et al., 1999). Accordingly, exposure to the sociocultural beauty ideals is understood to lead to internalization of these ideals, which in turn results in body image disturbance (Ahern, Bennett, Kelly, & Hetherington, 2011).

Thus within the TIM, the process of comparison to, and internalisation of, the thin-ideal is proposed to cultivate body dissatisfaction, due to the discrepancy between the typical individual’s appearance and the rigid aesthetic standards upheld by society. The TIM then posits that body dissatisfaction results in disordered eating, and in particular, dietary restriction and bulimic symptomatology, as a means to minimise the discrepancy between one’s actual size and the preferred societal thin-ideal, which in turns leads to psychological distress (Grogan, 2016; Thompson et al., 1999; Tiggemann, 2012). During the past couple of decades, the TIM has
gained substantial support as a predictive model of body dissatisfaction within female pre-adolescent (Shroff & Thompson, 2006), adolescent (Keery, van den Berg, & Thompson, 2004), and young-adult samples (Van den Berg, Thompson, Obremski-Brandon, & Coover, 2002). The literature examining each of these associations will be discussed below.

**Perceived pressure from societal ideals: Peers, Family, and the Media.**

**Peers.** Considerable research supports the impact of peers on appearance comparison engagement, internalisation of appearance ideals, body dissatisfaction and disordered eating (Thompson, Schaefer, & Menzel, 2012). This relationship is particularly evident in adolescence, when peers typically represent a primary reference group for one another (Brown & Larson, 2009). Appearance related conversations, criticisms, and teasing around weight and masculinity are all said to be typical during this phase of formative development (Thompson et al., 2012). For example, in their cross-sectional research including 333 girls and 347 boys aged approximately 12 – 15 years, Jones, Vigfusdottir, and Lee (2004) found that greater frequency of appearance-related conversations with peers was significantly associated with greater appearance internalisation for both boys and girls. Similarly, Carlson Jones (2004) found that greater engagement in appearance conversations with peers was associated with greater internalisation of the thin ideal, as well as greater engagement in social comparisons for girls one year later. Comparably, Paxton, Schutz, Wertheim, and Muir (1999) found that high school girls reported their friends as influential in their decisions to diet, and longitudinal research suggests that perceived peer pressure to lose weight is associated with weight loss strategies in adolescent boys (McCabe & Ricciardelli, 2003; Ricciardelli & McCabe, 2003). Further, perceived pressure from peers to meet appearance ideals has been associated with weight concerns in adolescent girls and muscle concerns in adolescent boys (Helfert & Warschburger, 2011). Extending to
older participants, Stice, Ziemba, Margolis, and Flick (1996) found that comparative to controls, adolescent and adult women who reported greater pressure from peers to be thin suffered from greater pathological eating. Thus, support exists for the association between perceived peer pressure to meet appearance ideals and internalisation of appearance ideals, appearance comparison engagement, and pathological eating.

**Family.** As with peers, support exists for direct and indirect influence of family on appearance comparison engagement, internalisation of appearance ideals, body dissatisfaction and disordered eating (Thompson et al., 2012). Direct influence may be defined as explicit comments or behaviours directed towards the individual’s appearance, such as teasing, pressure to modify one’s appearance, or appearance related commentary. Alternatively, indirect influence relates to familial modelling of appearance related concerns, such as engagement in dieting, disordered eating, and body/appearance related reassurance seeking (Thompson et al., 2012).

Research indicates that although familial appearance-related commentary is common for both genders, girls typically report receiving higher rates of negative comments from family members (Thompson et al., 2012). For example, it has been found that 23% of adolescent girls report appearance related teasing from at least one parent, and that in turn, greater frequency of teasing is associated with greater thin-ideal internalisation (Thompson et al., 2012). Another study found that approximately 25% of parents report encouraging their child to lose weight (Wertheim, Martin, Prior, Sanson, & Smart, 2002), a concerning statistic given that parental pressure to lose weight is associated with daughters’ drive for thinness (Levine, Smolak, Moodey, Shuman, & Hessen, 1994; Thompson et al., 2012). Furthermore, mothers of bulimic adolescents have been found to evaluate their daughter’s appearance and weight less favourably than mothers of girls without bulimia (Pike & Rodin, 1991). Similarly, greater appearance
related familial teasing has been reported by college women with eating disordered symptoms in comparison to control conditions (Kanakis & Thelen, 1995). Finally, Rieves and Cash (1996) demonstrated a significant association between daughter’s body image and their perception of their mother’s body image. Such results suggest that daughters might internalise their mothers’ views of their bodies, which in turn could influence their satisfaction with their own appearance. Thus, there is substantial evidence supporting both direct and indirect family influences on female body image disturbance.

Although lesser researched, evidence supports that familial pressures may also influence male appearance internalisation, body dissatisfaction, and eating disturbance. Longitudinal research suggests that parental pressure to lose weight is associated with weight loss strategies in adolescent males (McCabe & Ricciardelli, 2003; Ricciardelli & McCabe, 2003), and greater engagement in dieting over a one year period has been found in boys who perceive their father’s preference for a slim frame (Field et al. (2001). In a similar vein, Meesters, Muris, Hoefnagels, and van Gemert (2007) identified an association between perceived family pressure and muscle preoccupation among a sample of male adolescents. Taken together, there is evidence to suggest the importance of family pressure in relation to body image disturbance for both male and female populations.

**Media.** Perhaps the most extensively researched and empirically validated of all sociocultural influences is that of media pressure. Various forms of media permeate contemporary society, resulting in relentless exposure to societal beauty ideals for individuals across the lifespan. Technological advances mean that individuals often utilise their smartphones to engage with social media, news outlets, and various applications. Television, streaming services, and movies are regularly used to pass time, and internet sites are now
considered a typical component of occupational and leisure time. While travelling, individuals frequently encounter radio and billboard advertisements, and video games have become a common pastime. Each of these media platforms regularly portray images of excessively thin and fit women, together with muscular men; thus men and women are being constantly bombarded with societal body ideals to which they perceive they should aspire (Tiggemann, 2014).

As previously noted, media depictions of women have become increasingly thin, while media depictions of men have become increasingly muscular over time (Grogan, 2016; Grogan & Richards, 2002; Thompson et al., 2012). Beyond the relentless exposure of such ideals, media outlets are also notorious for presenting information and advertisements centred around the importance of attainment or maintenance of beauty ideals through use of appearance altering products, and diet and exercise regimes (Thompson et al., 2012). Mainstream media are often considered the primary factor responsible for body image declines across Western society (Fredrickson & Roberts, 1997; Grogan, 2016; Sanchez & Crocker, 2005). The impact of the media on body image disturbance has been demonstrated across the lifespan, as will be outlined below.

**Children.** Media influence on body image appears to occur across the female life-span, being evident in children as young as seven. Anschutz, Engels, Leeuwe, and Strien (2009) examined the impact of television watching on young girls’ appearance-ideal internalisation and restrained eating (aged 7 – 9 years). Findings indicated an association between media consumption and thin-ideal internalisation, and in turn, body dissatisfaction and restrained eating. Similarly, exposure to thin-ideal media images has consistently been associated with internalisation of the thin-ideal in pre-adolescent girls aged 10-13 years (Blowers, Loxton, ...
Grady-Flessner, Occhipinti, & Dawe, 2003; Moriarty & Harrison, 2008). Although lesser researched, similar findings are apparent for young boys. Cusumano and Thompson (2001) examined media influence on body image in boys (n = 75) and girls (n = 107) aged 8 to 11 years. Findings revealed that media consumption was associated with internalisation of appearance ideals, which in turn predicted body dissatisfaction in both genders. Further, research conducted by Field et al. (2001) found that girls (n = 6770) and boys (n = 5287) aged 9 to 14 years who put significant effort into looking like same-sex media figures were more likely to become overly concerned with their weight relative to peers that did not. Thus, media influence on female and male body image appears to impact early in life.

**Adolescents.** Unsurprisingly given the body changes and high social media use amongst adolescents, media influence on body image is common amongst teenagers. Indeed, 69% of female adolescents perceive magazine images to influence their perception of the ideal body shape, and 47% report a desire to lose weight following exposure to such images (Field et al., 1999). Durkin and Paxton (2002) found that exposure to idealised images via an interactive computer program was associated with declines in body satisfaction and mood for adolescent girls, and that this effect was greater for girls who internalised the thin-ideal. Consistent themes have also been demonstrated in adolescent males. In one cross-sectional study, perceived pressure from the media to lose weight was associated with weight loss strategies in adolescent boys (Ricciardelli & McCabe, 2001b). Similarly, preoccupation with weight and a desire to be thinner were identified in boys who reported a strong desire to look like men represented in the media (Field et al., 2001).

**Young adults.** The majority of TIM work has been conducted with young adult women. In their meta-analysis of 25 studies, Groesz, Levine, and Murnen (2002) concluded that mass
media promulgates a slender ideal that evokes body dissatisfaction, and that this effect is particularly problematic for young women who have internalised the thin-ideal. A more recent meta-analysis of 77 studies similarly found that exposure to thin-ideal media images is related to body dissatisfaction in young women aged 10 to 32 (Grabe et al., 2008). Cross sectional research further supports this association. Hendrickse, Arpan, Clayton, and Ridgway (2017) examined social media use and body image in 185 female participants (Mage = 21.04) and found that use of Instagram (a social media platform) positively predicted drive for thinness and body dissatisfaction, and that the relationship was mediated by appearance comparisons. These findings were further supported by research conducted by Brown and Tiggemann (2016). In their sample of 138 undergraduate women, exposure to images of peer and celebrity images on social media predicted negative mood and body dissatisfaction relative to travel images, with this relationship found to be mediated by appearance comparisons. Such findings support the influence of mass media on young adult women’s body image disturbance.

Midlife women. Although research is comparatively scarce in this age-group, similar themes have been detected in midlife women. In their investigation of middle-aged women, Slevec and Tiggemann (2011a) found that media exposure was linked to internalisation of appearance ideals, and in turn, body dissatisfaction. Similarly, recent research examining an adapted TIM in midlife women further supported the influence of media pressure on midlife women’s (n = 323, Mage = 47.6) body dissatisfaction (Lewis-Smith et al., 2020). Such findings are further supported by research investigating the influence of social media use in adult women aged 18 to 65 years and beyond (n = 6883; Strong et al., 2015). Findings revealed that Facebook use was associated with poor body dissatisfaction across all ages, with the effect most pronounced for women around 40 years of age. Taken together, these findings hint at the
powerful influence of mass media on midlife women’s body dissatisfaction. However, a dearth of research remains with regard to investigations of media and women beyond the adolescent and university-aged populations typically employed in body image research. Similarly, research pertaining to male body image and the media is less common than that undertaken in female populations. However, contemporary literature supports a similar positive association between media exposure and male body dissatisfaction, as will be seen below.

**Males.** Although research suggests that media pressure is more pronounced for women than men (Grogan, 2016), men are not immune to media influence, with consistent themes demonstrated in relation to the muscular ideal. In their examination of men aged 17 to 27 years, Fatt, Fardouly, and Rapee (2019) found that increased exposure to muscular men on social media was associated with greater internalisation of the muscular-ideal. In a similar vein, Daniel and Bridges (2010) found that internalisation of appearance ideals were the strongest predictor of drive for muscularity in their sample of college-aged men. Further, Agliata and Tantleff-Dunn (2004) found that exposure to advertisement images of men who fit the muscular-ideal profile resulted in greater depressed affect and higher muscle dissatisfaction in adult men (N = 158, Mage = 21.3). Taken together, these results demonstrate the vast influence that the media has on the internalisation of sociocultural aesthetic ideals that are upheld by boys, men, women, and girls across Western societies. As previously noted, following the sociocultural influences the TIM upholds two mediational variables, appearance comparisons and thin-internalisation. It is to these variables that the conversation now turns.

**Mediational Variables: The Link Between Sociocultural Pressures and Body Dissatisfaction**

**Appearance Comparison.** As outlined above, peers, family, and the media have each been demonstrated to influence individuals’ appearance comparison engagement, internalisation
of appearance ideals, and body dissatisfaction. In turn, appearance comparisons have been posited as one of the core mediating variables between the three sociocultural influences (peer, family and media) and body dissatisfaction within the TIM. To begin with, the relationship between appearance comparison and body dissatisfaction has been consistently demonstrated. For example, a meta-analytic review of 156 studies conducted by Myers and Crowther (2009) concluded that higher engagement in appearance comparison was associated with greater body dissatisfaction, and that this relationship was stronger for women than men. Similarly, in one the first longitudinal investigations of appearance ideals, appearance comparisons, and body dissatisfaction, Rodgers, McLean, and Paxton (2015) found that appearance comparison predicted body dissatisfaction over time in a sample of 277 girls ($M$ age = 12.77 years). Together, these findings support the role of appearance comparisons in predicting body dissatisfaction.

As evident in Figure 1, the TIM posits an indirect association between appearance comparison and body dissatisfaction through thin-ideal internalisation. Research has demonstrated a positive association between appearance comparisons and internalisation of sociocultural appearance ideals across a broad range of populations. Engeln–Maddox (2005) explored college women’s thoughts in relation to advertisements featuring attractive female models, and found that upward social comparisons were significantly associated with greater internalisation of the thin-ideal. Further, Jefferson and Stake (2009) found a positive correlation between appearance comparisons and internalisation for both European American and African American women, with a stronger relationship evident for European American women. More recently, the association between social comparison and internalisation has also been validated in a male sample, whereby internalisation of appearance ideals was found to mediate the relationship between appearance comparisons and muscular body dissatisfaction (Karazsia &
Crowther, 2009). Taken together, these findings suggest that making upward appearance comparisons is associated with internalization of the thin ideal, which in turn is associated with body dissatisfaction.

**Internalisation of the Thin-Ideal.** Internalisation of the thin-ideal (also referred to as thin-ideal internalisation) is central to the TIM. In fact, internalisation of the thin-ideal has been identified as one of the greatest risk factors for the development of body dissatisfaction (Cafri, Yamamiya, Brannick, & Thompson, 2005; Stice et al., 2002; Thompson & Stice, 2001). In their meta-analysis of 18 studies including over 7000 female participants, Cafri et al. (2005) found a strong positive association between thin-ideal internalisation and body image disturbance. The authors concluded that it is the incorporation of this aesthetic standard into the perception of how one should look that is damaging to body image, rather than mere awareness of thinness as a sociocultural beauty ideal. The causal relationship between internalisation and body image disturbance has also been verified in prospective studies, in which thin-ideal internalisation was found to predict body dissatisfaction (over 20 months and 1 year, respectively; Stice & Bearman, 2001; Stice & Whitenton, 2001).

Although relatively sparse, literature supports the relationship between thin-ideal internalisation and body dissatisfaction in midlife women. For example, internalisation of appearance ideals was found to predict body dissatisfaction in a sample of overweight midlife women (N = 79, Mage = 45; Matz, Foster, Faith, & Wadden, 2002). Likewise, Forbes et al. (2005) found that greater internalisation of the thin-ideal was associated with higher body dissatisfaction in a sample of mothers (N = 75, Mage = 48.77). Although limited, such findings support a positive association between internalisation and body dissatisfaction in midlife women.

The relationship between internalisation and body dissatisfaction has also been supported
in men, when considering muscular-ideal internalisation. Karazsia and Crowther (2009) examined the muscular-ideal in a sample of college men (N = 204), and found that greater internalisation of the ideal was associated with higher body dissatisfaction. Similarly, in their sample of 111 undergraduate males, Galioto and Crowther (2013) found that internalisation of sociocultural appearance ideals was associated with increases in body dissatisfaction. Likewise, in an investigation of adolescent boys (N = 239), Lawler and Nixon (2011) found that internalisation mediated the relationship between perceived appearance pressures from peers and body dissatisfaction. In sum, there is strong evidence that internalisation of sociocultural aesthetic-ideals is a causal risk factor for body image disturbance, and in turn, its pathological outcomes. As noted above, the TIM has been most broadly demonstrated in young female samples, however, recent years have seen greater expansion of the TIM to more diverse populations. A brief review of such research will be provided below.

**Existing Variations in the Tripartite Influence Model**

Recent research has established support for sociocultural frameworks and modified versions of the TIM for midlife women (Lewis-Smith, Diedrichs, Bond, & Harcourt, 2020; Slevec & Tiggemann, 2011a), men (Tiggemann, 2012; Tylka, 2011), and using the fit-rather than thin-ideal (Donovan, Uhlmann, & Loxton, 2020). In their novel research, Slevec and Tiggemann (2011a) adapted the sociocultural model of disordered eating in midlife women (N = 101, aged 35 – 55 years, see Figure 2 below) and found that television exposure was positively related to body dissatisfaction and disordered eating, although magazine exposure was not. Further, television and magazine exposure were positively correlated with internalisation, social comparison, appearance investment, and aging anxiety. In turn, internalisation, social comparison, appearance investment, and aging anxiety were each positively associated with both
body dissatisfaction and disordered eating. Notably, the research demonstrated that the influence of media exposure was fully mediated by the proposed media processes. Thus, the authors concluded that sociocultural theory can be reliably extended to midlife women.

Similarly, Lewis-Smith et al. (2020) examined an adaptation of the TIM in midlife women with \( n = 169, \text{Mage} = 49.9 \) and without \( n = 323, \text{Mage} = 47.6 \) a history of breast cancer. For women without a history of breast cancer (see Figure 3), media pressure had an indirect effect on

![Diagram](image-url)
body image. Further, pressure from friends, internalisation, and appearance comparison each had a direct association with body image for women without a history of breast cancer. In turn, body image was associated with appearance evaluation, body areas satisfaction, and body appreciation. The authors concluded that adaptations of the TIM may be suitable for midlife women with and without a history of breast cancer.

Donovan et al. (2020) examined the applicability of the fit-ideal to the TIM in a sample of 558 women aged 16 – 50 years ($M_{age} = 22.06$). The authors maintained the original TIM with two exceptions: psychological functioning was replaced with compulsive exercise as an outcome variable, and appearance comparison was placed between internalisation and body dissatisfaction as a mediating variable (see Figure 4 below). Further, two versions of the TIM were assessed, one that included thin-ideal internalisation, and one that included fit-ideal internalization. The innovative findings revealed that all of the hypothesised paths were significant for both the thin and fit-ideal internalisation models. Moreover, the final models for both thin and fit-ideal internalisation included paths from media to body dissatisfaction, and from social comparison to

Figure 4. Donovan, Uhlmann, & Loxton's (2020) proposed TIM
dieting, bulimic symptoms, and dieting. The two models differed in that the final model for thin-ideal internalisation included direct paths from thin-ideal internalisation to dieting and bulimic symptoms. The final model for fit-ideal internalization included a direct path from fit-ideal internalisation to compulsive exercise. Thus, the authors concluded that, in contrast to the widely held perception that the fit ideal is a ‘healthier’ alternative to the thin ideal, fit-ideal internalisation may be detrimental to female body satisfaction, disordered eating, and compulsive exercise.

Finally, Tylka (2011) assessed the applicability of the TIM to a sample of undergraduate men (N = 473). The author refined the TIM by including dual body image pathways (muscularity and body fat dissatisfaction) to engagement in muscular enhancement and disordered eating behaviours, and added dating partners as a source of social influence (see Figure 5 below). Findings provided support for a positive association between muscularity dissatisfaction and muscularity enhancement behaviours, and between body fat dissatisfaction and disordered eating

![Figure 5. Tylka's (2011) proposed TIM](image-url)
behaviours. Pressures to be mesomorphic from friends was directly associated with muscularity dissatisfaction, pressure from family and media were each associated with internalisation, pressure from media was directly associated with body fat dissatisfaction, and pressure from partner was directly associated with disordered eating behaviour. Finally, internalization of the mesomorphic ideal, muscularity dissatisfaction, and body fat dissatisfaction played meditational roles within the model.

Each of the novel studies described above provides preliminary support for the TIM in largely overlooked populations, as well as the applicability of the fit-ideal to the TIM. However, TIM research relating to populations beyond the young female populations typically assessed are still relatively limited. Thus, additional research is required in overlooked populations to further validate the preliminary findings currently identified in alternative populations.

Summary

This chapter first outlined the value of beauty within the Western world. Apparent from the evidence presented, was the significance of contemporary beauty-ideals that have emerged over time. The thin-ideal, fit-ideal, and muscular-ideal were then outlined and literature pertaining to each discussed. The unrealistic nature of these ideals was outlined, and in turn, the subsequent discrepancy between the average man and woman compared to the various ideals was addressed. A review of the literature supporting both the high prevalence and serious deleterious consequences related to body image disturbances was then provided, and the behavioural, psychological, physical, and interpersonal consequences of poor body image were outlined.

The importance of understanding the antecedents and consequences of body dissatisfaction to allow the development of targeted interventions was put forth, paving the way
for an outline of the Tripartite Influence Model. The literature relating to each predictive and mediational variable of the TIM were then outlined and novel literature examining the TIM in largely overlooked populations (midlife women and men), and the use of the fit-ideal as a mediating variable, were then discussed. What is evident from the extensive literature base on the TIM, is that the influence of perceived pressure from peers, parents, and the media to meet appearance ideals, has a significant impact on internalisation of these ideals. In turn, people who perceive more pressure are likely to engage in appearance comparisons, which both directly and indirectly (through internalisation) are associated with body dissatisfaction. Finally, perceived pressure to meet appearance-ideals positively predicts a greater internalisation of such ideals, which in turn is a core mediating variable in the development of body image disturbance. In sum, body image disturbance is extremely prevalent across all ages and genders and is associated with an array of detrimental consequences. While extant literature has paved the way for a deeper understanding of this vital topic, future research is required to further explicate the predictors and consequences of body dissatisfaction in overlooked populations in a bid to better inform theory and clinical intervention. Further, the vast majority of the research reviewed within Chapter 1 was cross-sectional in nature and typically includes university-aged and Western participants. Thus, limitations exist in relation to the generalisation of the discussed findings. More specifically, limitations such as the infrequent use of validated measures, limited inclusion of broad ethnicities, varied definitions of midlife (which limits the ease with which findings may be compared), and the limited state of knowledge in relation to specific risk factors and consequences in midlife each limit our understanding of body image across age and between genders. Nevertheless, Chapter 1 discussed the general literature to pave the way more a more succinct overview for the program of research within this thesis. Thus, in Section 2 below
(Chapter 2), a brief rationale and overview of the series of four studies comprised within this thesis will be provided.
SECTION 2

Three Empirical Studies
Chapter 2: Introduction to the Current Series of Studies

As outlined in Chapter 1, a vast literature base surrounds body image and body dissatisfaction. However, there is still more work to do. First, inconsistencies exist in relation to the literature examining the trajectory of body image across the male and female lifespan. Second, more work is required to understand body image disturbance in midlife women. While it is acknowledged that body image disturbance is also poorly understood for men, the current thesis has a more explicit focus on women. Finally, not enough is known about body image in romantic relationships, when taking both members of a romantic relationship into account.

Accordingly, the program of research described in this section of the thesis was designed to fill these gaps within the literature. A series of three empirical chapters, inclusive of four studies, were utilised to do this. To allow a more comprehensive understanding of each of these topics of interest, an outline of each topic and the relevant literature is below.

Body Image Across the Male and Female Lifespan

In Chapter 3 body image disturbance across the male and female lifespan is assessed. As discussed in Chapter 1, much of the existing body image literature appears to hold the implicit assumption that body image is a predominately young-adult female phenomenon (Tiggemann, 2004). A quick review of the literature will reveal that body image and related research is primarily comprised of adolescent and young adult female samples (Burrowes, 2013; Centre for Appearance Research, 2017; Tiggemann, 2004), school and community programmes targeting body dissatisfaction are disproportionately geared towards females, and more is understood about the nature, antecedents, and consequences of body image among school and university aged females (McCabe, Connaughton, Tatangelo, Mellor, & Busija, 2017; Yager, Diedrichs, Ricciardelli, & Halliwell, 2013). This is unsurprising given that the roots of body image
literature stem from clinical psychology and eating disorders, which disproportionately affect young women (Grogan, 2016), and that gender has been supported as the primary factor in body dissatisfaction regardless of age or ethnicity (Burrowes, 2013). However, body dissatisfaction in young women does not preclude body image disturbance in broader populations. Grogan (2016) postulated that the foundational understanding of body image in relation to eating pathology has reinforced body image as a matter relevant only to young female populations, despite the relevance of body image and its consequences to men and women of all ages. As outlined in Chapter 1 contemporary research supports the prevalence of body image disturbance in both male and female populations across the lifespan (Cash, 2012; Grogan, 2016; Tiggemann, 2004).

There is mounting evidence for the prevalence of body dissatisfaction across the female and male lifespan. For women, it would appear that body image disturbance is relatively stable across the lifespan, at least into quite elderly samples. Yet, for men, the relationship between age and body dissatisfaction is less well understood. It is therefore important to include both female and male participants in body image studies, and to examine the trajectory of body image across the lifespan, particularly for men. Accordingly, Study 1 of this thesis (presented in Chapter 3) included both male and female participants in an examination of body dissatisfaction across the lifespan. Additionally, in line with research alluding to increases in body dissatisfaction across the past decades, Study 1 also examined cohort differences to allow for an assessment of effects across time. Finally, given the dearth of longitudinal research within the realm of body image literature, particularly in relation to lifespan analyses, Study 1 employed a longitudinal design.

**Body Image in Midlife Women**

In Study 2 (presented in Chapter 4) the thesis turns its attention to women in midlife. One area of particular importance yet not well understood, is body image in midlife women. There
are a number of reasons to focus on body image in midlife women in contemporary research. While body dissatisfaction is often understood as a young female issue, there is good reason to anticipate a decline in body satisfaction as women age. Normal age-related changes such as wrinkle development, skin elasticity, reductions in muscle tone, thinning/greying of hair, and changes in body shape transpire during midlife (Kilpela, Becker, Wesley, & Stewart, 2015; Šitum et al., 2010; Tchkonia et al., 2010; Tiggemann, 2004). One examination of the effects of age and weight found a general trend toward increasing upper and central body fat deposition with age (Shimokata et al., 1989). Importantly, such age-related changes often coincide with biological markers, such as menopause (McGuinness & Taylor, 2016). Furthermore, midlife women are at increased risk of developing illness and disease, of which their treatment can indirectly impact appearance (e.g., steroids can lead to weight gain, chemotherapy leads to hair loss; Lewis-Smith et al., 2020). Despite the normality of these age-related changes, each instance moves women further from a youthful appearance, and the thin and fit ideals valued in Western society. As previously noted, the importance of these attributes has been emphasised by findings highlighting the social advantage afforded to women who meet such ideals (Esnaola, Rodríguez, & Goñi, 2010; McGuinness & Taylor, 2016; Tiggemann, 2004). It would seem that the same appearance-related standards do not exist for men; whose value is more broadly considered in relation to their intelligence, wealth and power, rather than their appearance alone (Tiggemann, 2004; Wilcox, 1997). Such double standards further compound pressures placed on women to somehow defeat the biological outcomes associated with aging.

Another reason to investigate body image in midlife women is existing evidence that women indeed attempt to curb the aging process and its effects on their appearance. Contemporary research has exposed middle-aged women as the greatest consumers of both
beauty products and cosmetic surgeries marketed at anti-aging (Marshall, Lengyel, & Utioh, 2012; Slevec & Tiggemann, 2011b). Moreover, the revenue generated by cosmetic industries has continued to grow in recent years, with one leading beauty manufacturer (L’oreal) generating 33.4 billion US dollars alone in 2020 (Shahbandeh, 2020) and 39% of cosmetic sales in 2018 being related to skincare (Shahbandeh, 2020). Such statistics allude to the wealth of resources being outlaid by women in an attempt to slow or mask the process of aging. Importantly, these beauty related behaviours appear to reflect an acceptance of society’s appearance ideals; thus, perpetuating a vicious cycle that devalues an aged-appearance as well as those to whom it is attached. Perlini, Bertolissi and Lind’s (1999) research on the effects of women’s age and physical appearance on evaluations of attractiveness and social desirability, further speak to the appearance-based pressures placed on women. It was found that across age and gender, participants emphasised the importance of a youthful appearance in ratings of attractiveness. The authors summarised the findings of their research in simple terms, stating; “what is beautiful is good, what is beautiful and younger is better”. Unsurprisingly, and as outlined in Chapter 1, such pressures are also associated with an array of deleterious consequences for midlife women.

Although much work has focused on the role of puberty in adolescent female body image and disordered eating, equivalent bodies of work have not evaluated the comparable changes faced by adult women (for reviews see Kilpela et al., 2015; Lewis-Smith, 2014; Tiggemann, 2004). This is in spite of findings implicating middle-aged women as a comparatively vulnerable group; as well as research indicating that the involuntary bodily changes associated with age that shift women further from appearance ideals may increase women’s desire for control, a construct further associated with eating disorders (Fairburn, 2008; Kilpela et al., 2015). Indeed, research conducted by Lewis and Cachelin (2001) and Mangweth-Matzek et al. (2014) ascertained that
the physiological and psychological challenges faced by middle-aged women parallel those faced by pubertal adolescents. Further, the researchers identified an increased risk of binge eating disorder (BED) in middle-aged cohorts, warning that such disorders may be overlooked given the tendency to focus on other forms of eating disorders (such as anorexia nervosa and bulimia nervosa; Lewis and Cachelin, 2001).

A further rationale for the focus on body image in midlife women relates to menopausal changes frequently experiences by this demographic. During menopause, women often experience a range of physiological and psychological symptoms. Due to hormonal fluctuations, weight gain experienced by middle-aged women is often exacerbated, resulting in a more rounded shape. In addition, women’s libido may decline, and a decrease in estrogen can lead to vaginal dryness, urinary incontinence and urinary tract infections. Menopausal women also experience common physiological aberrations such as hot flushes/sweats, bloating, breast tenderness and digestive problems, as well as psychological concerns such as, anxiety, panic disorder, sleep disorders and depression, each of which may amplify negative body image (Australian Menopause Centre, 2016; Lewis & Cachelin, 2001; Mangweth-Matzek et al., 2014; Tiggemann, 2004). In support of these findings, one study identified higher levels of dietary restraint and inhibition in postmenopausal women, when compared to pre-menopausal women (Copeland, Martin, Geiselman, Rash, & Kendzor, 2006). Further, compared to premenopausal samples, Mangweth-Matzek et al. (2013) found higher rates of ‘feeling fat’ and eating disorders in menopausal women. These authors concluded that departure from reproductive life may represent an increase in body dissatisfaction and related symptomatology similar to those entering reproductive life during pubescence (Mangweth-Matzek et al., 2013). Given the certainty of aging, and in turn, the eventual departure from Western appearance ideals,
consequential body dissatisfaction appears to be inevitable for midlife women. Indeed, contemporary research has further supported the presence of body dissatisfaction in midlife female samples (Kilpela et al., 2015; Lewis-Smith & Diedrichs, 2016; Tiggemann, 2004).

Taken together, these studies demonstrate mounting evidence for the prevalence and consequence of body image disturbance in midlife women. Accordingly, further research is required to address the scarcity of literature pertaining to this population comparative to their younger counterparts. Study 2 (presented in Chapter 4) addresses this gap in the literature, examining the applicability of the Tripartite Influence Model (TIM: Thompson et al., 1999) within a sample of midlife women. Given the broad support for the TIM, its utility as a tool for understanding the predictors and consequences of body image disturbances, and the limited research supporting the model within midlife samples, it is hoped that Study 2 provides valuable insights into body dissatisfaction in midlife women.

Body Image in Romantic Relationships

Finally, in Studies 3 and 4 (presented in Chapter 5) body image disturbance in romantic relationships is assessed. To date, much of the extant literature has focused on the physical, behavioural and psychological consequences of poor body image, with much less empirical enquiry directed towards interpersonal consequences, and in particular, the consequences for romantic relationships. Romantic relationships have been found to play a vital role in individual health and wellbeing, contributing to longer, healthier and happier lives (Ditzen, Hoppmann, & Klumb, 2008; Kiecolt-Glaser & Newton, 2001; Markey, Markey, & Gray, 2007; Robles & Kiecolt-Glaser, 2003). Compared to their single counterparts, individuals within positive romantic relationships have been found to have lower levels of depression, anxiety, mood disorders and psychological distress, and are less likely to commit suicide (Braithwaite et al.,
2010; Kiecolt-Glaser & Newton, 2001; Simon & Barrett, 2010). Further, people within positive romantic relationships are less likely to commit suicide (Braithwaite et al., 2010).

The benefits associated with positive romantic relationships, however, are not limited to mental health. A reduction in levels of stress, blood pressure and obesity, and an increase in immune functioning have all been associated with positive romantic relationships (Ditzen et al., 2008; Kiecolt-Glaser & Newton, 2001; Markey et al., 2007; Robles & Kiecolt-Glaser, 2003; Umberson & Montez, 2010). Further, individuals in committed relationships are less likely to suffer from long-term medical conditions (e.g. cancer), and tend to have better recovery rates from illness when compared to their single counterparts (Coombs, 1991; Holt-Lunstad & Smith, 2012; Putzke, Elliott, & Richards, 2001). Perhaps the most noteworthy of the physiological implications were those found within a recent meta-analysis of 148 studies, whereby an association was found between positive relationships and decreased morbidity and mortality rates (Holt-Lunstad, Smith, & Layton, 2010). Extending upon these findings, for those with serious medical conditions, a 50 percent increase in the likelihood of survival has been found for individuals with greater social support compared to those within weaker relationships (Holt-Lunstad & Smith, 2012). To provide perspective, the magnitude of the health effects of positive social relationships is similar to quitting smoking, the single most preventable cause of mortality (Holt-Lunstad & Smith, 2012; Kiecolt-Glaser & Newton, 2001). Notably, although social relationships have been associated with morbidity and mortality, data suggests that romantic relationships contribute more than most other forms of relationship to individual health and wellbeing (Kiecolt-Glaser & Newton, 2001). Thus, it would be logical to posit that the findings demonstrated by Holt-Lunstad and Smith (2012) would extend to positive romantic partnerships.

Taken together, these studies emphasise the importance of romantic relationships for
individual health and wellbeing. Evidently, understanding the influence of factors that may impede these relationships, such as poor body image, is a matter of public health. Limited research has examined the role that body image plays in relationship functioning, and the specific mechanisms through which poor body image is associated with relationship outcomes are still largely unknown. The aim of Studies 3 and 4 therefore, was to examine the potential role of projection biases in the relationship between body image and relationship functioning in both genders.

Projection biases refer to the tendency for individuals to project their own internal states, such as thoughts and feelings, on to another (Fletcher & Kerr, 2010; Kenny & Acitelli, 2001), and evidence suggests that projection biases are prevalent in romantic relationships. Early work by Kenny and Acitelli (2001) found that although both accuracy and projection bias are commonplace in partners’ perceptions of one another, bias effects were notably stronger. Additionally, recent research has established that greater experiences of negative emotions are linked to increased perceptions of similar negative emotions in romantic partners (e.g., Campbell et al., 2013; Lemay & Neal, 2014; Overall, Fletcher, Simpson & Fillo, 2015). Thus, a logical proposition, and one put forth within Study 3, is that specific projection biases pertaining to body dissatisfaction may be prominent within romantic relationships. Further, research suggests that projection biases are associated with poorer outcomes in romantic partnerships (Campbell et al., 2013; Overall et al., 2015), and therefore it is possible that body dissatisfaction-related projection biases in romantic relationships may be associated with reduced relationship outcomes.

Accordingly, Studies 3 and 4 sought to examine this argument. Thus, across two separate sub-studies, each inclusive of heterosexual romantic dyads, Chapter 5 attempts to better elucidate the
associations and mechanisms through which body image functions to impede upon romantic relationship outcomes.

**The Series of Studies**

In line with each of the respective topics outlined above, Chapters 3, 4, and 5 correspond to Studies 1, 2, 3 and 4 respectively, and represent a novel program of research designed to inform primary gaps within the body image literature. The outcomes of these empirical chapters provide valuable clinical and theoretical implications for future research and practice. It is to these empirical chapters that the manuscript now turns.
Chapter 3. Body Image Across the Adult Lifespan: a Longitudinal Investigation of Developmental and Cohort Effects
STATEMENT OF CONTRIBUTION TO CO-AUTHORED SUBMITTED PAPER

This chapter includes a co-authored paper. The bibliographic details of the co-authored paper, including all authors, are:


My contribution to the paper involved: Study conceptualization, literature review, and critical appraisal of results. Further contributions include the writing of the manuscript, conducting all changes and implementing all feedback provided from the secondary authors, as well as the feedback obtained throughout the journal submission process.

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Abstract

The current study examined patterns of normative change and cohort effects in body image across the male and female adult lifespan. Body satisfaction was assessed in longitudinal data spanning six years, from 2010 to 2015. Cohort sequential latent growth curve modelling was utilized to assess patterns of mean-level change due to both aging and cohort effects (across 11 cohorts) in 15,264 participants (62.9% women) aged between 18 – 94 years (M= 46.55, SD= 14.24). Results demonstrated a very slight increase in body satisfaction across the lifespan for both men and women. Cohort effects demonstrated that for women aged 54 years and below, all but two cohorts (24 – 29 & 34 – 39 years) displayed an upward trajectory in their body satisfaction over the 5-year period of assessment. No consistent cohort effects were evident for men. Finally, men, relative to women, consistently displayed higher levels of body satisfaction across the lifespan. This study provides insights into the trajectory of body image across the lifespan for men and women. The findings also suggest recent (cohort) improvements in body image for women, and potential explanations for this unexpected shift are discussed.
Introduction

Vast literature supports the significant impact of poor body image on individual health and wellbeing (Bolton et al., 2003; Grabe et al., 2008). To date however, gender effects and the extent to which age may differentially reduce or amplify body image concerns remain central topics of interest within the body image literature. Speaking to both these issues, the current paper utilized a relatively new statistical technique to investigate the developmental changes in body image across the lifespan, while also examining cohort effects of body image in both male and female populations.

Female Body Image Across the Lifespan: Existing Research

Normative Developmental Changes in Female Body Image

Mounting evidence suggests that body dissatisfaction is normative and relatively stable across the female lifespan (Lewis & Cachelin, 2001; Quittkat et al., 2019; Tiggemann, 2004; Tiggemann & Lynch, 2001). To understand the developmental trajectory of female body image across the lifespan however, women’s differing experiences across biological stages must be considered. As women age, they naturally deviate from the youthful and thin-ideals commonly propagated in Western cultures. The thin and youthful beauty ideals encompass rigid sociocultural standards of beauty, with high value placed on excessively slender (thin-ideal) and youthful (youthful-ideal) appearances as markers of attractiveness (Klaczynski et al., 2004; Myers & Crowther, 2007; Perlini, Bertolissi, & Lind, 1999). Research has implicated each ideal as a significant contributor to body image disturbance within Western cultures (Karazsia et al., 2013; Tiggemann, 2004; Webster & Tiggemann, 2003).

Further, normative biological stages of (cisgender) womanhood such as pregnancy and menopause may each impact women’s body image experience. For example, pregnancy and postpartum periods typically incur physiological changes inconsistent with rigid beauty
ideals, such as weight gain, body shape changes, hair thinning, and skin blemishes (Tiggemann, 2004). Similarly, menopause typically coincides with physiological symptoms such as weight gain, bloating, and reductions in libido (Lewis & Cachelin, 2001; Mangweth-Matzek et al., 2014), each of which may amplify negative body image. On the other hand, younger, relative to older women, report experiencing more appearance based pressures, often tied to finding and securing a partner (Demarest & Allen, 2000). It is possible that such pressures balance the deviations from beauty ideals experienced during middle and older adulthood, resulting in relative stability in body (dis)satisfaction throughout the lifespan.

**Cohort Effects in Female Body Image**

Having discussed developmental changes in body image, we now turn to considering how cohort effects, or time bound pressures, may affect women’s body image. In line with the supposition that body ideals are often culturally determined, it is sensible to consider whether women born in different time periods are more or less vulnerable to body image concerns. For example, Cash et al.’s (2004) investigation into body image disturbance across 20 years (between 1983 – 2001), demonstrated increases in body dissatisfaction in women up until the early-to-mid 1990s, suggesting increased pressures placed on women evaluating their bodies during this time. Similarly, comparative results of body image data collected in 1972, 1985, and 1996, (published in *Psychology Today*; Berscheid et al. 1973; Cash et al.; 1986; Garner, 1997) are often cited as evidence that body dissatisfaction substantially worsened over the 25 year period (Cash et al., 2004).

The findings described above dovetail with research demonstrating changes in the societal beauty ideals across time. For example, the weights of contestants and winners of an American beauty pageant were found to persistently decline between 1958 to 1988 (Garner, et al., 1980; Wiseman et al., 1992). Similarly, Playboy centerfold models became increasingly slender between 1959 and 1988 (Garner et al., 1980; Karazsia et al., 2017).
Given that the internalisation of the thin-ideal has been established as damaging to women’s health and in particular their body image (Karazsia et al., 2013), it seems plausible that an increased prominence of the thin-ideal during this time may have resulted in women who were particularly dissatisfied, perhaps especially if they were at formative stages during this period (e.g., adolescence, young adulthood).

In more recent years, a third appearance ideal has also become increasingly prominent across Western cultures: the fit-ideal. The fit-ideal encompasses a physique that is extremely thin, yet also muscular. Thus, women are increasingly exposed to excessively thin, toned, and youthful portrayals of other women in mainstream and social media - a depiction that is arguably further removed from the average woman than ever before (Grogan, 2008; Kelley et al., 2010; Tiggemann & Zaccardo, 2015). Similarly to the thin ideal, the fit-ideal has been found to be harmful to women’s body image (Tiggemann & Zaccardo, 2015; Uhlmann et al., 2018).

In contrast to the literature discussed above however, recent research conducted by Karazsia et al. (2017) suggests a decline in body dissatisfaction for women surveyed between 1981 to 2012. Similarly, Cash et al. (2004) noted that women surveyed in 2001 reported either the same, or slightly lower, body dissatisfaction relative to women surveyed in 1990. The mixed research findings to date make it difficult to make firm predictions about trends in body image experience across age cohorts for women. What has been routinely demonstrated however, is that women’s body image is consistently poorer than their male peers (Mellor et al., 2010; Quittkat et al., 2019; Tiggemann, 2004).

**Male Body Image Across the Lifespan: Existing Research**

**Normative Developmental Changes in Male Body Image**

Historically, the bulk of body image research focused on women. However, recent years have seen a surge of empirical interest in the male experience of body image
disturbance. Such research reveals that body dissatisfaction is also normative for men (Cohan & Pope, 2001; Frederick et al., 2012), and that both boys’ and mens’ body satisfaction is related to self-acceptance and distress (Tager et al., 2006). Although comparatively scarce, contemporary research provides some insights into the experience of male body dissatisfaction across the lifespan. For example, in their research examining 150 men aged 20 to 86, Mellor et al. (2010) found that younger men were more dissatisfied with their appearance than older men. Conversely, Ålgars et al. (2009) found that older men were less satisfied than younger men, but due to fluctuations in body dissatisfaction across different age groups, concluded that there is no linear relationship between body image and age for men. Consistent with this idea, in their cross-sectional work Quittkat et al. (2019) found that male body dissatisfaction remained relatively stable across all ages.

Finally, in a 20 year longitudinal study, Keel et al. (2007) found that men’s weight increased with age, which subsequently predicted weight dissatisfaction. However, the research did not include an explicit measure of body satisfaction and the mean age at the 20-year follow-up was 40, thus making it difficult to draw conclusions about male body dissatisfaction across the broader lifespan. Such findings appear to align with McCabe and Ricciardelli’s (2004) review of the literature, in which the authors concluded that research examining male body image across the lifespan is largely inconclusive due to restrictive measures and samples. This research aims to provide some clarity through a largescale study of men over time, and across different life stages.

Cohort Effects in Male Body Image

Like women, men are exposed to sociocultural appearance ideals that might give rise to cohort effects. The mesomorphic-ideal (or muscular-ideal) encompasses a shape characterised by a slim waist and muscular chest, shoulders and arms (Cafri et al., 2005; McCreary, 2007; Thompson & Cafri, 2007). Evidence suggests that the masculine body ideal
has become increasingly muscular over time (Labre, 2002; Thompson & Cafri, 2007). For example, Pope et al. (1999) examined action figures over 30 years and found that they had become more muscular across the decades, with the most contemporary action figures found to exceed the muscularity of even the largest human body builders of the era. Further, research suggests that the sociocultural influence of the muscular-ideal continued to increase during the 2000s (Thompson & Cafri, 2007), and that mere exposure to the this ideal can induce body dissatisfaction in men (Barlett et al., 2008). Conversely however, a cross-temporal meta-analysis conducted by Karazsia et al. (2017) found that on average, body dissatisfaction remained stable for men surveyed in 1981 compared to men surveyed in 2012.

The Present Study

Taken together, contemporary research suggests that body image remains relatively stable across the female lifespan, yet it remains unclear whether body image differs across the lifespan for men. Further, existing methodological limitations such as cross-sectional data, limited age ranges, and non-representative samples limit confidence in the conclusions that may be drawn for both men and women. Moreover, to the best of the authors’ knowledge, extant longitudinal studies have been largely unable to account for cohort effects in examinations of body image across the lifespan.

Accordingly, the goal of the current study was to investigate patterns of normative change in men and women’s body dissatisfaction through the use of a large, heterogeneous, longitudinal sample, by considering both developmental and cohort effects. In doing so, we employ a modeling approach that may allow researchers to disentangle the change due to time from the differences attributable to cohort effects. In turn, we estimate a series of cohort-sequential latent growth models (Preacher et al., 2008; Prinzie & Onghena, 2005) through two complementary approaches—a single group approach and a multigroup framework. When considered together, these two approaches allow an observation of both cohort
differences and change over time. The details of the modeling approach are presented in the sections below.

In line with the literature reviewed above, it is hypothesised that female body image will remain relatively stable across the adult lifespan, despite potential declines during biological periods of vulnerability (such as post-partum and menopausal periods). For men, no direct hypotheses are made due to the inconclusive nature of the existing literature. With regard to cohort effects, literature pertaining to sociocultural aesthetic ideals is considered. For women, research hints at an increasingly slender and increasingly prevalent thin-ideal from approximately the 1960s to the mid-1990s. Thus, it is anticipated that women born between 1961 and 1990 may demonstrate increased body dissatisfaction relative to older cohorts. This effect is expected to be particularly prominent for the youngest cohorts, who have also been increasingly exposed to the contemporary sociocultural beauty ideal, the fit-ideal. For men, the scarcity of research makes it difficult to draw concrete hypotheses. However, in line with literature demonstrating a progressively more muscular ideal, particularly post-1970s, it is anticipated that men born between 1961 to 1990 may demonstrate increased body dissatisfaction when compared to older cohorts relative to those in other cohorts (i.e. those whose formative developmental stages coincided with an increasingly muscular ideal). However, we offer this hypothesis tentatively given that research conducted by Karazsia et al. (2017) recognises the relative stability of male body image across cohorts. Finally, in line with past research, it is anticipated that women will consistently demonstrate greater body dissatisfaction than their male peers.
Method

Participants

The analyses presented here were based on the data from $N = 15624$ (62.9% women) participants who responded to at least three out of the seven waves of the New Zealand Attitudes and Values Study (NZAVS). The NZAVS is an ongoing study that has been conducting an annual longitudinal panel survey of adult New Zealanders since 2009. Because the key variable – Body Satisfaction – was introduced into the survey at Time 2, the present analyses are based on six waves of data from Time 2 to Time 7.

The majority of the sample (91.5%) identified as European – the majority ethnic group in New Zealand. Socioeconomic status is calculated using the New Zealand Deprivation index, a decile based measure of deprivation in neighbourhood units across the country with 1 representing the most affluent neighbourhoods and 10 representing the most deprived (for more detail see Salmond, Crampton & Atkinson, 2007; Salmond & Crampton, 2012; White, Gunston, Salmond, Atkinson, & Crampton, 2008). Deprivation scores were calculated using participants residential addresses, and the mean score for the NZ Deprivation index in the sample was 4.71 (SD = 2.80). The mean age of the sample was 46.55 years (SD = 14.24), and ages ranged from 18 to 94 years. For the purposes of estimating the multi-group cohort-sequential latent growth models, participants were grouped into 5-year cohorts based

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1 We tested key differences between those participants who met the criteria for selection in the analyses and those who were not selected. Looking at the differences at the initial point of measurement (Time 2), those who were selected for the analyses tended to be older (M = 46.55, SD = 14.24) than those not selected (M = 40.50, SD = 14.81; F(1,23146) = 892.527, p < .001; d = .42), to live in more affluent neighbourhoods (M = 4.71, SD = 2.80) than those not selected (M = 5.38, SD = 2.95; F(1,19256) = 140.323, p<.001; d = .23), were more likely to identify as NZ European than those not selected (91.5% vs. 74.3%), and were slightly more likely to be male than those not selected (39.8% vs. 37.1%). No significant differences were found in mean levels of Body Satisfaction at the initial point of assessment between those selected for the analyses and those not selected (M = 4.24, SD = 1.67; and M = 4.21, SD = 1.74, respectively; d = .02). For a more detailed analysis of sample retention and bias associated with the longitudinal nature of the NZAVS please refer to Satherley et al. (2015). Procedural and ethical information can be found at: https://www.psych.auckland.ac.nz/en/about/new-zealand-attitudes-and-values-study.html.
on the year of their birth. These birth cohorts and their respective sample sizes are presented in Table 1.

**Measures**

Body Satisfaction was measured with a single item: “[I]…Am satisfied with the appearance, size and shape of my body.” The item was scored on a response scale from 1 (Very Inaccurate) to 7 (Very Accurate). This single item was purpose built for the New Zealand Attitudes and Values Study. Large longitudinal studies of this sort typically measure multiple constructs, and thus space is at a premium. Consequently, we were limited to a single item when measuring body image. Our goal when measuring body image was to assess a state based holistic assessment of body image, sensitive to year-on-year change. Thus, we drew on Cash et al.’s (2002) body image states scale to develop our single item measure. The item was then validated as part of an ongoing large validation study of shortened measures from the New Zealand Attitudes and Values Study. Specifically, utilizing a student sample of 1545, recruited from three large New Zealand universities, the existing single item was validated against the body image states scale (Cash et al., 2002). This scale contains 6 items, each prefaced by the statement “Right now, I feel…”. In our validation study participants could respond to each statement on a 7-point scale, the response options of which were determined by the item. Items were (“Right now I feel…”): 1) “dissatisfied/satisfied with my physical appearance”, 2) “satisfied/dissatisfied with my body shape and size”, 3) “dissatisfied/satisfied with my weight”, 4) “physically attractive/physically unattractive”, 5) “Worse/better about my looks than I usually feel”, and 6) “Better/worse than the average person looks”. Items 2, 4, and 6 were reverse scored such that a high score indicated body satisfaction (like our single item scale).

We first tested whether our single item loaded onto the same factor as the items from Cash et al. (2002). We found that it did. Specifically, all items (the 6 items from the body
image states scale and our novel item – 7 items in total) loaded onto a single factor. Item loadings were all >.607, and our novel item loaded onto the factor at .766. The reliability of the scale, with the addition of our novel item, was $\alpha = .90$. Next, we examined inter-item correlations. Our single item was significantly associated ($ps < .001$) with each item from the body image states scale, $r_s = 1) .66, 2) .70, 3) .66, 4) .56, 5) .42, 6) .52$. Consequently, we were satisfied that our item was tapping into state body satisfaction (although note that we could not differentiate between size, shape, and appearance satisfaction with our measure – an issue we return to in the general discussion).

**Analysis**

To assess the developmental patterns of body satisfaction across the cohorts of the adult life span, two complementary estimations of Cohort Sequential Latent Growth Models were applied (Milojev & Sibley, 2016; Preacher et al., 2008; Prinzie & Onghena, 2005). All of the models detailed here were estimated in MPlus 7.4 (Muthén & Muthén, 1998-2015) using maximum likelihood with robust estimation of standard errors (MLR). A Single-Group Cohort-Sequential LGM was estimated based on the participants’ age at the times of assessment, allowing for the estimation of an overall change trajectory of body satisfaction from ages 19 to 74 years. This approach was complemented by a Multi-Group Cohort-Sequential LGM across five-year birth-cohorts representing the same age range, based on individually varying time indicators.

Single-group cohort-sequential latent growth models were estimated based on all of the six waves of annual assessments. Due to the sampling strategy of the NZAVS, the repeated assessments correspond to the years 2010 (Time 2 – initial point for the present

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2 Note that the analyses included all participants, including those older than 74 in the analysis. However, we limit our estimation of model-implied growth trajectories to the 19-74 age range as the slopes may be less reliable for more extreme values of age due to decreasing sample size.
models), 2011 (Time 3), 2012 (Time 4), 2013 (Time 5), 2014 (Time 6), and 2015 (Time 7). 3

In order to estimate a change trajectory over the available age-range of the adult life span, participants’ exact ages (to two decimal places) at each assessment point were used as individually varying time indicators. For instance, a participant who was 19.50 years of age at their first response at the first time point, would generally be about 20.50 at the follow-up response at the subsequent time point, and 21.50 at the second follow-up response, assuming that they completed each wave at exactly one-year intervals. By estimating exact ages at each time point, we allowed for variation in age due to the varying intervals of assessment (i.e., 350 days for some people, 400 days for others, and so on). Continuing with the example of someone who was 19 years at the first time point, that person’s responses would thus inform the estimation of the growth curve in that particular age range. Similarly, a person who was 41 years at their first response time would then inform a later portion of the growth curve.

This means that, due to the diverse range of age-cohorts represented and the large number of participants of overlapping ages, a growth curve could be estimated representing change from ages 19 to 74 years, with the different participants’ data informing different portions of the curve.

A latent intercept (i) and a latent slope (s) were estimated based on the participants’ ages estimated as individually varying time indicators. For the purposes of the models, age was centred on the sample mean. Quadratic (q) and cubic (c) slopes were also estimated. The latent intercept was estimated by fixing the six factor loadings (T2 to T7) to 1. The latent intercept thus represented the mean level of body satisfaction at the sample mean age. The latent slope was estimated based on individually-varying indicators of participants’ age over time (T2 to T7). Similarly, the quadratic and the cubic latent slopes were estimated based on

3 For details on NZAVS sampling strategy pertinent to the survey and participant response timeline see the NZAVS website (http://www.psych.auckland.ac.nz/en/about/our-research/research-groups/new-zealand-attitudes-and-values-study/nzavs-tech-docs.html)
the quadratic and cubic functions of the individually varying indicators of participants’ age over time, respectively. Thus, the latent slope(s) represent the linear or curvilinear change trajectory for body satisfaction across the available age range (19 through to 74 years).

To estimate the multi-group cohort-sequential latent growth model, the sample was organised into 12 sequential 5-year birth cohorts as presented in Table 1. Note that the 12th birth cohort (born in 1991 and later) was removed from the multi-group analyses due to small sample size. In congruence with the 5-year birth-cohorts, the multi-group growth model was estimated based on the first five waves of annual assessment (Time2 through to Time 6). Again, because of the sampling strategy of the NZAVS, exact times of collection were approximately annual and individually varying. The multi-group cohort-sequential latent growth models were thus estimated based on the individually varying time indicators (i.e. date of response rather than age at time of response) using the TSCORE function in the MPlus framework. Within these models, a latent intercept (i) was estimated as above, along with the latent slope (s) for each of the 5-year age cohorts seen in Table 1. The variances of the latent intercept and the latent slope, and the covariance between the intercept and slope, were constrained to equality across the birth-cohorts. Only the linear slope was estimated in this model.

Because the multi-group models spanned consecutive 5-year periods, the organisation of birth cohorts into 5-year bands allowed sequential organisation of the multiple LGMs. That is, each cohort LGM estimated change in the given variable over 5 years of assessment for that cohort – i.e. the 1986 to 1990 birth-cohort represented change from 19 years of age to 24 years of age; the 1981 to 1985 cohort represented change from 24 years of age to 29 years of age, and so on. Note that for each 5-year age cohort, the youngest age represented by that

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4 Use of 5-year birth cohorts (rather than the available 6) was decided on based on the common practice in the available literature on aging and normative change (e.g. Lucas & Donnellan, 2011).
cohort was taken as an indicator of age in this framework. By employing this approach, the estimated levels of body satisfaction, the intercepts, and the latent change trajectories (i.e., the slopes) could be plotted across the broad range of the adult life. This allowed for simultaneous investigation of estimated cross-sectional cohort differences in the latent intercepts (i.e. the cohort differences in levels of body satisfaction at time 1), the change trajectories in each cohort, and the cohort differences in the rate of change (i.e. the latent slopes for each 5-year birth cohort), as well as the overall pattern of change in body satisfaction that may be observed across the adult life span. Most importantly, this approach allowed appreciation of the age differences that are due to cohort differences, and those that are due to change over time.

In order to investigate gender differences in the developmental change trajectories of body satisfaction, we employed a multi-group modelling framework for both types of models detailed above. This allowed for estimation of the differences in parameters between men and women, thus allowing for the estimation of separate change trajectories.\(^5\)

**Results**

Descriptive statistics and bivariate correlations for body satisfaction across the seven assessment points are presented in Table 2.\(^6\)

**Single-Group Cohort-Sequential Latent Growth Models**

The parameter estimates for the Single-Group LGMs estimating the mean level change in body satisfaction across the adult life span for men and women are presented in Table 3. Figure 1 shows the estimated values of body satisfaction across ages 19 to 74 years

\(^5\) Nonetheless, we refer to the first model as a single-group model and the second as a multi-group model to easily distinguish them. We additionally constrained the variances for the growth factors to equality as we assume that the levels of individual differences in the rates of change are equal for men and women.

\(^6\) Descriptive statistics and bivariate correlations specific for men and women can be found in the supplementary materials.
for women, while Figure 2 presents the same estimated values for men. The Single-Group Cohort Sequential LGMs are represented by the dark lines within each figure.

For women, the estimated mean level of body satisfaction at the sample mean age (about 46 years of age) was 4.052 (95% CI [4.012, 4.092]). The model indicated a quadratic change trajectory for women, suggesting an accelerating increase in body satisfaction across the life span as can be seen in Figure 1. For men, the estimated mean level of body satisfaction at the sample mean age was 4.413 (95% CI [4.363, 4.463]). The model indicated a slight cubic oscillation in the change trajectory for men, characterising an overall slight increase over the life span.

**Multi-Group Cohort-Sequential Growth Models**

The Multi-Group Cohort-Sequential LGMs are presented as the brighter lines in Figure 1 for women and in Figure 2 for men. For women, a number of within cohort slopes were significant and positive indicating increases in body satisfaction over the five years of assessment for these periods of the life span. Specifically, systematic increases were observed among those who aged from 19 to 24 years (the youngest age cohort in the models; s = .070), from 29 to 34 years (s = .077), as well as the three sequential cohorts representing the age range from 39 to 54 years (s = .064; s = .045; and s = .047; for the three cohorts respectively). For men on the other hand, with the exception of the 59 to 64 years old cohort where a significant linear increase was observed (s = .039, p < .05), none of the other within-cohort slopes were significant.

For both men and women, the Multi-Group Cohort Sequential Model indicates an overall change trajectory that is subjectively comparable to that estimated by the Single-Group Cohort-Sequential modelling framework (represented as the darker line in Figure 1 and Figure 2, and described in the previous section). Interestingly, however, simple difference tests between women and men conducted on the intercepts for each cohort – thus
representing the initial points of each within-cohort trajectory – indicated that men consistently had significantly higher levels of body satisfaction. The difference tests between the cohort-specific intercepts and slopes can be seen in Table 4.

A Note on Cohort Effects

Our multi-group models potentially provide a way to estimate the cohort effects in change in body satisfaction across the adult life span. The use of 5-year birth cohorts, with the 5 yearly assessments, means there is an overlap between the estimated mean level of body satisfaction at the last assessment of one birth cohort, and the mean-level of body satisfaction for the same age at the first assessment point of the next cohort. For example, the LGM for the youngest cohort used in our models estimates change from age 19 years at the first assessment to age 24 years at the fifth and final assessment. The LGM for the next cohort estimates change across the five yearly assessments, from age 24 to age 29 years. Therefore, the two models each provide an estimate of mean-level body satisfaction at age 24 years, one from Time 6 (2014) and one from Time 2 (2010). The first estimate comes from the five-year latent change trajectory from age 19 to 24 years, and the second estimate from the initial level of body satisfaction for those aged 24 to 29 years. The discrepancy between these two estimates can provide an indication of the difference between the model-implied value that is due to change over time, and the model-implied value based on cohort differences. That is, we can examine whether the change in body satisfaction seen in the last five years among 19 – 24 year olds puts them in the same place developmentally as a 24 year olds from five years ago; if not, cohort differences may be at play.

The differences in estimated values of body satisfaction at Time 6 (2014) and the estimated values for the same age at Time 2 (2010) are presented in Figure 3 for both men and women. As can be seen in Figure 3, a number of significant differences can be seen for women, specifically at ages 24, 29, 39, 44, and 49 years, with each of the respective cohorts
having higher levels of body satisfaction than their respective subsequent cohort. Conversely for men, most of the differences observed were non-significant, with the exception of the estimates at age 44 years, whereby the 39 to 44 year old cohort had higher levels of body satisfaction than the 44 to 49 year old cohort. The differences described here are not ideal indicators of cohort effects, but they are a novel method for investigating cohort effects (see Milojev & Sibley, 2016) given the lack of longitudinal data collected across generations and consisting of participants of all ages.

Additionally, we conducted a more formal test of cohort effects by estimating a set of incrementally constrained models across the age cohorts. Specifically, we estimated Multi-Group Cohort-Sequential LGMs where: 1) the intercepts were constrained to equality across the age cohorts, 2) the slopes were constrained to equality across the age cohorts, and 3) the intercepts and the slopes – that is the full change trajectories – were constrained to equality across the age cohorts. Initially, these models were estimated allowing for differences between men and women. Subsequently, the same models were estimated; however, constraining the parameters to equality across gender as well. Comparison of the model fit indices across these models provides an indication of cohort effects. The estimated model fit indices are presented in Table 5. As can be seen in Table 5, little changes in model fit, relative to the baseline (Free) model, can be seen across the three specifications where gender differences were allowed for. Some change in model fit can be seen when the intercepts were constrained to equality across age cohorts, and when both the intercepts and the slopes were constrained, indicating presence of slight cohort effects in terms of intercept variation. The models specifications where gender differences in intercepts and slopes were constrained indicated a similar pattern of results; however, this suggests gender differences, particularly in terms of the intercepts, which were noted earlier.
### Table 1

**Age Cohorts used in Analyses**

<table>
<thead>
<tr>
<th>Cohort</th>
<th>N Women</th>
<th>N Men</th>
<th>Age at Time 2</th>
<th>Age at Time 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cohort 1</td>
<td>187</td>
<td>187</td>
<td>69</td>
<td>74</td>
</tr>
<tr>
<td>Cohort 2</td>
<td>290</td>
<td>261</td>
<td>64</td>
<td>69</td>
</tr>
<tr>
<td>Cohort 3</td>
<td>420</td>
<td>321</td>
<td>59</td>
<td>64</td>
</tr>
<tr>
<td>Cohort 4</td>
<td>457</td>
<td>318</td>
<td>54</td>
<td>59</td>
</tr>
<tr>
<td>Cohort 5</td>
<td>501</td>
<td>297</td>
<td>49</td>
<td>54</td>
</tr>
<tr>
<td>Cohort 6</td>
<td>491</td>
<td>299</td>
<td>44</td>
<td>49</td>
</tr>
<tr>
<td>Cohort 7</td>
<td>429</td>
<td>234</td>
<td>39</td>
<td>44</td>
</tr>
<tr>
<td>Cohort 8</td>
<td>392</td>
<td>162</td>
<td>34</td>
<td>39</td>
</tr>
<tr>
<td>Cohort 9</td>
<td>285</td>
<td>104</td>
<td>29</td>
<td>34</td>
</tr>
<tr>
<td>Cohort 10</td>
<td>212</td>
<td>58</td>
<td>24</td>
<td>29</td>
</tr>
<tr>
<td>Cohort 11</td>
<td>219</td>
<td>101</td>
<td>19</td>
<td>24</td>
</tr>
<tr>
<td>Cohort 12</td>
<td>84</td>
<td>21</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Cohort 12 was not used in the estimation of cohort effects in the Multi-Group Cohort Sequential LGM due to small sample size.

### Table 2

**Bivariate Correlations and Descriptive Statistics for the Overall Sample.**

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>BodySay_T2</td>
<td></td>
<td>.651**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BodySat_T3</td>
<td></td>
<td></td>
<td>.606**</td>
<td>.625**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BodySay_T4</td>
<td></td>
<td></td>
<td></td>
<td>.559**</td>
<td>.630**</td>
<td>.652**</td>
<td></td>
</tr>
<tr>
<td>BodySat_T5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.560**</td>
<td>.584**</td>
<td>.626**</td>
</tr>
<tr>
<td>BodySat_T6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.649**</td>
<td>.669**</td>
</tr>
<tr>
<td>BodySat_T7</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.688**</td>
</tr>
<tr>
<td>Gender</td>
<td>.139**</td>
<td>.124**</td>
<td>.134**</td>
<td>.125**</td>
<td>.115**</td>
<td>.111**</td>
<td>.37</td>
</tr>
<tr>
<td>M</td>
<td>4.24</td>
<td>4.26</td>
<td>4.27</td>
<td>4.29</td>
<td>4.30</td>
<td>4.30</td>
<td>0.37</td>
</tr>
<tr>
<td>SD</td>
<td>1.67</td>
<td>1.64</td>
<td>1.66</td>
<td>1.64</td>
<td>1.65</td>
<td>1.65</td>
<td>0.48</td>
</tr>
</tbody>
</table>

*Note.* **p = 0.01 (2-tailed).
Table 3

Parameter Estimates for the Single-Group Cohort-Sequential LGM

<table>
<thead>
<tr>
<th>Model</th>
<th>95% CIs</th>
<th>Variance s</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Estimate</td>
<td>se</td>
</tr>
<tr>
<td><strong>Patriotism</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Women</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>4.052*</td>
<td>.020</td>
</tr>
<tr>
<td>Age – Linear</td>
<td>.077*</td>
<td>.017</td>
</tr>
<tr>
<td>Age – Quadratic</td>
<td>.017*</td>
<td>.008</td>
</tr>
<tr>
<td>Age – Cubic</td>
<td>.003</td>
<td>.003</td>
</tr>
<tr>
<td><strong>Men</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>4.413*</td>
<td>.026</td>
</tr>
<tr>
<td>Age – Linear</td>
<td>.110*</td>
<td>.019</td>
</tr>
<tr>
<td>Age – Quadratic</td>
<td>.034*</td>
<td>.010</td>
</tr>
<tr>
<td>Age – Cubic</td>
<td>-.010*</td>
<td>.003</td>
</tr>
</tbody>
</table>

Note. N = 15624 (Women = 9831, Men = 5793) for estimation of Nationalism. Age was scaled so that each unit represented 10 years for ease of displaying parameters. AIC = 201997.644; aBIC = 202082.738.
Table 4

*Gender Differences in the Estimated Cohort-Specific Intercepts and Slopes*

<table>
<thead>
<tr>
<th>Cohort</th>
<th>Intercept Differences</th>
<th>Slope Differences</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Est.</td>
<td>se</td>
</tr>
<tr>
<td>69 to 74</td>
<td>0.556*</td>
<td>0.202</td>
</tr>
<tr>
<td>64 to 79</td>
<td>0.504*</td>
<td>0.164</td>
</tr>
<tr>
<td>59 to 64</td>
<td>-0.207</td>
<td>0.143</td>
</tr>
<tr>
<td>54 to 59</td>
<td>0.313*</td>
<td>0.140</td>
</tr>
<tr>
<td>49 to 54</td>
<td>0.449*</td>
<td>0.145</td>
</tr>
<tr>
<td>44 to 49</td>
<td>0.392*</td>
<td>0.140</td>
</tr>
<tr>
<td>39 to 44</td>
<td>0.568*</td>
<td>0.161</td>
</tr>
<tr>
<td>34 to 39</td>
<td>0.425*</td>
<td>0.189</td>
</tr>
<tr>
<td>29 to 24</td>
<td>0.516*</td>
<td>0.228</td>
</tr>
<tr>
<td>24 to 29</td>
<td>0.703*</td>
<td>0.285</td>
</tr>
<tr>
<td>19 to 24</td>
<td>0.835*</td>
<td>0.240</td>
</tr>
</tbody>
</table>
Table 5.

*Model Fit Indices for the Different Specification of Models Constrained Across the Age-Cohorts*

<table>
<thead>
<tr>
<th></th>
<th>Free</th>
<th>Intercepts</th>
<th>Slopes</th>
<th>Fully</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Constrained</td>
<td>Constrained</td>
<td>Constrained</td>
</tr>
<tr>
<td>AIC</td>
<td>85539.041</td>
<td>85566.257</td>
<td>85524.154</td>
<td>85572.300</td>
</tr>
<tr>
<td>aBIC</td>
<td>85724.958</td>
<td>85673.516</td>
<td>85631.414</td>
<td>85600.903</td>
</tr>
</tbody>
</table>

*Note.* The above fit statistics are those for models in which gender is free to vary.

<table>
<thead>
<tr>
<th></th>
<th>Intercepts</th>
<th>Slopes</th>
<th>Fully</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Constrained</td>
<td>Constrained</td>
<td>Constrained</td>
</tr>
<tr>
<td>AIC</td>
<td>85651.505</td>
<td>85526.859</td>
<td>85703.187</td>
</tr>
<tr>
<td>aBIC</td>
<td>85755.189</td>
<td>85630.543</td>
<td>85724.639</td>
</tr>
</tbody>
</table>

*Note.* The above fit statistics are those for models in which gender is constrained (i.e., men’s and women’s scores are constrained to equivalence).
Figure 1

Developmental Patterns of Normative (Mean-Level) Change in Body Satisfaction for Women.

Note. The figure shows the latent change trajectory based on the (a) seven-year single-group cohort-sequential latent growth model (dark line), and (b) five-year multi-group cohort sequential latent growth models across the 5-year birth cohorts presented in separate sections (light lines). The estimates of the latent intercept and the latent slope for each cohort are presented in the graph. The estimations are based on the levels of Body Satisfaction (y axis) across age and assessments (x-axis). Within each cohort, i = intercept for that parameter, s = the fixed effect for the slope.
Figure 2

*Developmental Patterns of Normative (Mean-Level) Change in Body Satisfaction for Men*

*Note.* The figure shows the latent change trajectory based on the (a) seven-year single-group cohort-sequential latent growth model (dark line), and (b) five-year multi-group cohort sequential latent growth models across the 5-year birth cohorts presented in separate sections (light lines). The estimates of the latent intercept and the latent slope for each cohort are presented in the graph. The estimations are based on the levels of Body Satisfaction (y axis) across age and assessments (x-axis). Within each cohort, i = intercept for that parameter, s = the fixed effect for the slope.
Figure 3

Estimated Cohort Effects Between Each Cohort as Seen in Figures 1 and 2

*Note.* The bars represent the difference between the level of Body Satisfaction at the participants’ age as estimated by the latent growth trajectory from the preceding cohort and the intercept of the adjacent cohort.
Discussion

The present study investigated patterns of normative change in body image across the female and male adult lifespan by considering both developmental and cohort effects. It was hypothesized that female body image would remain relatively stable across the adult lifespan, despite potential declines during vulnerable biological periods (i.e. post-partum and menopausal periods). No direct hypotheses were made for male development effects. Turning to cohort effects, for both women and men it was hypothesised that those born between 1961 and 1990 would display higher body dissatisfaction, relative to those in other cohorts. Finally, it was anticipated that women would consistently demonstrate greater body dissatisfaction than their male peers. These hypotheses were tested by employing a series of cohort-sequential latent growth models assessing patterns of change in body image in a large, heterogeneous longitudinal sample of adults.

Overall, both men and women displayed some stability in body image; women reported levels of body satisfaction close to the scale midpoint across the lifespan, and men reported levels just above the midpoint across the lifespan. Contrary to hypotheses (for women), however, there were small improvements across the lifespan for both men and women (note that because of the size of these effects we chose to begin by discussing stability). Women aged 19-24, for example, reported an average body dissatisfaction just below the midpoint ($M = 3.80$), but by age 59 women were reporting levels of body satisfaction just above the midpoint ($M = 4.21$). Improvements were even smaller (and less consistent) for men. Finally, cohort effects were identified across both genders and men were found to have consistently higher body satisfaction than their female counterparts.

Normative Change in Female Body Image

To elaborate on patterns observed, results of this study show a relatively flat pattern for women with a slight increase in women’s body satisfaction across the lifespan, especially
in later years of life (from roughly 60 years of age). This finding sits in contrast to our predictions and a body of research suggesting that body dissatisfaction is relatively stable across the female lifespan (e.g. Lewis & Cachelin, 2001; Quittkat et al., 2019; Tiggemann, 2004; Tiggemann & Lynch, 2001). However, the current findings align with a small number of studies that have suggested that women’s body image improves as they age (e.g. Oberg & Tornstam, 1999; Reboussin et al., 2000).

These results are also consistent with theoretical work suggesting that women place less importance on evaluating the appearance of their bodies as they age, and that older adults may value body function over body appearance (e.g. Reboussin et al., 2000). It is possible that such body-related perceptual shifts may gradually occur across the female lifespan, and in turn buffer against the impact of the damaging thin and youthful-ideals upheld within Western cultures to enable enhanced body image as women age. In line with this supposition, Tiggemann and McCourt (2013) found that women became increasingly appreciative of their health and functionality with age, and in turn were able to better accept physical imperfections. The current study supports the idea that the pressures women face may lessen over time. Having said this, it is important to remember that the shifts were extremely small – thus the current results suggest that any age related alleviation of pressure, or increase in bodily appreciation is insufficiently weak to eliminate body image concerns. An alternate possibility is that while such factors might be at play, increasing body satisfaction, simultaneous factors associated with aging (e.g., increase in adiposity, reduction in muscle tone and skin elasticity) may be decreasing body satisfaction, thus suppressing an otherwise positive trajectory.

Contrary to hypotheses, within the current study, consistent cohort effects emerged for women, such that women who entered the survey at 19, 29, 39, 44, and 49 years of age each showed significant improvement in their body image over the 5 years of assessment.
These patterns were so marked, that in many cases women were entering age stages with higher body satisfaction than that reported by their preceding cohort who entered the study 5 years prior. That is, for women aged 54 years and below, all but two cohorts (24 – 29 & 34 – 39 years) displayed an upward trajectory in their body satisfaction over the 5-year period assessed, while also entering their preceding cohort’s age-range with body satisfaction that was either better than, or (in two instances) relatively consistent with, their preceding cohort. These findings suggest cohort specific effects, such that there is some factor increasing body satisfaction in young and middle-aged women. Thus, these results depict a positive story that sits in contrast to much of the past literature, in which body image appeared to be getting increasingly worse across time and generations (e.g. Berscheid et al., 1973; Cash et al., 1986; Garner, 1997). However, the current findings are consistent with Karazsia et al.’s (2017) meta-analysis, which demonstrated an improvement in the body dissatisfaction for women surveyed over the years between 1981 and 2012.

It is possible that contemporary societal trends are responsible for the apparent improvement in female body image across time and between cohorts. During the past two decades, an intentional shift towards feminist perspectives of inclusivity and body acceptance have been underway (Bacon & Aphramor, 2014; Stice et al., 2012; Wood-Barcalow et al., 2010). Examples such as Dove’s ‘Campaign for Real Beauty’- a corporate campaign claiming to oppose restrictive beauty standards - and the ‘Health at Every Size’ (HAES) movements on social media each represent a relatively recent shift in the way the ‘typical’ female body is presented across mainstream media. Further, feminist oriented ‘Body Positivity’ movements have been recognised across many social, political and beauty platforms. These shifts may represent a growing acceptance of variation in what constitutes an ‘attractive’ female, and if so, play a part in women’s rejection of rigid beauty standards. Further evidence for such shifts can be seen in legislative reform surrounding the portrayal of
the female body, such as those banning overly thin models from fashion shows across a number of European countries (Stamper, 2015).

Of course, this is only one possibility. A related possibility is that feminist perspectives of body image, which have been increasing in recent years (Peterson et al., 2006), have had an impact. Such perspectives aim to disentangle female worth from appearance, as well as increase recognition and rejection of sociocultural beauty-ideals (Murnen & Smolak, 2009; Peterson et al., 2008). Increases in such perspectives may be partially responsible for shifts in how women are evaluated by broadening discussions around female value beyond “looks”. Indeed, mounting empirical evidence credits feminism for shifting the focus of women’s worth away from superficial characteristics such as appearance, towards more intrinsic factors such as intelligence. Such research also attributes the growing scepticism towards sociocultural appearance ideals to feminist perspectives (Murnen & Smolak, 2009; Peterson et al., 2008). It is possible, then, that feminist activism and identification has resulted in the recent increases in body image in young and middle aged cohorts observed in this study. Further research is warranted to test this possibility.

**Normative Change in Male Body Image**

Turning to men, a slight increase in body satisfaction over the lifespan, although effects were miniscule (and perhaps only detected due to the large sample, and hence power). Nonetheless, this finding aligns with past research conducted by Mellor et al. (2010), who found that older men reported less body dissatisfaction than young men. Moreover, research conducted by Peat et al., (2011) similarly found that older men reported greater body satisfaction compared to younger men. Past research suggests that similarly to their female peers, aging men may value body functionality over body appearance (e.g. Reboussin et al., 2000), which in turn may buffer against appearance dissatisfaction. However, given the typical declines in physical ability as a function of age, it is also possible that a focus on
physical functionality may instead promote body dissatisfaction in older men. Thus, future research is warranted to better support this speculation. Finally, it should be noted that men’s body image improvements were not as pronounced as were women’s (which were themselves small), thus partially supporting the work of Karazsia et al. (2017) and Quittkat et al. (2019).

The results of this study suggested limited cohort effects for men. Unlike their female peers, of the two cohort effects that were present for men, no discernible trend was apparent. This finding is in line with research conducted by Karazsia et al. (2017), in which no significant changes in body image were identified between cohorts for men. This is perhaps unsurprising, given that the recent societal shifts denouncing rigid societal beauty ideals have typically been geared towards women and not men. However, such findings sit in contrast to research highlighting increasing pressures on men to attain and maintain a muscular physique (e.g. Labre, 2002; Pope et al., 1999). Past research suggests that measures targeting male body image should be specifically tailored to muscularity rather than appearance as a whole (Karazsia et al., 2017). It is possible that the current research did not tap into male body satisfaction as efficiently as it did women’s body satisfaction, given that the measure more broadly assessed participants’ satisfaction with the appearance, size and shape of their bodies.

**Comparative Body Image Disturbance Between Men & Women**

As hypothesised, the results of the current study suggested that men consistently display higher levels of body satisfaction compared to women. This finding aligns with extant literature whereby women have been found to report greater body image disturbance than their male peers (e.g. Mellor et al., 2010; Quittkat et al., 2019; Tiggemann, 2004). Evolutionary and self-objectification theories provide insight into this phenomenon. From an evolutionary perspective, female physical attractiveness is considered an indicator of health and fertility (Barrett et al., 2002; Thornhill & Gangestad, 1999). Accordingly, appearance is said to be central to a woman’s worth and thus leaves women vulnerable to the pressures
associated with meeting ever increasing appearance ideals. Objectification theory further
stipulates that the sociocultural norms relevant to physical appearance may influence
individuals’ evaluations of their own appearance, and in turn their self-worth (Fredrickson &
Roberts, 1997). Such norms are communicated frequently via peers, family and the media,
and typically emphasize the importance of physical attractiveness more strongly for women
than men (Fredrickson & Roberts, 1997). Thus, our results are consistent with both
evolutionary and sociocultural perspectives.

Limitations and Future Directions

The present investigation has a number of strengths. The longitudinal nature, the
substantial size, and the heterogeneity in terms of age of the sample, ensured a representative
sample and allowed for analyses of change across the adult life span. The use of cohort-
sequential LGMs (Prinzie et al., 2005) provided a useful way of estimating the developmental
patterns of mean-level change across the adult life span, informing the debate about the
nature of body image disturbance across the lifespan. Despite the strengths of this study
however, it is not without its limitations and future research questions remain.

A primary limitation within the current research was the use of a single-item measure
of body satisfaction. Further, this single item included participants’ subjective evaluations of
their body size, shape, and appearance, meaning that we can’t disentangle lifespan and cohort
effects on size, shape, and appearance. In largescale longitudinal research of the type reported
in this study, space is premium, and consequently we were limited to one item to assess body
image. Consequently, this item was deliberately created to attain a gestalt evaluation of body
image, drawing on Cash et al.’s (2002) body image states scale. In creating a single item
designed to get at holistic body evaluation, however, it is likely that we miss more fine-
grained variations in specific aspects of body image. First, it is likely that variation exists in
individuals’ feelings about the appearance versus size versus shape vs appearance of their
bodies.

For example, past work clearly differentiates between ideal body *shape* and *weight* (Abell & Richards, 1996), and while drive for thinness and body shape satisfaction are highly related in past work, there is not perfect overlap (e.g., $r$s ranging from .60-.80 in Yeang et al., 2013). Further to this, evaluations of body appearance overall (an aspect of satisfaction included in our scale) might obscure more targeted dissatisfaction. For example, recent research suggests that concerns about weight and muscle tone might be significantly higher than concerns relating to overall physical appearance (Frederick & Essayli, 2016). Thus, it is possible that the utilisation of three varied components of body image may have complicated estimates of the prevalence of body image concern within the current research. Further, different participants may focus on different aspects of the question. For example, weight conscious individuals may focus on “size” and thus answer based on their feelings towards their weight/muscle, whereas other participants may respond by averaging their perceptions across the three separate components.

Although single-item measures are useful in large-scale research, they are typically less accurate in evaluations of complex constructs such as body image (Diamantopoulos et al., 2012). In particular, single item measures may be more sensitive to errors in response patterns (or noise), relative to multi-item scales. Thus, future research should endeavour to include well established and validated measures in similar investigations of body image. In particular, it will be important to parse out lifespan and cohort effects on muscle satisfaction (e.g., Mayville et al., 2002), satisfaction with body weight and shape (e.g., Abell & Richards, 1996), and holistic body appearance based satisfaction. Relatedly, it would also be interesting to see how appearance based *drives* change (or remain stable) over the lifespan. Similar studies could assess how drive for thinness (Tiggemann & Pickering, 1996) and muscularity (McCreary, 2007) develop over the lifespan. It may be the case, for example, that we see
satisfaction remain relatively stable (as in the present study), but active drives for alternative states decrease (consistent with ideas put forth in Tiggemann & Lynch, 2001).

Moving away from measurement issues, although the modeling approach allowed an investigation of change over time and change due to cohort differences, the issue of formally disentangling cohort effects remains an additional limitation. The estimation strategy employed provides a possible avenue that may help to quantify the extent to which cohort effects contaminate estimates of mean-level change; however, this approach provides only an approximation. Further, although an inevitable component of representative panel designs, the problem of systematic attrition should also be noted. It is possible, for example, that some of the cohort effects that we observe are in part due to systematic attrition. Future research may consider providing incentives (e.g. use of a prize pools or monetary compensation) to participants, as this has been shown to improve participant retention (Booker et al., 2011). On the issue of sampling, in our study there were fewer participants in the youngest and oldest cohorts when compared to midlife cohorts. Given that smaller sample sizes are more prone to the influence of random variation (Hackshaw, 2008), future research should consider longitudinal investigations of these cohorts independently. Such research may provide a deeper understanding of body image effects within younger and older cohorts.

Finally, it is important to discuss future directions for research that might help to explain who change happens for, and why. In the present study, we can make conclusions about body satisfaction overall – it is relatively “flat” across the lifespan, with a slight upward trajectory. This is not to say, however, that this is the pattern that will characterize each individual’s developmental trajectory within any given population. For example, body image is differentially relevant to people. Some report extreme body dissatisfaction that will markedly affect their life, while others report relative neutrality and others still satisfaction (Tiggemann, 2004). It would be interesting to test whether people who enter any longitudinal
study with very low body satisfaction, for example, show a different trajectory towards those entering with high satisfaction. It might be the case, for example, that those with poor body image show either stable dissatisfaction, or even increasing dissatisfaction, counteracting positive improvements in body satisfaction across the lifespan displayed by the rest of the sample. Conversely, it may be the case that only those extremely low in body satisfaction show positive change across the lifespan, whereas those either neutral or high show relative stability. The only way to ascertain whether either (or neither) of these possibilities is correct is through future research targeted at establishing moderators of any lifespan (or cohort) effects.

Other potential moderators are also identified in the literature. For example, aging anxiety (Slevec & Tiggemann, 2010), physical disability status (Taleporos & McCabe, 2002), single romantic relationship status (Tom et al., 2005), and traditional gender role perceptions (Boquiren et al., 2013) have all been established as potential risk factors for body image disturbance and its associated outcomes. For example, it is possible that improvements in body satisfaction over the lifespan are less pronounced or non-existent for those high in aging anxiety, or those who strongly endorse typical views of masculinity and femininity that prescribe restrictive beauty standards. Any investigation of such moderators should also test whether effects are qualified for both men and women (i.e., whether the moderated relationship is itself moderated by gender). A longitudinal study robustly examining moderators of body image over the lifespan would be time intensive and costly but may shed light on how body image is differentially experienced over time for different people. Finally, future research should consider controlling for body mass index, given its strong association with body dissatisfaction (Tiggemann, 2004).

**Conclusion**

Understanding normative change in body image across the lifespan is important given
the deleterious physical and psychological effects associated with body dissatisfaction. Overall, the results of the current paper demonstrate an improvement in body satisfaction across the lifespan for both men and women. While men consistently demonstrated greater body satisfaction than their female counterparts, cohort effects suggest increasing body positivity (or at least less appearance related negativity) for women. While further research is warranted to support these findings, the current study provides a novel contribution to the realm of body image literature by being the first of its type to investigate body image in both men and women utilizing a large, heterogeneous, longitudinal sample and considering both developmental and cohort effects. It is hoped that future research will assess male and female body image development across longer timeframes, as well as via the use of cohort-sequential LGM analyses, to further corroborate and expand upon these findings.
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Chapter 4. Body Image in Midlife Women: The Applicability of the Tripartite Influence Model
STATEMENT OF CONTRIBUTION TO CO-AUTHORED SUBMITTED PAPER

This chapter includes a co-authored paper. The bibliographic details of the
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My contribution to the paper involved: Study conceptualization and literature review, data
collection, data cleaning, data scoring and data analyses, data interpretation and critical
appraisal. Further contributions include the writing of the manuscript, conducting all changes
and implementing all feedback provided from the secondary authors, as well as the feedback
obtained throughout the journal submission process.

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In Chapter 3 (Study 1) we examined body dissatisfaction across the lifespan. In Chapter 4 (Study 2), we turn our attention towards understanding body dissatisfaction in a particular cohort, midlife women. Specifically, Chapter 4 applies the TIM to a sample of midlife women so as to better understand the predictors and consequences of body dissatisfaction within this population.
Abstract

Body image issues and disordered eating are relatively under-researched areas within midlife populations. Accordingly, this study investigated the applicability of the Tripartite Influence Model (TIM) to midlife women. In an online survey, predominately Western female participants (N=206) aged 40-55 years ($M = 46.75$, $SD = 4.54$) completed measures related to sociocultural pressures, thin-ideal internalisation, appearance comparison, body dissatisfaction, bulimic symptoms, restrained eating, and psychological distress. Structural Equation Modeling was used to evaluate the model. Greater peer and media pressure were associated with greater appearance comparison, which in turn was associated with greater thin-ideal internalisation, and through this greater body dissatisfaction. Similarly, greater body dissatisfaction was associated with greater restrained eating and bulimic symptoms, which in turn were associated with greater psychological distress. Unexpectedly, family pressure also emerged as an important direct predictor of outcomes, while sociocultural influences were not associated with thin-ideal internalisation, nor was family pressure associated with appearance comparison. Furthermore, appearance comparison was not associated with body dissatisfaction. Overall, the findings provide partial support for applicability of the TIM for midlife women and suggest practical implications such as targeted interventions that may assist body image disturbance and associated outcomes for midlife women.
Introduction

There is a plethora of research consistently demonstrating the high prevalence of body image problems among women, and the links between body image problems and an array of deleterious outcomes including unhealthy weight control behaviours, emotional eating, lower levels of physical activity, abnormal attitudes to eating and weight, decreased fruit and vegetable intake (Grabe, Ward, & Hyde, 2008; Neumark-Sztainer, Paxton, Hannan, Haines, & Story, 2006), unnecessary surgical enhancements (Bolton, Pruzinsky, Cash, & Persing, 2003; Didie & Sarwer, 2003), lower self-esteem, greater stress, higher negative affect, and greater depression (Grabe et al., 2008; Johnson & Wardle, 2005; Simon et al., 2008; Stice, 2002; Thompson & Stice, 2001; Webster & Tiggemann, 2003). The vast majority of research to date in this area has focussed on adolescents and younger women, with body image issues in midlife women being a largely neglected area of empirical enquiry. Although the exact period defined as midlife differs across research studies, it is defined here as ranging from 40 – 55 years of age, in line with literature highlighting biological, social, behavioural, and psychological related shifts specific to women within this period of life (Gold et al., 2001; Samuels et al., 2019; Thomas et al., 2019).

There are a number of reasons why midlife women may be particularly susceptible to body image issues. As women enter midlife they begin to experience normal biological age-related changes to their bodies including changes in weight distribution, increases in fat, and decreases in muscle mass (Kilpela, Becker, Wesley, & Stewart, 2015; Lewis-Smith, Diedrichs, Rumsey, & Harcourt, 2016). Consequently, with age, women naturally begin to diverge from the thin-ideal, a sociocultural appearance ideal emphasising that to be beautiful, a woman must be thin (Thompson et al., 1999). Mere exposure to the thin-ideal has been associated with an array of negative outcomes, including eating disorder symptoms, depression, stress, and shame (Stice, Schupak-Neuberg, Shaw, & Stein, 1994). However,
findings have demonstrated that internalisation of the thin-ideal, defined as the extent to which women buy into sociocultural beauty standards of thinness (Thompson et al., 1999), is particularly detrimental for individual health and wellbeing (Grogan, 2016; Slevec & Tiggemann, 2011b; Thompson et al., 1999; Unikel, Von Holle, Bulik, & Ocampo, 2012). Thus, it may be postulated that midlife women, who are further removed from the thin-ideal, are potentially more vulnerable to experiencing body dissatisfaction and its associated outcomes (Gendron & Lydecker, 2016; Kilpela et al., 2015; Lewis-Smith et al., 2016).

The limited research to date appears to support the supposition that for women, body dissatisfaction remains relatively stable into midlife, that thin-ideal internalisation continues to be positively associated with body dissatisfaction and disordered eating (Forbes et al., 2005; Matz, Foster, Faith, & Wadden, 2002; Share & Mintz, 2002; Slevec & Tiggemann, 2011; Tiggemann, 2004), and that there has been an increase in disordered eating among this population of women in recent years (Fairweather-Schmidt, Lee, & Wade, 2015; Lewis-Smith et al., 2016). For example, In a large sample of British midlife women, almost 80% indicated weight dissatisfaction and 74% were actively attempting to lose or maintain weight, despite more than 50% being in the normal weight range (Body Mass Index, BMI <25) (McLaren & Kuh, 2004). Similarly, an American study revealed that over 73% of midlife women aged 42 to 52 years were dissatisfied with their weight (Jackson et al., 2014), while an Australian study found that self-reported weekly episodes of strict fasting or dieting behaviours increased in midlife women from 1995 to 2005, with reported rates more than doubling in the 45 to 54 age bracket (Hay, Mond, Buttner, & Darby, 2008). In fact, a study of over 31,000 participants examining dieting across the lifespan, reported that dieting occurred most frequently in women aged 35 to 65 years (Slof-Op’t Landt et al., 2017). Taken together, the research to date alludes to the ubiquitous influence of thin-ideal internalisation and body image disturbance across the female lifespan.
In order to understand and investigate the antecedents and consequences of thin-ideal internalisation and body image issues in midlife women, it is important to draw on theoretical models. One of the most empirically validated sociocultural models of body dissatisfaction is the Tripartite Influence Model (TIM: Thompson et al., 1999). The TIM (see Figure 1 below) proposes that societal ideals of beauty are transmitted and reinforced by three primary sociocultural influences: peers, family and the media. The model contends that these influences contribute to appearance-based social comparison (referred to hereafter as ‘appearance comparison’) and thin-ideal internalisation, both of which in turn result in body dissatisfaction. Body dissatisfaction is then proposed to lead to disordered eating, which is subsequently proposed to lead to psychological distress (Thompson et al., 1999).

Substantial empirical evidence supports the various relationships put forward in the TIM. Within young female samples, the association between sociocultural influences and appearance comparison and thin-internalisation has been well documented (e.g. Rodgers et al., 2001; van den Berg et al., 2002). Numerous studies have shown that internalisation of the thin-ideal is related to body dissatisfaction and disordered eating (Thompson & Stice, 2001), and this robust finding in adolescent and young adult females is supported by a range of research methodologies including correlational, prospective, experimental and meta-analyses (Cafri, Yamamiya, Brannick, & Thompson, 2005; Groesz, Levine, & Murnen, 2002; Juarascio, Perone, & Timko, 2011; Nouri, Hill, & Orrell-Valente, 2011; Thompson & Stice, 2001). Similarly, the role of appearance comparison in body image is also well documented. Social Comparison Theory (Festinger, 1954) suggests that engagement in upwards based comparisons (i.e. comparisons of oneself to someone perceived as more attractive) results in negative psychological consequences. Consistent with the TIM, appearance comparison has repeatedly demonstrated a positive association with body dissatisfaction in young adult and adolescent females (Myers & Crowther, 2009). Further supporting the predictions of the TIM,
the mediating role of body dissatisfaction in the relationship between appearance comparison and disordered eating, and thin-ideal internalisation and disordered eating has also been well established in adolescent and young adult female samples (Keery, van den Berg, & Thompson, 2004; Rodgers, Chabrol, & Paxton, 2011; Shroff & Thompson, 2006; Van den Berg, Thompson, Obremski-Brandon, & Coover, 2002). Finally, the mediating role of disordered eating in the relationship between body dissatisfaction and psychological distress has also been consistently demonstrated in adolescent and young adult women (Keery et al., 2004; Shroff & Thompson, 2006; Van den Berg et al., 2002). Furthermore, the full TIM has been supported with preadolescent (Shroff & Thompson, 2006), adolescent (Keery et al., 2004) and young adult women (Rodgers et al., 2011; van den Berg et al., 2002).

**The Tripartite Influence Model and Midlife Women**

To date, much of the extant TIM literature has maintained a primary focus on adolescents and young adult women, despite mounting empirical evidence implicating body image disturbances in older female cohorts. Although body dissatisfaction correlates and predictors have been comprehensively researched in adolescent and young adult populations, studies with midlife women (aged 40 to 55 years), are comparatively scarce (Kilpela et al., 2015; Lewis-Smith et al., 2016; Slevec & Tiggemann, 2011b). However, in line with the aforementioned findings implicating the continuity of body image disturbances in midlife women, and the fact that women aged 40 to 55 years make up a substantive proportion of the population, this dearth of research highlights an imperative gap within the realm of body image literature.

Although limited, there is some research supporting aspects of the TIM with midlife women. For example, preliminary research has supported the role of family, peers, and the media on midlife women’s body dissatisfaction directly (e.g. Green & Pritchard 2003, Midlarsky & Nitzburg, 2008). However, research examining the association between
sociocultural pressures and mediating variables of appearance comparison and thin-
internalisation more specifically, is scarce. Of the research that does exist, the association
between media pressure and appearance comparison and thin internalisation is most well
documented for midlife women, demonstrating the enduring impact of such ideals into
midlife (Lewis-Smith et al., 2020; Slevec & Tiggemann, 2011).

Similar themes can also be found when reviewing the mediating role of appearance
comparison and thin internalisation on body dissatisfaction. A weak negative association has
been found between the frequency of appearance comparison behaviours and body
satisfaction in women over 30 years (Yu, Kozar, & Damhorst, 2013), and a positive
association has been found between self-comparison with fashion models and appearance
dissatisfaction in women aged 30-80 years (Kozar & Damhorst, 2009). Further, in an
Australian study of midlife women aged 35-55 years, a moderate and positive association
between appearance comparison and body dissatisfaction was found, together with a strong
positive association between appearance comparison and disordered eating (Slevec &
Tiggemann, 2011a). Further, positive associations have been established between body
dissatisfaction and disordered eating for midlife women (Forbes et al., 2005; Matz et al.,
2002; Share & Mintz, 2002; Slevec & Tiggemann, 2011).

Only two studies to date have examined the applicability of multiple aspects of the
TIM within samples of midlife women (Lewis-Smith et al., 2020; Slevec & Tiggemann,
2011). Slevec and Tiggemann (2011) found that body dissatisfaction mediated the
relationship between media processing (a latent variable including thin-ideal internalisation,
appearance comparison, aging anxiety and appearance investment) and disordered eating (a
latent variable including drive for thinness, bulimia and body dissatisfaction). Although
pioneering in terms of its exclusively midlife sample and inclusion of multiple variables of the
TIM, the study’s primary aim was to investigate the role of media exposure on body
dissatisfaction and disordered eating in midlife women, and it therefore excluded family and peer influences from the model. Further, the study included a measure of body dissatisfaction within the disordered eating variable, and included additional variables (appearance investment & aging anxiety) that were not part of the traditional TIM. Although the study was well designed and executed, deviations from the TIM make it difficult to infer the original model’s usefulness with older women.

A second study examined the TIM in midlife women with and without a history of breast cancer treatment (Lewis-Smith et al., 2020). Their research found support for the influence of media on appearance comparison and thin internalisation, which in turn was associated with body image (a latent variable including appearance evaluation, body areas satisfaction, and body appreciation). For women without a history of breast cancer treatment, peer influence was also directly associated with body image disturbance. Similarly to Slevec and Tiggemann’s (2011) research, Lewis-Smith et al.’s (2020) study made a significant contribution to the literature on midlife women’s body image. However, the study excluded outcomes variables of restrained eating, bulimic symptoms, and psychological distress, and therefore was not a test of the TIM in its entirety.

To date, and to the best of the authors’ knowledge, the traditional TIM has not yet been examined exclusively in midlife women, nor does there yet exist a well validated model to explain the predictors and consequences of body image disturbance in this cohort. Accordingly, the current study seeks to address this fundamental gap in the literature by assessing the validity of the original TIM as a sociocultural theory of body dissatisfaction and disordered eating for midlife women. In line with the TIM, the hypothesised associations are outlined in Figure 1. Given the limited research examining the TIM in its entirety in midlife women, the hypothesised pathways are inferred from research in midlife women in conjunction with more established literature examining younger cohorts. Specifically, it is
hypothesised that pressure from family, peers, and the media will be positively associated with appearance comparison engagement and thin internalisation. Further, it is anticipated that appearance comparison engagement will be positively associated with greater thin internalisation, which in turn will be positive associated with body dissatisfaction for midlife women. Finally, it is hypothesised that body dissatisfaction will be positively associated with restrained eating and bulimic symptomatology (with restrained eating also expected to be positively associated with bulimic symptoms), which in turn will be linked to greater psychological distress.

Figure 1. The Tripartite Influence Model

Method

Participants

Participants were 206 females aged 40 to 55 years ($M = 46.75$, $SD = 4.54$) with an average body mass index (BMI) of 28.35 ($SD = 6.91$), indicating that the sample was, on average, overweight (National Health and Medical Research Council, 2013), and comparable to that of the greater Australian populace of midlife females (Australian Bureau of Statistics,
Table 1 presents the full sociodemographic information for the sample. As indicated in Table 1, the majority of participants identified as Australian (67%), were married (62.6%), had children (78.6%), had completed a Bachelor degree as their highest level of education (32.5%), were employed full time (51.9%), and reported an annual household income over $100 001 (34.5%).
## Table 1

**Socio-demographic Information of Sample including Age, Ethnicity, Relationship Status, Children Status, Level of Education, Employment Status and Household Annual Income**

<table>
<thead>
<tr>
<th>Demographic Variable</th>
<th>Frequency (N=206)</th>
<th>Percentage of total sample</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40-44</td>
<td>77</td>
<td>37.4</td>
</tr>
<tr>
<td>45-49</td>
<td>68</td>
<td>33.0</td>
</tr>
<tr>
<td>50-55</td>
<td>61</td>
<td>29.6</td>
</tr>
<tr>
<td><strong>BMI</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Underweight (&lt;18.5)</td>
<td>3</td>
<td>1.5</td>
</tr>
<tr>
<td>Normal (18.5-24.99)</td>
<td>77</td>
<td>37.4</td>
</tr>
<tr>
<td>Overweight (25-29.99)</td>
<td>55</td>
<td>26.7</td>
</tr>
<tr>
<td>Obese (30+)</td>
<td>71</td>
<td>34.5</td>
</tr>
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<td><strong>Country of Birth</strong></td>
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<td></td>
</tr>
<tr>
<td>Australian (First Peoples)</td>
<td>138 (2)</td>
<td>67.0 (1.0)</td>
</tr>
<tr>
<td>European</td>
<td>29</td>
<td>14.0</td>
</tr>
<tr>
<td>American</td>
<td>13</td>
<td>6.3</td>
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<tr>
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<td>6</td>
<td>2.9</td>
</tr>
<tr>
<td>South East Asian</td>
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<td>1.0</td>
</tr>
<tr>
<td>African</td>
<td>3</td>
<td>1.5</td>
</tr>
<tr>
<td>Other</td>
<td>13</td>
<td>6.3</td>
</tr>
<tr>
<td><strong>Relationship Status</strong></td>
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<tr>
<td>Dating</td>
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<tr>
<td>Defacto</td>
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<tr>
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<tr>
<td>Other</td>
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<tr>
<td><strong>Children</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>44</td>
<td>21.4</td>
</tr>
<tr>
<td>All over 18 years</td>
<td>39</td>
<td>18.9</td>
</tr>
<tr>
<td>At least one under and one over 18 years</td>
<td>43</td>
<td>20.9</td>
</tr>
<tr>
<td>All under 18 years</td>
<td>80</td>
<td>38.8</td>
</tr>
<tr>
<td><strong>Level of Education</strong></td>
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<td></td>
</tr>
<tr>
<td>Grade 10 or below</td>
<td>9</td>
<td>4.4</td>
</tr>
<tr>
<td>Grade 12 or below</td>
<td>21</td>
<td>10.2</td>
</tr>
<tr>
<td>Some college but no degree</td>
<td>30</td>
<td>14.6</td>
</tr>
<tr>
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Measures

**Demographic information.** Participants were asked to report demographic details including their age, weight in kilograms, height in centimetres, gender, relationship status, employment status, highest level of education, household income, ethnicity and parental status including child(ren)/s age (see Table 1).

**Pressure from Family, Peers & Media.** The Sociocultural Attitudes Towards Appearance Questionnaire-4 (SATAQ-4; Schaefer et al., 2015) was used to measure sociocultural pressure from peers, family and media (e.g., “I feel pressure from family members to look thinner”, “My peers encourage me to get thinner”, “I feel pressure from the media to look in better shape”). Each of the 4-item domains requires respondents to rate the extent to which they agree with each item on a 5-point Likert scale from 1 (definitely disagree) to 5 (definitely agree). Items are summed to produce family, peer and media domain scores, each ranging from 4-20, with higher scores being indicative of greater perceived pressure to conform to the sociocultural thin-ideal from that particular influence domain. The SATAQ-4 has been found to have Cronbach's alphas ranging from 0.92 to 0.94 (Bell, Donovan, & Ramme, 2016; Ramme, Donovan, & Bell, 2016; Schaefer et al., 2015), indicating good internal consistency. Cronbach’s alphas of .92, .94 and .98 were found for the family, peers and media subscales respectively in the current study.

**Thin-ideal internalisation.** Thin-ideal internalisation was measured using the 5-item Thin Internalisation (TI) subscale of the SATAQ-4 (Schaefer et al., 2015). Respondents are required to rate their agreement with each statement on a 5-point Likert scale from 1 (definitely disagree) to 5 (definitely agree). The 5-item thin-ideal internalisation subscale (e.g., “I want my body to look like it has very little fat”) measures the extent to which individuals buy into and accept the cultural ideals of thinness. Items are summed to produce a
total score ranging from 5 to 25, with higher scores indicating greater internalisation of the thin-ideal. The TI subscale has demonstrated a Cronbach's alpha above .82, indicating high internal consistency (Bell et al., 2016; Ramme et al., 2016; Schaefer et al., 2015). The internal consistency of the TI subscale in the present study was α = .85.

**Appearance comparison.** Appearance comparison was measured using the 5-item Physical Appearance Comparison Scale (PACS; Thompson, Heinberg, & Tantleff-Dunn, 1991). Respondents are required to rate the frequency with which each statement (e.g. “At parties or other social events, I compared my physical appearance to the physical appearance of others”) applies to them on a 5-point scale from 1 (never) to 5 (always). Items are summed to produce a total score that may range from 5 to 25, with higher scores being indicative of a greater propensity for appearance comparison. The PACS has established test-retest reliability (r = .72, Thompson et al., 1991), and adequate internal consistency has been reported with female samples, including Australian young adult females (α = .70, Rodgers et al., 2011) and Australian midlife females (α = .77, Slevec & Tiggemann, 2011). The internal consistency of the PACS in the present study was α = .76.

**Body Dissatisfaction.** Body dissatisfaction was measured using a modified version of the Body Image Concern subscale (BIC) of the Body Image and Body Change Questionnaire (Ricciardelli & McCabe, 2002). The original Body Image Concern subscale is a 10-item scale measuring an individual's level of satisfaction with their weight, body shape, muscle size and seven specific body areas (hips, thighs, chest, abdominal/stomach region, shoulder size and width, legs, arms). This study used a modified version of the BIC employed by Bell et al. (2016) and Ramme et al. (2016) that included two additional body areas (back and buttocks) in order to provide a comprehensive measure of body dissatisfaction. The modified version of the BIC therefore consists of 12 items requiring respondents to rate how satisfied they are with each body part (e.g., “How satisfied are you with your abdominal region/stomach?”) on
a 5-point scale from 1 (extremely satisfied) to 5 (extremely dissatisfied). Items are summed to produce a total score that may range from 12 to 60, with higher scores being indicative of greater body dissatisfaction. The modified BIC reports good reliability in Australian adult samples ($\alpha = .91$, Bell et al., 2016). The internal consistency of the modified BIC in the present study was $\alpha = .92$.

**Bulimic symptoms.** Bulimic symptoms were measured using the 6-item Bulimia subscale of the Eating Attitudes Test (EAT-26: Garner et al., 1982). Respondents are required to rate the degree to which each item reflects their own bulimic attitudes and behaviour (e.g. “I vomit after I have eaten”) on a 6-point Likert scale from 1 (never) to 6 (always). Scores are summed to produce a total score that may range from 6 – 36, with higher scores indicating a higher propensity for bulimic-type eating and purging behaviours. Previous studies have demonstrated a Cronbach’s alpha of .90 for the EAT-26 (Garner et al., 1982; Stice et al., 1994). The internal consistency of the Bulimia subscale in the present study was $\alpha = .85$.

**Restrained eating.** Restrained eating was measured using the 10-item Restrained Eating subscale of the Dutch Eating Behaviour Questionnaire (DEBQ; Van Strien, Frijters, Bergers, & Defares, 1986). Respondents are required to rate the degree to which each item reflects their attitudes and behaviours (e.g. “Do you try to eat less at mealtimes than you would like to eat?) using a 5-point Likert scale from 1 (never) to 5 (always). Items are summed to produce a total score that may range from 10 to 50, with higher scores indicating greater dieting attitudes and behaviours. The DEBQ has been found to have a Cronbach's alpha of .95, indicating high internal consistency (Bell et al., 2016; Van Strien et al., 1986). The internal consistency of the Restrained Eating subscale within the present study was $\alpha = .92$. 

**Psychological Distress.** Psychological distress was measured using the 21-item Depression Anxiety Stress Scales (DASS-21; Lovibond & Lovibond, 1995). Respondents are required to rate the extent to which each item (e.g. “I found it hard to wind down”) has applied to them during the previous week on a 4-point Likert scale from 1 (did not apply to me at all) to 3 (applied to me very much, or most of the time). Items are then summed to produce a total score that may range from 21 to 84, with higher scores indicating greater psychological distress. The DASS-21 has previously demonstrated a Cronbach’s alpha of .93, indicating excellent internal consistency (Henry & Crawford, 2005). Within the present study, good internal consistency was found (α = .87).

**Procedure**

Data was collected as part of a larger project exploring body image across the lifespan and conducted in Brisbane, Australia. Women aged 40 – 55 years met inclusion criteria for the current study. Prior to commencement of data collection, ethics approval was sought and obtained from the (blinded for review) University Human Research Ethics Committee. Participant recruitment was conducted through several avenues including student participation for course credit, a University call for volunteers, and social media. Recruitment materials included a link to the online questionnaire that participants could either click on or type into their internet browser. Only those participants for whom online consent was obtained proceeded to the questionnaires. Prior to completing the questionnaire, participants were provided with an information sheet explaining that the research was being conducted to investigate body image across the female lifespan. The online questionnaire took participants approximately 20 minutes to complete.
Results

Descriptive Statistics

Means, SDs, and intercorrelations for all measures (N = 206) are displayed in Table 2. Fewer than 5% of participants were missing data, thus series mean imputation was used in line with Schaffer’s (1999) assertion that missing data below a rate of 5% is inconsequential. As anticipated, BMI positively correlated with body dissatisfaction, bulimic symptomatology, and psychological distress. Further, thin-ideal internalisation, appearance comparison, body dissatisfaction, bulimic symptomatology, retrained eating and psychological distress were all significantly and positively correlated with each other.

Pressure from peers, family, and the media, and appearance comparison, thin internalisation, body dissatisfaction, and restrained eating did not show any substantive skew or kurtosis (all values <1, and most <.5). However, bulimic symptoms and psychological distress showed a small degree of skew (1.46 and 1.20 respectively, and kurtosis 2.97 and 1.03 respectively). Bootstrapping procedures were used to account for skewed data and to obtain bias-corrected confidence intervals for the indirect effects.

Structural Equation Modeling

Path analysis was used to test the proposed model using AMOS 26 statistical software with maximum likelihood estimation using the covariance matrix. Schreiber et al (2006) suggest a ratio of observations to estimated parameters of 10 to 1 for adequate sample size in SEM. Given that the full predicted model in the present study included 21 estimated parameters, a sample size of 210 is required. The current sample size of 206 closely aligns with the estimated number of participants required, and therefore the sample size was adequate.

Dependent variables and error terms were allowed to correlate to acknowledge the
influence of everyday factors on outcomes associated with midlife women’s body dissatisfaction. The model was assessed for goodness-of-fit using the chi squared test, chi squared/degree of freedom ratio, the comparative fit index (CFI), the root mean square error of approximation (RMSEA), and the standardized root-mean-square residual (SRMR). Indications of a model with satisfactory fit include a non-significant $\chi^2$, or a $\chi^2$/df ratio $\leq 3$, a CFI $\geq .95$, values of RMSEA less than .06 to .08 (for continuous data), and a SRMR less than .08 (Hu & Bentler, 1999; Schreiber, Nora, Stage, Barlow, & King, 2006).

Indicators revealed poor model fit statistics for the original, predicted model, $\chi^2(20, N = 206) = 149.76, p = .00$, $\chi^2$/df$= 7.49$; CFI$= 0.71$; RMSEA$= 0.18$; SRMR$= 0.18$ (see Figure 2). Modification indices suggested the inclusion of 15 additional paths. Each of these paths were considered with reference to the size of the suggested modification index and existing theoretical support for a path, paths were then added in an iterative process until adequate model fit was achieved. In line with research demonstrating perceived pressure from family to meet appearance ideals is associated with body dissatisfaction in adult women (e.g. Ramme et al., 2016), a direct path between perceived family pressure and body dissatisfaction was included within the model ($\chi^2(19, N = 206) = 98.16, p = .00$, $\chi^2$/df$= 5.17$; CFI$= 0.82$; RMSEA$= 0.14$; SRMR$= 0.14$). Next, a path between appearance comparison and psychological distress was included within the model ($\chi^2(18, N = 206) = 68.54, p = .00$, $\chi^2$/df$= 3.81$; CFI$= 0.89$; RMSEA$= 0.12$; SRMR$= 0.11$). This sits in line with research demonstrating a positive association between greater appearance comparison engagement and negative mood states in women (e.g. Tiggemann & McGill, 2004). Next, a path between thin internalization and restrained eating was added ($\chi^2(17, N = 206) = 51.97, p = .00$, $\chi^2$/df$= 3.06$; CFI$= 0.92$; RMSEA$= 0.10$; SRMR$= 0.09$). Past research supports this additional path, given that internalization of the thin-ideal has been demonstrated as a risk factor for disordered eating in midlife women (Slevec & Tiggemann, 2011b). A path between appearance
comparison and bulimic symptomatology was then added into the model ($\chi^2(16, N = 206) = 36.24, p = .00, \chi^2/df = 2.27$; CFI= 0.95; RMSEA= 0.08; SRMR= 0.07). Theoretically, this addition is supported by research in which upwards based appearance comparisons have been associated with eating psychopathology in non-clinical samples of mid-life women (e.g. Slevec & Tiggemann, 2011). Finally, a path between perceived pressure from peers to meet appearance ideals and psychological distress was added to the model. Limited research has examined the direct association between sociocultural pressure from peers to meet appearance ideals and psychological distress in midlife women. However, research has supported the negative influence of peer pressure on individual well-being in younger samples (e.g. Alsubaie et al., 2019). The inclusion of these five additional paths resulted in the final model (displayed in Figure 3) with good fit statistics, $\chi^2(15, N = 206) = 23.07, p = 0.08, \chi^2/df = 1.54$; CFI= 0.98; RMSEA= 0.05; SRMR= 0.05. Table 3 displays the direct, indirect and total effects for the final model.

As can be seen in Figure 3, higher perceived pressure from family to meet appearance ideals was directly associated with higher levels of body dissatisfaction. Greater pressures from peers and media were associated with greater appearance comparisons, which in turn was associated with greater thin-ideal internalisation. Greater thin-ideal internalisation was associated with greater body dissatisfaction, which in turn was associated with higher restrained eating and bulimic symptoms. Higher internalisation of the thin-ideal was also directly associated with restrained eating, which in turn was associated with higher levels of bulimic symptoms. Further, bulimic symptoms were found to mediate the relationship between restrained eating and psychological distress, between body dissatisfaction and psychological distress, and between appearance comparisons and psychological distress. Finally, direct associations were observed between appearance comparisons and psychological distress, as well as between perceived pressure from peers and psychological distress.
distress. The model explained 19% of the variance in appearance comparison 21% in thin internalisation, 31% in body dissatisfaction, 14% in restrained eating, 28% in bulimic symptomatology, and 33% in psychological distress.

Given the association between women’s BMI and several outcome variables, as well as past work showing that women with larger bodies often report more body related distress (e.g., Slevec & Tiggemann, 2011b), as a final step we reran the final model while controlling for BMI. In this model entered as a predictor of all exogenous variables within the final model. All significant paths remained, with the exception of the association between body image and bulimic symptoms ($\beta = .11, p = .13$), accordingly this association should be interpreted with caution. Further, three paths that were not significant in the previous model became significant. These were the association between appearance comparison and body image ($\beta = .13, p = .03$) and appearance comparison and bulimic symptoms ($\beta = .28, p < .001$) each reached significance. For reference, BMI was associated with thin-internalisation ($\beta = -.14, p = .02$), body dissatisfaction ($\beta = .46, p < .001$), and bulimic symptoms ($\beta = .17, p = .01$). No other associations between BMI and exogenous variables were significant (appearance comparison $\beta = -.11, p = .08$, restrained eating $\beta = -.09, p = .23$, psychological distress $\beta = .03, p = .63$).
Figure 2. Original, predicted structural equation model for the Tripartite Influence Model of Body Image. Standardized estimates are shown, where * p< .05, ** p< .01, ***p<.001; N= 206.
Figure 3. Final structural equation model for the Tripartite Influence Model of Body Image. Significant paths are displayed in black, non-significant paths are displayed in grey, standardised estimates are shown, where * p< .05, ** p< .01, ***p<.001; N= 206.
Table 2

*Means, SDs, minimum scores, maximum scores, and intercorrelations*

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<td>.45**</td>
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<td>.28**</td>
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<tr>
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<td>.32**</td>
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<td>.35**</td>
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<td>6. Restrained Eating</td>
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<td>.00</td>
<td>.33**</td>
<td>.22**</td>
<td>.25**</td>
<td>.40**</td>
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<td>.07</td>
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</table>

*Note.* *p < .05,  **p < .01
Table 3

*Direct, indirect and total effects from the final significant model*

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<td>Bulimic Symptoms</td>
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<td>Pressure Peers</td>
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<tr>
<td></td>
<td>Body Dissatisfaction</td>
<td>-</td>
</tr>
<tr>
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<tr>
<td>Bulimic Symptoms</td>
<td>Psychological Distress</td>
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</table>

*Note. *p* ≤ 0.05, **p* < 0.01, ***p* ≤ 0.001. Direct and total effect significance values taken from regression weights table, indirect effects taken from bootstrapping analyses.*

**Discussion**

Despite growing evidence suggesting problematic rates of body image disturbance and disordered eating in midlife women (Fairweather-Schmidt, Lee, & Wade, 2015; Hay et al., 2008; Lewis-Smith et al., 2016, Mangweth-Matzek et al., 2014; Midlarsky & Nitzburg, 2008; Tiggemann, 2004), the majority of empirical research has maintained a focus on adolescent and young adult female populations. Thus, comparatively little is known about the origins and consequences of body image disturbance for midlife women. Accordingly, the current paper sought to assess the applicability of a prominent theoretical model of body image disturbance, the Tripartite Influence Model (TIM), to midlife women aged 40 – 55 years. Structural Equation Modeling demonstrated partial support for the TIM for women in midlife.

As predicted, the more women perceived pressure from peers and the media to meet appearance ideals, the more they engaged in appearance comparisons, and internalised the thin
ideal, which was further associated with increases in body dissatisfaction. Further, greater body dissatisfaction was associated with greater dieting and bulimic behaviours (with dieting behaviours also directly associated with bulimic symptoms), which in turn was associated with poorer psychological wellbeing.

The effect of media on body dissatisfaction through appearance comparison and then thin ideal internalisation for midlife women is perhaps unsurprising, given contemporary research demonstrating worldwide increases in media exposure (Nielsen, 2016). The findings for media also partially support the work of Slevec and Tiggemann (2010, 2011), who found that media exposure was directly and indirectly (via appearance comparison and thin-ideal internalisation) associated with body dissatisfaction in midlife women. It would therefore seem that middle-aged women may be vulnerable to media exposure in similar ways to adolescent and young adult women (Grabe et al., 2008; Keery et al., 2004; Rodgers et al., 2011; Shroff & Thompson, 2006; Van den Berg et al., 2002). This is a particularly pertinent finding, given that women in this demographic are typically further removed from the youthful and thin depictions frequently represented in mainstream media, and thus, are potentially more vulnerable than their younger counterparts. Examples of such vulnerability are demonstrated in studies where a positive association between media exposure and positive attitudes towards cosmetic surgery in midlife women has been established (Sharp, Tiggemann, & Mattiske, 2014; Slevec & Tiggemann, 2010). In a similar vein, Sharp et al (2014) found that greater engagement in appearance related conversations with friends was indirectly associated with body dissatisfaction, through thin internalisation and appearance comparisons. Collectively then, the evidence would suggest that perceived pressure from peers and the media to meet appearance ideals may inhibit midlife women’s body image in similar ways to their younger counterparts.
The association between appearance comparison and body dissatisfaction, *through* thin internalisation also warrants attention. Such findings align with research conducted by Slevec and Tiggemann (2011a) and Lewis-Smith et al. (2020), in which appearance-based social comparisons and thin-ideal internalisation were each found to be associated with lower body image in midlife women. When we included BMI as a control variable in analyses we found that women with larger bodies were more likely to report thin-ideal internalisation (as well as body dissatisfaction and bulimic symptomatology). Lewis-Smith et al. (2020) report similar associations. Such findings further indicate that internalisation of the thin-ideal may be detrimental for midlife women, particularly if discrepancies between one’s own body size and internalised appearance-related ideals emerge.

Contrary to predictions, none of the sociocultural influences were found to be directly associated with thin-ideal internalisation, and perceived pressure from family was not directly associated with appearance comparisons. Similarly, no direct association was established between appearance comparisons and body dissatisfaction. A number of unpredicted associations also emerged. Pressure from family was directly associated with body dissatisfaction, and pressure from peers was directly associated with psychological distress. Unpredicted direct associations were also found between thin-ideal internalisation and restrained eating, and between appearance comparison and both bulimic symptomatology and psychological distress. Thus the results of the current study do not support the TIM in its *entirety* as a valid sociocultural framework to interpret midlife women’s body dissatisfaction and eating psychopathology. However, when reviewed in conjunction with past literature, results from the present study may provide advances in the current understanding of body image among midlife women.
For midlife women, the most notable divergence from the original TIM appears to relate to differences in the role of sociocultural pressures. First, none of the sociocultural influences were directly associated with thin-ideal internalisation. Literature, including this study, supports the existence of thin-ideal internalisation and its damaging effects in midlife women (Forbes et al., 2005; Matz et al., 2002; Share & Mintz, 2002). However, little is known about the predictors of thin-ideal internalisation for this particular demographic. It would appear from the current study, that sociocultural pressures are not direct contributors. Rather, it would seem that peer and media influence may lead to thin-ideal internalisation only through appearance comparison, with family pressure having no unique effect on either appearance comparison or thin-ideal internalisation, but rather being directly relevant for body dissatisfaction.

Indeed, the second way that the role of sociocultural pressures deviate from the original TIM in the current study is that family pressure was found to be directly associated with body dissatisfaction instead of this effect occurring through appearance comparison and thin-ideal internalisation. Such findings align with those of Green and Pritchard (2003), who found a direct association between perceived pressure to diet from family members and body dissatisfaction amongst adults aged 19 to 68 years. Past work has also found negative effects of parental body dissatisfaction and dieting on their children’s body image disturbance (e.g. Abramovits & Birch, 2000; Stice, Argras, & Hammer, 1999), and in a similar way it is possible that spousal, child, and parental pressures are relevant for understanding midlife women’s body dissatisfaction. The direct effect, however, is interesting, and it is here that midlife women seem to diverge from younger women. It is possible that for midlife women family may represent a stronger primary reference group than it does for their younger peers. For example, a large portion of the women within the current study were wives and mothers. It may be that these significant roles may
comprised a large part of these many midlife women’s identities, and in turn have had a direct influence on the way women view themselves and their bodies. Further, perceived pressure from partners or children to lose weight or alter one’s appearance may lead to body dissatisfaction for midlife women, without the need for mediating variables such as appearance comparison and thin internalisation. Further exploration is required to determine what family pressures are and how such pressures influence midlife women’s body image.

The direct association between pressure from peers and psychological distress was another notable deviation from the original TIM in the current study. Despite the discrepancy between the current findings and past research, this association may be understood by literature more specifically exploring the relationship between peers and psychological wellbeing where it has been found that perceived peer social rejection is associated with greater psychological distress (e.g. Beeri & Lev-Wiesel, 2012). Given that midlife women are further removed from the youthful and thin-ideals upheld within Western cultures, it is possible that the peer influence questions used in the current study tap into perceived peer rejection (e.g. ‘I feel pressure from my peers to improve my appearance’). In turn, this rejection may flow through to increased psychological distress. Future research should investigate this issue further.

In comparison to the traditional TIM, appearance comparison and thin-ideal internalisation were each found to operate differently for midlife women in the current study. Although appearance comparisons were indirectly associated with body dissatisfaction through thin-ideal internalisation as predicted, no direct relationship was found between appearance comparison and body dissatisfaction. However, midlife women who more often engaged in appearance comparisons were found to demonstrate more bulimic symptoms and to experience greater psychological distress. This finding suggests that even in the absence of body related
distress, appearance comparisons may be linked to daming body related behaviour and poor psychological health in midlife women. However, it is also possible that a reverse causal path exists in which greater psychological distress itself results increased engagement in appearance-based comparisons as well as sensitivity to pressure from peers (as discussed above). Such suppositions are speculative, however, and require further investigation.

Broadly, the findings presented within this paper are also in line with Festinger’s (1954) social comparison theory, which suggests that upwards based appearance comparisons result in greater distress. Drawing on this theoretical perspective, past work shows that young women with bulimia fixate longer on women with lower BMIs compared to control groups (Blechert, Nickert, Caffier, & Tuschen-Caffier, 2009). It is possible that women in the current study may have engaged in bulimic behaviours in an attempt to mitigate the distress experienced as a result of appearance comparisons. This conjecture aligns with past work in which appearance comparison engagement has been associated with bulimic attitudes in young women (Blechert et al., 2009), therefore warranting further research with midlife women. Taken together, the current findings suggest that in a similar way to that of young women, appearance comparisons are an important mediating variable for midlife women’s experience of body dissatisfaction and its associated outcomes, although it functions somewhat differently within this population.

With respect to thin-ideal internalisation, despite being directly linked to body dissatisfaction for midlife women as predicted, it was also directly associated with restrained eating. These findings align with past research demonstrating a direct association between thin-ideal internalisation and restrained eating in midlife women (Share & Mintz, 2002; Thompson & Stice, 2001). Although they may operate in slightly different ways to that posited by the TIM, appearance comparison and thin-ideal internalisation appear to be increasingly well documented
as mechanisms able to both directly and indirectly influence disordered eating in midlife women.

Finally, the current findings support those of prior research that demonstrate women’s body image disturbance not only persists into midlife (e.g. Slevec & Tiggemann, 2011b; Tiggemann, 2004), but continues to negatively influence this demographic (Forbes et al., 2005; Matz et al., 2002; Share & Mintz, 2002; Slevec & Tiggemann, 2011; Tiggemann, 2004). The findings of this study align with mounting evidence highlighting the relevance of body image for midlife women, and thus underscore the importance of addressing the dearth of literature pertaining to the prevalence, predictors and consequences of body image disturbance in older women.

Limitations and Future Directions

The results of the present study should be considered within the context of its limitations. The primary limitation concerns the correlational and cross-sectional nature of the study’s design. This study is unable to determine the causal nature or the temporal progression of the associations assessed, and therefore future research would benefit from experimental and longitudinal work with a specific focus on body image in midlife women. Secondly, the final model required modifications to achieve adequate fit. Although these modifications were made with reference to the existing literature, it is still possible that they are specific to the sample assessed.

In terms of measurement, in the current study body image was assessed by asking women how satisfied they were with different parts of their body (e.g., arms, legs, stomach). This measure was deliberately chosen to access a Gestalt-type picture of how women felt about their bodies. With this said, the bulk of the literature reviewed in the introduction focused more specifically on body size or weight satisfaction. While in the present study women with larger
bodies reported lower body satisfaction, indicating that the measure is tapping into weight or size satisfaction, it is likely that other aspects of body satisfaction were also captured. Women face ubiquitous and restrictive appearance ideals that often concern thinness, but also youthfulness (Tiggemann, 2004). This latter ideal is particularly relevant to mid-life women, who by definition fall outside of the youthful ideal. External characteristics of aging, such as changes in skin and hair textures or tones, or skin elasticity, may influence women’s overall appearance satisfaction. As such, it is likely that when women in our study responded to items they were considering not only their body size, but also other appearance related characteristics. Future work should aim to establish which aspects of body dissatisfaction are most prominent and impactful for midlife women through the use of specific and targeted measures. In doing so, it may be possible to understand exactly which aspects of body dissatisfaction are linked to maladaptive cognitions and behaviours for midlife women.

Also on the topic of measurement, it is important to note that while many of the measures reported within this study are frequently used in midlife women, are reliable, and show good predictive validity, few have been formally validated in midlife samples. Formally validating body image measures in midlife women may prove useful, and shed light on how body image is experienced by midlife women, relative to younger women.

Returning to the results, in the present work BMI was heavily related to thin internalisation, body dissatisfaction, and bulimic symptomatology. Thus, future research may benefit from investigating how the TIM applies to women of higher and lower weight categories. Such work may also provide insights around the direct associations between appearance comparison and body dissatisfaction and appearance comparison and bulimic symptoms that emerged when controlling for BMI within the current research. Finally, future work may benefit
from assessing pressures faced by women in specific age categories (e.g. 40-44, 45-49, 50-54), as it is possible that 15 years is too great of a period to adequately account for the differences experienced by women at varied stages of midlife.

**Practical Implications**

A number of practical implications may also be gleaned from the current research. Firstly, the current findings align with past research demonstrating the potential harm of media consumption for midlife women’s body image. Thus, interventions targeting reduced media consumption, improved media literacy, or tailoring media intake, may be worthy of consideration as a means of reducing poor body image and disordered eating in midlife women, given that such programs have been demonstrated as beneficial in younger samples (McLean et al, 2016). Second, future clinical work may benefit from cognitive interventions aimed at reducing the propensity for appearance comparison and thin-ideal internalisation, in order to reduce their negative impact among middle-aged women. For example, programs aimed at creating cognitive dissonance around the thin-ideal have resulted in reductions in thin-ideal internalization, body dissatisfaction, dieting, negative affect, and bulimic symptomatology in undergraduate women (Stice et al., 2000). Of note, research by McLean et al. (2011) examined a body image and disordered eating intervention for midlife women, which also incorporated modules related to media literacy and cognitive dissonance. The authors found large improvements in their intervention group that were maintained at 6-month follow-up. Thus, preliminary research supports such interventions in midlife women and underscores the requirement for further validation in future research.

Finally, interventions centred around family therapy should be considered. Within the current research, perceived pressure from family to meet appearance ideals was directly
associated with body dissatisfaction for midlife women. Thus, it is possible that interventions educating family members about the potential impact of their behaviours and offering more productive ways to address appearance, weight, and shape concerns may help mitigate midlife women’s body dissatisfaction, and in turn, their disordered eating and psychological distress. Such interventions have been supported by preliminary research in which family therapy was described as significantly more helpful by midlife eating disorder patients in comparison to their younger peers (Forman & Davis, 2005).

**Conclusion**

The present study extends research pertaining to body image and disordered eating in midlife women. Partial support was found for the traditional TIM as an appropriate framework for understanding body image and disordered eating with midlife women. More specifically, the current research demonstrates that all sociocultural influences impact body dissatisfaction either directly or indirectly, with media the only sociocultural factor to demonstrate both direct and indirect influences on body dissatisfaction. Further, appearance comparison and thin-ideal internalisation appear relevant and important to the experience of midlife women’s body image, disordered eating and psychological distress. If these findings are verified through future research, clinical programs may be tailored to better combat the experience of body dissatisfaction, disordered eating, and psychological distress among midlife women. It is hoped that future research will utilise these findings as a foundation to establish a more comprehensive model of body image and disordered eating for women in midlife.
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Chapter 5. Body Image Projection Bias in Romantic Relationships: A Dyadic Investigation
STATEMENT OF CONTRIBUTION TO CO-AUTHORED SUBMITTED PAPER

This chapter includes a co-authored paper. The bibliographic details of the co-authored paper, including all authors, are:


My contribution to the paper involved: Study conceptualization and literature review, data collection, data cleaning, data scoring and data analyses, data interpretation and critical appraisal. Further contributions include the writing of the manuscript, conducting all changes and implementing all feedback provided from the secondary authors, as well as the feedback obtained throughout the journal submission process.

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In Chapter 4 (Study 2) we examined the applicability of the TIM to a sample of midlife women. In Chapter 5 (Studies 3 and 4) the focus shifts to understanding body image disturbances within romantic relationships. Specifically, Studies 3 and 4 call upon projection bias perspectives to assess the mechanism through which body dissatisfaction is associated with relationship and sexual satisfaction in heterosexual partnerships.
Abstract

Guided by projection bias perspectives, the current paper sought to advance understanding of the associations between body image and relationship and sexual satisfaction within heterosexual romantic relationships. In two studies, both members of heterosexual dating and/or married couples reported on their body image, perceptions of partner’s attraction to the self, own attraction toward the partner, and relationship satisfaction. Study 2 also incorporated measures of participants’ body mass index (BMI) and sexual satisfaction. Across both studies, women with poorer body image perceived their partner to be less attracted to them (irrespective of their partners’ actual attraction to them, or how attracted they were to their partner), which in turn was associated with lower relationship and sexual satisfaction. For men, attraction to their partner was consistently associated with their own relationship satisfaction. Results demonstrate that projection biases are a possible mechanism through which body image is associated with romantic relationship and sexual satisfaction, and hint at the particular relevance of appearance related projection biases for women’s relationship and sexual satisfaction.
Introduction

We live in a world that valorizes physical beauty, usually narrowly defined by youthfulness, symmetrical features, and thinness (Harper & Tiggemann, 2008). Physically “attractive” people are more likely to be seen as kind and clever (Maestripieri et al., 2017), whereas failing to match societal ideals of beauty is associated with being seen as lazy and unpopular (Tiggemann & Rothblum, 1988). Consequently, the way that we feel about our bodies plays a central role in the way that we feel about ourselves (Cash & Pruzinsky, 2002; Cash et al., 2004). People who have poor (relative to positive) body image typically report being less happy in relationships (Meltzer & McNulty, 2010). In the present paper we make the case that poor body image may be associated with relationship dissatisfaction in part because people project their own body image insecurities onto partners. In particular, we propose that over and above partners’ actual attraction to the self, greater body dissatisfaction will be associated with more negative assessments of how much partners are attracted to the self, which in turn will be associated with reduced sexual and relationship satisfaction. We test this prediction in two studies, drawing on samples of heterosexual couples.

Body Image and Romantic Relationships

Body image issues have been increasing over the past 40 years, with some findings suggesting that poor body image is the number one concern for young women (Mission Australia, 2007). Poor body image is associated with low self-esteem (Webster & Tiggemann, 2003), depression, and negative affect (Stice, 2002; Thompson & Stice, 2001). In perhaps no other domain, however, is physical appearance more important than in romantic relationships, where it is a core driver of mate selection (Maestripieri et al., 2017). Even in established relationships, the more that people see their partner as physically attractive, the happier they are
in the relationship (Swami et al., 2009). Further to this, poor body image itself (irrespective of markers of “attractiveness” such as body mass) is associated with a decreased likelihood of acquiring and maintaining romantic relationships, as well as lower levels of relationship satisfaction for both men and women (Meltzer & McNulty, 2010). For example, in a study of heterosexual married couples, wives who perceived themselves to be sexually unattractive tended to report low levels of relationship satisfaction, as did their husbands (Meltzer & McNulty, 2010). Other work shows that the more that undergraduate students are self-conscious about and objectify their bodies, the less satisfied they are in relationships (Zurbriggen et al., 2011).

There is also evidence to suggest that body image concerns are vitally implicated in the sexual satisfaction of people in romantic relationships. In most romantic relationships sexual intercourse represents a core part of the relationship, tied to pleasure, reproduction, comfort, and commitment (Muise et al., 2016; Sprecher & Cate, 2004). Not all sexual encounters are equal, however, and people vary in the extent to which they report sexual satisfaction within established relationships (Muise et al., 2013). Given that sex often involves being nude, and displaying the body, researchers have looked at how body dissatisfaction might be associated with sexual inhibitions, and ultimately, dissatisfaction. Past work shows that women with higher body esteem and lower appearance related distracting thoughts report higher sexual satisfaction, relative to women with lower body esteem and higher distracting thoughts (Pujols et al., 2010). Other work shows that for both men and women, a drive for thinness is negatively associated with sexual assertiveness and body exposure during sex (Alperin & Barlow, 2017). So why is it the case that poor body image is associated with decreased relationship and sexual satisfaction? One answer, put forward within this paper, is found in projection biases.
Body Image and Relationship Dissatisfaction: The Role of Projection Biases

Freud coined the term ‘projection’ to refer to a clinical pattern he observed whereby a client assumes their therapist shares the feelings and thoughts of clients themselves (Maner et al., 2005). Decades of research confirm that people often incorrectly assume that others’ thoughts and feelings mirror their own internal states (i.e., display a ‘projection bias’, Kenny & Acitelli, 2001; Fletcher & Kerr, 2010). In the realm of romantic relationships, early work by Kenny and Acitelli (2001) found that although both accuracy and projection bias were commonplace in heterosexual partners’ perceptions of one another (e.g., about families, relationships, and jobs), bias effects were notably stronger.

Later work shows that the more people experience negative emotions during relationship interactions, the more they perceive their partners to experience those same negative emotions, and consequently the less satisfied they feel in their relationship (e.g., Campbell et al., 2013; Lemay & Neal, 2014; Overall et al., 2015). Projection biases seem to be pervasive across judgment domains. For example, people use their own use of emotional suppression (i.e., attempts to hide their emotional experiences from others) to inform judgments about how much their partner engages in suppression (Peters and Overall, 2019; for other work on emotions see Clark et al., 2017).

Such work aligns with research investigating meta-perceptions, which are individuals’ beliefs about how other people perceive them (Carlson, 2016). Work from this perspective demonstrates that individuals typically enjoy relationships more when they perceive their significant other to view them positively (Carlson, 2016). Despite individuals’ meta-perceptions frequently being accurate, research suggests that they are typically tightly linked to individuals’
own self-perceptions, rather than the feedback that they receive from others (Carlson & Kenny, 2012; Kenny & DePaulo, 1993).

Across prior investigations, assessments of projection biases involved modelling both accuracy and projection paths (see Figure 1). Accuracy reflects the association between how Partner B actually feels (e.g., they love partner A) and what Partner A thinks Partner B feels. Controlling for this accuracy path, projection bias reflects the association between Partner A’s own feelings towards B (e.g., they are uncertain about Partner B) and what they think that Partner B feels. Using this framework in the current research context, accuracy and projection bias in how much partner A thinks partner B is attracted to them can be calculated by modelling the extent to which Partner B reports being actually attracted to Partner A (accuracy) and the extent to which Partner A is attracted to Partner B (projection bias).

Figure 6. Original conceptual model of projection biases within intimate relationships based on Kenny & Acitelli, 2001.

We extend this model, and the investigation of accuracy and projection bias in relationships, to examine how participants’ feelings about themselves (i.e., their own body image) predict how they think their partner feels about them (self-related projection) over and
above how their partner actually views them (accuracy) and how they view their partner (partner-related projection). We do this in recognition of the fact that personal body image is central to individuals’ self-concept (Cash & Pruzinsky, 2002), and thus may have a role to play within romantic relationships, over and above attraction to one’s partner (the typical projection bias shown in prior research; see Campbell et al., 2013). Figure 2 demonstrates how such projection processes examined in the current research extend the original examination of projection.

Projection Bias and Body Image. There is preliminary evidence to suggest that there are body image related projection biases: people who view their own body negatively are more
likely to perceive that others also view their body negatively. Muller et al. (2002) found that normal weight women preoccupied with body weight and shape overestimated general others’ agreement with their body shape concerns. Similarly, Dijkstra and Barelds (2011) found that women with poor body image generally had negative meta-perceptions about how attractive their partner, family and friends perceived them to be. Preliminary support has also been established for the presence of body image projection biases within dyadic studies.

In an investigation of race and body image, Miller (2001) assessed women’s perceptions of their partner’s satisfaction with their (women’s) weight. Women who were more dissatisfied with their weight tended to assume that their partners were also dissatisfied with their weight, and these assumptions held when accounting for actual ratings of their partners’ attraction to them. Further, in an investigation of women’s body image and their marital relationships, Meltzer and McNulty (2010) found that women who perceived themselves to be less sexually attractive were likely to think that their husbands also found them less sexually attractive. Markey and Markey (2006) found that young women were more dissatisfied with their bodies than they perceived their partners to be, and their partners actually were.

More recently Campbell et al. (2013) examined how ideal discrepancies held by one partner were related to the perceptions and relationship satisfaction of the other partner. Applying the standard accuracy and projection bias model shown in Figure 1, Campbell et al. found that individuals were relatively accurate in assessing how much they matched their partners’ ideal standards, but these judgements were also associated with how much they felt their partner matched their own ideal standards (partner-related projection bias). Campbell et al. (2013) found the projection pattern across different domains, including attractiveness/vitality, which included items related to body image (‘nice body’, ‘attractive appearance’). This finding
provides support for the standard partner-related projection bias in the domain of body image (see Figure 1), albeit using a broader index capturing other qualities (e.g., outgoing, adventurous). However, Campbell et al. (2013) did not test the self-related projection bias that we predict will play an important role in judgments of partners’ attractiveness toward the self. In particular, as outlined in Figure 2, independent of these standard projection biases, we predict that people’s own dissatisfaction with their body will be associated with negative assumptions that partners are less attracted to the self (self-related projection bias), independent of how much partners are actually attracted to the self (accuracy), and how attractive people find their partner (partner-related projection bias).

**Body image projection bias and relationship satisfaction**

Another novel contribution of the current paper is the examination of how body image projection biases are related to relationship (Studies 1 and 2) and sexual (Study 2) satisfaction. Past work reveals that individuals’ expectations and insecurities have the potential to influence relationship related perceptions, which in turn undermine relationships themselves (McNulty & Swann Jr, 1994). Further, individuals who perceive themselves as matching their partner’s ideal have been found to have better relationship satisfaction (e.g., Campbell et al., 2013; Overall, Fletcher, & Simpson, 2006). While we cannot establish causality in our paper, we propose a relationship consistent with past work on projection biases (Campbell et al., 2013; McNulty & Swann Jr, 1994; Overall et al., 2006), in which people’s own body image will be associated with their *assumptions* about how their partner feels about their body, which in turn will predict their own, and potentially their partners’, relationship and sexual satisfaction. We note, however, that irrespective of causal relationships, understanding how personal body image, attraction, assumptions about partner attraction, and relationship satisfaction are related in romantic
relationships may help us to better understand how body image concerns function for men and women, and further, how relationship satisfaction is related to personal evaluations.

**Current Research**

Within the present paper we focus on heterosexual relationships, and thus distinguishable dyads. This focus was deliberate, as considerable evidence suggests that body image is a gendered construct, and one that differs depending on sexual orientation (Basabas et al., 2019). For example, evidence suggests that gay men’s body image is qualitatively distinct from heterosexual men’s body image (e.g. Tiggemann et al., 2007). Further, lesbian women have frequently demonstrated less body dissatisfaction than heterosexual women (e.g. Alvy, 2013), with research suggesting that heterosexual women may be more socialized to take on observer’s perspectives of their bodies (Kozee & Tylka, 2006). Thus, the current research suggests that heterosexual men and women’s body image is bound to unique heterosexual dynamics, and therefore the present work may serve as a helpful starting point in understanding the role of body image within romantic relationships. However, it is hoped that this research will expand the current investigations into broader populations in the future.

Within the current paper, dyadic data from couples in two separate studies will be used to create completely parallel models (i.e. where all variables assessed in one partner are concurrently assessed in the other). Firstly, projection bias will be investigated by modelling body image as a predictor of participants’ perceptions of their partners’ attraction to them (self-related projection). Participants’ own attraction to their significant other will also be modelled as a predictor of their perceptions of their partners’ attraction to them (partner-related projection). Finally, each participants’ actual attraction to their significant other will also be modelled as a predictor of their perceptions of their partners’ attraction to them (accuracy). In turn,
participants’ attraction to their partners, and perceptions of whether their partners are attracted to them, will each be modelled as predictors of relationship satisfaction (Studies 1 and 2) and sexual satisfaction (Study 2).

As an additional contribution, we systematically investigate our proposed pattern for both women and men within heterosexual dyads, as prefaced above. The extant literature on body image within romantic partnerships overwhelmingly focuses on women’s body image. This is perhaps unsurprising given the high rates of appearance related concerns for women (Tiggemann & Lynch, 2001). Yet, substantive body dissatisfaction in women does not indicate an absence of body image concerns in men. Recent research has demonstrated increasing body image disturbances among men (Tager et al., 2006). Thus, there is reason to investigate both partners’ experiences of body image within heterosexual romantic dyads. Given the centrality of appearance to evaluations of women, and women’s evaluation of themselves (Tiggemann & Lynch, 2001), we might expect patterns to be stronger for women. However, given past lack of gender effects in projection biases (Kenny & Acitelli, 2001), and increasing appearance based pressures on men, we do not make firm predictions.

Study 3

Overview

Study 1 seeks to assess the presence and potential role of projection biases in relation to body image and romantic relationship satisfaction in heterosexual dyads. Specifically, we assess whether participants’ dissatisfaction with their own bodies is associated with their perceptions of their partners’ satisfaction with their bodies, irrespective of how their partners actually feel (self-related projection), and whether this assumption is further associated with relationship satisfaction. We examine the proposed projection bias from personal body dissatisfaction (in this
study operationalised as participants’ self-perceived attractiveness) through to assumptions about partners’ attraction to self (in this study operationalised as the extent to which participants believed that their partner thinks they meet their ideal levels of attractiveness), while simultaneously looking at the more commonly studied bias whereby participants’ own attraction to their partner (in this study operationalised as the extent to which participants rate their partner as matching their ideals) is modelled as a predictor of how much they think their partner is attracted to them (partner-related projection). The association between each participants’ attraction to their partner and their perception of their partner’s attraction to them (accuracy) is also assessed within Study 1.

Method

Participants. Participants consisted of 197 heterosexual couples, recruited via paper and electronic announcements posted across a New Zealand university and student-based organisations (e.g. health centres). Participant age ranged from 18 to 45 years ($M = 22.99$, $SD = 4.14$), and couples had an average relationship length of 2.88 years ($SD = 2.08$), with 61% of couples either living together or married. In terms of ethnicity, participants were primarily Caucasian (52.3% and 53.8% respectively), followed by Asian (12.7% and 19.8% respectively), Pacific Nations (11.2% and 7.6% respectively), Indian (7.1% and 6.6% respectively), and Māori (5.6% and 4.1% respectively), with the remainder of participants identifying as ‘other’ (9.6% of men and 8.1% of women). Means, standard deviations and intercorrelations are presented in Tables 1 and 2. This sample was drawn from Campbell et al. (2013) described above, which only examined partner-related projection biases (not the self-related projection bias focused on here) in more global domains (also see Fletcher et al., 2020).

Study 1 involved both members of mixed couples attending an in-person research session
to complete a range of questionnaires assessing self and partner perceptions as well as
behavioural observations of couples’ conflict discussion that were not relevant to the focus of
this investigation. The target sample size balanced funding limitations with the power needed to
detect small-medium actor and partner effects ($r = .20$) when controlling for typical dependence
across couple members. The final sample of 197 couples who completed the assessments for the
current study provided adequate power to detect partial $r$s smaller than the magnitude of the
principal effects in the current study. To illustrate, power analyses using the APIM power
module (Ackerman et al., 2016) indicates this sample provides the power (.99) needed to detect a
partial $r$ of .20 when both actor and partner effects are present and independent and dependent
variables are correlated at typical levels across partners ($r = .30$). The partial effect sizes of the
significant associations that we detected (reported below in the Results section) are .20 and
higher (see Figure 3) with the exception of the links between attraction and perception of partner
attraction, which were necessary control paths rather than the central psychological process
under investigation. Thus, although we did not conduct a priori analyses for the overall SEM
mediation model shown in Figure 1, and null effects should not be over-interpreted, the sample
size provided adequate power to detect the size of targeted effects while accounting for other
correlated factors.

**Procedure.** Ethical approval was obtained by the university, and measures pertaining to
the main hypotheses were provided via matching paper questionnaires during laboratory sessions
attended by both relationship partners. Participants completed the questionnaires independently
and privately, and were assured that their data would not be shared with their partners and would
be stored confidentially. Couples were paid NZ$70.
Measures.

**Body Satisfaction.** Two items from the Attractiveness/Vitality domain of the self-perceptions subscale of the Short-Form Partner Ideal Scales (Fletcher, Simpson, Thomas, & Giles, 1999) were used as indicators of body image. Participants were required to rate the extent to which they believed they had a ‘nice body’ and an ‘attractive appearance’ ($I = \text{not at all like me}$, $7 = \text{very much like me}$). Items were averaged with a high score indicating high body satisfaction for both men ($r = .85$) and women ($r = .85$).

**Perceptions of Partner Attraction.** Participants rated the extent to which they felt they matched their partner’s ideals pertaining to having a ‘nice body’ and ‘attractive appearance’ (e.g., $1 = \text{I do not match his/her ideal at all}$, $7 = \text{I completely match his/her ideal}$; Fletcher et al., 1999). Higher scores reflected higher attraction perceptions, and items were averaged for both men ($r = .89$) and women ($r = .92$).

**Attraction.** Two questions assessed the extent to which participants rated their partner as having a ‘nice body’ and ‘attractive appearance’ ($1 = \text{Not at all like my partner}$, $7 = \text{Very much like my partner}$). High scores were indicative of greater attraction to one’s partner, and items were averaged to form a scale for both men ($r = .91$) and women ($r = .85$).

**Relationship Satisfaction.** The short version of the Perceived Relationship Quality Components Inventory (Fletcher et al., 1999) was used as a measure of relationship satisfaction. This scale includes seven items assessing satisfaction, commitment, intimacy, trust, passion, love, and romance. Items were measured on a 7-point scale (e.g., “How satisfied are you with your relationship?”, $1 = \text{not at all}$, $7 = \text{extremely}$) and were averaged (men $\alpha = .80$; women $\alpha = .79$), with high scores indicating high satisfaction.
Results

Descriptive Statistics

Tables 1 and 2 display women’s and men’s intercorrelations and descriptive statistics (N = 197). Less than five percent of data was missing, and listwise deletion was employed.

Structural Equation Modelling

Structural equation modeling (SEM; AMOS 26) was employed to test the proposed theoretical model. Consistent with the Actor-Partner Interdependence Model (Kenny et al., 2006), a dyadic model was constructed that simultaneously predicted both partners’ responses while also allowing the residual of each variable for each partner dyad to covary (N = 197). Dependent variables and error terms of matched variables at the same model stage were allowed to correlate. The model was assessed using the $\chi^2$, $\chi^2$/degrees of freedom ratio, the comparative fit index (CFI), the root mean square error of approximation (RMSEA), and the standardized root-mean-square residual (SRMR). Indications of a model with a satisfactory fit include a non-significant $\chi^2$, or a $\chi^2$/df ratio $\leq$ 3, a CFI $\geq$ .95, and values of RMSEA less than .06 to .08 (for continuous data) and SRMR less than .08 (Hu & Bentler, 1999; Schreiber et al., 2006).

Given that we were looking at distinguishable dyads, we wanted to test whether a model that allowed both members of the couple to differ fit the data better than a model in which the relationships between variables for men were equated to be the same as the relationships between variables for women. The fit statistics of the full unconstrained model ($\chi^2$ [6, N = 197] = 35.73, $p < .001$) were compared to those of the fully constrained model, in which associations between variables for men and women were constrained to be equivalent ($\chi^2$ [15, N = 197] = 53.99, $p < .001$). The test of difference was significant, with the constrained model showing a worse fit to
the data ($\chi^2[9, N = 197] = 18.26, p = .032$). Given that we were interested in the possibility of differing associations for men and women, we proceeded with the unconstrained model.

Indicators revealed average model fit statistics for the full, unconstrained predicted model ($\chi^2/df = 5.96; CFI=.93; RMSEA=.16; SRMR= .07$). Modification indices suggested two additional paths between own body dissatisfaction to own attraction scores for men and women. Inclusion of these resulted in improved model fit statistics, $\chi^2(4, N = 197) = 16.36, p = < .003, \chi^2/df = 4.09; CFI=.97; RMSEA=.13; SRMR= .04$. Of the 20 proposed paths, 7 were non-significant. Figure 3 displays the full, predicted model with all significant and non-significant paths included. After inspecting this model, we removed the non-significant paths. Indicators revealed improved model fit statistics for the final significant model (with the inclusion of paths suggested by the modification indices, and non-significant paths removed), $\chi^2(11, N = 197) = 21.80, p = < .026, \chi^2/df = 1.98; CFI=.98; RMSEA=.07; SRMR= .05$. Given the improved fit and preference for a parsimonious model, we proceeded with the pared down model.

As can be seen in Figure 3 and Table 4, the more that women and men were dissatisfied with their bodies the more they assumed that their partner was also dissatisfied (or not attracted to them: a self-related projection bias). In addition, there was an association between how participants thought their partner felt about them, and how their partner actually felt about them (accuracy). Interestingly, the association between personal body image and whether participants felt that their partner found them attractive (self-related projection bias) was approximately twice the absolute size as the association between whether participants felt that their partner found them attractive and what partners actually reported feeling (accuracy). Further to this, both men and women who were dissatisfied with their bodies had partners who rated them as less attractive, and also tended to rate their partners as less attractive. For both men and women, the
more attracted they were to their partner the more they assumed their partner was attracted to them (partner-related projection bias). Beyond the accuracy and projection bias paths, the association between participant beliefs about whether or not their partner was attracted to them and relationship satisfaction differed for men and women. For men, these appraisals were not associated with their relationship satisfaction, and instead, the extent to which men were attracted to their partner was the best predictor of men’s own relationship satisfaction.

To probe this potential gender difference, follow-up t-tests were conducted, comparing the strength of the association between perception of partner attraction and relationship satisfaction for men and women. Results revealed that the association between the degree to which people thought their partner was attracted to them and the extent to which they were satisfied in the relationship was stronger for women ($b = .17 (.03), p < .001$) than for men (when re-entering this path into the model; $b = .02 (.03), p = .416; t = 3.79, p < .001$). In contrast, men and women showed similar associations between their own evaluations of their body, and the extent to which they perceived their partner to be attracted to them (men $b = .47 (.06), p < .001$, women $b = .51 (.06), p < .001; t = 0.47, p = .640$).

Turning to indirect effects, a small indirect effect of men’s body image on their own relationship satisfaction was identified via their own attraction to their partner. By contrast, women who assumed their partner was attracted to them were more satisfied in their relationship, and this effect emerged independently of whether or not women themselves were attracted to their partner. Thus, body dissatisfaction was indirectly associated with women’s relationship dissatisfaction through the assumption that their partner was also dissatisfied with their body, and vice versa. Finally, women who were more satisfied with their appearance had partners who were more attracted to them, which in turn was associated with partner relationship satisfaction.
A number of indirect effects less relevant to our research questions also emerged (see Figure 3 and Table 4). Men who were more satisfied with their bodies had partners who were more attracted to them, which in turn went on to predict increased relationship satisfaction and increased perception of partner attraction for women. This same pattern of results emerged for women, with indirect relationships between women’s body satisfaction and men’s relationship satisfaction and men’s perceptions of partner attraction explained by men’s attraction to their partner. Finally, men’s attraction to their partner as well as women’s attraction to their partner predicted women’s perceptions of partner attraction, and through this, women’s relationship satisfaction.
### Table 1

**Study 1 participants’ means, SDs, and intercorrelations**

<table>
<thead>
<tr>
<th></th>
<th>Men M (SD)</th>
<th>Women M (SD)</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Body image</td>
<td>4.74 (1.21)</td>
<td>4.54 (1.39)</td>
<td>.53**</td>
<td>.27**</td>
<td>.12</td>
<td>.06</td>
<td></td>
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<tr>
<td>2. Perception of Partner Attraction</td>
<td>5.52 (1.27)</td>
<td>5.53 (1.41)</td>
<td>.63**</td>
<td>–</td>
<td>.31**</td>
<td>.20**</td>
<td>-.09</td>
</tr>
<tr>
<td>3. Attraction score</td>
<td>5.60 (1.10)</td>
<td>5.85 (1.22)</td>
<td>.26**</td>
<td>.33**</td>
<td>–</td>
<td>.50**</td>
<td>-.18*</td>
</tr>
<tr>
<td>4. Relationship satisfaction</td>
<td>6.10 (.64)</td>
<td>6.04 (.69)</td>
<td>.27*</td>
<td>.48**</td>
<td>.45**</td>
<td>–</td>
<td>-.07</td>
</tr>
<tr>
<td>5. Age</td>
<td>23.67 (4.56)</td>
<td>22.32 (3.58)</td>
<td>.03</td>
<td>-.08</td>
<td>-.12</td>
<td>-.13</td>
<td>–</td>
</tr>
</tbody>
</table>

Note. *p < .05, **p < .01. Women’s correlations are presented below the diagonal, and men’s are presented above the diagonal.

### Table 2

**Study 1 correlations between women’s and men’s responses**

<table>
<thead>
<tr>
<th></th>
<th>Women’s body image</th>
<th>Women’s perception of partner attraction</th>
<th>Women’s attraction score</th>
<th>Women’s relationship satisfaction</th>
<th>Women’s age</th>
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<td>.17*</td>
<td>.35**</td>
<td>.20**</td>
<td>-.24*</td>
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<tr>
<td>Men’s attraction score</td>
<td>.37**</td>
<td>.49**</td>
<td>.26**</td>
<td>.29**</td>
<td>-.20**</td>
</tr>
<tr>
<td>Men’s relationship satisfaction</td>
<td>.11</td>
<td>.30**</td>
<td>.24**</td>
<td>.48**</td>
<td>-.14*</td>
</tr>
<tr>
<td>Men’s age</td>
<td>.06</td>
<td>-.11</td>
<td>-.09</td>
<td>-.20**</td>
<td>.73**</td>
</tr>
</tbody>
</table>

Note. *p < .05, **p < .01.
Figure 3. Study 1 full, predicted structural equation model for the effects of body image on relationship satisfaction. Non-Significant paths represented in grey. Standardized estimates are shown, with *p ≤ 0.05, **p < 0.01, ***p ≤ 0.001; N = 197 couples.
Table 3

Study 1 standardized direct, indirect and total effects from the final significant model

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Criterion</th>
<th>Effects</th>
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<tbody>
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<td></td>
<td></td>
<td>Indirect</td>
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<td></td>
<td></td>
<td>Total</td>
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<td>Men’s body satisfaction</td>
<td>Men’s perception of partner attraction</td>
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<td>Women’s perception of partner attraction</td>
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<td></td>
<td></td>
<td>.38***</td>
</tr>
</tbody>
</table>

*Note. p ≤ .05. *p ≤ .05, **p ≤ .01, ***p ≤ .001. Direct and total effect significance values taken from regression weights table, indirect effects taken from bootstrapping analyses based on 10000 samples.
Discussion

The results of Study 1 provide initial support for the role of body image related projection biases within romantic relationships. Consistent with past research, for both men and women, a lack of attraction to their partner was associated with the assumption that their partner was also less attracted to them (partner-related projection bias). However, in line with our core thesis, a second type of body image projection bias also emerged, whereby men and women who disliked their own appearance were more likely to think that their partners were also dissatisfied with their appearance (self-related projection bias). Notably, each of these projection biases emerged independently of the degree to which participants were accurate in their assessments of their partners’ attraction to them. Moreover, the association between participants’ own body satisfaction and the way that they thought their partner felt about them (self-related projection bias) was about twice the size of the association between these assumptions and how their partner actually felt about them (accuracy). The comparison in strength of projection versus accuracy paths hints at the power our own internal world (at least with regard to how we feel about our body) has over how we perceive others’ beliefs, although it must be noted that the projection effect may be inflated because both reports for projection come from the same person, whereas the accuracy ones do not.

For women (but not men), the extent to which they assumed their partner was attracted to them, the more likely they were to be satisfied in their relationship. The observed pattern in Study 1 suggests that self-related projection bias processes with regard to body image might be more marked in women. This finding in particular, regardless of the causal process, gives us insight into women’s experiences of romantic relationships, and how tied they are to body image and meta-perceptions/projection biases.

The results of Study 1, however, do not take into account participants’ body
weight, which affects body image and satisfaction. In Western cultures, individuals with larger bodies are generally perceived as less attractive by others, and also view themselves as less attractive (Klaczynski et al., 2004; Myers & Crowther, 2007). It is possible that larger men and women have poorer body image, and that body size rather than body image is actually accounting for the projection biases and relationship satisfaction findings observed within Study 1. Thus, in Study 2 we examine our proposed patterns while also accounting for body mass index. In addition, in Study 2 we included a measure of sexual satisfaction to sit alongside relationship satisfaction. Sexual satisfaction, as outlined earlier, is important in relationships (Muise et al., 2016), and associated with body image (Pujols et al., 2010), and we wanted to test whether our model might help to explain the association between body image and sexual satisfaction.

**Study 4**

**Overview**

In Study 2 we measured body mass index (BMI) to account for participant weight. BMI is a common measure of body fat based on an individuals’ weight relative to their height (Prentice & Jebb, 2001). Further, within Study 1, variables pertaining to body dissatisfaction, perceptions of partner’s attraction, and own attraction to partner were each assessed with reference to self or partner ideals. In Study 2, each of these measures were refined by utilising direct measures relating to each construct (although note that these were necessarily short). Finally, as stated above, we broadened our relationship variables to include a measure of sexual satisfaction – an important and often overlooked component of relationship health (Litzinger & Gordon, 2005). In sum, each participant’s BMI was modelled as a predictor of their own body image and the extent to which their partner was attracted to them; thus the indirect effects of BMI on perceptions of partners’ attraction to
self, relationship satisfaction, and sexual satisfaction could be assessed. Figure 4 demonstrates the model for Study 2.

Figure 4. Study 2 hypothesized structural equation model for the effects of projection biases on relationship satisfaction.

**Method**

**Participants.** Participants were 97 Australian heterosexual couples (ages 18 to 56; $M = 25.36$, $SD = 6.44$), who were recruited via social media. Participants had an average relationship length of 3.91 years ($SD = 5.03$), and 72.5% of the couples were living together. The sample was largely ethnically homogenous: 89.9% of women identified as Caucasian, 8.2% as Asian, and 2 as “other” (one of which identified as Pacific Islander, and the other as Eurasian). For men, 90.8% identified as Caucasian, 5.1% identified as Asian, 2% as Aboriginal or Torres Strait Islander, and 2 as “other” (one of which identified as Māori, and the other as Eurasian). See Tables 5 and 6 for item means, standard deviations and intercorrelations.

In Study 2, we had a limited budget to recruit couples (who, as stated, are
substantially more difficult to recruit than single members of couples). In Study 2 we adopted similar logic to that explained in Study 1, to identify a reasonable number of couples to test small actor and partner effects. For example, adopting the APIM power analyses above (Ackerman et al., 2016), 100 couples provides adequate power (.85) to detect partial r of .20 when both actor and partner effects are present and independent and dependent variables are correlated at typical levels across partners (r = .30 ). Note, however, that these estimates are for associations in a basic model, and care should be taken not to over-interpret null results. We discuss these issues further in the General Discussion.

**Procedure.** Ethical approval was obtained from the university ethics committee and participants took part in an online survey (a unique code was used to match couple responses). Surveys were broadcasted on social media platforms and participants were only able to proceed with questionnaires once consent was obtained. Participants were instructed to complete the questionnaires independently and privately, and assured that their data would not be shared with their partners and would be stored confidentially. Individuals were reimbursed AU$10 each for their time.

**Measures**

**Demographic information.** Participants were asked to report their age, gender, relationship status, and duration of relationship.

**Body mass index (BMI).** Participants were asked to report their weight (in kilograms) and height (in centimetres). Each participant’s BMI was calculated as weight in kilograms divided by height in metres squared (Prentice & Jebb, 2001).

**Body Satisfaction.** An 8-item body image scale was adapted from Hopwood et al.’s (2001) original 10-item Body Image Scale. The scale was comprised of behavioural
items (e.g. “Do you find it difficult to look at yourself naked?”), affective items (e.g. “To what extent do you generally feel attractive?”), and cognitive items (e.g. “To what extent do you feel satisfied with your body?”). Responses ranged from 1 (never) to 5 (always). Items were coded such that higher scores reflected greater body satisfaction, and then averaged (men $\alpha = .89$; women $\alpha = .92$).

**Perceptions of Partner Attraction.** A single novel item asked: “How attractive do you think your partner thinks you are?”. Responses ranged from 1 (very unattractive) to 7 (very attractive), and thus higher scores were indicative of greater perceptions of partner’s attraction to oneself.

**Attraction.** A single item was created as an indicator of participants’ subjective attraction to their romantic partner to match (as closely as possible) the perceptions of partner’s attraction item. The item simply asked, “How attractive do you think your partner is?”. Responses ranged from 1 (very unattractive) to 7 (very attractive), thus higher scores reflected greater ratings of attraction to one’s partner. Research has supported the reliability of single-item measures within empirical research (Bergkvist & Rossiter, 2007).

**Relationship Satisfaction.** Funk and Rogge’s (2007) 16-item Couple Satisfaction Index (CSI-16) was used to measure of participants’ relationship satisfaction. Participants were required to evaluate their relationship on 6- and 7-point Likert scales, as well as to describe their relationship on a bipolar adjective scale for six different characteristics, such as interesting (5) – boring (0). Responses were summed to produce a score between 0 – 81, where higher scores were indicative of greater relationship satisfaction (men $\alpha = .95$; women $\alpha = .96$).

**Sexual Satisfaction.** Sprecher’s (2002) 2-item self-report measure of sexual satisfaction was employed as a measure of men’s and women’s sexual satisfaction. The
two items asked, “how sexually satisfying is the relationship to you?” and “how rewarding or unrewarding is your partner’s contribution during sex?”. Response scales ranged from 1 (not at all rewarding/satisfying) to 7 (extremely rewarding/satisfying). The items were found to be highly related to one another for both men ($r = .66$) and women ($r = .72$).

Results

Descriptive Statistics

Tables 4 and 5 display participants’ descriptive statistics and intercorrelations (N=98). Fewer than five percent of participants had missing data, and listwise deletion employed.

Structural Equation Modelling

The fit statistics of the unconstrained model ($\chi^2 [24, N = 98] = 31.34, p = .144$) were compared to those of the fully constrained model, in which associations between variables for men and women were constrained to be equivalent ($\chi^2 [43, N = 98] = 89.42, p < .001$). The test of difference indicated that the unconstrained model fit the data better ($\chi^2 [19, N = 98] = 58.08, p < .001$), therefore we proceed with the unconstrained model.

Indicators revealed good model fit statistics for the full, predicted model, $\chi^2 (24, N = 98) = 31.34, p = .144, \chi^2/df=1.31; \text{CFI}=.97; \text{RMSEA}=.06; \text{SRMR}=.06$. Of the 32 proposed paths, 19 were non-significant. We therefore removed these paths from the model. The final significant model (with non-significant paths removed) also had good model fit statistics, $\chi^2 (43, N = 98) = 52.43, p = .153, \chi^2/df=1.21; \text{CFI}=.97; \text{RMSEA}=.05; \text{SRMR}=.09$. The pared down model fit the data as well as the full model ($\chi^2 [19, N = 98] = 21.09, p = .332$). Thus, in the interests of a parsimonious model, and as we lost no information, we proceeded with the pared down model. Figure 4 displays the full, predicted model. Figure 5 presents the final model, and Table 6 displays statistics for this model.
As can be seen from Figure 5 and Table 6, women with a lower BMI were more satisfied with their own appearance. In turn, women who were satisfied with their appearance were also more likely to believe that their partners were attracted to them (self-related projection). Further, women’s belief that their partner was attracted to them was associated with their relationship and sexual satisfaction, as well as greater levels of relationship satisfaction for men. Despite larger women assuming that their partner was less attracted to them, there was no zero-order correlation between women’s BMI and partners’ reported attraction, suggesting that women’s weight was not central to their partners’ attraction to them. However, effects indicated an indirect association between women’s BMI and their perceptions of men’s attraction through women’s body satisfaction. Similarly, women’s BMI was indirectly associated with sexual satisfaction for women, and lower relationship satisfaction for women and men through women’s perception of partner attraction.

For men, those with a higher BMI were less satisfied with their own bodies. Beyond this, men’s body (dis)satisfaction was unrelated to men’s or women’s relationship or sexual satisfaction. However, while men’s body dissatisfaction was not associated with their own beliefs about their partners’ attraction to them (self-related projection), higher levels of these beliefs (i.e. that their partner was attracted to them) were still positively associated with men’s own relationship and sexual satisfaction, as well as women’s relationship satisfaction. Further, men who were more attracted to their partners were also found to have greater relationship and sexual satisfaction, as well as having partners with higher ratings of sexual satisfaction. However, women’s ‘true’ ratings of attraction to their partner were not associated with either their own or their partners’ relationship or sexual satisfaction, yet women who were more attracted to their partners were also more likely to assume that their partners were attracted to them (partner-related projection). Finally,
although women’s attraction to their partners was not directly associated with relationship or sexual satisfaction, indirect effects emerged. Specifically, women’s attraction to their partners was indirectly associated with their own sexual satisfaction, as well as their own and their partners’ relationship satisfaction through their perceptions of their partners’ attraction to them.

To probe targeted potential gender differences, follow-up t-tests were again conducted, comparing the strength of key associations for men and women. Results revealed a significant association between body satisfaction and perception of partner attraction for women \( (b = .09 (.02), p < .001) \) but not men \( (b = .03 (.02), p = .187) \), and these slopes were significantly different from one another \( (t = 2.49, p = .014) \). However, no significant differences emerged for paths between men’s and women’s perception of partner attraction and their own relationship satisfaction \( (men B = 2.37 (1.01), p = .019, women b = 2.88 (.89), p = .001; t = 0.38, p = .704) \), or men’s and women’s perception of partner attraction and their own sexual satisfaction \( (men b = .62 (.19), p = .001, women b = .51 (.16), p = .001; t = 0.44, p = .658) \), or men’s and women’s perception of partner attraction to their partners’ relationship satisfaction \( (men b = 2.56 (.90), p = .005, women b = 2.15 (.76), p = .004; t = 0.35, p = .727) \).
Table 4

Study 2 participants’ means, SDs, and intercorrelations

<table>
<thead>
<tr>
<th></th>
<th>Men</th>
<th>Women</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. BMI</td>
<td>25.52 (4.71)</td>
<td>24.20 (6.71)</td>
<td>–</td>
<td>-.29**</td>
<td>-.13</td>
<td>.04</td>
<td>.04</td>
<td>-.03</td>
<td>.28**</td>
</tr>
<tr>
<td>2. Body satisfaction</td>
<td>3.62 (.68)</td>
<td>3.08 (.78)</td>
<td>-.37**</td>
<td>–</td>
<td>.22*</td>
<td>.11</td>
<td>.02</td>
<td>.11</td>
<td>-.01</td>
</tr>
<tr>
<td>3. Perception of Partner Attraction</td>
<td>5.51 (1.18)</td>
<td>5.46 (1.34)</td>
<td>-.30**</td>
<td>.45**</td>
<td>–</td>
<td>.16</td>
<td>.28**</td>
<td>.36**</td>
<td>-.03</td>
</tr>
<tr>
<td>4. Attraction score</td>
<td>6.21 (1.30)</td>
<td>6.10 (1.16)</td>
<td>-.05</td>
<td>.05</td>
<td>.50**</td>
<td>–</td>
<td>.38**</td>
<td>.45**</td>
<td>.06</td>
</tr>
<tr>
<td>5. Relationship satisfaction</td>
<td>66.39 (12.72)</td>
<td>66.17 (12.27)</td>
<td>-.26**</td>
<td>.24*</td>
<td>.30**</td>
<td>.13</td>
<td>–</td>
<td>.61**</td>
<td>.10</td>
</tr>
<tr>
<td>6. Sexual satisfaction</td>
<td>11.66 (2.37)</td>
<td>12.06 (2.24)</td>
<td>-.21*</td>
<td>.14</td>
<td>.32**</td>
<td>.11</td>
<td>.64**</td>
<td>–</td>
<td>.04</td>
</tr>
<tr>
<td>7. Age</td>
<td>26.34 (713)</td>
<td>24.39 (5.53)</td>
<td>.23*</td>
<td>-.21*</td>
<td>-.35**</td>
<td>-.41**</td>
<td>-.15</td>
<td>-.18</td>
<td>–</td>
</tr>
</tbody>
</table>

Note. p ≤ .05. *p ≤ .01. **p ≤ .01. ***p ≤ .001. Women’s correlations are presented below the diagonal, and men’s are presented above the diagonal.
Table 5

*Study 2 correlations between women’s and men’s responses*

<table>
<thead>
<tr>
<th></th>
<th>Women’s BMI</th>
<th>Women’s body satisfaction</th>
<th>Women’s perception of partner attraction</th>
<th>Women’s attraction score</th>
<th>Women’s relationship satisfaction</th>
<th>Women’s sexual satisfaction</th>
<th>Women’s age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men’s BMI</td>
<td>.25*</td>
<td>-.12</td>
<td>.14</td>
<td>-.12</td>
<td>-.13</td>
<td>-.11</td>
<td>.32**</td>
</tr>
<tr>
<td>Men’s body satisfaction</td>
<td>-.01</td>
<td>.07</td>
<td>.18</td>
<td>-.06</td>
<td>-.08</td>
<td>-.15</td>
<td>.04</td>
</tr>
<tr>
<td>Men’s perception of partner attraction</td>
<td>-.04</td>
<td>-.21*</td>
<td>.01</td>
<td>-.17</td>
<td>-.29**</td>
<td>-.14</td>
<td>.04</td>
</tr>
<tr>
<td>Men’s attraction score</td>
<td>-.02</td>
<td>.06</td>
<td>-.15</td>
<td>.06</td>
<td>.18</td>
<td>.26**</td>
<td>-.01</td>
</tr>
<tr>
<td>Men’s relationship satisfaction</td>
<td>-.6</td>
<td>.22*</td>
<td>.28**</td>
<td>.07</td>
<td>.51**</td>
<td>.44**</td>
<td>-.06</td>
</tr>
<tr>
<td>Men’s sexual satisfaction</td>
<td>-.05</td>
<td>.16</td>
<td>.10</td>
<td>.09</td>
<td>.33**</td>
<td>.37**</td>
<td>-.06</td>
</tr>
<tr>
<td>Men’s age</td>
<td>.14</td>
<td>-.12</td>
<td>.23*</td>
<td>-.35**</td>
<td>-.19</td>
<td>-.20</td>
<td>.90**</td>
</tr>
</tbody>
</table>

*Note.* p ≤ .05. *p* ≤ .05, **p* < .01, ***p* ≤ .001
Figure 5. Full, predicted structural equation model for the effects of poor body image on relationship and sexual satisfaction. Removed non-significant paths represented in grey. Standardized estimates are shown with *p ≤ .05, **p ≤ .01, ***p ≤ .001; N= 97 couples. Note, one path (men’s perception of partner attraction – men’s relationship satisfaction) was found to drop below significance (p= .089) upon review of the two-tailed bootstrap confidence intervals.
Table 6

*Study 2 standardized direct, indirect and total effects from the final, significant model*

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Criterion</th>
<th>Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Direct</td>
</tr>
<tr>
<td>Men’s BMI</td>
<td>Men’s body satisfaction</td>
<td>-.28**</td>
</tr>
<tr>
<td>Women’s BMI</td>
<td>Women’s body satisfaction</td>
<td>-.37***</td>
</tr>
<tr>
<td></td>
<td>Women’s perception of partner attraction</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>Men’s relationship satisfaction</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>Women’s relationship satisfaction</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>Women’s sexual satisfaction</td>
<td>–</td>
</tr>
<tr>
<td>Women’s body satisfaction</td>
<td>Women’s perception of partner attraction</td>
<td>.45***</td>
</tr>
<tr>
<td></td>
<td>Men’s relationship satisfaction</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>Women’s relationship satisfaction</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>Women’s sexual satisfaction</td>
<td>–</td>
</tr>
<tr>
<td>Men’s attraction score</td>
<td>Men’s relationship satisfaction</td>
<td>.29***</td>
</tr>
<tr>
<td></td>
<td>Men’s sexual satisfaction</td>
<td>.40***</td>
</tr>
<tr>
<td></td>
<td>Women’s sexual satisfaction</td>
<td>.16*</td>
</tr>
<tr>
<td>Women’s attraction score</td>
<td>Women’s perception of partner attraction</td>
<td>.49***</td>
</tr>
<tr>
<td></td>
<td>Men’s relationship satisfaction</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>Women’s relationship satisfaction</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>Women’s sexual satisfaction</td>
<td>–</td>
</tr>
<tr>
<td>Men’s perception of partner attraction</td>
<td>Men’s relationship satisfaction</td>
<td>.21*</td>
</tr>
<tr>
<td></td>
<td>Men’s sexual satisfaction</td>
<td>.28***</td>
</tr>
<tr>
<td></td>
<td>Women’s relationship satisfaction</td>
<td>.22**</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Women’s perception of partner attraction</th>
<th>Men’s relationship satisfaction</th>
<th>.23**</th>
<th>–</th>
<th>.23**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women’s relationship satisfaction</td>
<td>.30***</td>
<td>–</td>
<td>.30***</td>
<td></td>
</tr>
<tr>
<td>Women’s sexual satisfaction</td>
<td>.30***</td>
<td>–</td>
<td>.30***</td>
<td></td>
</tr>
</tbody>
</table>

Note. *p≤.05, **p< .01, ***p≤.001. Direct and total effect significance values taken from regression weights table, indirect effects taken from bootstrapping analyses based on 10000 samples.

Discussion

Study 2 replicated the core finding of Study 1. Women who were more dissatisfied with their body assumed their partner was dissatisfied too (self-related projection bias), women’s negative beliefs about how their partner felt about their appearance were associated with reduced relationship and sexual satisfaction for them, as well as reduced relationship satisfaction for their partners (and of course, the converse pattern). We also extended on Study 1 by showing the same pattern for women’s sexual satisfaction. For women, these findings lend further support for the role of body image related projection biases within romantic relationships. While there were small indirect effects of higher BMI on both relationship and sexual (dis)satisfaction, they were fully explained by women’s own body dissatisfaction and their assumptions about how their partner felt about them. It would seem that although larger women did not have partners who were less attracted to them (at the zero order level), they assumed they did, and this assumption was associated with lower relationship and sexual satisfaction. In Study 2 (unlike Study 1), men’s and women’s assumptions about how their partner felt about their significant other’s appearance was not related to their partner’s actual attraction to them (although note that we had a smaller sample size in Study 2). Further, for women, consistent with the results of Study 1, a second projection bias was apparent (partner-related projection); people who were less attracted to their partner tended to assume that their partner was also less attracted to them.

As in Study 1, the extent to which men were attracted to their partner emerged as a
key predictor of their own relationship and sexual satisfaction. In contrast to Study 1 however, men’s body dissatisfaction in Study 2 was not associated with men’s assumptions about whether their partner found them attractive or not (self-related projection), nor was men’s attraction to their partner associated with their assumptions about their partners’ attraction to them (partner-related projection). As another point of difference, in Study 2 men’s assumptions about their partner’s level of attraction to them was associated with their own relationship and sexual satisfaction, as well as their partners’ relationship satisfaction.

**General Discussion**

People with poor body image are less likely to establish romantic relationships, and are less likely to be satisfied in relationships they do have (Meltzer & McNulty, 2010). To date however, few studies have addressed the potential mechanisms through which poor body image is associated with reduced sexual and relationship satisfaction. Across two separate studies, the current paper drew on projection bias perspectives to test the proposal that people who dislike their bodies assume their partner does too (i.e. a self-related projection bias). The paper concurrently assessed whether those who are attracted to their significant other also perceive attraction from their partner (i.e. a partner-related projection), and in turn whether it is these assumptions (rather than poor body image itself) that predict relationship satisfaction.

Study 1 aimed to assess the presence and potential role of projection biases in relation to body image and heterosexual romantic relationship satisfaction. Study 2 aimed to replicate and extend on Study 1 by accounting for BMI, including a comprehensive measure of body image, and extending the model to include sexual satisfaction.

Across both studies, robust findings emerged for women’s self-related projection biases: women’s own feelings about their bodies strongly predicted their assumptions about the degree to which they met their partners’ physical attractiveness ideal standards (Study 1) and the degree to which their partner was attracted to them (Study 2). This projection bias
emerged even after taking into account the extent to which they accurately gauged their partners’ attraction to them, and the extent to which they projected their own attraction to their partner onto beliefs about whether their partner was attracted to them (partner-related projection). Body image concerns for women were not directly related to relationship (dis)satisfaction, after accounting for other variables in the model. Instead, women’s beliefs about the degree to which their partner was attracted to them acted as a core mediator of the links between body image and relationship and sexual satisfaction. Specifically, women with poorer body image tended to assume that their partner was less attracted to them, which predicted lower relationship satisfaction (Study 1 and Study 2) and sexual satisfaction (Study 2). In Study 2, women’s assumptions about their partners’ attraction also predicted relationship satisfaction in their partners, although this pattern did not emerge in Study 1.

Across both studies and in line with past research (e.g. Campbell et al., 2013; Kenny & Acitelli, 2001), a second partner-related projection bias path was also supported for women, whereby women who were more attracted to their partners also assumed that their partners were more attracted to them. Collectively, these findings lend support to the presence of two important and distinct forms of body image projection biases for women in romantic relationships, and suggests the power of women’s body image in their perceptions and relationships (in line with Markey & Markey, 2006; Miller, 2001; Muller et al., 2002).

For men, the results of the current research were less conclusive. Within Study 1, both self-related and partner-related projection biases were demonstrated for men. That is, men projected their dissatisfaction with their own appearance, as well as their partners’ appearance, onto perceptions of their partners’ attraction to the self. In contrast, in Study 2 suggest neither of these projection biases were evident for men (although these null effects should be interpreted with caution, given the small sample size in Study 2).
For men, the most consistent findings pertained to attraction to their partners. The extent to which men were attracted to their partner was consistently and positively associated with their relationship satisfaction (Studies 1 and 2), and sexual satisfaction (Study 2). Further, the findings of Study 2 suggest that men’s attraction to their partners is positively associated with their partner reporting higher levels of sexual satisfaction within the relationship. In contrast, women’s attraction to their partner was inconsistently associated with their relationship satisfaction (positively associated in Study 1, but not associated in Study 2), and not associated with their sexual satisfaction (Study 2). Together, these results suggest that women’s attraction to their partner is potentially of less importance to their relationship and sexual satisfaction than how they feel about their own body, whereas for men, attraction to their partner is central to relationship and sexual satisfaction. Such findings are in line with evolutionary research positing that physical attraction is particularly important for men in the context of intimate relationships (e.g. Thornhill & Gangestad, 1996).

Contrary to the work of previous authors (e.g. Klaczynski et al., 2004; Myers & Crowther, 2007), body mass index (as a proxy of body size) was not associated (at the zero-order) with attraction for either men or women. At face value, these results might suggest that body size predicts relationship and sexual satisfaction only to the extent that it creates body dissatisfaction and associated projection biases. However, participants in our studies were in established relationships (2.88 years and 3.91 years respectively). It has been found previously that superficial characteristics (such as weight and physical attractiveness) are important in the early stages of relationship formation, but often become less important in established relationships where the focus shifts to more personality and values-based characteristics (Regan et al., 2000). Indeed, relationship duration has previously been demonstrated to moderate the relationship between partner-objectification and relationship commitment (Mahar et al., 2020), with longer relationships less vulnerable to the damaging
effects of objectification. Accordingly, future research with larger sample sizes should assess whether relationship duration moderates the relationship between BMI and attraction to one’s romantic partner.

In previous investigations of bias and accuracy within relationships, notable accuracy patterns have emerged. For example, Campbell et al. (2013) demonstrated that couples had accurate insight into the extent to which they match their partners’ ideal standards. Similarly, meta-perception research suggests that individuals are typically largely accurate in their perceptions of other’s judgements about them (Carlson & Kenny, 2012). In our studies, however, participants were remarkably inaccurate in judging whether or not their partner thought they met their ideals (Study 1) or were attractive (Study 2). While further work is required to better understand the inaccurate judgements made by individuals within the current research, it is possible that body image is of central significance. Evidence suggests that people rely on self-perceptions when forming meta-perceptions (Carlson & Kenny, 2012). Although these self-perceptions typically enhance accuracy (Carlson & Kenny, 2012), body image research frequently demonstrates negative distortions in individuals’ subjective evaluations of their bodies, particularly for women (Hosseini & Padhy, 2020). Thus, it is possible that the typically sound judgements that contribute to accurate perceptions may become less accurate when body image is central to the judgements in question.

Overall, however, in relationships, where people presumably take information in from compliments, insults, physical intimacy, and physical avoidance, the lack of accuracy is perhaps surprising. While for women their personal body image appears tightly linked to judgment of their partners’ attraction to them, further work is needed to understand how men come to determine whether or not their partner finds them attractive.
Limitations and Future Directions

Results from the present study offer insights into body image within the context of romantic relationships. However, there are limitations that require noting. The primary limitation concerns the correlational and cross-sectional nature of the current studies. On the basis of past projection bias literature, we proposed that people’s own body image may carry forward to shape their views of their partners’ attraction to the self (a projection bias), which in turn would shape relationship and sexual satisfaction. While our mediational models were largely consistent with such a proposition, it is important to note that statistical mediation analyses cannot provide information about causal mediation, and may in fact be biased (Bullock et al., 2010; MacKinnon et al., 2000). Experimental work gets around some but not all of these problems, and thus multiple methods are required for future research. We recognize it is entirely possible that alternate paths exist; for example, lower levels of relationship satisfaction may influence negative perceptions of partner attraction, which in turn might result in higher levels of body dissatisfaction. Future work should investigate whether temporarily decreasing women’s body image (e.g., through media comparisons, as in past work; Hargreaves & Tiggemann, 2004) is associated with state assessments of whether their partner is attracted to them, and state feelings of relationship satisfaction. Longitudinal and experience sampling work may also provide information about the temporal nature of the relationships between variables.

It is important to note however, that regardless of the cross-sectional nature of the current research, important information may be gleaned from the associations established within Studies 1 and 2. For example, we find that women’s (but not men’s) assumptions about their bodies are linked to how they think their partner perceives them. These findings indicate a partially other-focused orientation for women’s body image development. Similarly, women’s (but not men’s) relationship satisfaction is strongly associated with their
perceptions of their partner’s attraction to them, again, showing that women’s relationship quality is perhaps inextricably linked to a focus on partner evaluations. Thus, despite being unable to speak to which variable precedes another, the nature of the associations may provide interesting and helpful insights with regard to body image, meta-perceptions, and romantic relationships.

Another limitation to note is the sample size, particularly for Study 2. Given the number of associations tested, Study 2 was underpowered. Given the inherently difficult nature of gathering dyadic data and the current global pandemic, however, it was not feasible to expand the data set at this time. Accordingly, it is suggested that Studies 1 and 2 should be viewed in conjunction with one another, with particular attention paid to the effects stable across both studies. Power issues are especially relevant for the (sometimes inconsistent) null effects across both studies. For example, it is possible that the sample sizes were not sufficient to detect smaller effects between men’s perception of partner attraction and relationship satisfaction (Study 1) or men’s body satisfaction and men’s perceptions of partners’ attraction (Study 2). Yet, these effects were very small ($r = .05$ and .12, respectively), and significantly different across men and women, and so are likely to be a much less salient and meaningful psychological process for men compared to women. Nonetheless, the current research should be replicated with larger samples sizes to further test the proposed model.

Another limitation within Study 2 is the use of single item measures for perceptions of partner attraction and attraction to one’s partner. Although support exists for the use of single items measures in research as they can minimise survey length and improve response rates (Fisher et al., 2016), multi-item measures have been demonstrated to be psychometrically superior (Fisher et al., 2016). Further to this, the diversity of measures across both studies increases confidence in our consistent results for women, yet makes it difficult to make direct
comparisons between the two studies. Future studies may benefit from employing clear, multi-item measures of the constructs tested. Similarly, consideration of measures that may address alternative explanations for findings may also be of interest to future research. For example, measures of neuroticism may be included to assess whether high neuroticism is linked to both body dissatisfaction and projection biases, and in turn, relationship (dis)satisfaction.

The populations recruited also limit the generalisability of our findings. In Study 2 the bulk of participants identified as Caucasian/White. Past work shows that people from different ethnic backgrounds often experience body image concerns differently (Craddock, 2016). For example, like White women, Black women face body size concerns. Unlike White women, however, they also often face substantive colourism, or discrimination based on skin shade (Craddock, 2016). Future work might simultaneously examine the roles of body image and colorism in informing women of colour’s perceptions of the extent to which their partner is attracted to them. More broadly, future research would benefit from inclusion of participants from diverse ethnic backgrounds. Additionally, couples assessed within the current research typically demonstrated satisfaction within their relationships. Thus, it may be of interest to recruit less satisfied couple to assess whether current findings hold (or potentially are even stronger) for those less fulfilled within their relationship. As a final note about sampling, as made clear throughout, we purposefully recruited heterosexual couples within the present work. It will be important, however, to see whether the same dynamics are evident in romantic relationships with people of diverse sexual orientations and gender identities.

Across Studies 1 and 2, men’s assumptions about how their partners felt about them, and which relational factors are associated with men’s body image, remain unclear. Future research may benefit from utilising exploratory and qualitative research to elucidate common
themes associated with body image and projection biases in men. There is evidence in our studies that this work may be valuable - within both studies, men substantive body dissatisfaction. This finding dovetails with recent research (e.g. Cash et al., 2004) and highlights the importance of including men in investigations of body image.

Finally, in the present paper we have also talked about accuracy, but have not specifically probed the direction of inaccuracies. In line with the theorizing in this paper it is possible that people with poor body image underestimate the degree to which their partner is attracted to them, with ramifications for relationship satisfaction. It is possible, however, that people who are satisfied with their bodies overestimate their partner’s attraction to them, and this in turn is associated with increased relationship satisfaction. The truth and bias model (West and Kenny, 2011) allows for estimates of both over and under estimation, as well as accuracy. Future research may benefit from the inclusion of this model.

Practical Implications

The results of these studies have several practical implications. The findings may be used within clinical practice to challenge commonly held assumptions of women who are convinced that their partner finds them unattractive, by discussing the possibility that women may simply be reacting to their own body image concerns. Some presenting problems that appear to be best treated by couple-based therapy may be augmented by individual therapy targeting inaccurate, and potentially harmful projection biases. Further, no association was found between women’s BMI and men’s ratings of women’s attractiveness. When paired, these findings may be used by health professionals to challenge commonly held cultural beliefs, such as the pervasive and damaging thin-ideal upheld in Western societies. Indeed, clinicians may also use the findings of this research within their case formulations. For example, rather than solely focusing on individual schemas or attachment histories for clients with repetitive negative relationship patterns, negative body-related perceptions may also
need to be addressed. Finally, for those engaged with weight loss interventions specifically to improve body image or relationships, individual therapy targeting damaging cognitions may be more important for positive prognoses.

**Conclusion**

This paper aimed to provide insights into how body image related projection biases may operate in romantic relationships. Overall, the results of the present paper provide support for body image projection biases as a mechanism through which body image is associated with women’s romantic relationships. This research suggests that women who are dissatisfied with their bodies assume that their partner is too, and through this assumption, report less satisfaction within relationships. Conversely, when men are attracted to their partners, both men and women appear happier within the relationship. Future research is required to better understand the complex way in which men’s body image, perceptions of partner’s attraction, and romantic relationship satisfaction function.
References


Miller, D. J. (2001). Weight satisfaction among black and white couples: The role of perceptions. *Eating Disorders, 9*(1), 41-47. doi:10.1080/106402601300187722


SECTION 3

General Discussion
Chapter 6: General Discussion

Body image disturbance is highly prevalent across the Western world and is associated with a vast array of psychological, physiological, behavioural, and interpersonal consequences (Cash, 2012; Grogan, 2016). As a result, body dissatisfaction has been heavily researched, equipping associated professionals to better predict, manage, and in some cases prevent body image disturbance and its negative associated outcomes (Thompson et al., 1999). Despite the breadth of research conducted to date, there is still much work to do. Subsequently, the research in this thesis took a diverse approach to understanding body image, by investigating three lesser studied and understood domains within the realm of body image disturbance. These were body dissatisfaction across the adult lifespan (Chapter 3), body dissatisfaction in midlife women (Chapter 4), and body dissatisfaction in romantic relationships (Chapter 5).

Contemporary research has attempted to examine variations in body image across the female and male lifespan. Although contention remains, to date findings largely support the relative stability of body dissatisfaction across the female lifespan (Quittkat et al., 2019; Tiggemann, 2004), with research being considerably more sparse and less conclusive for men (McCabe & Ricciardelli, 2004). Of the research that does exist, methodological limitations have restricted the conclusions that may be drawn. Limited age ranges, small sample sizes, and a lack of longitudinal research have been commonplace in past literature. Due to these limitations, as well as previously restrictive statistical analyses, cohort effects have also been largely under investigated in the body image literature. Accordingly, Study 1 (Chapter 3) sought to address these gaps within the literature via use of longitudinal data, a large heterogenous sample, and a relatively new statistical technique (cohort-sequential latent growth modelling) to simultaneously assess the developmental trajectory and cohort effects of female and male body dissatisfaction.
across the adult lifespan.

Although body image across the adult lifespan is relatively poorly understood, certain populations have demonstrated particular vulnerability to the experience of body dissatisfaction. One of these populations is midlife women. Although a comparatively lesser researched population than their young female counterparts, there is reason to anticipate declines in body image as women age. Age moves women further away from commonly upheld thin and fit ideals, while concurrently detracting from the youthful appearance that is so highly valued in Western culture. Indeed, research supports a high prevalence of body dissatisfaction and related psychopathology in samples of midlife women (Kilpela et al., 2015; Lewis-Smith & Diedrichs, 2016; Tiggemann, 2004). Broad empirical support exists for the validity of the Tripartite Influence Model (TIM: Thompson et al, 1999) as a model of body dissatisfaction in adolescent and young adult women (Rodgers et al., 2015; Van den Berg et al., 2002), which has in turn enabled advancements in interventions targeting poor body image in young female populations. Thus, building upon past research (e.g. Donovan et al., 2020; Lewis-Smith et al., 2020; Slevec & Tiggemann, 2011a ), Study 2 (Chapter 4) sought to examine the applicability of the TIM to a sample of midlife women, as a first step in informing interventions that may be targeted to this older cohort.

The final two studies within this program of research (Studies 3 and 4, presented in Chapter 5) examined body dissatisfaction in romantic relationships. Romantic relationships are important determinants of life satisfaction, and thus carry with them important implications for health and wellbeing (Ditzen et al., 2008; Kiecolt-Glaser & Newton, 2001). There is also reason to anticipate that the impact of body dissatisfaction may be particularly profound for romantic relationships, which typically entail enhanced physical intimacy when compared to relationships
of a platonic nature. Indeed, research supports an association between body dissatisfaction and poorer outcomes for romantic partnerships (e.g. Meltzer & McNulty, 2010). However, the mechanisms through which this association operates remain largely unknown, and of the studies that have examined body image within the context of romantic relationships, many have failed to account for the dyadic nature inherent to these partnerships. Thus, Studies 3 and 4 (Chapter 5) employed dyadic data from both partners in heterosexual romantic relationships and assessed the role of projection biases as a potential mechanism through which body dissatisfaction is associated with relationship outcomes.

**Summary of Findings**

**Study 1: Body Image Across the Adult Lifespan**

The aim of Study 1 (Chapter 3) was to assess the developmental trajectory of body image disturbance across the male and female lifespan, while simultaneously examining cohort effects across time. There were three key findings from Study 1. First, it was found that body dissatisfaction gradually improves across the lifespan for both men and women. For women, this pattern was more pronounced, with improvements becoming stronger in later stages of life (i.e. from around 55 years of age). This finding partially sits in contrast to existing bodies of research that support the stability of body image disturbance across the female lifespan (e.g. Quittkat et al., 2019; Tiggemann, 2004). On the other hand however, these findings partially align with existing research (e.g. Tiggemann, 2004) in that women were found to report high levels of dissatisfaction across the lifespan (irrespective of small age-related increases). It is suggested that due to the large sample size of Study 1, it is possible that the research was highly powered enough to detect small changes across the lifespan that have previously remained unexposed. In addition, the current findings do align with a small number of studies that have suggested that
women’s body image improves as they age (e.g. Oberg & Tornstam, 1999; Reboussin et al., 2000). For men, this is one of the first studies to longitudinally examine body satisfaction across the lifespan in a large, heterogenous sample.

The second key finding of Study 1 was in relation to cohort effects. No clear or consistent cohort effects were evident for men. For women however, a number of cohort effects emerged, demonstrating a theme in which body dissatisfaction appears to be lessening across time, particularly for younger cohorts aged below 55 years. This trend divulges a hopeful narrative in which female body image may be improving in contemporary society, perhaps being the result of feminist and body positive movements across the Western world, which have also been depicted in mainstream media. Thus, there is considerable scope for future research to investigate contemporary societal movements targeting female body image and their associated outcomes.

The third key finding from Study 1 was that women have consistently higher body dissatisfaction across the lifespan compared to their male counterparts. This finding supports the vast body of research that has previously found similar results (e.g. Mellor et al., 2010; McCabe & Ricciardelli, 2010; Quittkat et al., 2019; Tiggemann, 2004), and thus underscores the requirement for continued investigations of body image across the female lifespan. It is important to note however, that body dissatisfaction remained an issue for a large percentage of men, and future research is encouraged to continue its endeavor to more thoroughly examine male body image, particularly in populations beyond the typical adolescent and young adulthood samples.

**Study 2: Body Image in Midlife Women**

The aim of Study 2 (Chapter 4) was to assess the applicability of the TIM to a sample of midlife women. In line with the TIM, it was proposed that peer, family, and media influences
would be associated with greater engagement in appearance comparisons and greater internalisation of the thin-ideal. In turn, it was anticipated that appearance comparisons and thin-internalisation would mediate the relationship between sociocultural influences and body dissatisfaction. Finally, it was predicted that body dissatisfaction would be associated with disordered eating, and in turn, psychological distress. These findings were partially supported in Study 2. Specifically, appearance comparison and thin-internalisation were found to mediate the relationship between peer and media influence and body dissatisfaction, which in turn was associated with disordered eating, and through this, psychological distress. However, against predictions, family and media influence were each directly associated with body dissatisfaction. Further, peer influence and appearance comparison engagement were each directly associated with psychological distress, and appearance comparison engagement and thin-internalisation were each directly associated with disordered eating.

The key finding derived from Study 2, was that body image disturbance in midlife women can be partially understood through the Tripartite Influence Model (TIM: Thompson et al., 1999). Specifically, the results of Study 2 suggested that the influence of peers and media to adhere to sociocultural appearance ideals appear central to midlife women’s appearance comparison engagement and thin-ideal internalisation. Influence of family, the media, and internalisation further appear to have a direct association with midlife women’s body dissatisfaction. Finally, in addition to body dissatisfaction, peer influence, appearance comparison, and thin-ideal internalisation all appear directly associated with consequences of body dissatisfaction (i.e. disordered eating and/ or psychological distress).

These findings assist to further elucidate the antecedents and consequences of body image in a lesser investigated population: midlife women. However, that the model did not hold
up in its entirety highlights the need for further research, and in particular a theoretical model to better understand the broad range of influences and consequences on body image for midlife women. Such investigations may benefit from utilising the current findings in conjunction with those of Lewis-Smith et al. (2020) and Slevec and Tigemann (2011a) to inform future investigations of body dissatisfaction in midlife women.

**Studies 3 & 4: Body Image in Romantic Relationships**

The aim of Studies 3 and 4 (Chapter 5) was to examine body dissatisfaction in romantic relationships. More specifically, Chapter 5 examined projection biases as a potential mechanism through which body dissatisfaction is associated with relationship outcomes. Across Studies 3 and 4, it was anticipated that participants’ body dissatisfaction would be positively associated with perceptions of their significant others’ attraction to them (self-related projection), as well as partners’ actual attraction to them. Further, it was expected that a positive association would emerge between participants’ attraction to their partners, and their partners’ perceptions of this attraction. Finally, it was hypothesised that attraction to one’s partner, and perception of partner attraction would each be positively associated with reduced relationship outcomes. Within Study 4, additional measures of BMI (as a predictor of body dissatisfaction) and sexual satisfaction (as a relationship outcome variable) were incorporated. These results were partially supported across both studies.

In Study 3, participants’ body dissatisfaction was associated with perceptions of partners’ attraction to them as well as their partners’ actual attraction to them. However, in Study 4 participants’ body dissatisfaction (which was positively associated with BMI) was only associated with perceptions of partner’s attraction for women. Further, in Study 3 participants appeared to be somewhat accurate in their beliefs about their partner’s attraction to them, which
was not supported by Study 4. In Study 3 men’s lack of attraction to their partner was the only variable associated with male relationships dissatisfaction. For women however, reduced attraction to partner and the belief that their male partner was not attracted to them, were each associated with reduced relationship satisfaction. In Study 4, although not informed by body dissatisfaction, men’s belief that their partner was not attracted to them was associated with reduced relationship and sexual satisfaction for men, as well as reduced relationship satisfaction for women. Similarly, men’s lack of attraction to their partner was associated with men’s reduced relationship and sexual satisfaction, as well as reduced sexual satisfaction for female partners. Finally, for women, lack of attraction was not associated with relationship outcomes, however the belief that one’s partner was not attracted to them was associated with reduced relationship and sexual satisfaction for women, as well as reduced relationship satisfaction for men.

As noted, inconsistencies emerged between Studies 3 and 4. However, the key finding across the research was that projection biases were implicated as a mechanism through which body image is associated with romantic relationship outcomes. For women, the pattern was consistent with the idea that they might project their own insecurities on to their partners, which in turn diminishes their own relationship and sexual satisfaction, and potentially their male partner’s relationship satisfaction. For men, the relationship was less clear. Between the two studies, results were inconsistent for men in relation to projection biases. However, what was clear and in line with past research and evolutionary perspectives (e.g. Thornhill & Gangestad, 1996), attraction to one’s partner was consistently linked to men’s relationship satisfaction. These findings are the first of their kind to directly assess the role of self-related and other-related projection biases in relation to body image and romantic partnerships. Thus, while
valuable, future longitudinal research is required to better explicate the causal nature of these associations.

**Pulling it all Together: A Collective Overview of the Compendium of Research**

In viewing the compendium of research as whole, links may be made between the series of studies. The importance of body image research, the role of familial pressures and projection biases in body dissatisfaction, and the influence of the media on women’s body dissatisfaction are each discussed below.

**The Continued Relevance of Body Image Research.** Together, this compendium of research speaks to the continued relevance of body image disturbance across ages, stages, and domains of life. Furthermore, when reviewed alongside one another, it becomes particularly apparent that body image disturbance remains a significant issue in contemporary society. Throughout the series of studies, it can be seen that across an entire cohort of women, approximately 50% were below the mid-point mark on measures of body satisfaction, demonstrating some form of body image disturbance in half of all women tested. Notably, although there is some reprieve in the severity of body dissatisfaction as one progresses through life, women still suffer well into old age. Together, these findings highlight a phenomenon whereby despite improvements in women’s body dissatisfaction over time, women are still largely dissatisfied with their bodies. Similarly, although not quite as severe as their female counterparts, men also demonstrate consistent body image disturbances across the series of studies. So what maintains body dissatisfaction in this way? One potential answer may be found in projection biases for women.

**Familial Influence, or Projection Biases?** Based on Study 2 (Chapter 4), it would seem that familial influences are one factor that play a key role in the development of midlife women’s
body dissatisfaction. From this research, is may be inferred that women who perceive pressure from family to meet sociocultural appearance ideals may experience a more negative body image. However, Studies 3 and 4 (Chapter 5) demonstrate that male partner’s satisfaction with women’s appearance is minimally registering with women. Instead, it appears that how women feel about themselves is being projected onto their views of their partner’s satisfaction, which in turn leads to their own (and potentially their partner’s) reduced relationship outcomes. Thus, Studies 3 and 4 bring into question whether women’s perceived family influences are real, or rather meta-perceptions in which women are making judgments about what others think about them, informed by their own projection biases. In a similar way, it is possible that women are projecting their own body dissatisfaction on to their family, and in turn, perceiving their family to be dissatisfied with their appearance. In turn, these projection biases may be perpetuating women’s body dissatisfaction. Thus, it is possible that it is women’s internal world that is driving a belief system and harming their relationship with their bodies, rather than familial influences. Accordingly, future research may benefit from longitudinally investigating the role of projection biases within the TIM to explicate the relationship between sociocultural influences and body image, as opposed to projection biases and body image.

**Media Influence and Body Image.** Within the current research, media was also demonstrated to play a central role in midlife women’s body dissatisfaction, while also potentially influencing the trajectory of body dissatisfaction in women aged 19 to 54 years. Specifically, in Study 2 (Chapter 4) media influence was found to both directly and indirectly influence body dissatisfaction for midlife women. Further, although not directly assessed in Study 1, it was speculated that the observed declines in body dissatisfaction for midlife and younger cohorts may in part be due to shifts in mass media. For example, recent years have seen
a growing portrayal of diverse female bodies and roles within the media compared to two decades ago (Stampler, 2015; Toffoletti & Thorpe, 2018), and social media has increasingly promoted body positive and feminist perspectives (Peterson, Tantleff-Dunn, & Bedwell, 2006).

The supposition that media may be influencing changes in women’s body image across time aligns with the vast body of literature supporting a positive association between thin-ideal media exposure and body image disturbance (e.g. Yamamiya et al., 2005), and conversely, improved outcomes for women exposed to more diverse body types (Owen & Spencer, 2013). Taken together, the results of Studies 1 and 2 raise the question of whether diversity and body positive shifts in the media may enhance body satisfaction for women struggling with body image.

However, while diversity and body positive movements may be increasing in the media, there is still much work to do to ensure greater representation of diverse body types in the media moving forward (e.g. de Freitas, Jordan, & Hughes, 2018). Further, future research may benefit from investigations of media influence in women aged below 55 years, as will be outlined below.

For men, the results of the current research were less conclusive. Although men appear to suffer from body dissatisfaction, they appear less likely to utilise projection biases as a result. Future research may benefit from building upon the findings of the current compendium of research, as will be outlined below.

**Strengths and Limitations**

The strengths and limitations of each of the studies were presented in Chapters 3 to 5, and therefore will not be repeated at great length here. Instead, this section will focus on summarising the overall strengths and limitations of the compendium of research more broadly. One of the major strengths of this research was its role in addressing three diverse areas within the body image literature: body dissatisfaction across the adult lifespan, inclusive of cohort
effects; body dissatisfaction in midlife women; and body dissatisfaction in romantic relationships. Each of these series of studies was unique to the field, and thus advanced current knowledge of body dissatisfaction across each of the three domains.

A second strength of this series of studies was that it addressed a common criticism of the body image literature by including participants beyond the female and young adult samples typically employed. Further, to the best of the authors knowledge, it is the first body of research to: a) simultaneously examine body image across the lifespan and cohort effects, in both male and female participants via use of longitudinal and heterogenous data, b) employ an innovative statistical modelling technique (cohort-sequential latent growth curve modelling) to investigate body image across the adult lifespan, c) assess the applicability of the Tripartite Influence Model in its entirety to a sample of midlife women, and d) propose and assess a comprehensive model of body image disturbance within romantic relationships. In this way, it is hoped that the series of studies has met some of the suggestions put forth by prominent researchers within the realm of body image. For example, in her foundational literature review so frequently referred to throughout this thesis, Tiggemann (2004) stated: “what are urgently required are longitudinal studies that trace developmental changes in the same individuals over a considerable period of time”. The author similarly acknowledged the requirement for investigations of body dissatisfaction across the male lifespan. While this journey is not yet complete, it is hoped that the current research has advanced the field by speaking to these requirements.

Several methodological limitations must also be noted with regard to the compendium of studies. First, Study 1 utilised a brief, one-item measures of body satisfaction. Thus, replication of Study 1 with a broader, well-validated measure of body image is required. Second, although adequate, the samples sizes of Studies 2, 3, and 4 were not ideal, particularly given the use of
Structural Equation Modelling across each study. Although large sample sizes are notoriously difficult to obtain, particularly for dyadic data, future research would benefit from replicating these studies with larger samples. Another limitation relates to a common criticism within body image research: the use of cross-sectional designs. None of the work within this series of studies was experimental, further speaking to the difficulty of disentangling causality within the current research. Although relevant to Studies 2, 3 and 4, this is particularly pertinent to Study 3 and 4, given the novelty of the model assessed, and in turn, the lack of support that exists to speak to the causal nature of these associations.

Another limitation within the current compendium of research relates to the role of ‘family influence’. Within Chapter 4 family influence was open to interpretation (i.e., women may have interpreted this as parents, siblings, or romantic partners if in a relationship). Further, in Chapter 5, only women in a relationship were included, whereas there was variability in relation to relationship status in Chapter 4. A family relationship is of course different to that of a romantic relationship; appearance is arguably less critical in the former. Therefore, it is entirely possible that projection biases may be less relevant among family members, and may also be only one of a number of other potential mediators. Further, the mean age of women in Chapter 5 was younger than those of midlife women in Chapter 4, therefore limiting the extent to which comparisons can be drawn between the two studies.

More broadly, with the exception of Study 1, the samples were overwhelmingly comprised of Western and heterosexual participants. Thus, it is difficult to ascertain whether the current findings may generalise beyond such samples. This is particularly important, given that research has demonstrated that Western, educated, industrialised, rich, and democratic participants are typically not representative of the human species more broadly (Henrich, Heine,
& Norenzayan, 2010). Accordingly, future research examining sociocultural pressures in more diverse cultures and populations facing dual sociocultural pressures (such as racism and religion), and their influence on body image is required.

**Implications for Future Research and Practice**

It is hoped that the research contained within this thesis has advanced the body image literature by enhancing the knowledge base pertaining to body dissatisfaction across the lifespan, in midlife women, and in romantic relationships. The specific implications and future directions for each study were discussed in Chapters 3 to 5 and have been integrated throughout the above discussion. Thus, the broader implications of the series of studies as a whole, and directions for future research will be briefly outlined within this section.

Broadly, the results of the series of three studies emphasise the sustained occurrence of body dissatisfaction across gender, age, and within relationships. At a foundational level, these findings affirm the continued relevance and importance of contemporary body image research. Moreover, this research highlights the requirement for ongoing investigations of body dissatisfaction in less researched populations (such as in men, relationships, older participants, and culturally diverse samples), to better explicate the antecedents and consequences of body image disturbance more broadly.

Specifically, the majority of well-established measures of body image were developed based on young women (e.g., Cash et al., 2002). Thus, future research would benefit from development and validation of more measures for use with older participants and men. It may be the case, for example, that the same measures used in mid-life samples give rise to different factors than those revealed in younger samples, or that additional items are needed to tap into appearance related pressures for men and midlife women. These possibilities can only be
explored through targeted scale validation, and development. Indeed, models such as the Tripartite Influence Model may benefit from inclusion of variables such as ageing anxiety and appearance investment to more accurately assess body image in midlife women. Slevec and Tiggemann’s (2011) research provides preliminary support for such research. Research may also benefit from studying positive body image and comparing it with more generalised appearance satisfaction in midlife and beyond, given that research has hinted at individuals’ increasing appreciation of the functionality of their bodies with age (e.g. Tiggemann & McCourt, 2013).

As previously noted, the media was demonstrated to play a central role in women’s body dissatisfaction within the current research. Accordingly, greater utility of media literacy programs should also be considered in diverse populations. Indeed, evidence suggests that media literacy programs aimed at empowering individuals to critically evaluate media content and better identify, analyse, and challenge unhealthy and stereotypical messages, can reduce thin-ideal internalisation, and in turn, eating disorder symptomatology (Wade, Wilksch, Paxton, Byrne, & Austin, 2017). In a similar vein, future investigations should incorporate longitudinal investigations of feminist perspectives, body positive movements, and other societal trends in the media and other domains, in cohorts aged 19 to 54. Such research may better explicate the catalyst for the body image related shifts being observed in young adult to midlife cohorts. In turn, such research could more accurately inform future interventions targeting body dissatisfaction. Furthermore, the current research speaks to the requirement of media outlets to shift their portrayals of individuals to more realistic depictions of typical men and women. Such shifts are already underway (e.g. exposure of frequently utilised techniques such as air-brushing, and banning pro-Anorexia based websites), however dissonance still exists between typical men and women and those frequently depicted in the media (Tiggemann, 2014). In line with the
current findings implicating body dissatisfaction in men, it is also suggested that similar investigations be conducted in male samples.

Study 3 found that body dissatisfaction was associated with detrimental outcomes in romantic relationships. Thus, longitudinal research that spans across developmental periods, and clinical trials focussing on body image treatment and romantic relationship outcomes, are required to more accurately speak to the damaging nature of body dissatisfaction in romantic partnerships and across the lifespan. Such research may also benefit from the inclusion of projection bias measures to more clearly explicate the role of projection biases in body image disturbances. While the causal nature of these associations requires further investigation, it is possible that interventions targeting body dissatisfaction may benefit romantic partnerships. Further, it is possible that for those seeking couples counselling, assessments of body image and interventions targeting body dissatisfaction may need to be considered as part of treatment, particularly for women. Finally, inclusion of broader populations, such as participants of varied colour, sexual orientations, and cultural backgrounds are required to speak to the generalisability of the current findings beyond Caucasian, Western populations.

Conclusion

In sum, this compendium of research has highlighted the relevance and requirement for body image research in domains beyond those typically examined. Across a series of three empirical studies, body image was examined within the domains of lifespan, midlife women and romantic relationships, minimising the gaps within the literature. The findings of this dissertation outline a hopeful narrative in which body image improves across the adult lifespan and is progressively improving across generations for women. However, the current findings also highlight the requirement for further work, particularly to understand body image influences and
consequences in vulnerable and lesser researched populations- such as midlife women and men. Finally, projection biases appear to be an important mechanism through which body dissatisfaction is associated with diminished romantic relationship outcomes. It is hoped that these findings will pave the way for innovative research, inform clinical interventions, and play a small role in eventually mitigating the profound harm resulting from body image disturbance across the Western world.
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An analysis of body shape attractiveness based on image statistics: Evidence for a


Appendices

Appendix A: Study 1 Information and Questionnaire

All relevant information concerning the NZAVS can be located at:


The NZAVS Survey can be found at:

https://auckland.au1.qualtrics.com/jfe/form/SV_eX1m1pkK4YYWhKt

Technical documents may be located at:

Appendix B: Study 2 Ethical Clearance and Measures

Ethical clearance number: Griffith University Human Research Ethics - 2017/195

Demographics

Please provide the following information in the space provided:

How old are you? (in years) ..........................................................
Sex
Male □ Female □ Other □

Ethnic/Cultural Background
Australian □
Australian Aboriginal □
Australian South Sea Islander □
Central and West African □
North African & Middle East □
New Zealand Peoples □
North East Asian □
North West European □
People of the Americas □
South East Asian □
Southern & Central Asian □
Southern & Eastern Europe □
Southern & East African □
Torres Strait Islander □
Other (please specify) ........................................................................................................

Relationship Status
Single □
Dating □
Defacto □
Married □
Separated/divorced □
Other (please specify) .................................................................

*****Following items for those within relationships, single p’s redirected to children*****

How long have you been with your partner? (in years, or months if years not permitted)

Do you have children? Yes ☐ No ☐

If yes, how many? .................................................................

What is the highest degree or level of school you have completed? If currently enrolled, mark the previous grade or highest degree received.

Grade 10 or below ☐
12th grade or less (no diploma) ☐
High school diploma ☐
Some college, no degree ☐
Associate or technical degree (e.g. tradesmen) ☐
Bachelor’s degree ☐
Master’s degree ☐
Doctorate degree (e.g. PhD, EdD) ☐

What category best describes your income?

$ 0 – 10 000 ☐
$10 001 – 20 000 ☐
$20001 – 30 000 ☐
$30 001 – 40 000 ☐
$40 001 – 60 000 ☐
$60 001 – 80 000 ☐
$80 001 – 100 000 ☐
$100 001 + ☐

Please select your Employment Status

Unemployed ☐
Part-Time ☐
Full-Time □
Casual □

**Body Image Scale**

*The following items were adapted from Hopwood et al.’s (2001) Body Image Scale (for use in cancer patients)*

Please respond to the following questions by selecting the scaled number that best suits you. Please give your honest answer, and remember that all answers are anonymous.

Do you feel self-conscious about your appearance?
*Not at all 1234567 Extremely*

Do you feel self-conscious about your body?
*Not at all 1234567 Extremely*

In the last 6 months have you been dissatisfied with your appearance when dressed?
*Never 1234567 All the time*

Do you find it difficult to look at yourself naked?
*Not at all 1234567 Extremely*

To what extent do you generally feel attractive?
*I never feel attractive 1234567 I always feel attractive*

In the last 6 months have you avoided going somewhere or meeting someone because of your appearance?
*Never 1234567 I do this regularly*

To what extent do you feel satisfied with your body?
*Not at all 1234567 Extremely*

To what extent do you feel dissatisfied with your body?
*Extremely dissatisfied 1234567 Extremely satisfied*

**BMI Items**

*How much do you weigh? (in kilograms) ..............................................................
**How tall are you?** (in metres and centimetres, if unsure of metres and centimetres please provide imperial measure) .................................................................

**Sociocultural Attitudes Towards Appearance Questionnaire – 4**

Directions: Please read each of the following items carefully and indicate the number that best reflects your agreement with the statement.

Definitely Disagree = 1
Mostly Disagree = 2
Neither Agree Nor Disagree = 3
Mostly Agree = 4
Definitely Agree = 5

1. It is important for me to look athletic.
2. I think a lot about looking muscular.
3. I want my body to look very thin.
4. I want my body to look like it has little fat.
5. I think a lot about looking thin.
6. I spend a lot of time doing things to look more athletic.
7. I think a lot about looking athletic.
8. I want my body to look very lean.
9. I think a lot about having very little body fat.
10. I spend a lot of time doing things to look more muscular.

Thin-Internalisation subscale the Sociocultural Attitudes Towards Appearance Questionnaire-4 (SATAQ-4) include the following items from the above questions: includes items 3, 4, 5, 8, & 9.

Answer the following questions with relevance to your Family (include: parents, brothers, sisters, relatives):

11. I feel pressure from family members to look thinner.
12. I feel pressure from family members to improve my appearance.
13. Family members encourage me to decrease my level of body fat.
14. Family members encourage me to get in better shape.

Answer the following questions with relevance to your Peers (include: close friends, classmates, other social contacts):
15. My peers encourage me to get thinner. 1
16. I feel pressure from my peers to improve my appearance.
17. I feel pressure from my peers to look in better shape.
18. I get pressure from my peers to decrease my level of body fat.

Answer the following questions with relevance to the Media (include: television, magazines, the Internet, movies, billboards, and advertisements):
19. I feel pressure from the media to look in better shape.
20. I feel pressure from the media to look thinner.
21. I feel pressure from the media to improve my appearance.
22. I feel pressure from the media to decrease my level of body fat.

Note: SATAQ-4 Scoring:
Internalization – Thin/Low body fat: 3, 4, 5, 8, 9
Internalization – Muscular/Athletic: 1, 2, 6, 7, 10
Pressures – Family: 11, 12, 13, 14
Pressures – Peers: 15, 16, 17, 18
Pressures – Media: 19, 20, 21, 22

**Physical Appearance Comparison Scale**

Please indicate how much you agree with each statement below.

1. At parties or other social events, I compare my physical appearance to the physical appearance of others.
2. The best way for people to know if they are overweight is to compare their figure to the figure of others.
3. At parties or other social events, I compare how I am dressed to how other people are dressed.
4. Comparing your "looks" to the "looks" of others is a bad way to determine if you are attractive or unattractive.
5. In social situations I sometimes compare my figure to the figures of other people.

Respondents checked applicable box: Never, Rarely, Sometimes, Often or Always.

**Modified Body Image Concern subscale of the Body Image and Body Change Questionnaire**

This part of the questionnaire is designed to obtain information on how you feel about your body. There are no right or wrong answers, please select the response that best applies to you.

1. How satisfied are you with your weight?
2. How satisfied are you with your body shape?
3. How satisfied are you with your muscle size?
4. How satisfied are you with your hips?
5. How satisfied are you with your thighs?
6. How satisfied are you with your chest?
7. How satisfied are you with your abdominal region/stomach?
8. How satisfied are you with the size/width of your shoulders?
9. How satisfied are you with your legs?
10. How satisfied are you with your arms?
11. How satisfied are you with your back?
12. How satisfied are you with your buttocks?

Respondents checked applicable box from the following choices: Extremely Satisfied, Fairly Satisfied, Neutral, Fairly Dissatisfied, Extremely Dissatisfied.

**Bulimia subscale of the EAT-26**

Please select a response for each of the following statements

Never (0) Rarely (1) Sometimes (2) Often (3) Usually (4) Mostly (5) Always (6)

1. I find myself preoccupied with food
2. I have gone on eating binges where I feel that I may not be able to stop
3. I vomit after I have eaten
4. I feel that food controls my life
5. I give too much time and thought to food
6. I have the impulse to vomit after meals

**Restrained Eating subscale of the Dutch Eating Behaviour Questionnaire (DEBQ)**

Please answer the following questions by selecting the response that best relates to you.

1. If you have put on weight, do you eat less than you usually do?
2. Do you try to eat less at mealtimes than you would like to eat?
3. How often do you refuse food or drink offered because you are concerned about your weight?
4. Do you watch exactly what you eat?
5. Do you deliberately eat foods that are slimming?
6. When you have eaten too much, do you eat less than usual the following days?
7. Do you deliberately eat less in order not to become heavier?
8. How often do you try not to eat between meals because you are watching your weight?
9. How often in the evening do you try not to eat because you are watching your weight?
10. Do you take into account your weight with what you eat?

Respondents checked applicable box from the following choices: Never, Seldom, Sometimes, Often, Very Often.

**Obligatory Exercise Questionnaire**

Listed below are a series of statements about people’s exercise habits. Please select the statement that reflects how often you could make the following statements.

1. I engage in physical exercise on a daily basis.
2. I engage in one/more if the following forms of exercise: walking, jogging/running or weightlifting.
3. I exercise more than three days per week.
4. When I don’t exercise I feel guilty.
5. I sometimes feel like I don’t want to exercise but I go ahead and push myself anyway.
7. When I miss an exercise session, I feel concerned about my body possibly getting out of shape.
8. If I have planned to exercise at a particular time and something unexpected comes up (like an old friend comes to visit or I have some work to do that needs immediate attention) I will usually skip exercise for that day.
9. If I miss a planned workout, I attempt to make up for it the next day.
10. I may miss a day of exercise for no good reason.
11. Sometimes, I feel a need to exercise twice in one day, even though I may feel a little tired.
12. If I feel I have overeaten, I will try to make up for it by increasing the amount I exercise.
13. When I miss a scheduled exercise session I may feel tense, irritable or depressed.
14. Sometimes, I find that my mind wanders to thoughts about exercising.
15. I have had daydreams about exercising.
16. I keep a record of my exercise performance, such as how long I work out, how far or fast I run.
17. I have experienced a feeling of euphoria or a “high” during or after an exercise session.
18. I frequently “push myself to the limits”
19. I have exercised when advised against such activity (i.e. by a doctor, friend, etc).
20. I will engage in other forms of exercise if I am unable to engage in my usual forms of exercise.

Respondents checked applicable box from the following choices: Never, Sometimes, Usually, Often.
DASS-21

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

The rating scale is as follows:

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

1. I found it hard to wind down
2. I was aware of dryness of my mouth
3. I couldn’t seem to experience any positive feeling at all
4. I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)
5. I found it difficult to work up the initiative to do things
6. I tended to over-react to situations
7. I experienced trembling (eg, in the hands)
8. I felt that I was using a lot of nervous energy
9. I was worried about situations in which I might panic and make a fool of myself
10. I felt that I had nothing to look forward to
11. I found myself getting agitated
12. I found it difficult to relax
13. I felt down-hearted and blue
14. I was intolerant of anything that kept me from getting on with what I was doing
15. I felt I was close to panic
16. I was unable to become enthusiastic about anything
17. I felt I wasn’t worth much as a person
18. I felt that I was rather touchy
19. I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat)
20. I felt scared without any good reason
21. I felt that life was meaningless
## Appendix C: Study 3 Measures

### Background Information

<table>
<thead>
<tr>
<th>Gender (please tick ☒):</th>
<th>Please tick (☒) the category that best describes you.</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Male</td>
<td>□ Full-time Student</td>
</tr>
<tr>
<td>□ Female</td>
<td>□ Part-time Student</td>
</tr>
<tr>
<td></td>
<td>□ Employed Part-time</td>
</tr>
<tr>
<td></td>
<td>□ Employed Full-time</td>
</tr>
<tr>
<td></td>
<td>□ Unemployed</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age:</th>
<th>Please tick (☒) the ethnic group(s) that you belong to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>_______________________</td>
<td>□ NZ European/Pakeha</td>
</tr>
<tr>
<td></td>
<td>□ Maori</td>
</tr>
<tr>
<td></td>
<td>□ Pacific Nations</td>
</tr>
<tr>
<td></td>
<td>□ Asian</td>
</tr>
<tr>
<td></td>
<td>□ Indian</td>
</tr>
<tr>
<td></td>
<td>□ European (non-NZ)</td>
</tr>
<tr>
<td></td>
<td>□ Other (please specify)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How long have you been in your current relationship?</th>
<th>Please tick (☒) the category that best describes your highest educational level attained:</th>
</tr>
</thead>
<tbody>
<tr>
<td>_______ years _________ months</td>
<td>□ Postgraduate Qualification</td>
</tr>
<tr>
<td></td>
<td>□ Tertiary Qualification</td>
</tr>
<tr>
<td></td>
<td>□ Higher School Certificate/Bursary</td>
</tr>
<tr>
<td></td>
<td>□ School Certificate</td>
</tr>
<tr>
<td></td>
<td>□ Other (please specify)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>If you are married, how long have you been married?</th>
<th>Please estimate your annual income</th>
</tr>
</thead>
<tbody>
<tr>
<td>_______ years _________ months</td>
<td>□ $10,000 or under</td>
</tr>
<tr>
<td></td>
<td>□ $11,000 - $20,000</td>
</tr>
<tr>
<td></td>
<td>□ $21,000 - $30,000</td>
</tr>
<tr>
<td></td>
<td>□ $31,000 - $40,000</td>
</tr>
<tr>
<td></td>
<td>□ $41,000 - $50,000</td>
</tr>
<tr>
<td></td>
<td>□ $51,000 - $60,000</td>
</tr>
<tr>
<td></td>
<td>□ $61,000 - $70,000</td>
</tr>
<tr>
<td></td>
<td>□ $71,000 - $80,000</td>
</tr>
<tr>
<td></td>
<td>□ $81,000 +</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>If you are living with your partner (but not married), how long have you been living together?</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>_______ years _________ months</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>If you are living with your partner (but not married), please tick (☒) the category that best describes your reasons for living together?</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Temporary for convenience</td>
<td></td>
</tr>
<tr>
<td>□ Extension of affectionate, steady relationship</td>
<td></td>
</tr>
<tr>
<td>□ Trial marriage (if contemplating marriage)</td>
<td></td>
</tr>
<tr>
<td>□ Temporary alternative to marriage</td>
<td></td>
</tr>
<tr>
<td>□ Permanent or semi-permanent alternative to marriage</td>
<td></td>
</tr>
</tbody>
</table>
Short-Form Partner Ideal Scales - Self

Items 8 and 9 were utilised as measures of body dissatisfaction

Rate each factor below in terms of how accurately it describes YOURSELF. Circle ONE number in each scale.

<table>
<thead>
<tr>
<th>Item</th>
<th>Not at all like me</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Very much like me</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understanding</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Supportive</td>
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<td>Kind</td>
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<tr>
<td>Good Listener</td>
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<td></td>
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</tr>
<tr>
<td>Sensitive</td>
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<td></td>
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<td>Considerate</td>
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<tr>
<td>Sexy</td>
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<tr>
<td>Nice Body</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Attractive Appearance</td>
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<tr>
<td>Good Lover</td>
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<tr>
<td>Outgoing</td>
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<tr>
<td>Adventurous</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Successful (or potential to succeed)</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nice House (or potential to attain)</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Financially Secure (or potential to achieve)</td>
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<tr>
<td>Dresses Well (or potential to dress well)</td>
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<td></td>
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<tr>
<td>Good Job (or potential to attain)</td>
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</tr>
</tbody>
</table>
Short-Form Partner Ideal Scales – Partner Ideals

Items 8 and 9 were utilised as measures of perceptions of partner’s attraction

On this scale you will rate what your partner thinks of you. For each item consider how your partner would rate you in terms of his/her ideal. For example, if your partner thinks you are very understanding and you match their ideal on this attribute, circle 7 for the first item. If your partner thinks you only moderately meet their ideal for understanding, circle 4, and if your partner believes you do not meet their ideal on this attribute at all, circle 1. Rate each factor below in terms of the extent to which you believe YOU MATCH YOUR PARTNER’S IDEAL on this attribute. Circle ONE number in each scale.

<table>
<thead>
<tr>
<th>Understanding</th>
<th>I do not match his/her ideal at all</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>I completely match his/her ideal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supportive</td>
<td>I do not match his/her ideal at all</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>I completely match his/her ideal</td>
</tr>
<tr>
<td>Kind</td>
<td>I do not match his/her ideal at all</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>I completely match his/her ideal</td>
</tr>
<tr>
<td>Good Listener</td>
<td>I do not match his/her ideal at all</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>I completely match his/her ideal</td>
</tr>
<tr>
<td>Sensitive</td>
<td>I do not match his/her ideal at all</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>I completely match his/her ideal</td>
</tr>
<tr>
<td>Considerate</td>
<td>I do not match his/her ideal at all</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>I completely match his/her ideal</td>
</tr>
<tr>
<td>Sexy</td>
<td>I do not match his/her ideal at all</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>I completely match his/her ideal</td>
</tr>
<tr>
<td>Nice Body</td>
<td>I do not match his/her ideal at all</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>I completely match his/her ideal</td>
</tr>
<tr>
<td>Attractive Appearance</td>
<td>I do not match his/her ideal at all</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>I completely match his/her ideal</td>
</tr>
<tr>
<td>Good Lover</td>
<td>I do not match his/her ideal at all</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>I completely match his/her ideal</td>
</tr>
<tr>
<td>Outgoing</td>
<td>I do not match his/her ideal at all</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>I completely match his/her ideal</td>
</tr>
<tr>
<td>Adventurous</td>
<td>I do not match his/her ideal at all</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>I completely match his/her ideal</td>
</tr>
<tr>
<td>Successful (or potential to succeed)</td>
<td>I do not match his/her ideal at all</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>I completely match his/her ideal</td>
</tr>
<tr>
<td>Nice House (or potential to attain)</td>
<td>I do not match his/her ideal at all</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>I completely match his/her ideal</td>
</tr>
<tr>
<td>Financially Secure (or potential to achieve)</td>
<td>I do not match his/her ideal at all</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>I completely match his/her ideal</td>
</tr>
<tr>
<td>Dresses Well (or potential to dress well)</td>
<td>I do not match his/her ideal at all</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>I completely match his/her ideal</td>
</tr>
<tr>
<td>Good Job (or potential to attain)</td>
<td>I do not match his/her ideal at all</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>I completely match his/her ideal</td>
</tr>
</tbody>
</table>
Short-Form Partner Ideal Scales – Partner Ideals

Items 8 and 9 were utilised as measures of perceptions of attraction to partner

Rate each factor below in terms of how accurately it describes your CURRENT ROMANTIC PARTNER. Circle ONE number in each scale.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Not at all like my partner</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Very much like my partner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understanding</td>
<td>Not at all like my partner</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>Very much like my partner</td>
</tr>
<tr>
<td>Supportive</td>
<td>Not at all like my partner</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>Very much like my partner</td>
</tr>
<tr>
<td>Kind</td>
<td>Not at all like my partner</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>Very much like my partner</td>
</tr>
<tr>
<td>Good Listener</td>
<td>Not at all like my partner</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>Very much like my partner</td>
</tr>
<tr>
<td>Sensitive</td>
<td>Not at all like my partner</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>Very much like my partner</td>
</tr>
<tr>
<td>Considerate</td>
<td>Not at all like my partner</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>Very much like my partner</td>
</tr>
<tr>
<td>Sexy</td>
<td>Not at all like my partner</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>Very much like my partner</td>
</tr>
<tr>
<td>Nice Body</td>
<td>Not at all like my partner</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>Very much like my partner</td>
</tr>
<tr>
<td>Attractive Appearance</td>
<td>Not at all like my partner</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>Very much like my partner</td>
</tr>
<tr>
<td>Good Lover</td>
<td>Not at all like my partner</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>Very much like my partner</td>
</tr>
<tr>
<td>Outgoing</td>
<td>Not at all like my partner</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>Very much like my partner</td>
</tr>
<tr>
<td>Adventurous</td>
<td>Not at all like my partner</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>Very much like my partner</td>
</tr>
<tr>
<td>Successful (or potential to succeed)</td>
<td>Not at all like my partner</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>Very much like my partner</td>
</tr>
<tr>
<td>Nice House (or potential to attain)</td>
<td>Not at all like my partner</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>Very much like my partner</td>
</tr>
<tr>
<td>Financially Secure (or potential to achieve)</td>
<td>Not at all like my partner</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>Very much like my partner</td>
</tr>
<tr>
<td>Dresses Well (or potential to dress well)</td>
<td>Not at all like my partner</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>Very much like my partner</td>
</tr>
<tr>
<td>Good Job (or potential to attain)</td>
<td>Not at all like my partner</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>Very much like my partner</td>
</tr>
</tbody>
</table>
Perceived Relationship Quality Components Inventory

Please indicate what your current partner/relationship is like, answering each question that follows. 1 to 7 scale.

The short scale utilised consists of items 1, 4, 7, 10, 13, and 16, which were utilised as a measure of relationship satisfaction.

Relationship Satisfaction

1. How satisfied are you with your relationship?
2. How content are you with your relationship?
3. How happy are you with your relationship?

Commitment

4. How committed are you to your relationship?
5. How dedicated are you to your relationship?
6. How devoted are you to your relationship?

Intimacy

7. How intimate is your relationship?
8. How close is your relationship?
9. How connected are you to your partner?

Trust

10. How much do you trust your partner?
11. How much can you count on your partner?
12. How dependable is your partner?

Passion

13. How passionate is your relationship?
14. How lustful is your relationship?
15. How sexually intense is your relationship?

Love

16. How much do you love your partner?
17. How much do you adore your partner?
18. How much do you cherish your partner?
Appendix D: Study 4 Ethical Clearance and Measures

Ethical clearance number: Griffith University Human Research Ethics - 2015/248

Please note; these items will be presented online where participants will be requested to select one of the numbers. Each number will have the correlated response written above it (i.e. Not at all, rarely, every now and then, sometimes, a fair bit, regularly, all the time)

Demographics

Please provide the following information in the space provided:

How old are you? (in years) ........................................................................................................................................

Sex
Male ☐
Female ☐

Ethnic/Cultural Background

White/European-Australian ☐
Asian-Australian ☐
Aboriginal and/or Torres Strait Islander ☐
Other (please specify) ........................................................................................................................................

How long have you been with your partner? (in years, or months if years not permitted)

What is the status of your relationship?

Dating ☐
Defacto ☐
Married ☐
Other (please specify) ........................................................................................................................................

Do you have children? Yes ☐ No ☐

If yes, how many? ........................................................................................................................................

What is the highest degree or level of school you have completed? If currently enrolled, mark the previous grade or highest degree received.

Grade 10 or below ☐
12th grade or less (no diploma) ☐
High school diploma ☐
Some college, no degree ☐
Associate or technical degree (e.g. tradesmen) ☐

Bachelor’s degree ☐

Master’s degree ☐

Doctorate degree (e.g. PhD, EdD) ☐

What category best describes your income?

- $ 0 – 10 000 ☐
- $10 001 – 20 000 ☐
- $20001 – 30 000 ☐
- $30 001 – 40 000 ☐
- $40 001 – 60 000 ☐
- $60 001 – 80 000 ☐
- $80 001 – 100 000 ☐
- $100 001 + ☐

Body Image Scale

The following items were adapted from Hopwood et al.’s (2001) 6 Global Health items

Please respond to the following questions by selecting the scaled number that best suits you. Please give your honest answer, and remember that all answers are anonymous.

1. Do you feel self-conscious about your appearance?
   
   Not at all 1 2 3 4 5 6 7 Extremely

2. Do you feel self-conscious about your body?
   
   Not at all 1 2 3 4 5 6 7 Extremely

3. In the last 6 months have you been dissatisfied with your appearance when dressed?
   
   Never 1 2 3 4 5 6 7 All the time

4. Do you find it difficult to look at yourself naked?
   
   Not at all 1 2 3 4 5 6 7 Extremely

5. To what extent do you generally feel attractive?
   
   I never feel attractive 1 2 3 4 5 6 7 I always feel attractive
6. In the last 6 months have you avoided going somewhere or meeting someone because of your appearance?

   Never 1 2 3 4 5 6 7 I do this regularly

7. To what extent do you feel satisfied with your body?

   Not at all 1 2 3 4 5 6 7 Extremely

8. To what extent do you feel dissatisfied with your body?

   Extremely dissatisfied 1 2 3 4 5 6 7 Extremely satisfied

**Perceptions of Body Image Items**

A valid scale could not be found, thus 3 novel items were created to tap into this construct

9. How attractive do you think your partner is?

   Not at all attractive 1 2 3 4 5 6 7 Extremely Attractive

10. How attractive do you feel your partner thinks YOU are?

    Not at all attractive 1 2 3 4 5 6 7 Extremely Attractive

11. How attractive do you feel your partner thinks THEY are?

    Not at all attractive 1 2 3 4 5 6 7 Extremely Attractive

**Sexual Satisfaction Scale**

*Sprecher’s (2002) Sexual Satisfaction Index*

The following questions are based on your current sexual relationship with your partner, please answer as honestly as you can, again, answers are completely anonymous.

12. How sexually satisfying is the relationship to you?

    Not at all satisfying 1 2 3 4 5 6 7 Extremely satisfying

13. How unrewarding or rewarding is your partners contribution during sex?

    Not at all rewarding 1 2 3 4 5 6 7 Extremely rewarding

**Couple Satisfaction Index**

*Adapted from Funk & Rogge (2007)*

14. All things considered, the degree of happiness of your relationship is?

   Extremely Unhappy 1 2 3 4 5 6 7 Perfect
15. Our relationship is strong
   Not at all true  1  2  3  4  5  6  7  Completely true

16. My relationship with my partner makes me happy
   Not at all true  1  2  3  4  5  6  7  Completely true

17. I have a warm and comfortable relationship with my partner
   Not at all true  1  2  3  4  5  6  7  Completely true

18. I really feel like part of a team with my partner
   Not at all true  1  2  3  4  5  6  7  Completely true

19. How rewarding is your relationship with your partner?
   Not at all   1  2  3  4  5  6  7  Completely

20. How well does your partner meet your needs?
   Not at all   1  2  3  4  5  6  7  Completely

21. To what extent has your relationship met your original expectations?
   Not at all   1  2  3  4  5  6  7  Completely

22. In general, how satisfied are you with your relationship?
   Not at all   1  2  3  4  5  6  7  Completely

23. In general, how often do you think things between you and your partner are going well?
   Extremely Unhappy  1  2  3  4  5  6  7  Perfect

24. My relationship is
   Interesting   1  2  3  4  5  6  7  Boring
   Bad          1  2  3  4  5  6  7  Good
   Full         1  2  3  4  5  6  7  Empty
   Sturdy       1  2  3  4  5  6  7  Fragile
   Discouraging 1  2  3  4  5  6  7  Hopeful
   Enjoyable    1  2  3  4  5  6  7  Completely

Global Health Items

The following items were adapted from Hays et al.’s (2009) 6 Global Health items

25. In general how would you rate your physical health?
   Poor        1  2  3  4  5  6  7  Excellent
26. In general, how would you rate your mental health, including your mood and your ability to think?

- Poor
- 1
- 2
- 3
- 4
- 5
- 6
- 7

Excellent

27. To what extent are you able to carry out your everyday physical activities such as walking, climbing stairs, carrying groceries, or moving a chair?

- Not at all
- 1
- 2
- 3
- 4
- 5
- 6
- 7

Completely

BMI Items

How much do you weigh? (in kilograms) ..............................................................

How tall are you? (in metres and centimetres, if unsure of metres and centimetres please provide imperial measure) ..............................................................

In an average week, how many times would you have sex? ...........................

How long have you been sexually active with your current partner? (please provide your best guess if unsure) ..............................................................

How long have you been sexually active? (please provide your best guess if unsure)........