

The Role of Friends in Adolescent Appearance-Based Rejection Sensitivity: An Exploration of Individual Perceptions of the Friendship Context, and Interactions Within Best Friend Dyads and Friendship Groups

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The Role of Friends in Adolescent Appearance-Based Rejection Sensitivity: An
Exploration of Individual Perceptions of the Friendship Context, and Interactions
Within Best Friend Dyads and Friendship Groups

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ABSTRACT

When we consider society's fixation with physical attractiveness coupled with adolescent concerns about social acceptance, it seems inevitable that some young people develop a tendency to expect social rejection based on the way they look. This tendency has recently been referred to as appearance-based rejection sensitivity (appearance-RS; Park, 2007). Building upon the existing theory and research on rejection sensitivity and body dissatisfaction, and on two recent studies that examined the role of social relationships on appearance-RS (Bowker et al., 2012; Park, DiRaddo, & Calogero, 2009), the primary purpose of the studies reported here were to examine the specific and multiple roles of friends in appearance-RS. Following a review of the literature and the development of a modified version of the Appearance-RS Scale (Park, 2007) suitable for adolescents, the Adolescent Appearance-RS Scale (AA-RSS), two studies were conducted.

Study 1 examined associations between characteristics of the friendship context and appearance-RS in adolescents. The 380 participants were recruited from three schools and were aged 12 to 15.5 years ($M_{\text{age}} = 13.84$). Mediators of these associations were tested, important covariates were considered, and gender differences were examined. Consistent with expectations, findings suggested that when adolescent boys and girls report more experiences of a peer appearance culture, through friends' and peers' appearance conversations and teasing, and pressure to be attractive, they more anxiously expect and readily perceive cues of interpersonal rejection based on the way they look. Results also supported the hypothesis that an appearance-focused friendship context would be associated with heightened appearance-RS to the extent that the adolescents personally endorse society's appearance ideals, compare their appearance to others' appearance, and feel more dissatisfaction with their appearance. Finally,

associations rarely differed for boys and girls, with one exception: appearance-RS was higher in girls, but not boys, who rated their friends higher on attractiveness.

In Study 2, appearance-RS was examined within the intimate context of best friend relationships ($N = 132$, $M_{\text{age}} = 13.84$), and friendship groups ($N = 186$, $M_{\text{age}} = 13.83$) using subgroups of the original 380 participants in Study 1. The Actor-Partner Interdependence Model and social-cognitive mapping were used to examine associations between adolescents' reports and the reports of their best friends and friendship groups, respectively. Overall, best friends were found to be similar in terms of their appearance-RS and body dissatisfaction, as well as their restrictive dieting, appearance-conditional self worth, valuing of appearance, and self-rated attractiveness. Similarities between the individual and their friendship group were consistent with the findings for friendship dyads, except for self-rated attractiveness and (unexpectedly) restrictive dieting. It was also found that sensitivity to appearance-based rejection was higher in adolescents whose best friends and friendship groups reported higher levels of restrictive dieting, and a sense of self worth that is dependent on feeling attractive. In general, associations did not differ for boys and girls, but having a higher proportion of male friends in the friendship group was associated with lowered appearance concerns, perhaps because boys tend to have more positive attitudes toward their appearance.

In summary, the findings highlight how adolescents' appearance-focused interactions within their friendships show important links with their concerns about appearance-based rejection, and these associations generally do not differ between boys and girls. Despite the cross-sectional design of these studies precluding conclusions about the direction of effects, these findings make valuable contributions to newly emerging literature concerned with understanding the social correlates of appearance-RS, and highlight the importance of further research into the ways in which diverse

social relationships may be disruptive, but also protective, in relation to adolescent appearance-RS and associated attitudes and behaviours.

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 published or written by another person except where due reference is made in the thesis itself.

Haley Jean Webb

August, 2013

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ACKNOWLEDGEMENT OF PUBLISHED PAPERS IN THIS THESIS

Included in this thesis are papers in Chapters 2, 5, and 6, which are co-authored with other researchers. My contribution to each co-authored paper is outlined at the front of the relevant chapter. The publication reference or status for these papers including all authors, are:

Chapter 2: Webb, H. J., & Zimmer-Gembeck, M. J. (2013). The role of friends and peers in adolescent body dissatisfaction: A review of research. *Journal of Research on Adolescence*.

Webb, H. J., Zimmer-Gembeck, M. J., & Donovan, C. L. The appearance culture between friends and adolescent appearance-based rejection sensitivity. *Manuscript submitted for publication*.

Webb, H. J., & Zimmer-Gembeck, M. J. Body image attitudes and body change strategies within best friend dyads and friendship cliques: Implications for adolescent appearance-based rejection sensitivity. *Manuscript submitted for publication*.

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

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CHAPTER 1

INTRODUCTION

Adolescence is almost synonymous with change, including increasing independence and responsibility taking, greater adoption of adult roles, greater intimacy of social relationships, and the initiation and development of romantic relationships (Collins, Welsh, & Furman, 2009; Roth & Brooks-Gunn, 2000; Sumter, Bokhorst, Steinberg, & Westenberg, 2009). However, adolescence for many young people also involves important challenges to be navigated (Roth & Brooks-Gunn, 2000), including the challenges of fitting in with friends and peers, feeling accepted, and establishing supportive and enriching friendships.

One pervasive concern among adolescents and adults alike is the concern about physical appearance and attractiveness (Gilbert & Miles, 2002). While the pursuit of beauty dates back to ancient times (Stuttgen, 1996), the last decades have witnessed an increase in the time, money and energy invested in efforts to enhance one's appearance (e.g., American Society for Aesthetic Plastic Surgery, 2012). These fervent efforts to improve appearance are not surprising given the social rewards of physical attractiveness, including increased media and personal attention, more positive interpersonal treatment, and increased perceptions of social competence, assertiveness, and intelligence (Brookes & Kelly, 2009; Eagly et al., 1991; Langlois et al., 2000; Maner et al., 2003; Umberson & Hughes, 1987). When we consider society's fixation with physical attractiveness, coupled with adolescent concerns about social acceptance, it seems inevitable that some young people develop a tendency to expect social rejection based on the way they look. This tendency has recently been referred to as appearance-based rejection sensitivity (appearance-RS; Park, 2007). Appearance-RS comprises two components: anxious concerns about rejection (the affective component) and

expectations of being rejected due to appearance (the cognitive component; Park, 2007; Park, DiRaddo, & Calogero, 2009). Appearance-RS is based on Downey and Feldman's (1996) more general processing disposition, rejection sensitivity (personal-RS). RS theories have described how individuals develop a tendency to anxiously expect, readily perceive and overreact to cues of rejection (Feldman & Downey, 1994). Drawing on attachment theory and social cognitive theory, personal-RS has been described as a cognitive-affective processing bias that develops from a history of rejection experiences, either real or perceived (Downey & Feldman, 1996). Further, a person with high personal-RS may respond to perceived rejection through escape or freezing behaviour, or through anger or aggression (Zimmer-Gembeck & Nesdale, 2013). Hence, a person with high personal-RS can experience an escalating and self-fulfilling cycle of social problems and biased cognitions that result in increasing RS and social or other problems, making personal-RS particularly insidious and intractable.

Appearance-RS: Overview of Research Findings to Date

Personal-RS has received extensive research attention over the last decade, and the many adverse behavioural and social outcomes of personal-RS have been confirmed in cross-sectional, longitudinal, and laboratory experiments (for a review see Romero-Canyas, Anderson, Reddy, & Downey, 2009; Wang, McDonald, Rubin, & Laursen, 2012; Watson & Nesdale, 2012; Zimmer-Gembeck & Nesdale, 2013). In contrast, there is limited research available regarding appearance-RS as it has attracted research interest only in the last couple of years. What is known, is that anxious expectations of appearance-based rejection are associated with a number of psychological problems. Individuals with heightened appearance-RS tend to exhibit poor self-esteem, and greater personal-RS, social anxiety, and a sense of self-worth that is conditional on physical appearance (Bowker, Thomas, Spencer, & Park, 2013; Park, 2007). These individuals

show elevated symptoms of body dysmorphic disorder and greater endorsement of cosmetic surgery both for intrapersonal (e.g., to enhance self image) and social reasons (e.g., to improve attractiveness to others; Calogero, Park, Rahemtulla, & Williams, 2010; Park, Calogero, Young, & DiRaddo, 2010).

Sensitivity to interpersonal rejection is thought to develop from a history of real or perceived rejection experiences (Downey & Feldman, 1996). Congruent with this idea, researchers have found that experiencing an appearance threat (i.e., recalling an incidence of appearance-related teasing or being reminded of disliked aspects of appearance), men and women with heightened sensitivity to appearance-based rejection reported feeling more alone and rejected, and showed greater interest in changing their appearance via cosmetic surgery (Park, 2007; Park, Calogero, Harwin, & DiRaddo, 2009). There was no difference in feelings of loneliness and rejection when there was no appearance threat (i.e., when disliked aspects of appearance were not primed, or when recalling an appearance-related compliment).

Researchers have built further upon these findings through the use of real-world interpersonal rejection scenarios. Under the guise of a study investigating initial impression formation, Park and Harwin (2010) found that an ambiguous rejection from a new acquaintance resulted in heightened negative affect in adults with high appearance-RS, but only when the participant had been visible - and therefore their appearance was on display - to the new acquaintance. Further, high appearance-RS individuals in the visible condition rated ambiguous commentary about appearance (but not ambiguous general commentary) more negatively. These findings support the notion that an interpretive bias might reinforce expectations of appearance rejection, contributing to an escalating and self-fulfilling cycle of social problems and biased cognitions.

Park and Pinkus (2009) provide a clear illustration of a dysfunctional social pattern that can result from heightened appearance-RS. In this study, after interacting briefly with a new acquaintance, participants were given negative feedback allegedly from the new acquaintance about their appearance or intelligence. Individuals with high appearance-RS reported a desire to avoid social interaction both in general and with close contacts, after receiving negative appearance feedback, but not negative feedback about intelligence. As such, high appearance-RS individuals may be attempting to prevent further rejection by avoiding social interactions generally and with close others. Unfortunately, this pattern of avoidance potentially prevents the individual from receiving positive support from friends or family, prevents corrective learning in terms of whether the perceived rejection was accurate and the response was helpful, and may serve to isolate the individual (Park & Pinkus, 2009).

Summary and general aim of the present study. In consideration of the associated psychological and social problems, further research is needed to identify the factors that promote or protect against appearance-RS. The identification of such factors may consequently provide avenues that could guide prevention or treatment of this processing disposition, as well as associated problems such as social withdrawal and body dysmorphic symptoms. However, limited research is available, as appearance-RS has only received research attention in recent years. The existing studies have examined a few of the psychological and social correlates and consequences of appearance-RS (e.g., Calogero et al., 2010; Park, 2007; Park & Pinkus, 2009), and the discreet social encounters that activate appearance-RS (Park, 2007; Park, Calogero et al., 2009; Park & Harwin, 2010). The existing literature does not address the wider, ongoing social influences that individuals are exposed to continually, which could drive the onset of, and perpetuate appearance-RS. Thus, identifying some of the

important social foundations of appearance-RS was the primary aim of this thesis. To achieve these aims, this thesis built upon existing personal-RS theory and research, research on body dissatisfaction, and on two recent studies that examined the role of social relationships on appearance-RS (Bowker et al., 2013; Park et al., 2009).

Potential Socio-Cultural Correlates of Appearance-RS

Friends and appearance-RS. There is little available research on the socio-cultural correlates of appearance-RS. Only two studies, one of adolescents and one of adults, could be located. In the first study, Bowker and colleagues (2013) examined how adolescents' ($N = 150$, $M_{\text{age}} = 13.05$) relationships with other-sex friends and peers moderated associations between appearance-RS and psychological maladjustment in early adolescents. These authors found other-sex friendships were protective, while peer-rated acceptance by other-sex classmates was a risk factor, for associations between appearance-RS and mental health outcomes. In the second study, Park and colleagues (2009) examined the role of socio-cultural influences in appearance-RS in young adults ($N = 220$, $M_{\text{age}} = 19$). Results showed that internalisation of media ideals, perceived pressure from the media to look attractive, and perceiving one's acceptance by friends as being conditional on appearance were associated with appearance-RS. In contrast, parental valuing of appearance, and perceptions that parental acceptance is conditional on appearance were not related to appearance-RS. Hence, there is some preliminary evidence that friends do play a role in understanding appearance-RS among adolescents, as well as young adults.

Social-cultural correlates of body dissatisfaction. There is other relevant research to draw upon for developing hypotheses about how friendships and peer groups may be associated with appearance-RS and body-related maladjustment. In particular, given that there is a known association of appearance-RS and excessive body

image concerns, such as body dysmorphic disorder (Calogero et al., 2010), the literature on children's and adolescents' development of body dissatisfaction is useful for considering how appearance-RS may emerge in young people (e.g., Groesz, Levine, & Murnen, 2002; Jones, 2004; Keery, van den Berg, & Thompson, 2004; Kluck, 2010; Muris, Meesters, van de Blom, & Mayer, 2005; Shroff & Thompson, 2006). In particular, the existing knowledge regarding the correlates of body dissatisfaction appears pertinent to making hypotheses about the socio-cultural correlates of appearance-RS.

At this point it is important to define body dissatisfaction, and to differentiate body dissatisfaction from appearance-RS, but to also acknowledge how they are likely to relate to one another. Body dissatisfaction involves negative thoughts and feelings about one's body (Grogan, 2008). On the other hand, appearance-RS is the anxious concern about interpersonal rejection because of the way one looks (Park, 2007). As such, appearance-RS involves negative thoughts and feelings about one's appearance (rather than one's body), and explicitly relates these negative thoughts to fears about being accepted or rejected by one's peers (and others). An individual may be dissatisfied with their body and have no concerns about social rejection because of their appearance, but it would be expected that all persons who are extremely high in appearance-based rejection sensitivity would be at least somewhat dissatisfied with their appearance.

Empirical evidence supports the widely held view that socio-cultural influences play a significant role in the development of body dissatisfaction (see Cafri, Yamamiya, Brannick, & Thompson, 2005; Muris et al., 2005; Shroff & Thompson, 2006; Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999; van den Berg, Thompson, Obremski-Brandon, & Covert, 2002). According to socio-cultural theory, mass media,

parents, and friends or peers communicate powerful messages regarding appearance ideals. Exposure to unrealistic ideals from these socio-cultural sources has been theorised to contribute to body dissatisfaction as it reinforces individual endorsement of these standards and provides pressure to conform (Dittmar, 2005).

Although messages and modelling from the media and family are important correlates of body dissatisfaction, adolescence marks an increasing amount of time spent with close friends and romantic partners in and out of school (Crockett, Losoff, & Petersen, 1984; Zimmer-Gembeck, 1999), and is characterized by an increase in concern about peer acceptance and approval, as well as greater intimacy with friends (Crockett et al., 1984; Furman & Buhrmester, 1992; Veronneau & Dishion, 2010). It is friends, both same-sex and other-sex, who increase in their importance and influence during adolescence (Brown, Feiring, & Furman, 1999; Bukowski, Hoza, & Boivin, 1993). Given the promising findings of Park et al. (2009), and Bowker et al. (2013), and the substantial evidence confirming the important role of friends and peers in shaping body image concerns and related attitudes and behaviours (Jones, 2004; Jones, Vigfusdottir, & Lee, 2004; Hutchinson & Rapee, 2007; Paxton, Schutz, Wertheim, & Muir, 1999), more research is needed to examine how friends and peer groups of young people contribute to appearance-RS.

Summary and aims of the present research. The aim of this thesis was to fill a gap in previous research by more closely examining the specific and multiple roles of friends in appearance-RS. It is during early adolescence that young people are at high risk for developing body image and eating problems (Hutchinson & Rapee, 2007), while at the same time they experience elevated concerns about social belonging, and are most susceptible to peer influence (Baumeister & Leary, 1995; Steinberg & Monohan, 2007). Adolescence is also characterised by an increase in the saliency of

appearance ideals, and physical development that heightens awareness of one's appearance and that can contribute to a deviation from appearance ideals (Attie & Brooks-Gunn, 1989; Byely, Archibald, Graber, & Brooks-Gunn, 2000; Wertheim, Paxton, & Blaney, 2004). By examining the role of friends in appearance-RS in an early adolescent sample, it is possible to capture the period of development when the social transmission of appearance ideals is gaining momentum, and may be most critical to the emergence of appearance-RS. No previous study has examined the social environmental predictors of appearance-RS in adolescents, nor conducted such a comprehensive assessment of the friendship context as a potential catalyst for the development of appearance-RS in adolescents or adults.

Gender

Gender differences pervade the study of body dissatisfaction and eating disorders. Differences have been reported in terms of severity of body dissatisfaction, appearance-RS, and related behaviours, such as disordered eating patterns (Bowker et al., 2013; Halliwell & Harvey, 2006; White & Halliwell, 2010). Further, differences have also been reported in terms of how appearance concerns may relate to friend and peer influences. Body dissatisfaction has shown stronger associations with appearance conversations with friends and perceived pressure to be thin in females than in males (Halliwell & Harvey, 2006; Jones et al., 2004; Vincent & McCabe, 2000), whereas the association between appearance teasing and body dissatisfaction is sometimes stronger in males than in females (Jones et al., 2004; Vincent & McCabe, 2000). Unfortunately, studies assessing body image and related concerns often do not include boys, preventing assessment of gender differences.

In relation to gender differences in the appearance-RS literature, Park and colleagues (2009) found the simple association between friends' valuing of appearance

and appearance-RS in young adults to be stronger in females than in males. Further, Bowker and colleagues (2013) identified gender differences in the ways in which other-sex peer relationships moderate associations between appearance-RS and mental health outcomes, with high peer-rated acceptance by other-sex classmates posing a risk factor for boys, and low acceptance by other-sex classmates being a risk factor for girls.

Also relevant are the more general findings that suggest there are meaningful gender differences in the nature of friend and peer relationships during adolescence and young adulthood. Within young adult same-sex dyads, females have been found to engage more frequently in relationship maintenance behaviours than do males, including being supportive and open, and spending time together (Oswald, Clark, & Kelly, 2004). Further, adolescent girls have been found to be more similar to their best friend than were boys in terms of psychological distress, behavioural problems, and perception of the relationship (Selfhout, Branje, & Meeus, 2007). Finally, in a review of gender differences in peer relationship processes, girls were found to have higher levels of conversation, support seeking, and emotional expression, while boys were more likely to participate in rough-and-tumble and competitive play, emphasise self-interest and dominance goals, and experience peer victimization (Rose & Rudolph, 2006).

Overall, these findings indicate that boys and girls may have different experiences of their body image and their social relationships, as well as differences in how their appearance concerns may be associated with characteristics of their friend and peer groups. Accordingly, both boys and girls were assessed in the present research in order to examine whether the role of friends in adolescent concerns about appearance-based rejection differed according to gender.

Summary of Thesis Chapters

This thesis consists of seven chapters, including this introduction. Chapter 2 provides a review and critique of literature examining the role of friends and peers in association with adolescent body dissatisfaction, to inform the subsequent investigation of friendship characteristics as they relate to appearance-RS in adolescents. Chapter 3 provides a transition from the findings of Chapter 2 (the body dissatisfaction review) to subsequent chapters that focus on appearance-RS. In Chapter 4, the Adolescent Appearance-Based Rejection Sensitivity Scale (AA-RSS) is described, which was revised in this thesis to assess appearance-RS in adolescents. Using this measure, Chapter 5 (Study 1) presents a series of models that identify characteristics within the friendship context that are associated with appearance-RS. In this chapter, individual beliefs and processes mediating these associations are also examined, important covariates considered, and gender differences between key friendship characteristics and appearance-RS are tested. Expanding upon these findings in Chapter 6 (Study 2), adolescent appearance-RS is examined in the context of best friend relationships, and within naturally occurring friendship groups. This chapter examines similarity between friends, and the associations between adolescent appearance-RS and other appearance-related attitudes and behaviours reported by their best friend and friendship group. Finally, Chapter 7 integrates the findings of all chapters, and outlines the implications of the findings.

CHAPTER 2

This chapter will be published as:

Webb, H. J., & Zimmer-Gembeck, M. J. (2013). The role of friends and peers in adolescent body dissatisfaction: A review of research. *Journal of Research on Adolescence*.

My contribution to the paper involved the literature review, data analysis, and summarising of findings.

Haley Webb (Date)

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See Appendix “A” for the journal PDF of this paper.

**THE ROLE OF FRIENDS AND PEERS IN ADOLESCENT BODY
DISSATISFACTION: A REVIEW AND CRITIQUE
OF 15 YEARS OF RESEARCH**

Body dissatisfaction among children and adolescents is a perplexing and complicated concern that has attracted increasing research attention due to its high prevalence, and because of the evidence that it is multiply determined and has complex effects on behaviour, emotion, mental health, and well-being (Keery, van den Berg, & Thompson, 2004; Levine & Smolak, 2002; Presnell, Bearman, & Stice, 2004; Stice, 2002). Body dissatisfaction often emerges during childhood (McCabe & Ricciardelli, 2003) and peaks in adolescence when many young people are ‘acutely attuned’ to their body weight and shape (Ata, Ludden, & Lally, 2007, pp. 1024; Littleton & Ollendick, 2003). Of all the potential correlates of body dissatisfaction addressed in the literature, interest in the research on peer relationships is probably accelerating the most rapidly. Adolescence marks an increasing amount of time spent with friends and romantic partners in and out of school (Crockett, Losoff, & Petersen, 1984; Zimmer-Gembeck, 1999), and is characterized by increased concern about peer acceptance and greater intimacy with friends (Crockett et al., 1984; Furman & Buhrmester, 1992; Veronneau & Dishion, 2010). Despite recent calls for researchers to focus additional attention in this area (Dishion & Tipsord, 2011; Jones, 2004; Jones, Vigfusdottir, & Lee, 2004), there has been no comprehensive review of recent research that has addressed what particular aspects of friend and peer relationships increase or mitigate adolescent body dissatisfaction. Accordingly, in this review the aim was to summarise what is known about friend and peer influences on body dissatisfaction in adolescents, identify gaps in research, and propose productive paths for new research that can guide effective intervention efforts.

Theoretical Background

The focus on body dissatisfaction as being socially influenced was guided by two theories. First, Social Identity Theory (Tajfel, 1978; Turner, Hogg, Oakes, Reicher, & Wheterel, 1987) was drawn from to consider how an individual's self concept is derived from his or her perceived membership to a relevant social group (Worchel, Iuzzini, Coutant, & Ivaldi, 2000). Social Identity theorists (e.g., Deaux, 2000; Worchel et al., 2000) suggest that self-conceptions are intimately tied to social relationships, being outcomes of exposure to shared group representations, group pressure for uniformity, and participation in group activities that emphasize the shared meaning and representations of the group. Hence, influences from friends and peer groups might come from direct exposure to the body dissatisfaction of others, shared conversations and interactions that promote uniformity in views of the body, and participation in activities that promote body dissatisfaction (e.g., restrictive dieting).

Social Learning Theory (Bandura, 1977) places a more direct focus on learning from others by describing how learning occurs in a social context, principally through experiencing the consequences of elicited behaviours (instrumental learning), and the imitation of others (observational learning; Akers 1998). Social Learning Theory leads us to expect that appearance-related attitudes and behaviours can be strengthened by friends and peers through, for example, imitating others' weight loss behaviours following the observation of desirable outcomes, symbolic sharing of behaviours that have produced or are expected to produce positive outcomes, encouragement or reinforcement from friends, and attempts to avoid the social disapproval associated with failing to meet peer appearance ideals.

Aims and Organization of the Review

The purpose of this review is to identify key characteristics of friend and peer relationships that are linked with adolescent body dissatisfaction. The focus on the past 15 years of research permitted inclusion of almost all of the relevant research on this topic, and captured the current state of the evidence where changes may be occurring rapidly given new media sources and changes in adolescents' social relationships (Brown & Bobkowski, 2011; Larson, Wilson, Brown, Furstenberg, & Verma 2002). The sections in this review are organized according to the theoretically derived ways that friends and other peer relationships might covary with, or affect, body dissatisfaction. Hence, the review covers victimization, friends' body dissatisfaction, socialization, perceptions of friends' attitudes and behaviours, and friendship quality. The chapter ends with a critique and recommendations for future research.

Method

Literature Search

To identify articles for this review, electronic searches were conducted using PsycINFO and Medline. The search terms were body dissatisfaction, body satisfaction or body image combined with friends, peers, or socio-cultural influences. The reference lists of relevant research articles were searched for additional articles. Each article had to be published in a peer-reviewed journal, with a Western sample, in English, between 1997 and 2012. Although ethnicity is addressed in this review, the focus on Western populations is due to the documented cross-cultural differences in body dissatisfaction and related constructs (Jung & Lee, 2006; Swami et al., 2010), that are beyond the scope of this article. The target date range was selected as it incorporates much of the contemporary research conducted in the body dissatisfaction field. Other inclusion criteria were that the mean age of the sample was between 10 and 18 years, and that the

article reported the results of analyses of friend or peer influences separately from parent and media influences. Finally, influences must have been examined in relation to body dissatisfaction or a comparable construct, such as body esteem or body image concern (and not for example, appearance preoccupation or disordered eating), because this is the most prevalent issue and it has been argued to be one of the ‘most consistent and robust risk and maintenance factors for eating pathology’ (Stice, 2002, pp 833).

Fifty-seven articles including 55 independent samples were identified in electronic and subsequent reference list searches; nine were longitudinal, 43 cross-sectional, and five qualitative (see Table 2.1). These articles investigated a number of associations between friend or peer influences and body dissatisfaction, including similarity between friends (five articles). Articles also examined body dissatisfaction in association with friend or peer appearance-related teasing and criticism (19 articles), modelling of weight loss behaviours (10 articles), appearance-related conversations (13 articles), peer pressure (14 articles), anti-dieting encouragement (two articles), social comparison (eight articles), friends’ appearance preoccupation (eight articles), perceptions that thinness will improve friendships (six articles), social support and friendship quality (11 articles), and conflict and bullying (four articles). One article was excluded due to unclear results. The Results provide summaries of the findings, and Table 2.1 presents effect sizes, when available.

Table 2.1

Description of Studies, Results, and Effect Sizes

Authors (year)	Sample (M_{age})	Friend/peer measure	Outcome	Effect size
Ata et al. (2007) United States	Mid – late adol. boys & girls (15.8 years)	Appearance teasing – friends	Body weight less than ideal, rather than greater than ideal, controlling for pressure to lose weight or gain muscle from family, friends, and media	$r = -.15, p < .05$
		Social/emotional support – friends	Higher body-esteem, controlling for general self-esteem, parental social and emotional support, weight teasing from peers and family, and pressure to lose weight or gain muscle from peers, family, and the media	$\beta = .13, p < .05$
		Social/emotional support – friends	No association with figure rating discrepancy, controlling for general self-esteem, parental social and emotional support, weight teasing from peers and family, and pressure to lose weight or gain muscle from peers, family, and the media	$\beta = -.05, p > .05$
Barker & Galambos (2003) Canada	Mid adol. boys (14.3 years)	Appearance teasing – source unspecified	Higher body dissatisfaction, controlling for BMI, pubertal status, efforts to manage one's figure, involvement in popular culture and resource factors	$\beta = .58, p < .05$
	Mid adol. girls	Appearance teasing – source unspecified	Higher body dissatisfaction, controlling for BMI, pubertal status, efforts to manage one's figure, involvement in popular culture and resource factors	$\beta = .32, p < .05$
Bearman et al. ^a (2006) United States	Mid adol. girls (13.6 years)	Social support – peers	Lower body dissatisfaction concurrently, as well as one year and two years later. These associations did not remain when controlling for negative affect, parent support and diet restraint	$\beta = -.10, p < .05$ $\beta = -.14, p < .05$ $\beta = -.17, p < .05$
Blodgett Salafia & Gondoli ^a (2011) United States	Early adol. girls (10.6 years)	Conversations about dieting – friends	Higher body dissatisfaction measured one year later	$r = .49, p < .05$
		Pressure to be thin – friends	Higher body dissatisfaction measured one year later	$r = .54, p < .05$

Blowers et al (2003) <i>Australia</i>	Early adol. girls (11.1 years)	Pressure to be thin –friends & peers	No association with body dissatisfaction	$r = .15, p > .05$
		Modelling of disordered eating – friends	Higher body dissatisfaction	$r = .16, p < .05$
		Physical appearance comparisons – peers	Higher body dissatisfaction	$r = .39, p < .001$
Carey et al. ^b (2011) <i>Australia</i>	Mid adol. girls (range= 14-15)	Modelling of dieting behaviour	Entire cliques perceived to engage in dieting to fit in with others and demonstrate shared commitment to the thin ideal	Qualitative study
Clark & Tiggemann (2006) <i>Australia</i>	Early adol. girls (10.6 years)	Perceptions of friends' body dissatisfaction	Higher body dissatisfaction	$\beta = .28, p < .01$
		Appearance conversations – friends	Higher body dissatisfaction	$r = .27, p < .01$
		Appearance conversations – friends	Lower body esteem	$r = -.20, p < .05$
		Belief that friends value appearances	Lower body esteem	$r = -.20, p < .05$
Clark & Tiggemann (2007) <i>Australia</i>	Early adol. girls (10.6 years)	Appearance conversations – friends	Higher body dissatisfaction	$r = .17, p < .01$
		Appearance conversations – friends	Lower body esteem	$r = -.26, p < .001$
		Appearance conversations – friends	No association with body dissatisfaction when controlling for age, BMI, exposure to appearance-focused media, emotional autonomy and appearance schemas	$\beta = .06, p > .05$
		Appearance conversations – friends	No association with body esteem when controlling for age, BMI, exposure to appearance-focused media, emotional autonomy and appearance schemas	$\beta = -.05, p > .05$

Dunkley et al. (2001) <i>Australia</i>	Mid adol. girls (15.5 years)	Pressure to be thin – peers	Higher body dissatisfaction, controlling for parent and media pressure to be thin and diet	$\beta = .24, p < .001$
Eisenberg et al. (2003) <i>United States</i>	Early – late adol. boys (approx. 11-18)	Weight teasing – peers	Higher body dissatisfaction	OR=2.35, $p < .05$
	Early – late adol. girls	Weight teasing – peers	Higher body dissatisfaction	OR=1.50, $p < .05$
Farrow et al. (2011) <i>United Kingdom</i>	Early adol. boys & girls (10.5 years)	Friendship groups' body dissatisfaction	No association with individual body dissatisfaction, controlling for gender	$r = .22, p > .05$
		Modelling of dietary restraint – friends	Greater body dissatisfaction, controlling for gender	$r = .34, p < .01$
Fox & Farrow (2009) <i>United Kingdom</i>	Early adol. girls (12.8 years)	Verbal bullying – peers	Higher body dissatisfaction	$r = .26, p < .01$
		Physical bullying – peers	Higher body dissatisfaction	$r = .20, p < .01$
		Social bullying – peers	Higher body dissatisfaction	$r = .26, p < .01$
Griffiths & McCabe (2000) <i>Australia</i>	Early adol. girls (12.5 years)	Importance of own body to best girlfriend	Higher body dissatisfaction on two scales	$r = .39, p < .05$ $r = .42, p < .05$
		Importance of own body to best girlfriend	No association with body dissatisfaction when controlling for BMI, menarche, self-esteem, locus of control, importance of appearance, and influence of society and parents	$\beta = .18, p = .07$
		Importance of own body to best boyfriend	Higher body dissatisfaction on two scales	$r = .40, p < .05$ $r = .48, p < .05$
		Importance of own body to best boyfriend	No association with body dissatisfaction when controlling for BMI, menarche, self-esteem, locus of control, importance of appearance, and influence of society and parents	$\beta = -.05, p = .61$

Hayden-Wade et al. (2005) <i>United States</i>	Early adol. boys & girls (12.2 years)	Weight teasing – unspecified source	Higher weight concerns	$r = .59, p < .001$
		Weight teasing – unspecified source	Lower confidence in physical appearance	$r = -.31, p < .001$
Helfert & Warschburger ^a (2011) <i>Germany</i>	Mid adol. boys (14 years)	Appearance-related modelling – friends	No association with body dissatisfaction one year later when controlling for age, BMI, appearance teasing by parents and peers, parental appearance-related encouragement and modelling, and appearance-related social exclusion and class norms	$\beta = .09, p > .05$
		Appearance-related modelling – friends	Higher body dissatisfaction one year later, controlling for age, BMI, appearance teasing by parents and peers, parental appearance-related encouragement and modelling, and appearance-related social exclusion and class norms	$\beta = .24, p < .01$
		Appearance teasing – peers	No association with body dissatisfaction one year later when controlling for age, BMI, parental appearance-related encouragement, modelling by friends, and social exclusion	$\beta = .08, p > .05$
		Appearance teasing – peers	No association with body dissatisfaction one year later when controlling for age, BMI, parental appearance-related encouragement, modelling by friends, and social exclusion	$\beta = .04, p > .05$
		Social exclusion – peers	Higher body dissatisfaction one year later	$\beta = .34, p < .01$
		Social exclusion – peers	No association with body dissatisfaction one year later	$\beta = .10, p > .05$
Holsen et al. ^a (2012) <i>Norway</i>	Mid adol. boys (13.3 years)	Higher quality relationships – peers	Higher body dissatisfaction	$\beta = .39, p < .001$
	Mid adol. girls	Higher quality relationships – peers	Higher body dissatisfaction	$\beta = .26, p < .001$
Hutchinson & Rapee (2007) <i>Australia</i>	Early adol. girls (12.3 years)	Friends' similarity in body dissatisfaction	No similarity in body dissatisfaction within friendship groups, controlling for BMI, self-esteem and negative affect	$p > .05$
		Pressure to be thin – female friends	Higher body dissatisfaction, controlling for physical, psychological, behavioural and peer variables	$\beta = .48, p < .001$

		Weight teasing – peers	Higher body dissatisfaction	$r = .47, p < .001$
		Weight teasing – peers	No association with body dissatisfaction when controlling for physical, psychological, behavioural and peer variables	$\beta = .03, p > .01$
Jones (2001) <i>United States</i>	Early – mid boys & girls (14.3 years)	Appearance comparison sources	Comparisons more often made towards same-sex peers than people in the media	
	Early – mid adol. boys	Appearance comparison – same sex peers	Higher dissatisfaction with a range of physical attributes	$r_s > .17, p_s < .05$
	Early – mid adol. girls	Appearance comparison – same sex peers	Higher dissatisfaction with a range of physical attributes	$r_s > .29, p_s < .01$
Jones (2004) ^a <i>United States</i>	Early – mid adol. boys (13.9 years)	Appearance conversations – friends	Predicted positive change in body dissatisfaction over one year. Association not significant when controlling for BMI, peer appearance teasing, perceptions that acceptance is dependent on appearance, social comparison, and internalisation of ideals	$\beta = .15, p < .05$ $\beta = .05, p > .05$
	Early – mid adol. girls	Appearance conversations – friends	Predicted positive change in body dissatisfaction over one year. Association not significant when controlling for BMI, peer appearance teasing, perceptions that acceptance is dependent on appearance, social comparison, and internalisation of ideals	$\beta = .16, p < .01$ $\beta = .06, p > .05$
	Early – mid adol. boys	Appearance–conditional acceptance – female peers	No association with change in body dissatisfaction over one year	$\beta = .01, p > .05$
	Early – mid adol. girls	Appearance–conditional acceptance – peers	Predicted change in body dissatisfaction one year later. The association not significant when controlling for BMI, Time 1 body dissatisfaction, conversations, social comparison, internalisation of appearance ideals, and appearance teasing	$\beta = .17, p < .05$ $\beta = .01, p > .05$
	Early – mid adol. boys	Appearance teasing – friends and peers	Higher body dissatisfaction concurrently, but did not predict change in body dissatisfaction over one year	$r = .25, p < .05$ $\beta = .14, p > .05$

	Early – mid adol. girls	Appearance teasing – friends and peers	Higher body dissatisfaction concurrently, but did not predict change in body dissatisfaction over one year	$r = .40, p < .05$ $\beta = .02, p > .05$
	Early – mid adol. boys	Social comparison – peers & models	Higher body dissatisfaction concurrently, and one year later	$r = .37, p < .05$ $r = .28, p < .05$
	Early – mid adol. girls	Social comparison – peers & models	Higher body dissatisfaction concurrently, and one year later	$r = .71, p < .05$ $r = .66, p < .05$
Jones & Crawford (2005) <i>United States</i>	Mid adol. boys (13.6 & 16.6)	Appearance conversations – friends	Higher weight concern	$\beta = .21, p < .05$
		Muscle building conversations – friends	Higher muscularity concern	$\beta = .31, p < .001$
		Own weight concern	Higher body dissatisfaction	$\beta = .48, p < .001$
		Own muscle concern	Higher body dissatisfaction	$\beta = .48, p < .001$
Jones et al. (2004) <i>United States</i>	Early – mid boys (13.5 years)	Appearance conversations – friends	Higher body dissatisfaction	$r = .16, p < .05$
	Early – mid girls	Appearance conversations – friends	Higher body dissatisfaction	$r = .34, p < .001$
	Early – mid boys & girls	Appearance criticism – peer	Higher body dissatisfaction, controlling for internalisation of media ideals	$\beta = .31, p < .001$
	Early – mid adol. boys	Social comparison	No mediation of the longitudinal association between appearance conversations and body dissatisfaction	
	Early - mid adol. girls	Social comparison	Fully mediated the longitudinal association between appearance conversations and body dissatisfaction	
Keery et al. (2004) <i>United States</i>	Early adol. girls (12.6 years)	Social comparison	Partially mediated associations of body dissatisfaction with peer and media influences, and fully mediated the association with parent influence	

Kelly et al. (2005) <i>United States</i>	Early – late adol. girls	Friends diet to lose weight	Lower body satisfaction	$p < .001$
		Friends care about exercise & being fit	Higher body satisfaction	$p < .001$
Kichler & Crowther (2009) <i>United States</i>	Early adol. girls (10.3 years)	Appearance criticism & encouragement to lose weight – peers	Higher body dissatisfaction	$r = .54, p < .01$
Lawler & Nixon (2011) <i>Ireland</i>	Mid adol. boys (16 years)	Appearance conversations – friends	No association with body dissatisfaction	$r = .08, p > .05$
	Mid adol. girls	Appearance conversations – friends	Higher body dissatisfaction	$r = .25, p < .01$
	Mid adol. boys	Appearance criticism – peers	Higher body dissatisfaction	$r = .55, p < .01$
	Mid adol. girls	Appearance criticism – peers	Higher body dissatisfaction	$r = .47, p < .01$
Lieberman et al. (2001) <i>Canada</i>	Mid adol. girls (14.1 years)	Modelling of dieting & weight loss – friends	Lower body esteem, controlling for age, BMI, popularity, self- esteem, externalized self-perception, appearance attributions, teasing and social reinforcement	$B = -.13, p < .001$
		Self-reported weight teasing – peers	Lower body esteem	$r = -.43, p < .001$
		Self-reported shape teasing – peers	Lower body esteem	$r = -.44, p < .001$
		Self-report appearance teasing – peers	Lower body esteem	$r = -.40, p < .001$
		Classmate-reported appearance teasing	Lower body esteem	$r = -.22, p < .001$

		Perceived pressure to diet or lose weight – friends	Higher body esteem, controlling for BMI, age, popularity, relational self-esteem, externalized self-perception, social rejection, appearance teasing, and peer modelling	$\beta = .08, p < .01$
Lunde et al. (2006) <i>Sweden</i>	Early adol. boys (10.4 years)	General teasing – peers	Lower satisfaction with appearance and weight, controlling for BMI and victimization experiences	$\beta = -.20, p < .01$ $\beta = -.25, p < .01$
	Early adol. girls	Appearance teasing – peers	Lower satisfaction with general appearance, controlling for BMI and victimization experiences	$\beta = -.26, p < .01$
	Early adol. boys	Social exclusion	Lower satisfaction with appearance and weight	$\beta = -.23, p < .01$ $\beta = -.19, p < .01$
	Early adol. girls	Social exclusion	Lower satisfaction with appearance and weight	$\beta = -.18, p < .01$ $\beta = -.28, p < .01$
Lunner et al. (2000) <i>Sweden & Australia</i>	Swedish mid adol. girls (14.3 years)	Appearance criticism – peers	Higher body dissatisfaction	$\beta = .33, p < .01$
	Australian mid adol. girls (13.3 years)	Appearance criticism – peers	Higher body dissatisfaction	$\beta s > .23, p s < .01$
McCabe & Ricciardelli ^a (2005) <i>Australia</i>	Early – mid adol. boys & girls (13 years)	Pressure to change body – same- & other- sex friends	No association with body dissatisfaction	$p > .05$
McCabe et al. ^b (2006) <i>Australia</i>	Mid adol. girls (15.9 years)	Appearance messages – friends	Majority of girls received positive appearance messages from friends. Half the girls perceived criticism from friends.	Qualitative study
	Mid adol. boys	Appearance messages – friends	Only a small number of boys reported receiving positive or negative appearance-related messages from friends	Qualitative study

Mooney et al. ^b (2009) <i>Ireland</i>	Mid adol. girls (range = 15-16)	Acceptance and approval	Thinness considered important because it is believed to influence acceptance by friends	Qualitative study
O’Koon (1997) <i>United States</i>	Mid adol. boys & girls (range = 16-18)	Trust, sensitivity and helpfulness from friends	More positive body image	$r = .24, p < .05$
Page et al. (2006) <i>Europe</i>	Mid adol. boys & girls (16.7 years)	Estimates of same-sex peers perceived to be dieting to lose weight	Higher perception of oneself as “too fat”	$p < .01$
Palmqvist & Santavirta (2006) <i>Finland</i>	Mid adol. boys & girls (14.1 years)	Friendship intimacy	No association with body dissatisfaction	$p > .05$
Paxton et al. ^a (2006) <i>United States</i>	Early adol. boys (12.7 years)	Modelling of dieting – friends	No association with body dissatisfaction five years later	$r = .07, p > .05$
	Mid adol. boys (15.8 years)	Modelling of dieting – friends	Higher body dissatisfaction five years later. Associations did not remain significant when controlling for BMI, SES, ethnicity, weight teasing and Time 1 body dissatisfaction	$r = .13, p < .001$ $\beta = .49, p > .05$
	Early adol. girls	Modelling of dieting – friends	Higher body dissatisfaction five years later. Associations remained when controlling for BMI, self-esteem and Time 1 body dissatisfaction	$r = .13, p < .001$ $\beta = 1.45, p < .05$
	Mid adol. girls	Modelling of dieting – friends	No association with body dissatisfaction five years later	$r = .05, p > .05$
	Early adol. boys	Appearance teasing – peers	Higher body dissatisfaction five years later. Associations did not remain significant when controlling for BMI, SES, depression, friend dieting, and Time 1 body dissatisfaction	$r = .16, p < .01$ $\beta = .49, p > .05$
	Mid adol. boys	Appearance teasing – peers	Higher body dissatisfaction five years later. Associations did not remain significant when controlling for BMI, SES, depression, friend dieting, and Time 1 body dissatisfaction	$r = .19, p < .001$ $\beta = .36, p > .05$

	Early adol. girls	Appearance teasing – peers	Higher body dissatisfaction five years later. Associations did not remain significant when controlling for BMI, SES, depression, friend dieting, and Time 1 body dissatisfaction	$r = .11, p < .05$ $\beta = -.54, p > .05$
	Mid adol. girls	Appearance teasing – peers	Higher body dissatisfaction five years later. Associations did not remain significant when controlling for BMI, SES, depression, friend dieting, and Time 1 body dissatisfaction	$r = .17, p < .001$ $\beta = .37, p > .05$
Paxton et al. ^a (2005) <i>Australia</i>	Mid adol. girls (15.5 years)	Belief that thinness is important for attracting boys	Higher body dissatisfaction, controlling for BMI, depression, self-esteem, and the importance the individual places on being popular with boys	$\beta = .32, p < .005$
Paxton et al. (1999) <i>Australia</i>	Mid adol. girls (15.5 years)	Friends' similarity in body dissatisfaction	Body dissatisfaction similar within friendship groups	$\eta^2 = .31$
		Body comparison – peers	Higher body dissatisfaction	$r = .59, p < .001$
		Friends' concern with thinness & dieting	Higher body dissatisfaction, controlling for a range of physical, psychological, family/media and friend influences	$\beta = .12, p < .01$
		Belief that thinness impacts friendships	Higher body dissatisfaction, controlling for a range of physical, psychological, family/media and friend influences	$\beta = .19, p < .001$
		Pressure to be thin – friends & peers	Higher body dissatisfaction, controlling for a range of physical, psychological, family/media and friend influences	$\beta = .15, p < .01$
		Appearance teasing – friends & peers	Higher body dissatisfaction, controlling for a range of physical, psychological, family/media and friend influences	$\beta = .14, p < .01$
		Social support – friends	No association with body dissatisfaction	$r = .02, p > .05$
Peterson et al. (2007) <i>United States</i>	Mid adol. boys (16.5 years)	Pressure to be thin – friends	Higher body dissatisfaction	$r = .34, p < .01$
	Mid adol. girls	Pressure to be thin – friends	Higher body dissatisfaction	$r = .42, p < .01$
Presnell et al. (2004)	Mid adol. boys & girls	Pressure to be thin – friends	Higher body dissatisfaction nine months later	$r = .40, p < .05$

<i>United States</i>	(17 years)	Pressure to be thin – friends	Increased body dissatisfaction over nine months	$\beta = .08, p = .04$
Ricciardelli & McCabe (2001) <i>Australia</i>	Mid adol. boys & girls (13.2 years)	Pressure to lose weight or increase muscles – same/other-sex friends	No association with body dissatisfaction	$p > .05$
	Mid adol. boys	Pressure to increase muscles from same-sex best friend	Higher engagement in strategies to increase muscles, controlling for pressure from parents and media to lose weight and increase muscles, negative affect and self-esteem	$\beta = .14, p < .01$
	Mid adol. girls	Pressure to increase muscles from same-sex best friend	Higher engagement in strategies to increase muscles, controlling for pressure from parents and media to lose weight and increase muscles, negative affect and self-esteem	$\beta = .12, p < .05$
	Mid adol. boys	Pressure to lose weight from same-sex best friend	Higher engagement in strategies to lose weight, controlling for pressure from parents and media to lose weight and increase muscles, negative affect and self-esteem	$\beta = .10, p < .05$
	Mid adol. girls	Pressure to lose weight from same-sex best friend	No association with engagement in strategies to lose weight, controlling for pressure from parents and media to lose weight and increase muscles, negative affect and self-esteem	$p > .05$
Sands & Wardle (2003) <i>United Kingdom</i>	Early adol. girls (range = 9-12)	Perception of best same-sex friends' weight concerns	Higher body dissatisfaction. Association did not remain when internalisation of appearance ideals was controlled	$\beta = .20, p < .01$ $\beta = .07, p > .05$
Schutz & Paxton (2007) <i>Australia</i>	Mid adol. girls (15.9 years)	Perception of friends' concerns with weight and shape	Higher body dissatisfaction	$r = .32, p < .001$
		Belief that thinness benefits relationships	Higher body dissatisfaction	$r = .53, p < .001$
		Communication quality - friends	No association with body dissatisfaction	$r = .01, p > .01$
		Friendship security	No association with body dissatisfaction	$r = -.10, p > .01$

		Conflict – friends	Higher body dissatisfaction	$r = .14, p < .001$
		Emotional detachment – friends	Higher body dissatisfaction	$r = .27, p < .001$
Schutz et al. (2002) <i>Australia</i>	Early – mid adol. girls (14.1 years)	Body comparison	Higher body dissatisfaction	$r = .69, p < .002$
Shisslak et al. (1998) <i>United States</i>	Early – mid adol. Girls (range = 9-15)	Social support	No association with body dissatisfaction	$p > .05$
Shomaker & Furman (2009) <i>United States</i>	Late adol. boys & girls (18 years)	Pressure to be thin – friends	Reduced body satisfaction	$r = -.19, p < .05$
		Appearance criticism – friends	No association with body dissatisfaction	$r = -.07, p > .05$
		Appearance criticism – romantic partner	No association with body dissatisfaction	$r = -.14, p > .05$
Shroff & Thompson (2006) <i>United States</i>	Mid adol. girls (14.6 years)	Appearance conversations - friends	Higher body dissatisfaction	$r = .32, p < .001$
		Anti-dieting advice – friends	No association with body dissatisfaction	$r = -.04, p > .05$
		Anti-dieting advice – friends	Higher appearance conversations with friends	$r = .23, p < .001$
		Anti-dieting advice – friends	Higher perceptions that friends are preoccupied with weight/dieting	$r = .13, p < .05$
		Belief that friends' are preoccupied with weight & dieting	Higher body dissatisfaction	$r = .44, p < .001$

		Belief that friends influence own ideas of perfect body & weight loss strategies	Higher body dissatisfaction	$r = .38, p < .001$
		Social comparison	Partially mediated the association of body dissatisfaction with peer influence	
Sinton & Birch (2006) <i>United States</i>	Early adol. girls (11.3 years)	Appearance-based interactions – same-sex peers	Higher body dissatisfaction	$r = .40, p < .001$
Stanford & McCabe (2005) <i>Australia</i>	Early adol. boys (12.6 years)	Pressure to be thin – best same-sex friend	No association with weight satisfaction, controlling for parent and media pressure to lose weight and increase muscles	$p > .05$
		Pressure to be thin – best other-sex friend	Lower weight satisfaction, controlling for parent and media pressure to lose weight and increase muscles	$t = -2.11, p < .05$
Stice et al. (2002) <i>United States</i>	Mid adol. girls (14.9 years)	Social support – peers	Lower body dissatisfaction	$r = -.29, p < .05$
Taylor et al. (1998) <i>United States</i>	Early adol. girls (12.3 years)	Weight teasing – peers	Higher body dissatisfaction, controlling for BMI, perceived importance of weight/eating to peers, self-confidence, trying to look like people in the media	$b = 4.58, p < .001$
Thompson et al. (2007) <i>United States</i>	Mid adol. girls (14.5 years)	Appearance conversations – friends	No association with body dissatisfaction, controlling for attributions about popularity and teasing, friend anti-dieting advice, friends as a source of influence and perceived friend preoccupation with weight and dieting	$p > .05$
	Mid adol. girls	Anti-dieting advice – friends	No association with body dissatisfaction, controlling for attributions about popularity and teasing, friend anti-dieting advice, friends as a source of influence and perceived friend preoccupation with weight and dieting	$p > .05$

	Mid adol. average-weight girls	Perceived friend preoccupation with weight and dieting	Higher body dissatisfaction, controlling for attributions about popularity and teasing, friend anti-dieting advice, friends as a source of influence and appearance conversations with peers	$\beta = .27, p < .01$
	Mid adol. overweight girls	Perceived friend preoccupation with weight and dieting	Higher body dissatisfaction, controlling for attributions about popularity and teasing, friend anti-dieting advice, friends as a source of influence and appearance conversations with peers	$\beta = .25, p < .05$
	Mid adol. average-weight girls	Belief that friends influence own ideas of perfect body & weight loss strategies	No association with body dissatisfaction, controlling for attributions about popularity and teasing, friend anti-dieting advice, appearance conversations with peers, friend preoccupation with weight & dieting	$\beta = .13, p > .05$
	Mid adol. overweight girls	Belief that friends influence own ideas of perfect body & weight loss strategies	Higher body dissatisfaction, controlling for attributions about popularity and teasing, friend anti-dieting advice, appearance conversations with peers, friend preoccupation with weight/diet	$\beta = .31, p < .01$
Tiggemann et al. (2000) ^b <i>Australia</i>	Mid adol. girls (approx. 16 yrs)	Terms used to describe self	Girls use emphatically negative terminology to describe themselves. E.g., fat, thunder thighs, and heifers	Qualitative study
		Reasons for wanting to be thinner	The second most frequent reason for wanting to be thinner (following the influence of models and media) was to be attractive and receive more attention	Qualitative study
Tremblay & Lariviere (2009) <i>Canada</i>	Early – mid adol. girls (range = 9-16)	Pressure to be thin – friends	Lower body satisfaction	$r = -.12, p < .01$
Vander Wal & Thelen (2000) <i>United States</i>	Early adol. girls (10.3 years)	Teasing – peers	Higher body dissatisfaction (using two scales), controlling for friends' investment in dieting	$\beta = .53, p < .001$
		Appearance comparison – peers	Higher body dissatisfaction, controlling for social anxiety and BMI	$\beta = .60, p < .001$ $\beta = .34, p < .001$
Vincent & McCabe (2000) <i>Australia</i>	Early – late boys & girls (13.77 years)	Modelling of weight loss behaviour – peers	No association with body dissatisfaction, controlling for relationship quality, and appearance-related conversation, encouragement, and negative commentary from friends or family	$p > .01$

	Early – late adol. boys	Appearance conversation – peers	No association with body dissatisfaction, controlling for relationship quality, and appearance-related encouragement, modelling, and negative commentary from friends or family	$p > .01$
	Early – late adol. girls	Appearance conversation – peers	Higher body dissatisfaction, controlling for relationship quality, and appearance-related reinforcement, modelling, and negative commentary from friends or family	$sr^2 = .02, p < .01$
	Early – late adol. boys & girls	Perceived pressure to lose weight – peers	No association with body dissatisfaction, controlling for relationship quality, and appearance-related conversation, modelling, and negative commentary from friends or family	$p > .01$
	Early – late boys & girls	Appearance criticism – peers	No association with body dissatisfaction	$p > .01$
	Early – late adol. boys	Lower relationship quality – peers (higher score = lower quality)	Higher body dissatisfaction, controlling for BMI, familial and peer negative commentary, weight-related encouragement and modelling, and parental care and overprotection	$sr^2 = .04, p < .01$
	Early – late adol. girls	Lower relationship quality – peers	No association with body dissatisfaction	$p > .01$
Wertheim et al. ^b (1997) <i>Australia</i>	Mid adol. girls (approx. 15 yrs)	Modelling of dieting – friends	Dieting friends make girls feel concerned about their own weight and that they ought to be dieting	Qualitative study
		Appearance conversation – friends	Conversations involve complaining about weight, commenting on disliked body parts, and discussing weight loss/gain	Qualitative study
Woelders et al. ^a (2010) <i>Netherlands</i>	Mid adol. girls (13.8 years)	Self-reported body dissatisfaction friends	Higher individual body dissatisfaction concurrently	$r = .19, p < .05$
		Self-reported body dissatisfaction friends	Higher individual body dissatisfaction one year later	$r = .12, p < .05$

^aLongitudinal design.^bQualitative design.

Definitions of Friends versus Other Peer Relationships

In the 57 included studies, the terms ‘friends’ and ‘peers’ were used in varying ways, with many studies using the term ‘peers’ to describe both close friends and the wider peer group. However, the importance of differentiating between ‘friends’, defined as individuals who interact regularly and have a degree of mutual positive liking, and ‘peers’, defined as encompassing the wider social group of agemates, has previously been highlighted for conceptual and empirical reasons (Bukowski, Hoza, & Boivin, 1993; Jones, 2001). As such, when a study used the term ‘friend’ in their questionnaire or interview, the study will be described (in text and Tables) as targeting friend influences. When a study avoided the term ‘friend’ (e.g., referring to ‘other boys or girls you know’), the study will be described as targeting peer influences. It is also noted whether the study specified that friends or peers were of the same- or other-sex, or whether, instead, the target of the study could have been a mixed-gender peer group.

Results

Victimization Related to Weight and Appearance

Teasing. Teasing about appearance and weight is the most frequently researched social correlate of adolescent body dissatisfaction. Sixteen studies have focused on appearance and weight teasing, with only two studies failing to find a concurrent association between teasing and body dissatisfaction in girls or boys. Specifically, researchers have shown a consistent association between body dissatisfaction and appearance teasing or criticism by mixed-gender friends and peers (Ata et al., 2007; Eisenberg, Neumark-Sztainer, & Story, 2003; Kichler & Crowther, 2009; Lawler & Nixon, 2011; Lunde, Frisen, & Hwang, 2006; Lunner et al., 2000), with the association remaining significant after controlling for a large range of variables (Jones et al., 2004; Paxton et al. 1999; Taylor et al., 1998; Vander Wal & Thelen 2000).

In contrast, despite a positive bivariate association between weight teasing and body dissatisfaction in girls, Hutchinson and Rapee (2007) found that the association did not remain significant when controlling for BMI, self-esteem, depression, negative emotionality, psychological constraint, alcohol and cigarette use, friends' concerns with thinness or dieting, perceptions that friends influence own weight beliefs and behaviours, and peer pressure to be thin. Two studies found that appearance or weight teasing from an unspecified source was associated with body dissatisfaction in boys and girls. In both studies, peers were indicated as the primary source of teasing, followed by friends, then family (Barker & Galambos, 2003; Hayden-Wade et al., 2005). Interestingly, a study that employed not only self-reported appearance teasing by peers, but also classmate-reported teasing, found that lower body esteem was associated with higher levels of self-reported and classmate-reported teasing (Lieberman et al., 2001). This result indicates that the link between teasing and body dissatisfaction is not only due to the shared method of self-report across all measures, but that the association holds even when reports of teasing are based on classmates' observations. Two studies found no association between body dissatisfaction in boys or girls and appearance-related criticism from friends, a romantic partner, or peers (Shomaker & Furman, 2009; Vincent & McCabe, 2000).

Three studies have assessed the longitudinal associations between appearance-related teasing and body dissatisfaction, with inconsistent results. Jones (2004) found that appearance teasing by friends in boys and girls did not prospectively predict changes in body dissatisfaction over one year. On the other hand, Paxton and colleagues (2006) found appearance teasing by peers to be linked with greater body dissatisfaction five years later. However, across two studies, this relationship was not

significant when controlling for a range of influences (Paxton et al., 2006; Helfert & Warschburger, 2011).

In summary, boys and girls who report more teasing about their weight and appearance by their mixed-gender friends or peers show greater concurrent body dissatisfaction. Studies have predominantly assessed teasing by peers rather than friends. In contrast to many other areas of research on body image that find associations are stronger or only exist among girls, the associations between weight or appearance teasing and body dissatisfaction have tended to be stronger in boys (Barker & Galambos, 2003; Eisenberg et al., 2003; Lawler & Nixon, 2011; Paxton et al., 2006). Importantly, there are inconsistencies in terms of whether a longitudinal association exists, and whether the concurrent association remains significant when controlling for other factors. Other weight and body-related measures have been associated with both teasing and body dissatisfaction (e.g., BMI), suggesting that multiple interrelated weight and image concerns are important to consider, perhaps as a third-variable explanation. Future research should consider multivariate pathways and processes that can add to what is currently emerging about the direct and indirect associations between body dissatisfaction and teasing. In fact, across all types of friend and peer influences these multivariate pathways and processes, including those that relate to BMI, are important research targets. In the above studies, no single measured or extraneous variable has been identified as a clear mediator of associations between other measures.

Despite the inconsistencies described above, the reviewed studies suggest that children and adolescents who experience appearance teasing from friends or peers are likely to be more dissatisfied with their bodies relative to others. In relation to Social Learning Theory, weight and appearance teasing are likely to be poignant negative consequences attributed to an appearance that does not match peers' ideals. Appearance

teasing clearly communicates how one's appearance differs from socially accepted appearance ideals, shaping the sufferer's beliefs and internalized standards of beauty, body shape, and body size. One outcome of these experiences is body dissatisfaction, because it is difficult for girls to resist the thin ideal and for both girls and boys to meet standards of body shape and size. Hence, children and adolescents often perceive that they cannot achieve the ideal, and body image concerns consequently result (Kopp & Zimmer-Gembeck, 2011).

Friends' Body Dissatisfaction

Two processes typically explain the similarity in attitudes and behaviours often seen between friends: selection, the formation of groups on the basis of relevant attitudes and behaviours; and socialization, behaviour or attitude change as a result of group membership (Ennett & Bauman, 1994; Fisher & Bauman, 1988). No study has attempted to differentiate selection from socialization when studying dyadic or friendship group influences on body dissatisfaction leaving a gap that could be filled with future research. However, five studies have assessed friend similarity in body dissatisfaction. Four studies (Hutchinson & Rapee, 2007; Farrow, Haycraft, & Meyer, 2011; Paxton, Schutz, Wertheim, & Muir, 1999; Woelders, Larsen, Sholte, Cillessen, & Engels, 2010), obtained independent reports of friends' self-reported body dissatisfaction. In general, these studies suggest that friends are similar in their body dissatisfaction, just as has been found in other domains, including school performance, alcohol, drug and cigarette use, hobbies and interests, and deviant behaviour (Ali & Dwyer, 2011; Burgess, Sanderson, & Umana-Aponte, 2011; Kandel, 1978b; Selfhout, Branje, ter Bogt, & Meeus, 2009; Urberg, Degirmencioglu, & Pilgrim, 1997). However, all studies included girls only, and findings depended on age. Associations between the body dissatisfaction of friends were found in older samples (Paxton et al.,

1999; Woelders et al., 2010), but not when participants were younger than an average age of 13 (Farrow et al., 2011; Hutchinson & Rapee, 2007). Interestingly, Hutchinson and Rapee (2007) found that early adolescent girls within friendship groups were similar in dietary restraint, extreme weight loss behaviours, and binge eating. It is noteworthy that BMI was not consistently controlled for; however the presence or absence of BMI as a control did not differentiate between the studies that did find similarity in body dissatisfaction, and those that did not. Regardless of the findings above, young adolescent girls perceive similarity with their friends, as girls' body dissatisfaction was associated with perceptions of their friends' dissatisfaction (Clark & Tiggemann, 2006).

Friendship Socialization

Friends' modelling. The link between body dissatisfaction and modelling of weight loss behaviours by friends or peers has been the focus in two qualitative (Carey et al., 2011; Wertheim et al., 1997), six cross-sectional survey (Blowers et al., 2003; Farrow et al., 2011; Kelly, Wall, Eisenberg, Story, & Neumark-Sztainer, 2005; Lieberman et al., 2001; Page et al., 2006; Vincent & McCabe, 2000), and two longitudinal survey studies (Helfert & Warschburger, 2011; Paxton et al., 2006). In three cross-sectional studies, greater body dissatisfaction was found in early adolescent girls who reported that their friends model dieting or weight loss behaviours (Blowers et al., 2003; Farrow et al., 2011), with the association remaining when controlling for age, BMI, popularity, self-esteem, externalized self-perception, appearance-related attributions, appearance teasing, and social reinforcement (Lieberman et al., 2001). Interestingly, the purpose of dieting may be important, as positive body satisfaction was found to be lower in early adolescent girls who reported that their friends diet to lose weight, and higher in girls who described their friends as caring about exercise and

being fit (Kelly et al., 2005). In the one study of dieting among peer groups, European girls, but not boys, who perceived themselves as “too fat” estimated that a higher percentage of same-sex peers at school were dieting to lose weight (Page et al., 2006). This finding indicates that an individual’s appearance concerns may influence estimates of peers’ appearance concerns and behaviours, and suggests that researchers need to expand their use of methods beyond self-report assessments of peers’ attitudes and behaviours.

Notably, evidence for an association between peers’ dieting and body dissatisfaction is weaker when measurement quality is lower. When a single item measure of peer modelling was used, peer modelling of weight loss behaviours did not uniquely account for body dissatisfaction in girls or boys when controlling for relationship quality, and appearance-related conversation, encouragement, and negative commentary from peers and family (Vincent & McCabe, 2000). The univariate association was not reported. The development and use of quality measures is one important area for future research.

Results from two longitudinal studies (Helfert & Warschburger, 2011; Paxton et al., 2006) are less clear. Friends’ modelling of dieting behaviours prospectively predicted increased body dissatisfaction over time in early adolescent girls, but not in early or middle adolescent boys, when controlling for individual, parent, and peer influences (Paxton et al., 2006). On the other hand, findings for mid-adolescent girls are mixed, with increased body dissatisfaction over time being demonstrated in one study (Helfert & Warschburger, 2011) but not the other (Paxton et al., 2006).

The two qualitative studies provide adolescents’ views that could explain why these associations between friend and peer modelling of dieting behaviour and body dissatisfaction have been found. Adolescent girls have described weight and dieting as

a group activity, whereby entire cliques engage in dieting to fit in with others and demonstrate shared commitment to the thin ideal (Carey et al., 2011). However, dieting friends make girls feel concerned about their own weight, and make them feel that they too ought to be dieting (Wertheim et al., 1997).

In summary, modelling of weight loss behaviours may encourage friends to question their own eating or weight, and create an incentive to engage in similar behaviours through creating expectations of positive results. Appearance concerns may develop from an inability to achieve the thinness ideal that is becoming increasingly difficult to reach (Myers & Crowther, 2007). The results of cross-sectional and longitudinal studies indicate that during early adolescence, modelling of dieting behaviours by mixed-gender friends or peers have correlational associations with adolescent girls' body dissatisfaction, both concurrently and longitudinally. Yet, by mid-adolescence, dieting becomes more common, and may not have the impact that it did in earlier years. Alternatively, Paxton and colleagues (2006) proposed that major changes occurring within the friend and peer context from early to middle adolescence may weaken associations between friends' dieting and body dissatisfaction. Furthermore, it is important also to consider the nature of the message being socially transmitted, as body satisfaction may differ according to whether friends are modelling strategies to be thinner or strategies to support good health (Kelly et al., 2005). Finally, modelling of dieting behaviours among males appears to be less common and may have less influence on boys' body image (e.g., Paxton et al., 2006), but this finding requires replication.

Friends' conversations about appearance. Conversations with friends relating to body size and shape, diet, exercise and clothing, have been theorized to heighten awareness of appearance ideals, and increase attention to the body (Jones, 2004).

Indeed, girls report that their conversations often focus on these issues (Wertheim et al., 1997). In 10 cross-sectional and two longitudinal studies, conversation with friends has been addressed but has been measured in a variety of ways. Despite this variety, findings show a consistent positive association between appearance conversations with friends and body dissatisfaction, concurrently and longitudinally.

Across five studies, greater frequency of conversations with friends that focused on appearance was associated with heightened body dissatisfaction and poorer body esteem (Clark & Tiggemann, 2006, 2007; Jones et al., 2004; Shroff & Thompson, 2006a; Sinton & Birch, 2006). This was found for both girls and boys, but the association was weaker in boys. Lawler and Nixon (2011) found that appearance conversations with friends were associated with body dissatisfaction in girls but not boys. The same finding was reported by Vincent and McCabe (2000), who also controlled for relationship quality, appearance-related encouragement, modelling, and negative commentary from peers and family. These gender differences might be explained to some extent by a study that looked more closely at boys' appearance concerns and conversations (Jones & Crawford, 2005). These authors concluded that while girls may show a singular pathway to body dissatisfaction through weight concerns, there might be two pathways among boys: one via weight concerns, and a second pathway via muscularity concerns. In their male sample, Jones and Crawford (2005) found that appearance conversations with friends predicted weight concern, whereas muscle-building conversations predicted muscularity concern. Body dissatisfaction was associated with weight concern and muscularity concern. Notably, Jones, Bain and King (2008) proposed that weight concerns remain prominent for early adolescent boys, whereas muscularity concerns may become more important as adolescent boys mature. These results highlight the importance of considering

constructs and measures relevant to both boys and girls, in order to provide a clearer understanding of adolescent body image. Thus, the gender differences in associations between appearance conversations and body dissatisfaction may reflect a real difference in the degree to which body image in boys and girls is linked with appearance conversation with friends, or they may reflect an assessment bias toward female-oriented attitudes and concerns.

Although a consistent association between appearance conversations with friends and body dissatisfaction is evident, two studies (Clark & Tiggemann, 2007; Thompson et al., 2007) found that the bivariate association does not remain significant when controlling for other influences, including BMI, age, exposure to appearance TV and magazines, emotional autonomy, appearance schemas, appearance-related attributions, appearance teasing, perceptions that friends influence own appearance-related beliefs, and friend preoccupation with weight or dieting.

Longitudinally, appearance conversations with friends were associated with higher body dissatisfaction, and prospective increases in body dissatisfaction one year later in boys and girls (Blodgett Salafia & Gondoli, 2011; Jones, 2004). The association did not remain significant when Jones (2004) controlled for BMI, peer appearance teasing, perceptions that one's acceptance is dependent on appearance, social comparison, and internalisation of appearance ideals.

A specific type of appearance conversation is that of 'fat talk', which is conversing with friends or peers about one's weight or body in a self-disparaging manner (Nichter, 2000). In a qualitative study, girls were found to use emphatically negative terminology to describe themselves. For example, they used the words 'fat', 'thunder thighs', and 'heifers' (Tiggemann, Gardiner, & Slater, 2000). Fat talk predominantly occurs among females, and has been proposed to perform a range of

functions, such as to express distress, conform to perceived social norms, strengthen group cohesion, elicit emotional support or feedback, to establish sameness (rather than superior thinness) to friends, and to call attention to one's own imperfections before others notice (Britton, Martz, Bazzini, Curtin, & LeaShomb, 2006; Nichter, 2000).

In general, findings indicate that adolescent boys and girls who more frequently engage in appearance conversations with mixed-gender friends report greater body dissatisfaction, both concurrently and longitudinally. This association tends to be stronger in girls, and may be reduced in size after accounting for BMI, other peer relationship factors, and personal attitudes. These findings suggest that appearance conversations with friends are linked indirectly with body dissatisfaction, perhaps via strengthening of personal attitudes and beliefs or internalisation of beauty standards that are transmitted through conversation. Talking with friends about dieting, exercise, and clothing appears to influence beliefs about, and investment in appearance, which in turn may impact body dissatisfaction. From a Social Identity perspective, the conversations that occur between members of a social group play a key role in transmitting group norms and behaviours. Conversations relating to diet, exercise, and clothing are likely to provide a vehicle for sharing and reinforcing the group's appearance-related ideals and representations. Further, Social Learning Theory recognizes that behaviour and attitudes can be learned through symbolic sharing of effective actions. The persistent conversational emphasis on unhealthy and narrow appearance ideals between friends, coupled with the use of emphatic terminology, appears to be creating an influential interpersonal context.

Peer pressure to achieve a more ideal body. Peer pressure is one of the most frequently studied characteristics of friendships and peer groups, with 11 cross-sectional and three longitudinal studies testing associations with adolescent body dissatisfaction.

Across seven cross-sectional studies, adolescent boys and girls were less satisfied with their bodies when they perceived more pressure from mixed-gender friends or peers to be thin (Peterson, Paulson, & Williams, 2007; Shomaker & Furman, 2009; Tremblay & Lariviere, 2009). The association remained significant even when researchers controlled for a large range of socio-cultural and individual biological and psychological influences (Dunkley, Wertheim, & Paxton, 2001; Hutchinson & Rapee, 2007; Lieberman et al., 2001; Paxton et al., 1999). Similarly, girls were more dissatisfied with their bodies when they believed friends had an influence on their own ideas about the perfect body and use of weight loss strategies (Shroff & Thompson, 2006), with the relationship remaining significant in over-weight girls, but not average-weight girls, when applying a number of controls. Two studies of Australian adolescents did not find an association (Blowers et al., 2003; Vincent & McCabe, 2000), with Vincent and McCabe (2000) controlling for relationship quality, appearance-related conversation, modelling, and negative commentary from friends or family. A univariate association was not reported. Notably, these two studies found relatively low levels of pressure from friends or peers compared to other studies.

In two studies, appearance-related pressure from friends was examined more closely by identifying the source (male and female best friends) or the type of pressure perceived (lose weight and increase muscle tone). Conflicting findings were found. In the first study (Stanford & McCabe, 2005), body dissatisfaction in boys was associated with perceived pressure to be thin from other-sex best friend, but not same-sex best friend, while in the second study (Ricciardelli & McCabe, 2001) body dissatisfaction in girls and boys was not associated with perceived pressure to lose weight or increase muscles from same-sex or other-sex best friends. Interestingly in this second study, pressure from same-sex best friend to increase muscle mass uniquely predicted

engagement in strategies to increase muscles in boys and girls. In contrast, pressure from same-sex friend to lose weight uniquely predicted engagement in strategies to lose weight in boys, but not girls (Ricciardelli & McCabe, 2001). It may be that the influence of the source of pressure may differ between adolescents in different locations. In some schools, the attention and perceived pressure from same-sex friends may be particularly salient (as in Ricciardelli & McCabe's study above), while in other schools the schoolyard culture may dictate that other-sex friends are a more salient influence. Moreover, the impact of perceived pressure may also differ. Some adolescents develop body dissatisfaction in association with pressure from friends or peers, while others enlist active and positive strategies to manage this without becoming dissatisfied with their appearance. Researchers might explore concepts such as locus of control, problem solving, or coping styles (e.g., see Furnham & Greaves, 1994; VanBoven & Espelage, 2006) to explain these differences.

The link between perceived pressure to be thin and body dissatisfaction has also been assessed in three longitudinal studies. Early and middle adolescents who experienced greater pressure from friends to be thin reported elevated body dissatisfaction nine and 12 months later (Blodgett Salafia & Gondoli, 2011; Presnell et al., 2004). When controlling for BMI and negative affect, the relationship between perceived pressure from friends to be thin and change in body dissatisfaction was no longer significant (Presnell et al., 2004). On the other hand, McCabe and Ricciardelli (2005) found that perceived pressure to change one's body (i.e., lose weight or increase muscle mass) from parents, best male friend, and best female friend was not associated with changes in body dissatisfaction over 16 months in boys or girls. However, the stability of body dissatisfaction and perceived pressure in this sample over 16 months might explain the null result.

In summary, the evidence shows that boys and girls who perceive more pressure from their friends or peers to lose weight, be thin, or strive for the perfect body, consistently report greater body dissatisfaction. Also, perceived pressure from friends to lose weight is associated with increases in body dissatisfaction over time for older adolescents. However, a unique predictive relationship was not consistently detected, possibly due to the roles of BMI and negative affect in accounting for these associations. Social Identity Theory suggests that group pressure to conform to appearance norms is aimed at promoting group congruency, with body dissatisfaction likely resulting from an inability to achieve thinness ideals. Notably, this topic is one in which researchers have considered, and found conflicting findings, regarding the source of social pressure (i.e., same-sex versus other-sex friends), and the potential appearance-related correlate (i.e., body dissatisfaction or adoption of body changing techniques). Further research is needed to identify potential moderators and provide explanations for divergent results.

Friends' anti-dieting advice. In contrast to the studies above, which assessed perceived pressure among adolescents to achieve appearance ideals, some adolescents might attempt to discourage friends from dieting. However, two studies based on the same female sample suggest that those who received anti-dieting advice from mixed-gender friends did not show lower body dissatisfaction (Shroff & Thompson, 2006; Thompson et al., 2007). In fact, friends' anti-dieting advice was positively associated with appearance conversations with friends and perceptions that friends are preoccupied with weight or dieting (Shroff & Thompson, 2006). Thus, although very little research has been conducted, friends' anti-dieting advice may be counter-productive; it may increase the attention given to appearance, and facilitate appearance conversation and

the recognition of the importance of appearance among friends. These interactions may strengthen dysfunctional body image attitudes and behaviours (Jones, 2004).

Social appearance comparison. Drawing from Social Comparison Theory (Festinger, 1954), social appearance comparisons involve comparing qualities of one's own appearance to the appearance of others, for the purpose of self-evaluation (Schutz, Paxton, & Wertheim, 2002). According to Social Identity Theory, individuals tend to compare themselves to others who are similar to the self in some way, and therefore ingroup members are most commonly selected as a comparison source (Worchel et al., 2000). Accordingly, adolescents have been shown to compare themselves to friends and close peers most frequently, with more distal peers, family members and individuals in the media being less frequent, but still important, comparison targets (Jones, 2001; Schutz et al., 2002). Importantly, across six studies, adolescent engagement in social comparison with peers and models showed a moderate to strong positive association with body dissatisfaction (Blowers et al., 2003; Jones, 2001; Jones, 2004; Schutz et al., 2002; Paxton et al., 1999; Vander Wal & Thelen, 2000). These associations remained significant for girls both concurrently (Vander Wal & Thelen, 2000) and longitudinally (Jones, 2004), when controlling for a range of influences, including BMI, social anxiety, appearance teasing and conversations, appearance-dependent acceptance and internalized ideals. Notably, social comparison has demonstrated evidence as a mediator of the association between socio-cultural influences and body dissatisfaction (Jones, 2004; Keery et al., 2004; Shroff & Thompson, 2006). Engaging in social comparison may contribute to body dissatisfaction by highlighting perceived physical deficits (Jones, 2001).

Adolescents' Perceptions of their Friends

Valuing thinness and preoccupation with appearance. Nine studies have investigated the link between girls' body dissatisfaction and the belief that friends value attractiveness or are preoccupied with appearance. Overall, results showed that adolescent girls who believe their mixed-gender friends are preoccupied with thinness and dieting, or perceive that their friends place high importance on appearances, report greater body dissatisfaction (Clark & Tiggemann, 2006; Paxton et al., 1999; Schutz & Paxton, 2007; Shroff & Thompson, 2006a; Thompson et al., 2007). Similarly, perceived importance of own body to one's best girlfriend and boyfriend was linked with greater body dissatisfaction (Griffiths & McCabe, 2000). However, these associations do not always remain after controlling for other individual and social influence variables (Griffiths & McCabe, 2000; Hutchinson & Rapee, 2007; Vander Wal & Thelen, 2000). Importantly, Sands and Wardle (2003) found that the association between body dissatisfaction and best girl friends' appearance preoccupation was no longer significant when internalisation of appearance ideals (i.e., personal acceptance of society's appearance ideals) was also entered into the analysis, suggesting internalisation as a possible mediator.

According to Social Identity Theory, a social group that values thinness and is preoccupied with appearance is likely to expose group members to attitudes and behaviours consistent with these norms, and create pressure for members to adopt similar behavioural and attitudinal patterns. Identification with an appearance-preoccupied social group could encourage concerns about one's own appearance. The results of this review support this theory in girls, however the link between body dissatisfaction and friends' appearance preoccupation has not been examined in boys.

Achieving acceptance via conforming to the ideal body. In a qualitative study, mid-adolescent girls reported that being thin is important because they perceive it to impact their acceptance by friends (Mooney, Farley, & Strugnell, 2009). Likewise, in another qualitative study, the second most frequent reason for wanting to be thinner (following the influence of models and the media) was to be attractive and receive more attention (Tiggemann et al., 2000). Across three cross-sectional studies of girls, body dissatisfaction was found to be associated with the perception that thinness would be advantageous to interpersonal relationships, or important for attracting the attention of boys (Schutz & Paxton, 2007; Paxton et al., 1999; Paxton, Norris, Wertheim, Durkin, & Anderson, 2005). These correlations remained significant even when controlling for a large number of individual biological and psychological factors, as well as other friend, family and media influences. The final study employed a longitudinal research design, and found that the belief that acceptance by peers is dependent on appearance was associated with increases in body dissatisfaction over one year in girls, but not in boys (Jones, 2004). However, the association among girls did not remain significant when controlling for BMI, Time 1 body dissatisfaction, appearance conversations and teasing, social comparison, and internalized appearance ideals.

Overall, adolescent girls who believe that their acceptance or liking by same- and other-sex friends is influenced by their appearance are more dissatisfied with their bodies. While studies have shown that adolescents who are rated as more physically attractive are also more popular (i.e., more prominent and well known), they are not necessarily better liked by peers (e.g., Wang, Houshyar, & Prinstein, 2006). Nevertheless, many young people appear to have formed expectancies that attractiveness is rewarded with greater attention and social acceptance, and consequently form the belief that being thinner would be beneficial to their social

relationships. Extreme and dysfunctional expectancies are proposed to play a role in the development of an extreme drive for thinness by shaping behaviour and attitudes (Hohlstein, Smith, & Atlas, 1998). It follows that body dissatisfaction may also result from an inability to achieve these appearance and social goals.

Friendship Quality: Social Support and Conflict

Although direct communication about body concerns and attractiveness is likely to have the strongest socializing role among adolescents, general quality of friendship may also be relevant to understanding self-concepts and esteem when related to the body.

Social support. Five studies were located that examined associations of social support and body dissatisfaction, and another five studies that examined friendship quality. It has been hypothesized that social support from friends (i.e., the satisfaction of one's needs for support, information and feedback; Procidano & Heller, 1983) may help defend against socio-cultural pressures and support a more positive body image (Stice & Whitenton, 2002). Three studies support this idea, finding that social support from mixed-gender friends or peers was associated with lower body dissatisfaction in boys and girls, both currently and one and two years later (Ata et al., 2007; Bearman, Presnell, Martinez, & Stice, 2006; Stice, Presnell, & Spangler, 2002). Notably, there were inconsistencies in terms of whether the relationship remained when using a figure-rating assessment of body dissatisfaction, and when controlling for other individual and socio-cultural influences. In contrast to the findings above, two studies did not find associations (Paxton et al., 1999; Shisslak et al., 1998). Targeting social support from friends, compared to the support of peers, did not differentiate studies that did find associations from those that did not.

Five studies reported on associations between adolescents' body dissatisfaction and friendship quality. Lower body dissatisfaction in boys and girls was associated with a stronger sense of trust, sensitivity, and helpfulness from friends (O'Koon, 1997), and higher quality friend and classmate relationships (Holsen, Jones, & Skogbrott Birkeland, 2012). In another study, lower body dissatisfaction was associated with higher quality peer relationships in boys but not girls (Vincent & McCabe, 2000). In contrast however, two studies found that quality of communication with friends, friendship security, and friendship intimacy were not associated with body dissatisfaction (Palmqvist & Santavirta, 2006; Schutz & Paxton, 2007). Overall, the relationship between body dissatisfaction and factors relating to friendship quality or support remains unclear.

Negative friendship qualities. Looking to the other end of the relationship quality spectrum, it has been theorized that negative interactions within friendships and peer groups, such as conflict, may be associated with poorer body image. Across three studies (one including boys), adolescents with higher body dissatisfaction reported more verbal bullying, physical bullying, and social bullying (Fox & Farrow, 2009), conflict with friends and emotional detachment (Schutz & Paxton, 2007), and social exclusion from peers (Lunde, Frisen, & Hwang, 2006). Helfert and Warschburger (2011) found that adolescent boys with increasing feelings of appearance-based social exclusion from peers reported increased body dissatisfaction a year later, after controlling for BMI, age, and parent, friend and peer influences. This association was not found for girls.

Research shows that friendships early in life can have many benefits, such as promoting happiness through need fulfilment and enhancement of adaptive functioning later in life (Bagwell, Newcomb, & Bukowski, 1998; Demir & Ozdemir, 2010). From a Social Learning perspective, higher quality relationships that provide unconditional

reinforcement regardless of appearance could encourage extinction of dysfunctional appearance attitudes. Alternatively however, young people may be especially likely to imitate and learn from friends with whom they have a closer relationship. Similarly, Social Identity Theory recognizes that identification with a social group fosters adherence to the group's norms, and relationships that are more intimate or that have greater social support are likely to cultivate closer identification with the social group, and will subsequently encourage greater adherence to the group's (potentially unhealthy) norms. It is likely that friendships, even when high quality, can include the transmission of messages that negatively affect body dissatisfaction via comparisons and shared norms about body size and shape. As such, positive friendship quality may moderate associations between risk factors in the friend or peer group and body dissatisfaction, such that the effects are strongest when friendship quality is high. However this hypothesis has not been examined in the reviewed literature.

The results of this review indicate that negative social interactions, such as verbal and physical bullying or social exclusion from mixed-gender friends and peers, may be a risk factor for increased body dissatisfaction, with preliminary longitudinal research suggesting that negative social interactions may lead to subsequent body dissatisfaction. On the other hand however, the evidence was conflicting regarding measures of positive relationship quality. Friendship quality and social support from friends or peers may provide an indication of the overall emotional context of the relationship, but in the reviewed literature they do not show consistent associations with body dissatisfaction. In consideration of the clear and consistent associations demonstrated by the more direct appearance-focused interactions between friends (e.g., appearance teasing, peer pressure and conversations), these broad and multifaceted friendship variables do not appear to be contributing to our understanding of adolescent

body dissatisfaction. While protective influences are important and should continue to be a research focus, results of this review suggest that resources would be best targeted to more specific and direct appearance-related interactions between friends.

Alternatively, a theoretical framework for conceptualizing the role of the broader emotional context of friendships in body dissatisfaction may provide a clearer understanding of the findings and guide future research in this area.

Ethnicity

Historically, body dissatisfaction has been believed to differ between ethnic groups within Western countries due to a variation in socio-cultural ideals, values, and influences, with researchers suggesting that White American participants report higher body dissatisfaction than, example, Black, Hispanic and Asian American individuals (Barry & Grilo, 2002; Claudat, Warren, & Durette, 2012; Mintz & Kashubeck, 1999). However, some researchers have challenged the view that meaningful ethnic differences within Western countries currently exist (e.g., Arriaza & Mann, 2001; Grabe & Shibley Hyde, 2006; Shaw, Ramirez, Trost, Randall, & Stice, 2004). In the studies included in this review, researchers have predominantly sampled White adolescents, with the examination of ethnicity effects often precluded by the too small sample of those from minority ethnic backgrounds. Of particular relevance to the aims of this review are two studies that considered how the relationship between body dissatisfaction and friend or peer influences may differ according to ethnicity. In both studies (one in the US and one in Australia), there was no evidence of a difference in associations between ethnic groups (Eisenberg et al., 2003; Lunner et al., 2000).

Research Strengths and Limitations

As can be seen in this review, the past 15 years has seen many friend and peer relationship characteristics examined as correlates of adolescents' body dissatisfaction.

A large number of studies have focused on the potential negative influences of adolescent social groups (e.g., Fox & Farrow, 2009; Lunde et al., 2006; Shomaker & Furman, 2009; Taylor et al., 1998; Vander Wal & Thelen, 2000). However, in recent years there has been an increase in attention to the ways that friends and peers may be positive and supportive of each other (e.g., O’Koon, 1997; Shisslak et al., 1998; Stice et al., 2002). The many qualitative and cross-sectional studies in this area have been invaluable because they have described the processes involved in body dissatisfaction and relationships from the view of adolescents, and have identified associations and potential mediational pathways that warrant further investigation and investment. However, the valuable insights provided by the small number of longitudinal studies that have examined the role of friends and peers in shaping body dissatisfaction over time are particularly informative (e.g., Bearman et al., 2006; Jones, 2004; McCabe & Ricciardelli, 2005).

There has also been an improvement in study design and measurement, with most now assessing and accounting for a multitude of other factors when examining associations between friend or peer influences and body dissatisfaction, and using larger sample sizes. Researchers are increasingly attending to body dissatisfaction in males, and making use of measures modified or designed for males (e.g., McCabe & Ricciardelli, 2001; 2005; McCabe, Ricciardelli, & Ridge, 2006). Nevertheless, a common criticism of the body image literature (e.g., McCabe & Ricciardelli, 2001), and one that is still apparent in this review, is the remaining deficiency of research examining male body image, as well as associated concerns and behaviours, such as muscularity preoccupation.

A final point to be raised is in relation to measurement instruments. In terms of the measurement of body dissatisfaction, a figure-rating scale appears to provide an

overall indication of an individual's divergence from their ideal size or shape.

However, it is less able to provide more fine-grained body evaluations, relating for example, to muscle tone, firmness of flesh, or shape of particular body parts. On the other hand, multiple item questionnaire scales tend to target specific appearance concerns, potentially without capturing overall dissatisfaction with body size or shape. In some studies (e.g., Ata et al., 2007; Dunkley et al., 2001; Vander Wal & Thelen, 2000), researchers have used a multiple item scale in conjunction with a figure-rating scale, likely to ensure comprehensiveness. It is noteworthy that at times significant results were found for one type of scale but not the other, demonstrating their potential difference and the value of using both. Unfortunately, there was not always a discussion of why these differences might occur.

Future Research Directions

In the body of the review multiple suggestions were provided for future research and these ideas are summarized, as well as additional ideas described below, in Table 2.2. The first additional suggestion for future research is one that arises regularly, but must be restated here. Future body image research should include both boys and girls. Furthermore, researchers are encouraged to make use of existing scales specifically designed or modified for boys, or to develop new measures that take into account the specific body image and weight management issues that concern boys and men. A number of findings identified in this review were tested in studies of girls but not boys, including similarity in friends' body dissatisfaction, and the association of body dissatisfaction with anti-dieting advice and perceptions of the importance of thinness (or muscularity) to friends. When studying the influence of friends on boys, it will be important to consider gender differences in peer relationships and the features of friendships that may be more or less important to girls compared to boys.

The mutually influential nature of adolescent friendships highlights the importance of examining how friends' body image and associated concerns may be linked. Three studies (Hutchinson & Rapee, 2007; Paxton et al., 1999; Woelders et al., 2010) have provided valuable understanding of how adolescent girls may be similar to their friends in terms of body dissatisfaction and eating behaviours. However, longitudinal research that specifically aims to differentiate selection from socialization processes is needed to assist in the understanding of how appearance concerns develop. This research will inform our understanding of the formation and dissolution of friendships in relation to body image attitudes and behaviour, and about the process of socialization, which cannot be determined from cross-sectional designs (Kandel, 1978). Further, these findings could provide valuable guidance to clinicians in their use of adolescent friendships as an intervention platform for body dissatisfaction and related disorders.

Adolescence is a period of development characterized by an increase in interest in the opposite sex (Zimmer-Gembeck, 1999), and yet minimal research was identified in this review that addressed these relationships. Future research could provide greater emphasis on the role of the opposite sex, and romantic relationships in particular, in shaping adolescent body evaluations.

Finally, an area that has strong relevance among young people especially, but which was not addressed in the studies identified in this review, is the area of social media (see O'Keefee et al., 2011). Future research must consider the role of online social contacts, via Facebook or Twitter for example, in adolescent appearance concerns and behaviours. The direct interactions between individuals, as well as the indirect interactions through commentary, photographs and videos posted by online friends, transmit salient appearance-related messages, ideals and reinforcement.

Conclusion

This chapter summarized the past 15 years of research that has investigated how friends and peers may influence adolescents' body dissatisfaction and esteem. The aim was to identify the key characteristics of adolescent social relationships that are consistently linked with body dissatisfaction, and provide a foundation for research that seeks to intervene in the behaviours between friends or peers to reduce body dissatisfaction. Overall, it was found that pressure to be thin and appearance teasing from friends were most widely studied and most consistently linked with poorer body dissatisfaction. Further, body dissatisfaction tends to be higher when adolescents are exposed to friends' appearance conversations or weight loss strategies, engage in social comparison, and when messages between friends convey the importance of thinness and influence beliefs about the importance of appearance for social acceptance. Hence, elevated body image concerns and dissatisfaction is most likely to be found when an "appearance culture" (Jones, 2004) is created within friend or peer groups via explicit and overt, or even inadvertent, teasing, pressure and exploration of appearance-related issues.

Despite evidence that friend and peer group experiences are associated with body dissatisfaction, there was less consistency in associations when controlling for individual factors (such as BMI), and when examining the links between body dissatisfaction and friendship factors longitudinally. A range of other variables is associated with friendship characteristics and body dissatisfaction, suggesting a complex pattern of influences. BMI is an important biological variable that has a consistent association with body dissatisfaction (Jones et al., 2004) as well as some peer influence variables, such as weight teasing and pressure to lose weight (Blodgett Salafia et al., 2011; Lunner et al., 2000). However, controlling for BMI did not always reduce

the association between peer influence variables and body dissatisfaction to nonsignificance. Overall, these findings suggest that the appearance culture between friends has multiple complex associations with body dissatisfaction. This complex pattern is beginning to be explored but much remains unclear, making it an important arena for continued research.

A number of recommendations can be formed in relation to the treatment or prevention of body dissatisfaction. A greater understanding by friends, parents, teachers, and practitioners of the ways in which adolescents are directly and inadvertently influenced through their interactions with friends, may assist in reducing body dissatisfaction. It would be beneficial for an adolescent's social contacts to understand how appearance-focused exchanges - even those aimed at encouraging a friend *not* to diet - increases attention given to appearance, reinforces appearance ideals, creates pressure for conformity, and subsequently may foster body dissatisfaction. Adolescent relationships are an influential learning context in which social approval is a salient reward, and disapproval is a poignant negative consequence. The results of this review suggest that body image attitudes may be improved through teaching adolescents specific strategies to break their acceptance of, and beliefs around, the idea that social liking depends on attractiveness. Finally, adolescents should be educated and encouraged to create a culture within their friendships that is not appearance-focused. Identification with a friendship group that is preoccupied with thinness is likely to result in greater exposure to thin ideals and to activities that support and emphasize the thin ideal, creating pressure for uniformity among members. It would be beneficial to focus instead on adaptive and functional areas (e.g., creativity, interpersonal skills, active leisure activities for fun and fitness), reducing the attention given to superficial physical attributes (e.g., dieting, clothing, body shape), and resisting overt and covert pressures

to conform to unhealthy appearance standards. The potential benefits of making use of, and addressing, issues within friend and peer groups in prevention efforts was raised nearly two decades ago (Paxton, 1996). Since then, clinical research targeting some of these social risk factors, or making use of the adolescent social environment, has progressed, with preliminary findings supporting the call for further applied research in this area (Richardson & Paxton, 2010; Steese et al., 2006; Thompson, Russell-Mayhew, & Saraceni, 2012).

Table 2.2

A Summary of Suggestions for Future Research Directions on Friend and Peer Relationships and Body Dissatisfaction

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- 1 Further tests of longitudinal associations between appearance teasing and body dissatisfaction.
 - 2 Confirmation of the unique association between appearance teasing and body dissatisfaction, and/or identify the variables that may account for and/or further explain the processes involved.
 - 3 Consideration to multivariate pathways and processes that contribute to our understanding of direct and indirect associations of body dissatisfaction with friend and peer influences.
 - 4 Longitudinal research to better differentiate selection from socialization processes in relation to body image attitudes and behaviour.
 - 5 Further examination of the association between friends' anti-dieting advice and body dissatisfaction.
 - 6 Identification of potential moderators and provision of explanations to account for the divergent associations found concerning perceived pressure from friends to be attractive. Conflicting findings were reported in terms of sources of perceived pressure to be attractive (i.e., same sex versus opposite sex friends) and the potential appearance-related correlate (i.e., body dissatisfaction or adoption of body changing techniques). Researchers might explore concepts such as locus of control, problem solving, or coping styles as potential moderators.
 - 7 Clarify how the role of friends or peers may differ for adolescents with different ethnic backgrounds.
 - 8 Greater use of longitudinal and experimental research across all areas.
 - 9 Development of and greater use of psychometrically sound measures.
 - 10 Consistent discussion of any differences in findings when comparing results using figure-rating and multiple item rating scales to assess body dissatisfaction.
 - 11 Development of measures suitable for males and females, and further testing of whether existing measures are equally reliable and valid with males and females.

- 12 Greater focus on boys' body image concerns and related issues. In particular, exploration of friends' similarity in body dissatisfaction, and the association of body dissatisfaction with anti-dieting advice and perceptions of the importance of thinness (or muscularity) to friends.
 - 13 Additional focus on potential protective factors. Recommended targeting more specific and direct characteristics of social relationships as they relate to appearance, rather than broad, multifaceted variables (e.g., friendship quality). Alternatively, development of a theoretical framework for conceptualizing the role of the broader emotional context of friendships in body dissatisfaction to guide future research and provide a clearer understanding of the conflicting findings in this area.
 - 14 Exploration of the role of the opposite sex and romantic relationships in adolescent body dissatisfaction.
 - 15 Examination of the role of relationships based in social media, in adolescent body dissatisfaction.
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CHAPTER 3

FROM BODY DISSATISFACTION TO APPEARANCE-BASED REJECTION SENSITIVITY

In the studies reported here, the general purpose was to assess the unique contributions of multiple features of friendship and peer relationships to girls' and boys' sensitivity to appearance-based rejection (appearance-RS). As described in the last chapter (Chapter 2), the friendship context was the focus of the present research because of the important and pervasive role these social relationships play during adolescence, in both positive and negative ways (Barry & Wentzel, 2006; Giletta et al., 2012; Roth & Brooks-Gunn, 2000; Van Zalk, Kerr, Branje, Stattin & Meeus, 2010). However, as there was only limited research available on appearance-RS to guide the theoretical and empirical foundation of this thesis, existing personal-RS theory and research, and the literature on the development of body dissatisfaction in children and adolescents, was drawn upon to guide study hypotheses. In Chapter 2 evidence was presented to support the notion that elevated body image concerns are most likely to be found within friend or peer groups that have a strong appearance culture, created through the many appearance-related overt and inadvertent interactions that occur between friends, such as appearance conversations, perceived pressure to be attractive, and appearance teasing.

With the exception of a recently published paper by Bowker and colleagues (2013), which examined the role of friends and peers in association with appearance-RS in early adolescents, research into appearance-RS has been conducted with adults only. Thus, a first step of the present research was to modify the Appearance-RS Scale (Park, 2007) to be suitable for use with early adolescents. Although the current project was initiated in 2010 prior to the work of Bowker et al. (2013), this measure appears quite

similar in form to the measure used in this recently published study. The next chapter, Chapter 4, presents this modified measure, as well as the factor structure and psychometric properties of the Appearance-RS Scale modified for use in adolescents. Next, Chapter 5 (Study 1) focuses on adolescents' perceptions of appearance-focused characteristics of their friends, and the associations with appearance-RS. Chapter 6 (Study 2) builds upon the findings of Chapter 5, by examining adolescent appearance-RS in the context of best friend relationships, and within larger friendship groups. Chapter 7 integrates the findings of all chapters, and outlines the implications of the findings. Overall, this series of studies results in the consideration of how appearance-RS is associated with peer relationships and interactions across several system levels by examining adolescents' perceived reports of their friends and their friends' self reports, and testing associations at the individual, dyadic, and larger peer social network levels.

CHAPTER 4

AN EXPLORATION OF THE APPEARANCE-BASED REJECTION SENSITIVITY SCALE REVISED FOR ADOLESCENTS

The aim of this chapter was to confirm and validate the Adolescent Appearance-Based Rejection Sensitivity Scale (AA-RSS), which was revised in the present thesis from the Appearance-Based Rejection Sensitivity Scale (Park, 2007) for use with adolescents. The Appearance-RS Scale consists of 15 scenarios relevant to older adolescents and adults, which may trigger concerns about rejection based on appearance. For example, “You are leaving your house to go on a first date when you notice a blemish on your face.” Participants are required to indicate their anxiety/concern about being rejected based on their appearance (“How concerned or anxious would you be that your date might be less attracted to you because of the way you looked?”), and their expectation that rejection will occur (“I would expect that my date would find me less attractive”). For each scenario, the degree of anxious concern is multiplied by the degree of rejection expectation, and a total appearance-RS score for each individual is calculated by averaging the interaction score across the 15 scenarios. In their college sample of males and females (age range = 18 – 35 years, $M_{\text{age}} = 19.19$ years), Park (2007) found the scale to demonstrate high internal consistency ($\alpha = .90$) and adequate test-retest reliability over a 6- to 8-week period ($r = .69, p < .001$). Notably, a shortened 10-item version also demonstrated high internal consistency ($\alpha = .88$; Park, DiRaddo, & Calogero, 2009). Factor analysis of the full scale showed that all 15 items loaded sufficiently onto one factor (Park, 2007).

Drawing upon findings from the literature concerning personal-RS and physical attractiveness, Park (2007) assessed the convergent validity of the Appearance-RS Scale with personality and psychological factors. Consistent with predictions, Park (2007)

found that appearance-RS was positively associated with a sense of self worth that is conditional on physical attractiveness (appearance-conditional self worth; Crocker, Luhtanen, Cooper, & Bouvrette, 2003). Similar to individuals with heightened sensitivity to appearance-based rejection, Park (2007) suggested that those with low self-esteem are likely to experience self-doubt and show greater concern about acceptance and rejection. Further, an individual whose self-esteem is unduly influenced by their feelings of attractiveness is likely to be particularly susceptible to fluctuations in self-doubt and rejection concerns when their appearance seems threatened.

Park (2007) referred to Cooley's (1902) looking-glass self to understand how self-rated attractiveness may be associated with appearance-RS. Cooley suggested that it is through others' eyes that people learn to see and understand themselves. Park (2007) cited unpublished research by Park and Pelham (2006) that is consistent with the idea that self-rated attractiveness is largely based on how one believes others view the self, rather than their objective level of attractiveness. Individuals who feel unattractive are likely to believe that other people also find them unattractive. Accordingly, Park (2007) predicted, and found, that perceiving oneself as being unattractive was associated with higher appearance-RS.

Park (2007) also theorized that appearance-RS would be associated with attachment style. Attachment Theory (Bowlby, 1969) proposes that a child's mental representations of self and others are formed within early caregiving relationships, and shape the way in which an individual relates to others across their lifetime. A secure attachment style is characterised by a positive view of self and others, and emerges from sensitive and responsive caregiving experiences (Levy, Blatt, & Shaver, 1998). On the other hand, insecure attachment styles (fearful, preoccupied and dismissing) are characterised by negative views of self, and likely result from inconsistent and rejecting

caregiver experiences (Levy, Blatt, & Shaver, 1998). Park (2007) proposed that the insecurely attached child might attribute feelings of uncertainty and rejection to characteristics of the self, including attractiveness. Accordingly, her results showed that high scores on the Appearance-RS Scale were correlated with higher scores for preoccupied and fearful attachment styles, and lower scores for secure attachment style. Appearance-RS was not associated with dismissing attachment style.

Both appearance-RS and personal-RS (a tendency to anxiously expect, readily perceive, and overreact to generalised rejection; Downey & Feldman, 1996) are thought to develop out of a history of rejection experiences, with appearance-RS stemming from appearance-related rejection in particular. As predicted, Park (2007) found that appearance-RS and personal-RS were positively associated, theoretically due to their similar developmental pathways.

Finally, Park (2007) explored the links between appearance-RS and mental and physical health outcomes. Due to a common preoccupation with appearance and a tendency to associate social rejection with physical imperfections, it was predicted that individuals with heightened sensitivity to appearance-based rejection were likely to show behaviours often seen in eating disorders, such as disordered eating patterns. Further, it was predicted that individuals with heightened sensitivity to appearance-based rejection would frequently engage in social appearance comparisons to monitor how well they meet the widely accepted standards of attractiveness in order to avoid social rejection because of the way they look. Park's (2007) findings were consistent with these predictions; appearance-RS uniquely predicted disordered eating and engagement in social appearance comparisons even after controlling for gender, self-esteem, appearance-conditional self worth, attachment styles, self-rated attractiveness,

personal-RS, and neuroticism. Notably, appearance-RS did not differ between males and females.

In summary, the Appearance-RS Scale is a valid and reliable instrument that demonstrates a unitary factor structure, and shows the expected associations with psychological and behavioural variables. However, many of the scenarios presented in the Appearance-RS Scale refer to experiences relevant to older adolescents and adults (e.g., internet dating, going to a club, having dinner in a restaurant with a date). As such, it was necessary to modify the scale to be suitable for early adolescents. Hence this chapter documents the modification of the Adolescent Appearance-RS Scale (AA-RSS), and confirmation of its factor structure, psychometric properties, and convergent validity.

Aims and Hypotheses

The aims and hypotheses of this chapter were:

1. To assess the psychometric properties of the AA-RSS. It was predicted that the items would satisfactorily load onto a single factor and demonstrate acceptable internal reliability.
2. To investigate the convergent validity of the AA-RSS. It was predicted that the AA-RSS would be positively associated with appearance-conditional self worth, fearful and preoccupied attachment, personal-RS, body dissatisfaction, restrictive dieting, overexercise and social comparison. It was predicted that the AA-RSS would be negatively associated with self-rated attractiveness and secure attachment.

Method

Participants

Participants were 380 year 8 and 9 students from one public and two independent private secondary schools located in South East Queensland, Australia. The sample comprised of 216 girls and 164 boys, in grades 8 and 9 (aged 12 to 15.5 years, $M = 13.84$, $SD = .63$). Participants were predominantly white/Caucasian (82.6%), followed by Asian (7.9%), and Aboriginal or Pacific Islander (3.4%). A small number of students did not report their ethnicity or socio-cultural background (2.6%). The estimated response rate was 38%.

Measures

Participants completed a number of measures. Only measures pertaining to this chapter are described here.

Demographics. Information about participants' gender, age and ethnicity was collected.

Appearance-RS. Appearance-RS was measured using the Appearance-RS Scale (Park, 2007), which was slightly modified to be suitable for an early adolescent sample (e.g., "You are at a dance/disco and all of your friends have been asked to dance except you"). The Children's Rejection Sensitivity Questionnaire (CRSQ; Downey, Lebolt, Rincon, & Freitas, 1998) was drawn upon to develop an age-appropriate response format. The resulting measure presented participants with 10 hypothetical scenarios (see Appendix 2). On a 6-point scale, participants indicated their anxiety/concern about being rejected based on their appearance (e.g., "How concerned or anxious would you be that you have not been chosen to dance because of the way you look?"; 1 = not concerned, 6 = very concerned), and their expectation of appearance-related rejection (e.g., "Do you think it is because of the way you look that

no one has asked you to dance?"; 1 = No!!, 6 = Yes!!). To obtain the appearance-RS score, the participant's anxious concern was multiplied by their expectation of rejection, and averaged across the 10 scenarios. The total score had a possible range from 0 to 36, and a higher score indicated greater appearance-RS. For the purpose of the Factor Analysis, participants' anxious concern was multiplied by their expectation of rejection for each of the 10 scenarios.

Appearance-conditional self worth. The Appearance Subscale of the Contingencies of Self-Worth Scale (Crocker et al., 2003) was used to assess appearance-conditional self worth. The 5-item subscale measures the extent to which self worth is dependent on feeling attractive, for example; "When I think I look attractive, I feel good about myself". Responses were made on a 5-point scale (1 = strongly disagree, 5 = strongly agree). Items were averaged to form a total score, and a higher score indicated a stronger sense of self worth that is conditional on appearance. In a late adolescent/early adult sample, test-retest reliability over three months for the appearance subscale was .75 (Crocker et al., 2003), and Cronbach's α was .83 (Park, Crocker, & Mickelson, 2004). Cronbach's α in this sample was .69 for girls and .43 for boys.

Self-rated attractiveness. An item used by Bleske-Rechek and Lighthall (2010) was modified for use in males and females to assess perceptions of own attractiveness ("Compared with other girls or guys your age, how physically attractive are you?") Responses were made on a 7-point scale (1 = not at all attractive, 7 = extremely attractive). A higher score indicated higher self-rated attractiveness.

Attachment style. The Relationship Questionnaire (Bartholomew & Horowitz, 1991) was used to assess participant correspondence to the four prototypic attachment patterns pertaining to close relationships; secure, fearful, preoccupied and dismissing

patterns. This scale presented participants with four short paragraphs, each describing one of the prototypic patterns. Participants were first asked to select the attachment pattern that best describes them in close relationships in order to minimise order effects. Next, participants were asked to rate their correspondence to each pattern on a 7-point scale (1 = not at all like me, 7 very much like me). Participant responses to each of the four items were taken to indicate correspondence to each attachment pattern.

Personal rejection-sensitivity. A shortened version of the Children's Rejection Sensitivity Questionnaire (CRSQ; Downey et al., 1998) was used to measure personal-RS. The participant was presented with eight hypothetical scenarios, for example; "Imagine you had a really bad fight the other day with a friend. Now you have a serious problem and you wish you had your friend to talk to. You decide to wait for your friend after class and talk with him/her. You wonder if your friend will want to talk to you." Participants were first asked to indicate on a 6-point scale, their *anxiety* about the outcome of each situation (e.g., "How NERVOUS would you feel, RIGHT THEN, about whether or not your friend will want to talk to you and listen to your problem?"; 1 = not nervous, 6 = very, very nervous). Next, participants indicate on a 6-point scale, how *angry* they feel about the possibility of being rejected (e.g., "How MAD would you feel, RIGHT THEN, about whether or not your friend will want to talk to you and listen to your problem?"; 1 = not mad, 6 = very, very mad). Finally, participants indicate on a 6-point scale their perceived likelihood that they will be accepted or rejected (e.g., "Do you think he/she will want to talk to you and listen to your problem?; 1 = YES!!, 6 = NO!!). Anxious expectation of rejection was scored by multiplying the participant's anxious concern with their expectation of rejection. Angry expectation of rejection was scored by multiplying the participant's anger score with their expectation of rejection. Researchers have found that both anxious and angry expectations are important

components of personal-RS in children and adolescents, and that, depending on how rejection is anticipated (i.e., anxiously versus angrily), responses to cues of rejection differ (i.e., withdrawal versus reactive aggression; Downey et al., 1998; Zimmer-Gembeck & Nesdale, 2012). As such, the total personal-RS score was formed by averaging across anxious and angry expectations of rejection. For the anxious and angry subscales of the full scale, Cronbach's α has previously been shown to be .79 and .82 respectively, and test-retest reliability was .82 and .85, respectively (Downey et al., 1998). In this sample, Cronbach's α for total personal-RS scale was .90 for girls, and .86 for boys.

Body dissatisfaction. The shortened 8-item Body Shape Questionnaire (BSQ; Cooper, Taylor, Cooper, & Fairburn, 1987; Evans & Dolan, 1993) was used to evaluate body dissatisfaction. The BSQ required participants to rate, on a 6-point scale (1 = never, 6 = always), how they are feeling about their body weight and shape over the past four weeks, for example; "Have you felt ashamed of your body?" Three items from the BSQ were modified to be suitable for males (e.g., referring to other people rather than other women). Items were averaged, and a higher score indicated greater body dissatisfaction. The full scale and the shortened version of the BSQ have demonstrated sound psychometric properties, with the shortened version showing good internal consistency (α ranges from .87 to .92), and adequate convergent validity with the Eating Attitudes Test, which is a measure of disordered eating (r ranges from .58 to .63; Evans & Dolan, 1993). In this sample, Cronbach's α was .90 for girls and .88 for boys.

Disordered body change strategies. To assess disordered eating and exercise habits, a modified version of the Restraint Scale (Herman & Polivy, 1975) and the Excessive Exercise Scale (Long, Smith, Midgley, & Cassidy, 1993) were used. The

Restraint Scale measured dieting behaviours, concern with food and eating, and history of weight loss and weight gain. Some items were simplified for use with young adolescents in this study. Items were averaged to form a total score, and a higher score indicated greater restrictive dieting. van den Berg, Thompson, Obremski-Brandon and Covert (2002) reported a Cronbach's α of .82 for the original scale. In this sample, the modified scale produced an α of .72 for girls and .69 for boys.

The shortened 10-item Excessive Exercise Scale (McCabe & Vincent, 2009) was used to assess participants' focus on and need for exercise. An example item is: "Do you still exercise if you are tired, injured, or sick?" Participants responded using a 5-point scale (1 = never, 5 = always). Averaging all items formed a total score. A higher score indicated greater excessive exercise habits. Cronbach's α for shortened scale was previously reported as .86, and the 1-month test-retest reliability was .82 (McCabe & Vincent, 2009). In this sample, Cronbach's α was .84 for girls and boys.

Social comparison. The Physical Appearance Comparison Scale (PACS; Thompson, Heinberg, & Tantleff, 1991) was used to assess participants' tendency to compare their appearance to the appearance of others. The scale comprised of five items, for example; "At parties or other social events, I compare how I am dressed to how other people are dressed". Participants responded using a 5-point scale (1 = never, 5 = always). Cronbach's α in previous research was .70 in girls and .71 in boys (Rodgers, Paxton, & Chabrol, 2009). In this sample, Cronbach's α was .79 for girls and .73 for boys.

Procedure

Approval for this study was obtained from the Griffith University Human Research Ethics Committee. Fifteen appearance-RS items were initially presented to a small pilot sample. Five items were removed based on feedback of respondents and

poor inter-item correlations, leaving the 10-item scale described above. Next, eight secondary schools in southeast Queensland were contacted via email and then telephone. The principals of one public and two private schools consented to their schools' participation. Following these approvals, active parental consent was obtained, with consent forms sent home with children and returned to the school (see Appendix 3). To increase consent form return rate, students who returned their consent form were entered into a draw to win a skateboard or an iPod (regardless of whether consent to participate was given or not). Participating students also received a small gift when the survey was completed (e.g., a wrist band or novelty eraser). Teachers gave non-participating students an alternative task. Participants completed the questionnaire in their classrooms during school hours. To prevent student fatigue, the questionnaire was completed over two days, taking approximately 70 minutes in total.

Results

Factor Analysis and Reliability

To confirm the suitability of items and the factor structure of the measure, Factor Analysis was conducted using principal axis factoring. An oblique rotation was employed as the potential factors were expected to be interrelated. The criteria to determine the number of factors extracted included an eigenvalue ≥ 1.0 , the Scree test, and the interpretability of the solution.

Two factors were extracted that had eigenvalues ≥ 1.0 . Notably, the Scree test indicated a one-factor solution, and the second factor only just exceeded an eigenvalue ≥ 1.0 (1.02). Further, the second factor explained only 10.16% of the variance, as opposed to the first factor, which explained 48.79% of the variance. As such, a one-factor solution was produced, which had an eigenvalue of 4.88. This factor explained 58.9% of the total variance, with item loadings ranging from .49 to .80 (see Table 4.1). Examination of communalities indicated that the percentage of variance extracted for all 10 items was acceptable, with all items above 30%. The 10-item scale demonstrated high reliability (Cronbach's $\alpha = 0.88$), and was comparable across gender and age groups (Cronbach's α ranged from 0.85 for boys and 0.94 for 15 year old participants). Table 4.2 presents reliability coefficients for the AA-RSS.

Demographic Associations

Correlational analyses were conducted to assess the association of appearance-RS with demographic variables. Appearance-RS was significantly associated with gender ($r = .23, p < .001$), with higher scores reported by girls than boys. Appearance-RS was not associated with age ($r = -.02, p = .73$). The mean and standard deviation of appearance-RS in this sample was 9.9 and 6.02, respectively.

Table 4.1

AA-RSS Item Loadings

Item	Item Loadings
1 You are leaving your house to go to school when you notice a pimple on your face	0.63
2 You are at the shops trying on clothes and notice that you are a kilo heavier than last week	0.67
3 You post a photo of yourself on the internet, hoping the girl or guy you like will see it	0.59
4 Your friends get together to buy you a gym membership for your birthday	0.55
5 At lunch time, you notice the person you like looking at one of your attractive friends	0.72
6 You sent the person you like an email for the first time. Three days have passed and you still have not heard back	0.74
7 Your boyfriend/girlfriend of 3 months is considering breaking up with you	0.63
8 You are at a dance/disco and all of your friends have been asked to dance except you	0.80
9 Your hair is looking thin lately	0.49
10 You look in the mirror and notice that your stomach is getting bigger	0.72

Table 4.2

Reliability Coefficients for the AA-RSS

Sample	Cronbach's α
All participants	0.88
Boys	0.85
Girls	0.89
12 year olds	0.87
13 year olds	0.87
14 year olds	0.89
15 year olds	0.94

Convergent Validity

Correlational analyses were conducted to assess the convergent validity of the AA-RSS. Table 4.3 presents the bivariate correlations between the AA-RSS and the convergent measures. Consistent with the Appearance-RS scale, the AA-RSS was positively associated with appearance-conditional self worth, fearful and preoccupied attachment, personal-RS, body dissatisfaction, restrictive dieting, and overexercise. It was negatively associated with secure attachment and self-rated attractiveness. Also consistent with the Appearance-RS scale, the AA-RSS was not significantly associated with dismissing attachment.

Table 4.3

Correlations Between the AA-RSS and Relevant Variables

Variables	1	2	3	4	5	6	7	8	9	10	11	12
1 Appearance-RS	-	.50***	-.26***	-.19***	.14**	.26***	-.01	.46***	.67***	.51***	.20***	.63***
2 Appearance-conditional self worth		-	.02	-.21***	.17**	.24***	-.06	.36***	.53***	.39***	.18**	.51***
3 Self-rated attractiveness			-	.17**	-.17**	-.15**	.04	-.24***	-.32***	-.20***	.10	-.14**
4 Secure attachment				-	-.42***	-.18***	-.20***	-.32***	-.23***	-.22***	-.04	-.06
5 Fearful attachment					-	.37***	.24***	.34***	.14**	.19***	.01	.01
6 Preoccupied attachment						-	.14**	.32***	.25***	.26***	.08	.17**
7 Dismissing attachment							-	.07	-.07	-.01	-.04	-.13*
8 Personal-RS								-	.43***	.34***	.08	.35***
9 Body dissatisfaction									-	.76***	.30***	.62***
10 Restrictive dieting										-	.27***	.47***
11 Overexercise											-	.22***
12 Social comparison												-

* $p < .05$. ** $p < .01$. *** $p < .001$.

Discussion

The aim of this chapter was to confirm the factor structure of the AA-RSS, and assess its psychometric properties and convergent validity. Analyses revealed that the AA-RSS demonstrated a single-factor solution with high internal consistency across gender and age differences. Consistent with the convergent relationships demonstrated by the original Appearance-RS Scale, the AA-RSS showed positive associations with appearance-conditional self worth, fearful and preoccupied attachment, personal-RS, body dissatisfaction, and disordered body change strategies, and negative associations with secure attachment and self-rated attractiveness. Unlike the original scale however, appearance-RS in this early adolescent sample was higher in girls than boys. As the items on the AA-RSS were modified directly from the Appearance-RS Scale and were designed to be relevant for boys and girls, it is theorized that there may be a real difference in appearance-RS between boys and girls during early adolescence. Support for this idea can be drawn from a recent paper that also modified the Appearance-RS Scale for use in adolescents, and similarly found that girls reported higher appearance-RS scores than boys (Bowker, Thomas, Spencer, & Park, 2013).

Notably, appearance-RS showed a moderate association with personal-RS, which is consistent with previous research on early adolescents (Bowker et al., 2013) and young adults (Park, Calogero, Harwin & DiRaddo, 2009). In support of the notion that these two constructs are unique forms of rejection sensitivity, appearance-RS showed significantly stronger associations ($ps < .02$) with appearance concerns and behaviours, including body dissatisfaction, appearance-conditional self worth, restrictive dieting, and social appearance comparisons, than did personal-RS.

In summary, the AA-RSS is a reliable and valid measure of appearance-RS in young adolescents. Whilst keeping in mind the inherent age differences, efforts to

maintain similarity between the AA-RSS and the original Appearance-RS Scale, together with the corresponding convergent relationships, permit reasonable comparisons between findings based on these scales.

CHAPTER 5

This chapter includes a co-authored paper, which has been prepared for publication.

Webb, H. J., Zimmer-Gembeck, M. J., & Donovan, C. L. The appearance culture between friends and adolescent appearance-based rejection sensitivity. *Manuscript submitted for publication.*

My contribution to the paper involved data collection and analysis, and the writing of the paper.

Haley Webb (Date)

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STUDY 1

PREDICTING APPEARANCE-RS FROM INDIVIDUAL PERCEPTIONS OF THE APPEARANCE CULTURE BETWEEN FRIENDS

An "appearance culture" in adolescent peer groups can develop from the many appearance-related intentional and inadvertent interactions that occur on a daily basis in and outside of school. This culture is believed to be created by the sharing and strengthening of appearance ideals, and by focusing attention on attractiveness (Jones, 2004). Chapter 2 outlined the specific appearance-related interactions that occur between friends and peers that can contribute to an appearance culture, and that have been empirically linked with adolescent body dissatisfaction. Because body dissatisfaction and appearance-RS may share similar antecedents, adolescents socializing within an appearance-focused context may also experience greater sensitivity to appearance-based rejection. Thus, the aim of Study 1 was to examine whether appearance-culture-enhancing characteristics of the friendship context were associated with early adolescents' greater appearance-RS, and whether these associations differed for boys and girls. The friendship context characteristics that were examined included appearance-focused verbal exchanges between friends, perceived pressure to be attractive, friends' physical attractiveness and appearance-related values, and social support from friends.

A second purpose of the present study was to determine whether individual beliefs and perceptions mediate associations between characteristics of the friendship context and appearance-RS. These mediators included internalisation of appearance ideals, social appearance comparison, and body dissatisfaction. Hence, structural equation modelling was used to examine the direct and indirect (via the mediators) associations of characteristics of the friendship context and appearance-RS.

Finally, important covariates were considered, including BMI, personal rejection sensitivity (personal-RS), social anxiety and depression, to determine whether associations between characteristics of the friendship context and appearance-RS remained after accounting for their associations with BMI, personal-RS, social anxiety and depression. Finally, the adverse behavioural outcomes of elevated body image and appearance concerns were also assessed. When taken together, the literature reviewed in Chapter 2 and the literature on appearance-RS informed the study hypotheses.

Characteristics of the Friendship Context

The appearance-focused characteristics of the friendship context that were expected to be associated with heightened sensitivity to appearance-based rejection included appearance-focused verbal exchanges between friends, perceived pressure to be attractive, friends' physical attractiveness and appearance-related values, and social support from friends. These were selected because existing research (summarized below) has indicated the importance of these influences to appearance-RS and/or body image concerns.

Verbal exchanges with friends. Two types of verbal exchanges were studied. These included conversations with friends about appearance, including for example body size and shape, clothing, diet, exercise, and hairstyle, and appearance-related teasing. Both have been shown to be associated with greater body dissatisfaction in adolescent girls and boys (Blodgett Salafia & Gondoli, 2011; Jones, 2004; Jones, Vigfusdottir, & Lee, 2004; Lawler & Nixon, 2011; Paxton, Eisenberg, & Neumark-Sztainer, 2006).

Frequent engagement in conversations with friends about appearance has shown consistent concurrent and longitudinal associations with heightened body dissatisfaction in both boys and girls (Jones, 2004; Jones et al., 2004; Shroff & Thompson, 2006).

Jones (2004) described appearance conversations as ‘appearance training’, as these discussions direct attention to and guide the interpretation of appearance-based information, shape appearance norms and ideals, and encourage evaluation of oneself and others according to strict appearance standards. These regular and intimate interactions may also contribute to sensitivity to interpersonal rejection based on appearance, whereby the individual develops the understanding that being attractive is highly important to one’s friends and peers (or comes to value highly this trait himself or herself), and that attractiveness demands adherence to strict standards of beauty or body shape and size. Subsequently, the individual may develop a fear of interpersonal rejection because of a perceived failure to achieve these rigorous and valued appearance ideals.

Appearance-related teasing is a widely studied, negative type of verbal exchange among friends. Criticism from friends or peers about weight, shape or appearance has been reported to be the most common type of teasing at school (Puhl, Luedicke, & Heuer, 2011). Appearance teasing is a salient and distressing experience that would clearly convey the ways in which one’s appearance diverges from widely accepted standards of attractiveness. Not surprisingly, appearance teasing has been reliably linked with concurrent body dissatisfaction in adolescent boys and girls (Eisenberg, Neumark-Sztainer, & Story, 2003; Lunde, Frisen, & Hwang, 2006; Lunner et al., 2000; Taylor et al., 1998). The significance of negative appearance feedback to appearance-RS in young adults has also been empirically documented. Researchers have shown that when reminded of disliked aspects of their appearance, individuals who are sensitive to appearance-based rejection experienced heightened feelings of loneliness and rejection (Park, 2007). Similarly in another study, high appearance-RS individuals who were asked to recall a time when they were teased about an aspect of their

appearance (compared to recalling an appearance compliment) reported elevated feelings of rejection, and greater interest in modifying their appearance via cosmetic surgery (Park, Calogero, Harwin, & DiRaddo, 2009). Notably, high appearance-RS individuals recalled more negative appearance comments than did those who were low in appearance-RS, and across all participants, peers, friends or romantic partners were identified as the most common source of appearance teasing. The significance of appearance teasing to appearance-RS in young adults, and to body dissatisfaction in adolescents, highlights the importance of examining the role of appearance teasing from friends and peers with respect to appearance-RS in our early adolescent sample. Whereas appearance teasing is potentially and understandably damaging to how an individual evaluates their own appearance, it may be particularly pertinent to appearance-RS, as appearance teasing conveys both appearance criticism and interpersonal rejection.

Perceived pressure to be attractive. As was described in Chapter 2, perceived pressure to be thin or attractive was one of the most frequently studied characteristics of friend or peer relationships in association with adolescent body dissatisfaction. Adolescents who perceive greater pressure from friends or peers to be attractive also report heightened body dissatisfaction concurrently (Peterson, Paulson, & Williams, 2007; Shomaker & Furman, 2009) and longitudinally (Blodgett Salafia & Gondoli, 2011). Yet, how important perceived pressure from friends is to the development of adolescent appearance-RS has not been investigated. Feeling socially compelled to achieve a more ideal appearance could heighten one's sensitivity to appearance-based rejection by elevating the perceived importance of attractiveness, and by making the attribution of perceived interpersonal rejection to one's appearance more salient.

Friends' appearance-related values. Having friends who are more preoccupied with being attractive is likely to prompt interactions that emphasise appearance and communicate appearance ideals, such as appearance conversations, offering advice or encouragement, and engaging in body change strategies (e.g., dieting or exercise). In the review of friend and peer influences in relation to body dissatisfaction (see Chapter 2), perceptions of friends' valuing of, or preoccupation with appearance was consistently associated with higher body dissatisfaction in adolescent girls. Further, a simple, positive association between friends' valuing of appearance and appearance-RS has been demonstrated in young adults, although this association did not remain significant when controlling for self-esteem, personal-RS, self-perceived attractiveness, gender, and perceptions that peer acceptance is conditional on appearance (Park, DiRaddo, & Calogero, 2009).

Friends' physical attractiveness. Research from the 1970's (Melamed & Moss, 1975) all the way through to more recent research involving friends on Facebook (Walther, Van Der Heide, Kim, Westerman, & Tom Tong, 2008) has raised awareness of the effects of the social context in appearance evaluations. In general, this research has demonstrated that an individual's perceived attractiveness is influenced by their friends' attractiveness, whereby observers rated a moderately attractive individual as more attractive when described as a friend to a highly attractive individual (i.e., an assimilation effect). Moreover, researchers have suggested that friends' or peers' attractiveness may influence evaluations of one's own appearance through a tendency to make social comparisons. Bailey and Ricciardelli (2010) reported that adult women who more frequently perceived themselves to be less attractive than peers (e.g., "My body isn't as attractive as the others around me") reported greater body dissatisfaction, while lower body dissatisfaction was found in women who more frequently rated

themselves as being more attractive than peers. Physical attractiveness of one's friends is a visible characteristic of the friendship context that may influence perceptions and evaluations within that context, and thus may be important for understanding the development of appearance concerns. In view of Bailey and Ricciardelli's (2010) findings, it was hypothesized that rating one's friends higher on attractiveness may be associated with greater appearance-RS. Notably, in the example provided above there might be some degree of overlap between body dissatisfaction and how one's own attractiveness compares to their peers' attractiveness. As such, in the present study, a measure was employed that focused specifically on friends' attractiveness, rather than friends' attractiveness in comparison to one's own attractiveness, in order to clearly differentiate body dissatisfaction and appearance-RS from friend characteristics.

Social support. When identifying the elements of the friend and peer context that may be contributing to the development of appearance-RS, consideration must be given to the potentially protective influences to better understand those individuals who retain positive body and appearance attitudes. In this field, identifying potentially protective influences, or the factors associated with positive attitudes, has been a difficult task, and few researchers have focused on doing this well (Kelly et al., 2005). One encouraging candidate is social support, which can be defined as the extent to which one's needs for support, information, and feedback are perceived as being fulfilled (Procidano & Heller, 1983). Social support from friends or peers has been identified as a potentially protective factor for body dissatisfaction, as it has been found to be negatively associated with body dissatisfaction in adolescent boys and girls (Ata, Ludden & Lally, 2007; Bearman, Presnell, Martinez, & Stice, 2006; Stice, Presnell, & Spangler, 2002). However, this association was not found in two other studies of adolescents (Paxton, Schutz, Wertheim, & Muir, 1999; Shisslak et al., 1998). While

social support does not appear to be a strong and consistent predictor of body dissatisfaction in comparison to some of the adverse social experiences (e.g., peer pressure and appearance teasing; see Chapter 2), this deserves further attention because so few studies have been conducted with early adolescents (see Shisslak et al. 1998). It may be the case that social support from friends, particularly during early adolescence, may be more important in protecting against increasing appearance-RS, given that childhood experiences of interpersonal criticism have been implicated in the development of rejection sensitivity (Butler, Doherty & Potter, 2007). Interestingly, in their examination of possible attenuators of increased appearance-RS, Park (2007) demonstrated that in high appearance-RS adults, being reminded of a person who ‘loves you unconditionally and to whom you feel you can turn in times of need’ attenuated the negative outcomes of being exposed to an appearance threat. However, appearance-RS in early adolescents was not found to be associated with friendship with, or acceptance by, same-sex or other-sex peers (Bowker, Thomas, Spencer & Park, 2013). Thus, the role of positive friendship qualities, such as social support, requires further clarification.

Mediators of the Association between Friendship Characteristics and Appearance-RS

With the exception of appearance teasing from friends and peers, each of the proposed correlates of appearance-RS are theorised to contribute to an appearance-focused culture between friends in a manner that does not necessarily convey interpersonal rejection. Therefore, identifying pathways and processes linking social information and experiences to individual appearance-RS is vital. Body dissatisfaction, internalisation of appearance ideals and social comparison were included in this study as mediators to ensure a comprehensive model that may help explain the complex links between friendship characteristics and appearance-RS in adolescent boys and girls.

These variables were selected by drawing from the socio-cultural theory of body dissatisfaction (Stice & Whitenton, 2002), in light of appearance-RS and body dissatisfaction sharing a core emphasis on physical appearance, and in light of the previously demonstrated associations of appearance-RS with appearance dissatisfaction and extreme body image concerns (Calogero, Park, Rahemtulla, & Williams, 2010; Park, Calogero, Young, & DiRaddo, 2010).

Body dissatisfaction. The process by which appearance-focused friendship interactions and contextual features may be linked with appearance-RS could be through (i.e., mediated by) the development of body dissatisfaction. Previous research suggests that individuals with heightened appearance-RS filter and interpret information from their environment through an ‘appearance lens’ (Park & Harwin, 2010). Negative evaluation of, and dissatisfaction with, one’s appearance is likely to trigger a more pessimistic appearance lens in relation to self-evaluations, potentially contributing to increasing sensitivity to signs of appearance-based social rejection. Conceptually, it would seem that heightened appearance-RS is likely to involve some level of dissatisfaction with or negative evaluation of personal appearance (or at least a perception that one’s appearance deviates from social ideals) in order to be sensitive to and expect appearance-based social rejection.

Although the developmental predictors of appearance-RS have not been explored, researchers have proposed multiple pathways to explain how the social environment may shape body dissatisfaction. Although many mediators have been proposed and multiple pathways to appearance concerns may exist (Cafri et al., 2005; Stice, 2002), two processes – internalisation of appearance ideals and social comparison – have received some of the strongest empirical support as mediators, primarily in

studies of females and their body image or eating behaviours (see Keery et al., 2004; Muris et al., 2005; Shroff & Thompson, 2006; van den Berg et al., 2002).

Internalisation of appearance ideals. Internalisation refers to the process of personally accepting society's appearance ideals (i.e., the impossibly thin female, and the muscular yet lean male; Thompson, van den Berg, Roehrig, Guarda, & Heinberg, 2004). The internalised ideal becomes the personal standard against which the self and others are judged. Extensive research suggests that internalisation of appearance ideals mediates, at least partially, the relationship between socio-cultural influences and body dissatisfaction (Brown & Dittmar, 2005; Fingeret & Gleaves, 2004; Jones et al., 2004; Keery et al., 2004; Shroff & Thompson, 2006). In other words, being exposed to appearance-related information from friends or peers will impact satisfaction with one's own body to the extent that the individual personally accepts society's appearance ideal as being an appropriate appearance standard. Notably, Park and colleagues (2009) found that heightened appearance-RS in young adults was associated with stronger internalisation of appearance ideals, highlighting the relevance of this construct to the link between characteristics of the friendship context and adolescent appearance-RS. In the face of appearance-related messages or pressures from friends, a young person who more strongly buys into society's notion of attractiveness is more susceptible to feeling dissatisfied with their body. Further, they may be more hypervigilant to signs of interpersonal rejection attributed to perceived deviations from appearance ideals.

Social comparison. The socio-cultural influence of friends and peers on body dissatisfaction is also said to occur through social appearance comparisons (Keery et al., 2004; van den Berg et al., 2002). Derived from Social Comparison Theory (SCT; Festinger, 1954), appearance comparisons involve comparing one's appearance with others, for the purpose of self-evaluation (Jones, 2004; Schutz, Paxton, & Wertheim,

2002). Dissatisfaction with appearance is theorised to be the result of unfavourable appearance comparisons (Bailey & Ricciardelli, 2010). Highlighting the relevance of social comparison to a model predicting appearance-RS, Park (2007) has shown that more frequent engagement in social appearance comparisons was associated with higher appearance-RS in young adults, even after controlling for gender, self-esteem, appearance-conditional self worth, personal-RS, attachment styles, self-rated attractiveness and neuroticism. Based on these findings, the present study predicted that appearance comparisons would mediate the relationship between an appearance-focused friendship context and body dissatisfaction.

Outcomes of Appearance-RS

For many practitioners and researchers, it is the adverse psychological and behavioural outcomes of elevated body image and appearance concerns that are most worrying. For example, particularly concerning has been the identification of body dysmorphic symptoms and highly favourable attitudes towards cosmetic surgery that are associated with greater appearance-RS (Calogero et al., 2010; Park et al., 2010). Accordingly, another aim of the present research was to examine whether extreme body change strategies were associated with elevated levels of appearance-RS in adolescents. As the present study targeted a community sample of early adolescents, it was important to consider age-appropriate and sub-clinical body change strategies. Dieting and exercise are two weight loss techniques often reported by adolescents, which, at excessive levels, precede eating disorder onset, and are associated with serious psychological and physical health problems, such as substance use behaviours, binge eating, suicide risk, concerns about peer acceptance and emotional stress (Davis, Blackmore, Katzman, & Fox, 2005; French, Story, Downes, Resnick, & Blum, 1995; Lowry, Galuska, Fulton, Burgeson, & Kann, 2005). Restrictive dieting and

overexercise reflect a preoccupation with, and a drive to restrict food intake and be active, typically to alleviate distress about weight and shape (Goodwin, Haycraft, Willis, & Meyer, 2011). The tendency of individuals with elevated appearance-RS to attribute actual or expected social rejection to their physical appearance, could contribute to this drive to be more attractive, theoretically through disordered eating or through excessive and emotionally, socially or physically damaging levels of exercise. Accordingly, this study examined whether heightened appearance-RS was associated with adolescents' greater engagement in restrictive dieting and overexercise.

Covariates

A set of key covariates were assessed and controlled for in this study due to established links with appearance-RS and/or body dissatisfaction. In particular, researchers have shown that sensitivity to appearance-based rejection in adolescents or adults is associated with higher personal-RS, social anxiety and depression (Bowker et al., 2013; Park et al., 2010). BMI (a statistical measure of body weight based on weight and height) has demonstrated consistent, positive associations with body dissatisfaction (Paxton et al., 2006; Clark & Tiggemann, 2006).

Gender

Research from the field of body dissatisfaction has indicated that friends may differentially influence males and females with regards to appearance concerns. Researchers have found body dissatisfaction to be more strongly related to appearance conversations (Jones et al., 2004; Vincent & McCabe, 2000) and perceived pressure to be thin (Halliwell & Harvey, 2006) in females than in males. On the other hand, researchers sometimes find the association between appearance teasing and body dissatisfaction to be stronger in males than in females (Jones et al., 2004; Vincent & McCabe, 2000). Turning to the appearance-RS literature, Park et al. (2009) found the

simple association between friends' valuing of appearance and appearance-RS to be stronger in young adult females than in males. In their study of young adolescents, Bowker and colleagues (2013) identified gender differences in the ways in which peer-rated acceptance by other-sex classmates poses a risk factor for psychological distress in individuals with high appearance-RS. Of additional consideration is the research suggesting that female friendships tend to be higher in quality, more intimate, and more supportive than male friendships (Bokhorst, Sumter, & Westenberg, 2009; Ciairano, Rabaglietti, Roggero, Bonino, & Beyers, 2007), which may affect the degree to which the individual is influenced by the relationship. Accordingly, this study included both boys and girls in order to examine whether the relationships between characteristics of the friend and peer group and individual appearance-RS differed according to gender. Given the limited research available, no a priori hypotheses were made, but gender was tested as a potential moderator of the associations between appearance-RS and friends' appearance conversations, appearance teasing, pressure to be attractive, valuing of appearance, physical attractiveness, and social support.

Study 1 Aims and Hypotheses

The aims and hypotheses of Study 1 were:

1. To investigate whether an appearance-focused friend context (i.e., *friendship characteristics*) was associated with greater appearance-RS in early adolescents.

It was predicted that adolescents would report more appearance-RS when they had friends who more frequently discussed appearance-related topics, engaged in appearance teasing that caused distress, valued attractiveness, were rated higher on attractiveness, and were perceived as providing pressure to be attractive. Appearance-RS was expected to be lower in adolescents who perceived greater social support from friends.

2. To identify individual factors that may better account for why friendship characteristics were associated with appearance-RS, by testing potential mediators of these associations. In particular, associations of friendship characteristics and appearance-RS were expected to be indirect via the intervening roles of internalisation of appearance ideals, social comparison and body dissatisfaction. Due to the explicit expression of appearance-based rejection in appearance teasing, however, a direct association between appearance teasing and appearance-RS was expected.
3. To examine whether the associations that were expected in Hypotheses 1 and 2 above, held after accounting for 1) BMI and personal-RS, which are important physical and social-personality factors known to covary with appearance-RS and/or body image concerns, and; 2) depression and social anxiety, two important mental health issues that have established links with appearance and interpersonal concerns.
4. To examine the potential negative behavioural outcomes of appearance-RS. Towards this end, additional models were tested, examining associations of appearance-RS with restrictive dieting and overexercise. It was predicted that heightened appearance-RS would be associated with elevated restrictive dieting and overexercise.
5. To investigate whether the associations between friendship characteristics and appearance-RS were moderated by gender. Although no specific a priori hypotheses were made, it was expected that some associations would be stronger among girls than boys, given the elevated importance of appearance and body dissatisfaction known to exist among early adolescent girls compared to boys (Jones et al., 2004; White & Halliwell, 2010).

Method

Participants

Participants were 380 Australian students from one public and two independent private secondary schools located in Southeast Queensland, Australia. The sample comprised of 216 girls (56.8%) and 164 boys (43.2%), in grades 8 and 9 (aged 12 to 15.5 years, $M = 13.84$, $SD = .63$). Participants were predominantly white/Caucasian (82.6%), followed by Asian (7.9%), and Aboriginal or Pacific Islander (3.4%). A small number of students did not report their ethnicity or socio-cultural background (2.6%). To retain all 380 participants in all analyses, multiple imputation was used whenever possible, and pooled results are reported. For structural equation modelling, full information maximum likelihood was used to maintain all 380 participants in the analyses. The estimated response rate was 38%.

Measures

Participants completed a number of measures. The measures pertaining to a number of variables have already been described in Chapter 4, including appearance-RS, social comparison, body dissatisfaction, disordered body change strategies, and personal-RS. Only measures unique to this chapter are described here.

Demographics. Information about participants' gender, age and ethnicity was collected. Participants' Body Mass Index (BMI; weight kg / height m²) was measured individually, with participant consent, by a trained researcher.

Appearance conversations with friends. The frequency of participants' engagement in conversations with friends about appearance evaluations and enhancements was assessed using the Appearance Conversations with Friends Scale (Jones et al., 2004). An example from the 6-item scale is; "My friends and I talk about how our bodies look in our clothes." Participants respond using a 5-point scale (1 =

never, 5 = very often). Averaging items formed the total score, and a higher score indicated more frequent engagement in appearance conversations with friends. Jones and colleagues (2004) reported Cronbach's α as .85 for girls and .83 for boys. In this sample, α was .86 for girls and .79 for boys.

Appearance teasing from friends. The 6-item Weight Teasing Subscale of the Perceptions of Teasing Scale (POTS; Thompson, Cattarin, Fowler, & Fisher, 1995) was modified for this thesis to measure appearance teasing from friends, rather than weight teasing in general. An example item is: "Friends make jokes about your appearance." Participants first rated the frequency with which they experienced the behaviour on a 5-point scale (1 = never, 5 = always). Unless participants responded "never", they also rated how upset the behaviour made them feel on a 5-point scale (1 = not upset, 5 = very upset). The teasing-frequency score was formed by averaging the frequency items, while the teasing-upset score was formed by averaging the upset items. Higher scores indicated greater frequency of appearance teasing from friends or feeling greater distress about teasing. Cronbach's α for the teasing-frequency and teasing-upset scales in this sample were .78 and .83 for girls, and .79 and .88 for boys.

Appearance pressure from friends and peers. The Perceived Sociocultural Pressure Scale (Stice & Agras, 1998) measures perceived pressure to be thin from family, friends, dating partners, and the media. In consideration of the differences between male and female appearance ideals, the 10-item scale was modified to assess perceived pressure to be attractive, rather than pressure to be thin. Additionally, the two items relating to dating partners were modified to be more age appropriate. An example item is: "I've felt pressure from my friends to look good." Participants responded using a 5-point scale (1 = none, 5 = a lot). A Cronbach's α of .88 and test-retest reliability of .93 was reported for the original full scale (Stice & Agras, 1998), while for the friend

subscale Cronbach's α was .72 and the test-retest reliability was .91 (Stice, Ziemba, Margolis, & Flick, 1996). In the current study, the five items pertaining to friends and peers were averaged to create a total score (Cronbach's $\alpha = .84$ for girls and .83 for boys). A higher score indicated greater perceived pressure from friends and peers to be attractive.

Friends' physical attractiveness. A modified version of the scale used by Bleske-Rechek and Lighthall (2010) was used to assess perceptions of the attractiveness of one's best friend and friendship group. An example item is; "Compared with other girls or boys their age, how physically attractive is your closest friend?" Responses were made on a 7-point scale (1 = not at all attractive, 7 = extremely attractive), and the total score was calculated from the average of the two items referring to one's best friend and one's friendship group. The Cronbach's α was .68 for girls and .60 for boys.

Friends' appearance-related values. A 3-item scale was devised to assess perceptions of friends' valuing of appearance. Participants rated how important they believe appearance-related characteristics (e.g., an attractive body or face, and wearing nice clothing) are to their friends. Response options for each item ranged from 1 (very unimportant) to 5 (very important). Averaging all items created a total score. Three items pertaining to other domains, such as sporting ability and intelligence, were included but not scored to somewhat disguise the main interest in appearance valuing. Cronbach's α was .88 for girls and .83 for boys.

Social support. Social support from friends was assessed using the Perceived Social Support from Friends scale (PSS-FR; Procidano & Heller, 1983). This scale comprises of 20 statements to which participants must respond, "Yes", "No", or "Don't Know". For example: "I rely on my friends for emotional support." A response indicative of perceived social support is scored as +1, while a negative response is

scored as 0. “Don’t Know” responses are not scored. Procidano and Heller (1983) reported an α of .88, and in this sample Cronbach’s α was .80 for girls and boys.

Internalisation of appearance ideals. A modified version of the Sociocultural Attitudes Toward Appearance Questionnaire (SATAQ; Heinberg, Thompson, & Stormer, 1995) was used to assess participant acceptance of society’s appearance ideals. Similar to the modifications made by Jones (2004), items were modified in the present study to reflect male and female appearance ideals, and two items relating to appearance comparisons were removed to form a more consistent scale. An example item is: “People who appear in TV shows and movies project the type of appearance that I see as my goal”. Responses to the six items were made using a 5-point scale (1 = strongly disagree, 5 = strongly agree). The reliability and validity of the original scale have been well documented (Thompson et al., 1999), and for the modified scale, Jones (2004) reported that Cronbach’s α ranged from .82 to .85 for girls, and from .77 to .83 for boys. In this sample, Cronbach’s α was .83 for girls, and .73 for boys.

Social anxiety. Social anxiety was assessed using the 18-item Social Anxiety Scale for Adolescents (SAS-A; LaGreca & Lopez, 1998). Responses are made using a 5-point scale, ranging from “not at all true of me” to “all the time.” An example item is: “I feel shy around people I don’t know.” A total score was formed by averaging items, and a higher score indicated greater social anxiety. LaGreca and Lopez (1998) reported that Cronbach’s α ranged from .69 to .86. Cronbach’s α in this sample was .93 for girls and .94 for boys.

Depression. The short form of the Children’s Depression Inventory (CDI-S; Kovac, 1992) was used to assess depressive symptomology. Each of the 10 items consisted of three sentences, and the participant was required to select the sentence that best described him or her over the past two weeks. Averaging scores for the 10 selected

sentences created the total score, and a higher score indicated stronger depressive symptoms. Internal consistency was described as ranging from .71 to .89 in the CDI-S user manual. In this sample, Cronbach's α was .81 for girls and boys.

Procedure

Approval for this study was obtained from the Griffith University Human Research Ethics Committee and the school principals. Following these approvals, active parental consent was obtained, with consent forms sent home with students and returned to the school. To increase the return of consent forms, students who returned their consent form were entered into a draw to win a skateboard or an iPod (regardless of whether consent to participate was given or not). Participating students also received a small gift when the survey was completed (e.g., a wrist band or novelty eraser). Teachers gave non-participating students an alternative task. Participants completed the questionnaire in their classrooms during school hours. To prevent student fatigue, the questionnaire was completed over two days, taking approximately 70 minutes in total.

Overview of Analyses

Preliminary analyses included producing descriptive statistics (e.g., means and standard deviations) and conducting *t*-tests to compare boys and girls on all measures. Correlations between all variables were also calculated to identify simple associations and to make decisions about the final variables to include in the structural equation models (SEM). Only the independent variables significantly correlated with appearance-RS were included in these models. SEM was employed using AMOS software (IBM Corporation) to test hypotheses pertaining to direct and indirect effects between friendship characteristics, individual characteristics, appearance-RS, and behavioural outcomes.

SEM refers to a family of statistical procedures (Kline, 2005) that permits the testing of various types of models, including regression models, confirmatory factor models, and (of relevance to the present study) path models (Schumacker & Lomax, 2010). The overarching goal of SEM is to determine the extent to which the theoretical model is supported by the data (Schumacker & Lomax, 2010). To evaluate the theoretical model, both goodness-of-fit indices and parameter estimates for model paths should be considered (Kline, 2005). In terms of the model fit indices, chi-square (χ^2) is the only statistical test of significance, whereby a non-significant χ^2 value indicates that the theoretical model fits the sample data (Schumacker & Lomax, 2010). However, χ^2 is adversely affected by sample size: as the sample size increases, the χ^2 value can increasingly indicate a poor goodness-of-fit despite small differences between observed and predicted covariances (Kline, 2005). Further, numerous indices exist that have different statistical properties. Thus, the use of a variety of fit indices that are not overly sensitive to sample size has been recommended (Byrne, 2001; Kline, 2005; Schumacker & Lomax, 2010). In addition to the χ^2 , three of these indices were used in the present study: the normed χ^2 value (χ^2/df), which reduces the sensitivity of χ^2 to sample size, the comparative fit index (CFI), which is not adversely affected by sample size and compares the theoretical model to a model with complete independence, and the root mean square error of approximation (RMSEA), which is an estimate of error due to the approximate fit of the model. The level to indicate an acceptable fit is a non-significant χ^2 value and <3.0 for the normed χ^2 (Kline, 2005), $>.95$ for the CFI (Byrne, 2001; Hu & Bentler, 1999), and $<.06$ (or the less conservative $.08$) for RMSEA (Schumacker & Lomax, 2010). To test hypotheses regarding indirect pathways, bootstrapping was used to estimate standard errors and 95% confidence intervals for all direct and indirect effects in the model.

Finally, Process (a macro available for SPSS; Hayes, 2013) was employed to estimate regression models to test the moderating effect of gender on the associations between friendship characteristics and appearance-RS.

Results

Tests of Statistical Assumptions

As would be expected in a typical school group of adolescents, body dissatisfaction, depression, personal-RS, the frequency of, and feeling distress about, appearance teasing, and perceived pressure from friends and peers to be attractive showed significant positive skew. In an attempt to reduce skew and normalise distributions, square root and log transformations were applied. Although skew was reduced, distributions still significantly departed from the normal distribution, and further analyses showed that the transformed variables produced results similar to those with untransformed measures. As such, the analyses reported here were based on untransformed measures. Examination of scatterplots, studentised residuals, leverage scores and Cook's D identified a number of unusual scores. However all participants were retained in the analyses as the outlying individuals were not found to be responding in an incongruent manner, and estimating the simple correlations without these individuals did not substantially change the findings.

Means, Standard Deviations, and Gender Differences

Means and standard deviations for girls and boys, and *t*-tests comparing them, are provided in Table 5.1. The assumption of homogeneity of variance was violated for some variables, so the more stringent alpha level of .01 was applied for these variables, but all significant differences reached this level. Girls, relative to boys, were higher on almost all measures. They reported significantly greater appearance-RS, body dissatisfaction, appearance conversations with friends, ratings of friends' attractiveness, perceived pressure from friends and peers to be attractive, friends' valuing of appearance, social support, social comparison, internalisation of appearance ideals,

social anxiety, personal-RS and restrictive dieting. Boys reported significantly more frequent appearance teasing from friends.

Table 5.1

Independent Groups t-tests and Descriptive Statistics for Study 1 Variables (males n = 164, females n = 216)

	Independent groups <i>t</i> (df)	Males <i>M (SD)</i>	Females <i>M (SD)</i>
Appearance-RS	-4.80 (376.35)***	8.29 (5.15)	11.12 (6.35)
Conversations	-11.49 (376.78)***	1.81 (.63)	2.69 (.87)
Appearance teasing - frequency	2.55 (378)*	1.64 (.66)	1.49 (.53)
Appearance teasing - upset	-1.51 (378)	1.38 (.69)	1.50 (.75)
Pressure to be friends to be thin	-3.83 (376.43)***	1.60 (.66)	1.89 (.82)
Friends' valuing of appearance	-2.76 (378)**	2.93 (.97)	3.23 (1.07)
Attractiveness of friends	-6.02 (378)***	4.17 (1.07)	4.82 (1.01)
Social support	-5.29 (378)***	10.82 (4.41)	13.15 (4.15)
Body dissatisfaction	-7.77 (377.09)***	1.77 (.82)	2.54 (1.13)
Internalisation	-5.60 (378)***	2.47 (.83)	2.99 (.96)
Social comparison	-8.32 (376.58)***	2.14 (.78)	2.88 (.96)
Restrictive Dieting	-4.71 (378)***	1.82 (.39)	2.03 (.43)
Overexercise	-1.40 (378)	2.82 (.75)	2.93 (.73)
BMI	-0.13 (378)	21.06 (3.61)	21.11 (3.18)
Personal-RS	-4.60 (376.85)***	7.80 (3.16)	9.48 (3.93)
Depression	-1.72 (378)	.33 (.32)	.39 (.33)
Social Anxiety	-4.13 (378)***	2.10 (.74)	2.42 (.75)

* $p < .05$. ** $p < .01$. *** $p < .001$.

Correlations Between All Variables

Patterns of correlations between all continuous measures were similar for boys and girls. However, as there were some gender differences that reached significance (e.g., the association between appearance-RS and internalisation of appearance ideals, $z = -2.52$, $p = .01$) correlations are shown separately for boys and girls (see Table 5.2).

Table 5.2

Correlations Between All Variables Separated According to Gender

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 Appearance-RS	-	.42**	.28**	.32**	.48**	.23**	-.09	-.11	.23**	.50**	.56**	.08	.39**	.53**	.52**
2 Conversations	.49**	-	.33**	.28**	.44**	.48**	.10	.13	.37**	.46**	.41**	.07	.09	.22**	.24**
3 Teasing - frequency	.32**	.26**	-	.75**	.42**	.25**	-.01	-.12	.28**	.24**	.44**	.10	.16*	.29**	.27**
4 Teasing - distress	.35**	.20**	.68**	-	.42**	.22**	-.11	-.07	.19*	.21**	.50**	.13	.20**	.35**	.33**
5 Pressure to be attractive	.49**	.56**	.39**	.35**	-	.29**	.09	-.01	.33**	.39**	.72**	.28**	.39**	.51**	.48**
6 Friends' appearance valuing	.34**	.43**	.12	.12	.35**	-	.13	.11	.26**	.28**	.18*	.06	.15*	.08	.20**
7 Friends' attractiveness	.13	.36**	.15*	.13	.24**	.20**	-	.14	.18*	.01	.01	.07	.15	-.01	-.20*
8 Social support	-.12	.15*	-.18*	-.13	-.09	-.06	.19**	-	.09	.08	.04	.09	-.13	-.16*	-.22**
9 Internalisation	.46**	.36**	.16*	.18**	.36**	.23**	.20**	-.14*	-	.25**	.40**	-.02	.21**	.11	.18*
10 Social comparison	.65**	.61**	.26**	.26**	.49**	.33**	.21**	.04	.47**	-	.44**	.01	.26**	.39**	.27**
11 Body dissatisfaction	.69**	.48**	.33**	.28**	.50**	.29**	.24**	-.09	.50**	.61**	-	.28**	.38**	.57**	.58**
12 BMI	.06	-.05	.03	-.05	.02	-.01	-.02	-.07	-.01	.07	.31**	-	-.13	.01	.09
13 Personal-RS	.44**	.18**	.26**	.26**	.26**	.11	-.06	-.26**	.23**	.30**	.38**	.06	-	.62**	.54**
14 Social anxiety	.54**	.29**	.36**	.34**	.47**	.16*	.06	-.24**	.33**	.45**	.54**	.01	.62**	-	.58**
15 Depression	.46**	.19**	.35**	.29**	.39**	.05	.06	-.31**	.34**	.32**	.48**	.08	.54**	.69**	-

Correlations above the diagonal are for boys ($N = 164$), and those below the diagonal are for girls ($N = 216$)

** $p < .01$, * $p < .05$.

In relation to Hypothesis 1, the correlation analyses revealed that boys and girls with higher appearance-RS reported greater exposure to friendship characteristics, including appearance conversations with friends, the frequency of, and feeling distress about, appearance teasing from friends, pressure from friends and peers to be attractive, and perception that friends value appearance. Appearance-RS was not associated with social support or friends' attractiveness. Notably, when considering the correlations based on the combined sample of boys and girls, appearance-RS was positively associated with friends' attractiveness ($r = .11, p = .03$).

Of relevance to Hypothesis 2, Baron and Kenny (1986) proposed that to establish mediation significant associations must first be demonstrated between 1) the independent and dependent variables, 2) the independent and mediator variables, and 3) the mediator and dependent variables. As reported above, appearance conversations, appearance teasing, pressure to be attractive, friends' valuing of appearance, and friends' attractiveness were associated with appearance-RS, while no association was found for social support, ruling out mediation. In accordance with the second requirement for mediation, appearance conversations with friends, the frequency of, and feeling distress about, appearance teasing, pressure to be attractive, and friends' valuing of appearance were positively associated with internalisation, social comparison and body dissatisfaction in boys and girls. Friends' attractiveness was positively associated with internalisation in boys and girls, and was positively associated with social comparison and body dissatisfaction in girls only. Finally, internalisation, social comparison and body dissatisfaction were positively associated with appearance-RS in boys and girls.

BMI, personal-RS, social anxiety, and depression were assessed in this study due to past evidence that they are linked with appearance-RS and/or body

dissatisfaction (Bowker et al., 2013; Park et al., 2010; Paxton et al., 2006). As found in previous research, appearance-RS and body dissatisfaction in boys and girls was associated with personal-RS, social anxiety and depression, whereas BMI was positively associated with body dissatisfaction only for both boys and girls (see Table 5.2).

It was expected that appearance-RS would be positively associated with extreme body change strategies (Hypothesis 4). Hence, associations between appearance-RS and problematic dieting and exercise patterns were examined with Pearson correlations (see Table 5.2). As expected, appearance-RS in boys and girls was positively associated with restrictive dieting and overexercise. Positive associations were also found between body dissatisfaction and dieting and exercise.

Characteristics of the Friendship Context and Appearance-RS Model

A series of models were estimated to test the hypothesised direct and indirect effects of friendship characteristics on appearance-RS. The first two models below assess the direct and indirect effects. The second two models build on the prior models by controlling for important covariates. The final models explore two adverse appearance modification methods, restrictive dieting and overexercise, as potential outcomes of appearance-RS. Bootstrapped estimates of paths, standard errors, and confidence intervals are reported, with any differences between maximum likelihood and bootstrapped estimates explicitly stated.

Model A. The aim of this analysis was to test the direct paths between friendship characteristics and appearance-RS. Social support from friends was not included in this model because it was not bivariately associated with appearance-RS. To ensure parsimony, distress about appearance teasing, but not teasing frequency, was included in the model. Distress about teasing was selected over teasing frequency, as it

tended to show stronger bivariate associations with other relevant constructs.

Therefore, the independent variables included in this model were appearance conversations with friends, distress about appearance teasing, friends' valuing of appearance, friends' attractiveness, and perceived pressure from friends to be attractive. The dependent variable was appearance-RS.

This direct effects model demonstrated a good fit with the data, $\chi^2 (2, N = 380) = .92, p = .34, \chi^2/df = .92, CFI = 1.0, \text{ and } RMSEA = .000 (90\% CI = .000-.134), p = .53$. The first section of Table 5.3 presents the path estimates, standard errors, and confidence intervals. Figure 5.1 illustrates the significant paths, and provides the standardised bootstrapped coefficients and standard errors.

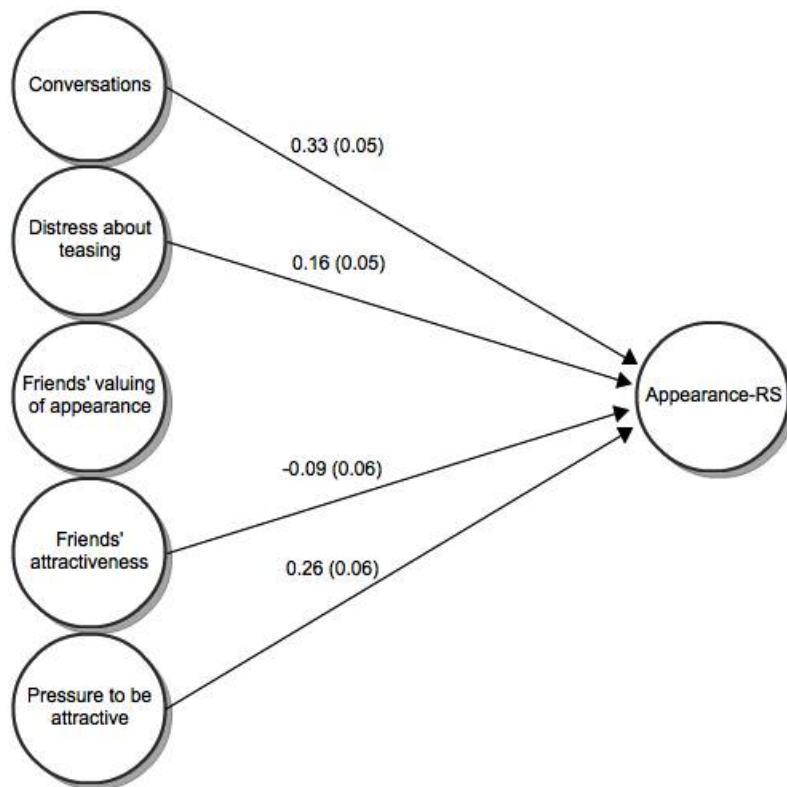


Figure 5.1. Significant paths of Model A. Standardised bootstrapped coefficients, with standard errors in parentheses, are shown here (and see the first section of Table 5.3).

The model explained 37.2% of the variance in appearance-RS, and the direct paths between appearance conversations ($\beta = .33, p < .01$), distress about appearance teasing ($\beta = .16, p < .01$), friends' attractiveness ($\beta = -.09, p = .04$) and pressure from friends to be attractive ($\beta = .26, p < .01$) were uniquely associated with appearance-RS. While a significant bivariate association was found between friends' valuing of appearance and appearance-RS, the association did not remain significant in this multivariate analysis ($\beta = .07, p = .18$).

Model B. A second model was fit to test the hypothesis that the associations between friendship characteristics and appearance-RS were indirect via internalisation of appearance ideals, social comparison and body dissatisfaction. Thus, these three variables were included in Model B as mediators. Bivariate associations calculated previously indicated that the first requirement in establishing mediation was met (Baron & Kenny, 1986), that is, that each of the independent variables was significantly associated with appearance-RS.

The second model explained 54.7% of the variance in appearance-RS, with a $\Delta R^2 = .18$ (17.5%) compared to the direct effects model. However, this second model was a poor fit to the data on some indicators, $\chi^2 (2, N = 380) = 18.76, p < .001, \chi^2/df = 9.38, CFI = .99$, and $RMSEA = .149$ (90% $CI = .092-.213$), $p = .003$. The second section of Table 5.3 presents the paths estimates, standard errors, and confidence intervals. Figure 5.2 illustrates the significant paths, and provides the standardised bootstrapped coefficients and standard errors.

Table 5.3

Path Estimates, Standard Errors, and Confidence Intervals for Models A and B

Model paths	Unstandardised				Standardised				
	Estimate	SE	Lower 95% CI	Upper 95% CI	Estimate	SE	<i>p</i>	Lower 95% CI	Upper 95% CI
Model A. Direct effects models									
<i>Direct effects</i>									
Conversations → Appearance-RS	2.26*	0.06	1.50	3.04	.33*	0.05	<.01	.23	.46
Teasing-upset → Appearance-RS	1.35*	0.05	0.60	2.13	.16*	0.05	<.01	.07	.26
Friends' values → Appearance-RS	0.40	0.30	-0.12	1.02	.07	0.05	.18	-.02	.18
Friends' attract. → Appearance-RS	-0.51*	0.31	-1.13	-0.03	-.09*	0.06	.04	-.19	-.01
Pressure → Appearance-RS	2.07*	0.48	1.10	2.97	.26*	0.06	<.01	.13	.38
Model B: Direct and Indirect effects									
<i>Direct effects</i>									
Conversations → Internalisation	0.28*	0.07	0.15	0.41	.27*	0.06	<.01	.15	.37
Teasing-distress → Internalisation	0.07	0.07	-0.06	0.21	.05	0.05	.31	-.05	.15
Friends' values → Internalisation	0.05	0.05	-0.05	0.15	.06	0.05	.35	-.06	.16
Friends' attract. → Internalisation	0.09*	0.04	0.01	0.18	.11*	0.05	.03	.02	.20
Pressure → Internalisation	0.21*	0.07	0.08	0.37	.17*	0.06	.02	.07	.29
Conversations → Comparison	0.56*	0.06	0.45	0.67	.52*	0.05	<.01	.43	.61
Teasing-distress → Comparison	0.08	0.05	-0.02	0.18	.06	0.04	.09	-.01	.13
Friends' values → Comparison	0.04	0.04	-0.04	0.12	.04	0.04	.35	-.04	.13
Friends' attract. → Comparison	-0.01	0.04	-0.09	0.07	-.01	0.04	.83	-.10	.08
Pressure → Comparison	0.21*	0.06	0.09	0.33	.17*	0.05	<.01	.07	.26
Conversations → Body dissatisfaction	0.12	0.06	-0.02	0.24	.10	0.05	.10	-.02	.20
Teasing-distress → Body dissatisfaction	0.17*	0.07	0.03	0.30	.12*	0.05	.02	.02	.20
Friends' values → Body dissatisfaction	-0.04	0.05	-0.13	0.05	-.04	0.05	.36	-.13	.05
Friends' attract. → Body dissatisfaction	0.02	0.04	-0.06	0.11	.02	0.04	.61	-.06	.10
Pressure → Body dissatisfaction	0.37*	0.08	0.20	0.51	.27*	0.06	<.01	.15	.36

Internalisation → Body dissatisfaction	0.24*	0.05	0.14	0.34	.22*	0.04	<.01	.13	.31
Comparison → Body dissatisfaction	0.35*	0.05	0.25	0.47	.32*	0.05	<.01	.24	.41
Conversations → Appearance-RS	0.39	0.36	-0.30	1.22	.06	0.05	.27	-.04	.18
Teasing-distress → Appearance-RS	0.73*	0.32	0.15	1.39	.09*	0.04	<.01	.02	.17
Friends' values → Appearance-RS	0.35	0.23	-0.07	0.82	.06	0.04	.14	-.01	.14
Friends' attract. → Appearance-RS	-0.62*	0.24	-1.11	-0.13	-.11*	0.04	<.01	-.20	-.02
Pressure → Appearance-RS	0.59	0.46	-0.35	1.51	.08	0.06	.22	-.05	.20
Internalisation → Appearance-RS	0.23	0.30	-0.40	0.79	.04	0.05	.51	-.06	.13
Comparison → Appearance-RS	1.79*	0.35	1.11	2.50	.29*	0.05	<.01	.18	.40
Body dissatisfaction → Appearance-RS	2.13*	0.31	1.55	2.84	.38*	0.05	<.01	.29	.49
<i>Indirect effects via internalisation, social comparison and body dissatisfaction</i>									
Conversations → Appearance-RS	1.87*	0.26	1.38	2.41	.28*	0.03	<.01	.20	.36
Teasing-distress → Appearance-RS	0.62*	0.21	0.21	1.08	.08*	0.02	<.01	.03	.12
Friends' values → Appearance-RS	0.04	0.16	-0.27	0.37	.01	0.03	.76	-.04	.06
Friends' attract. → Appearance-RS	0.11	0.14	-0.15	0.43	.02	0.03	.44	-.03	.07
Pressure → Appearance-RS	1.49*	0.31	0.95	2.08	.19*	0.04	<.01	.12	.26
<i>Indirect via body dissatisfaction</i>									
Internalisation → Appearance-RS	0.52*	0.13	0.26	0.81	.08*	0.02	<.01	.04	.12
Comparison → Appearance-RS	0.75*	0.17	0.42	1.11	.12*	0.03	<.01	.07	.17

Note: CI = Confidence interval. Model A fit statistics: $\chi^2(2, N = 380) = .92, p = .34, \chi^2/df = .92, CFI = 1.0$, and RMSEA = .000 (90% CI = .000-.134), $p = .53$. Model B fit statistics: $\chi^2(2, N = 380) = 18.76, p < .001, \chi^2/df = 9.38, CFI = .99$, and RMSEA = .149 (90% CI = .092-.213), $p = .003$.

* $p < .05$.

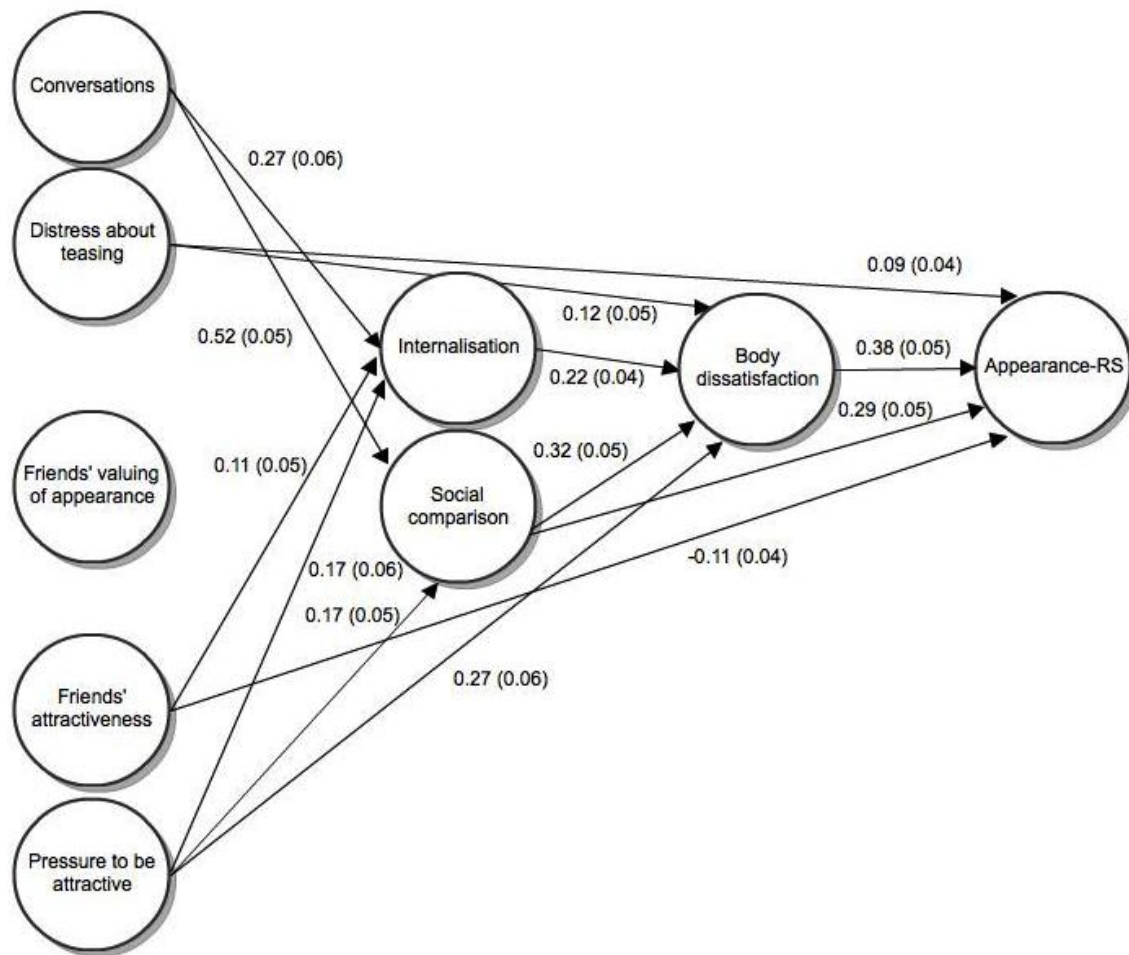


Figure 5.2. Significant paths of Model B. Standardised bootstrapped coefficients, with standard errors in parentheses, are shown here (and see the second section of Table 5.3).

First, the mediators were either directly associated with appearance-RS or were indirectly associated via body dissatisfaction. Body dissatisfaction was associated with appearance-RS ($\beta = .38, p < .01$), and the paths from both internalisation ($\beta = .22, p < .01$) and social comparison ($\beta = .32, p < .01$) to body dissatisfaction were significant.

Second, in accordance with requirements for establishing mediation, there were significant associations between four of the five independent variables and one or more of the mediators. Paths from the independent variables of appearance conversations ($\beta = .27, p < .01$), friends' attractiveness ($\beta = .11, p = .03$), and pressure to be attractive ($\beta = .17, p = .02$)

to internalisation of appearance ideals were significant. Similarly, there were significant paths from appearance conversations ($\beta = .52, p < .01$) and pressure to be attractive ($\beta = .17, p < .001$) to social comparison. Significant paths were identified from distress about teasing ($\beta = .12, p = .02$) and pressure to be attractive ($\beta = .27, p < .01$) to body dissatisfaction. Paths from friends' valuing of appearance to internalisation ($\beta = .06, p = .35$), social comparison ($\beta = .04, p = .35$), and body dissatisfaction ($\beta = -.04, p = .36$) were not significant, ruling out mediation for this independent variable.

When controlling for all other variables in this model, the direct pathways from friends' attractiveness ($\beta = -.11, p < .01$) and distress about teasing ($\beta = .09, p < .01$) to appearance-RS were also significant. All other direct pathways from the independent variables to appearance-RS were not significant ($ps \geq .05$), after internalisation, social comparison and body dissatisfaction were included in the model.

Significant indirect pathways were identified from appearance conversations ($\beta = .28, p < .01$) and pressure to be attractive ($\beta = .19, p < .01$) to appearance-RS, via the three mediators: internalisation, social comparison and body dissatisfaction. Overall, 83% of the total effect of appearance conversations on appearance-RS ($\beta = .34$) occurred indirectly via the three mediators, while the direct pathway was not significant. Similarly for pressure to be attractive, 72% of the total effect ($\beta = .27$) on appearance-RS was indirect, and the direct pathway was not significant. Distress about teasing also showed a significant indirect pathway to appearance-RS ($\beta = .08, p < .01$), however the indirect pathway occurred via body dissatisfaction, but not internalisation and social comparison. Of the total effects of distress about teasing on appearance-RS ($\beta = .16$), 55% was accounted for by the direct pathway, and 46% was accounted for by the indirect pathway via body dissatisfaction. Indirect pathways

from friends' valuing of appearance and friends' attractiveness to appearance-RS were not significant ($\beta = .01, p = .76$; $\beta = .02, p = .44$).

Lending support to the hypothesised mediational pathway, internalisation and social comparison showed significant indirect pathways to appearance-RS via body dissatisfaction ($\beta = .08, p < .01$; $\beta = .12, p < .01$). Social comparison ($\beta = .29, p < .01$), but not internalisation ($\beta = .04, p = .51$), also demonstrated a direct effect on appearance-RS. Of the total effects of social comparison on appearance-RS, 71% occurred directly, and 29% occurred via body dissatisfaction. The indirect pathway from internalisation to appearance-RS accounted for 69% of the total effects internalisation.

In summary, the results of this model indicate that higher distress about appearance teasing and lower ratings of friends' attractiveness have a direct association with heightened appearance-RS, with the link between teasing and appearance-RS being partially indirect via higher body dissatisfaction. The associations of appearance conversations and pressure to be attractive with greater appearance-RS were fully indirect via greater internalisation of appearance ideals, social comparison and body dissatisfaction. In addition, the link between internalisation of appearance ideals and heightened appearance-RS was explained by higher body dissatisfaction, and a large proportion of the positive effect of social comparison on appearance-RS occurred directly. Friends' valuing of appearance did not show a direct or indirect effect on appearance-RS.

Model C. A third model was tested with the aim of improving the fit of the previous model, and to examine the effects on the model paths when controlling for adolescents' measured BMI and self-reported personal-RS, two key variables known to covary with appearance-RS and/or body image concerns (Park et al., 2010; Paxton et al., 2006). The

associations of BMI and personal-RS with all relevant variables in the analysis were freed in this model.

Model C explained 57.0% of the variance in appearance-RS, with a $\Delta R^2 = .02$ (2.3%) compared to Model B. Notably, a very good fit with the data was demonstrated, $\chi^2(10, N = 380) = 19.45, p = .04, \chi^2/df = 1.94, CFI = .99,$ and $RMSEA = .050$ (90% $CI = .013-.083$), $p = .46$. Table 5.4 presents the path estimates, standard errors, and confidence intervals. Figure 5.3 illustrates the significant paths, and provides the standardised bootstrapped coefficients and standard errors.

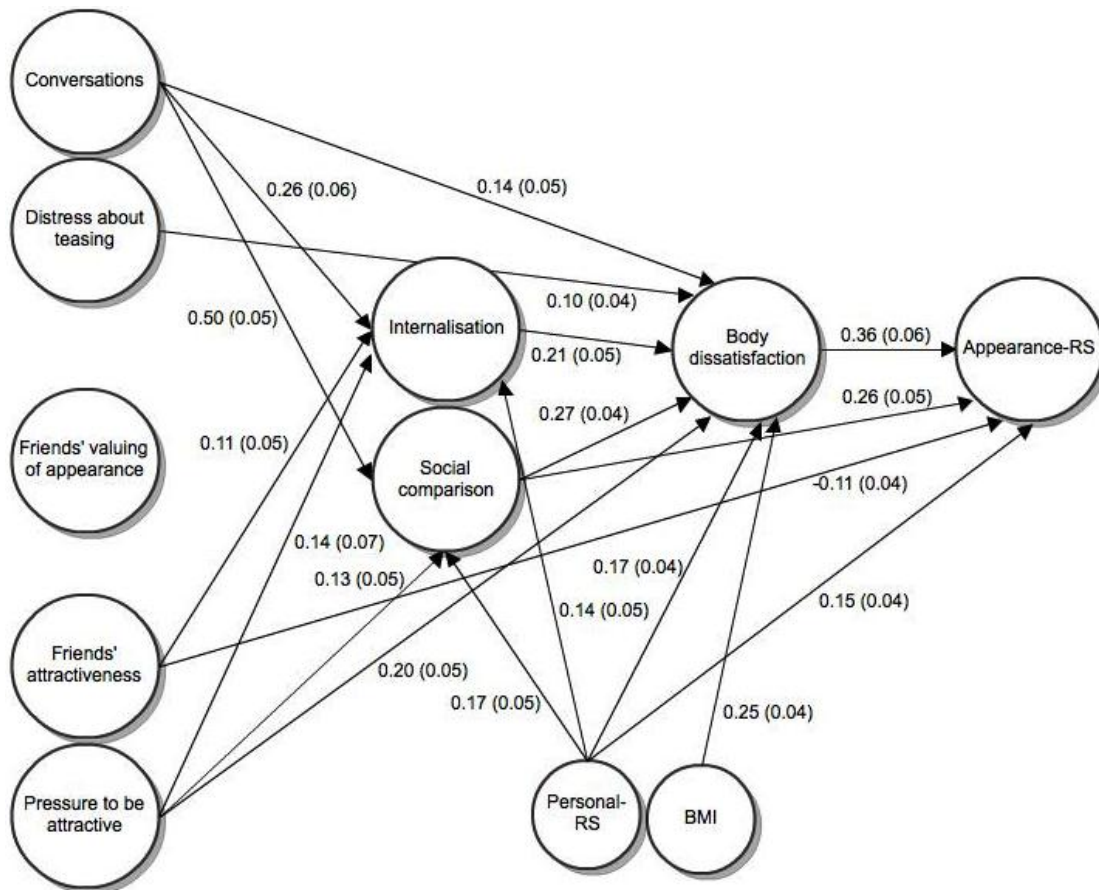


Figure 5.3. Significant paths of Model C. Standardised bootstrapped coefficients, with standard errors in parentheses, are shown here (and see Table 5.4)

Table 5.4

Path Estimates, Standard Errors, and Confidence Intervals for Model C

Model paths	Unstandardised				Standardised					
	Estimate	SE	Lower 95% CI	Upper 95% CI	Estimate	SE	<i>p</i>	Lower 95% CI	Upper 95% CI	
Model C: Direct and indirect effects with BMI and personal-RS										
<i>Direct effects</i>										
Conversations → Internalisation	0.27*	0.06	0.16	0.41	.26*	0.06	<.01	.15	.37	
Teasing-distress → Internalisation	0.04	0.06	-0.10	0.18	.03	0.05	.59	-.07	.14	
Friends' values → Internalisation	0.05	0.05	-0.04	0.13	.06	0.05	.37	-.05	.14	
Friends' attract. → Internalisation	0.09*	0.04	-0.01	0.18	.11*	0.05	.03	-.01	.20	
Pressure → Internalisation	0.17*	0.07	0.01	0.37	.14*	0.07	.02	.01	.30	
BMI → Internalisation	-	-	-	-	-	-	-	-	-	
Personal-RS → Internalisation	0.04*	0.01	0.01	0.06	.14*	0.05	<.01	.05	.24	
Conversations → Comparison	0.55*	0.05	0.44	0.65	.50*	0.05	<.01	.40	.59	
Teasing-distress → Comparison	0.05	0.06	-0.06	0.17	.04	0.04	.28	-.04	.11	
Friends' values → Comparison	0.04	0.04	-0.04	0.11	.04	0.05	.41	-.05	.12	
Friends' attract. → Comparison	-0.01	0.04	-0.08	0.07	-.01	0.05	.85	-.09	.08	
Pressure → Comparison	0.16*	0.06	0.03	0.31	.13*	0.05	<.01	.03	.24	
BMI → Comparison	-	-	-	-	-	-	-	-	-	
Personal-RS → Comparison	0.04*	0.01	0.03	0.07	.17*	0.05	<.01	.10	.25	
Conversations → Body dissatisfaction	0.16*	0.06	0.04	0.30	.14*	0.05	<.01	.03	.25	
Teasing-distress → Body dissatisfaction	0.15*	0.05	0.03	0.26	.10*	0.04	.02	.02	.17	
Friends' values → Body dissatisfaction	-0.05	0.04	-0.12	0.04	-.05	0.04	.34	-.12	.04	
Friends' attract. → Body dissatisfaction	0.02	0.03	-0.05	0.09	.02	0.04	.67	-.05	.09	
Pressure → Body dissatisfaction	0.27*	0.06	0.12	0.41	.20*	0.05	<.01	.09	.30	
Internalisation → Body dissatisfaction	0.24*	0.04	0.12	0.34	.21*	0.05	<.01	.10	.30	
Comparison → Body dissatisfaction	0.30*	0.05	0.21	0.40	.27*	0.04	<.01	.19	.36	
BMI → Body dissatisfaction	0.08*	0.01	0.06	0.10	.25*	0.04	<.01	.18	.32	
Personal-RS → Body dissatisfaction	0.05*	0.01	0.03	0.07	.17*	0.04	<.01	.09	.25	
Conversations → Appearance-RS	0.44	0.35	-0.21	1.11	.07	0.05	.20	-.03	.16	

Teasing-distress → Appearance-RS	0.60	0.31	-0.08	1.35	.07	0.04	.05	-.01	.16
Friends' values → Appearance-RS	0.35	0.22	-0.06	0.79	.06	0.04	.11	-.01	.14
Friends' attract. → Appearance-RS	-0.60*	0.20	-1.03	-0.19	-.11*	0.04	.02	-.18	-.03
Pressure → Appearance-RS	0.49	0.36	-0.28	1.38	.06	0.05	.27	-.04	.18
Internalisation → Appearance-RS	0.11	0.30	-0.48	0.75	.02	0.05	.72	-.07	.12
Comparison → Appearance-RS	1.62*	0.30	1.05	2.34	.26*	0.05	<.01	.17	.36
Body dissatisfaction → Appearance-RS	2.04*	0.30	1.35	2.64	.36*	0.06	<.01	.25	.47
BMI → Appearance-RS	-0.09	0.07	-0.22	0.03	-.05	0.04	.08	-.13	.02
Personal-RS → Appearance-RS	0.24*	0.06	0.11	0.39	.15*	0.04	<.01	.07	.24
<i>Indirect effects via internalisation, social comparison and body dissatisfaction</i>									
Conversations → Appearance-RS	1.71*	0.24	1.26	2.27	.25*	0.05	<.01	.20	.33
Teasing-distress → Appearance-RS	0.44*	0.18	0.08	0.81	.05*	0.04	<.01	.01	.09
Friends' values → Appearance-RS	0.01	0.14	-0.28	0.31	.01	0.04	.99	-.05	.05
Friends' attract. → Appearance-RS	0.09	0.13	-0.14	0.36	.02	0.04	.55	-.03	.07
Pressure → Appearance-RS	1.02*	0.23	0.60	1.46	.13*	0.06	<.01	.07	.19
BMI → Appearance-RS	0.16*	0.03	0.11	0.22	.09*	0.03	<.01	.06	.13
Personal-RS → Appearance-RS	0.22*	0.05	0.15	0.31	.13*	0.04	<.01	.09	.19
<i>Indirect via body dissatisfaction</i>									
Internalisation → Appearance-RS	0.49*	0.12	0.26	0.72	.08*	0.05	<.01	.04	.11
Comparison → Appearance-RS	0.61*	0.15	0.30	0.94	.10*	0.05	<.01	.05	.15

Note: CI = Confidence interval. Model C fit statistics: $\chi^2(10, N = 380) = 19.45, p = .04, \chi^2/df = 1.94, CFI = .99,$ and RMSEA = .050 (90% CI = .013-.083), $p = .46$.

* $p < .05$.

Similar to the previous model, the direct pathway from friends' attractiveness ($\beta = -.11, p = .02$) to lower appearance-RS was significant when controlling for all other variables in this model. Notably, the direct pathway from personal-RS ($\beta = .15, p < .01$), but not BMI ($\beta = -.05, p = .08$), to appearance-RS was also significant. All other direct pathways from the independent variables to appearance-RS were not significant ($ps \geq .05$). The inclusion of BMI and personal-RS in this model resulted in the direct pathway from distress about appearance teasing to appearance-RS becoming non-significant ($\beta = .07, p = .05$).

The covariates, BMI ($\beta = .09, p < .01$) and personal-RS ($\beta = .13, p < .01$), showed significant indirect effects on appearance-RS through internalisation, social comparison and body dissatisfaction. The indirect pathways from appearance conversations, distress about teasing, and pressure to be attractive to appearance-RS via internalisation, social comparison and body dissatisfaction remained the same as in the previous model.

In summary, the results of Model C indicate that lower ratings of friends' attractiveness and higher personal-RS are directly associated with heightened appearance-RS, with the link between personal-RS and appearance-RS being partially explained by higher internalisation of appearance ideals, social comparison and body dissatisfaction. Notably, the inclusion of BMI and personal-RS in this model reduced the direct effect of teasing on appearance-RS to non-significance. The positive associations of appearance conversations and pressure to be attractive with appearance-RS remained, and were still fully indirect via higher internalisation of appearance ideals, social comparison and body dissatisfaction. The positive association between distress about teasing and appearance-RS was fully indirect via higher body dissatisfaction only. Social comparison had direct positive effects on appearance-RS, as well as indirect effects via higher body dissatisfaction. The positive

effects of internalisation of appearance ideals on appearance-RS occurred entirely through higher body dissatisfaction.

Model D. The aim of the fourth model was to examine the overall fit, as well as the path estimates, when controlling for social anxiety and depressive symptoms, which have established links with appearance and interpersonal concerns (Park et al., 2010). The associations of depression and social anxiety with all relevant variables in the analysis were accounted for in the model.

This model explained 58.1% of the variance in appearance-RS (an additional 1.1% compared to the previous model), and demonstrated a good fit with the data, $\chi^2(16, N = 380) = 38.34, p = .001, \chi^2/df = 2.40, CFI = .99,$ and $RMSEA = .061$ (90% $CI = .036-.086$), $p = .22$. Table 5.5 presents the path estimates, standard errors, and confidence intervals. Figure 5.4 illustrates the significant paths, and provides the standardised bootstrapped coefficients and standard errors.

The inclusion of social anxiety and depression in this model produced direct paths from the independent variables to appearance-RS that were comparable to the direct paths in Model C. There was one exception, however; the direct path from personal-RS to appearance-RS became non-significant in this model ($\beta = .08, p = .14$).

Similarly, the indirect paths from the independent variables to appearance-RS were comparable to the previous model. Notably, the inclusion of social anxiety and depression in this model resulted in the indirect pathways from distress about teasing ($\beta = .03, p = .19$) and personal-RS ($\beta = .04, p = .11$) to appearance-RS, to become non-significant. Further, unlike in previous models, the indirect pathway from pressure to be attractive to appearance-RS occurred via internalisation and body dissatisfaction, but not social comparison.

Table 5.5

Path Estimates, Standard Errors, and Confidence Intervals for Model D

Model paths	Unstandardised				Standardised				
	Estimate	SE	Lower 95% CI	Upper 95% CI	Estimate	SE	<i>p</i>	Lower 95% CI	Upper 95% CI
Model D: Direct and indirect effects with BMI, personal-RS, depression and social anxiety									
<i>Direct effects</i>									
Conversations → Internalisation	0.27*	0.07	0.14	0.39	.26*	0.06	<.01	.13	.37
Teasing-distress → Internalisation	0.04	0.07	-0.10	0.19	.03	0.06	.59	-.08	.14
Friends' values → Internalisation	0.05	0.05	-0.05	0.15	.06	0.05	.37	-.06	.16
Friends' attract. → Internalisation	0.09*	0.04	-0.01	0.18	.11*	0.05	.03	-.01	.20
Pressure → Internalisation	0.17*	0.08	0.02	0.32	.14*	0.06	.02	.02	.26
BMI → Internalisation	-	-	-	-	-	-	-	-	-
Personal-RS → Internalisation	0.04*	0.01	0.01	0.06	.14*	0.05	<.01	.05	.24
Depression → Internalisation	-	-	-	-	-	-	-	-	-
Social anxiety → Internalisation	-	-	-	-	-	-	-	-	-
Conversations → Comparison	0.53*	0.05	0.43	0.63	.49*	0.06	<.01	.41	.57
Teasing-distress → Comparison	0.02	0.05	-0.07	0.11	.02	0.04	.61	-.06	.09
Friends' values → Comparison	0.05	0.04	-0.04	0.14	.05	0.05	.15	-.05	.15
Friends' attract. → Comparison	0.00	0.04	-0.09	0.07	.00	0.04	.92	-.10	.08
Pressure → Comparison	0.08	0.06	-0.04	0.20	.07	0.05	.21	-.03	.17
BMI → Comparison	-	-	-	-	-	-	-	-	-
Personal-RS → Comparison	0.01	0.01	-0.01	0.04	.06	0.05	.27	-.04	.17
Depression → Comparison	-0.09	0.17	-0.40	0.30	-.03	0.06	.68	-.13	.10
Social anxiety → Comparison	0.31*	0.07	0.14	0.43	.25*	0.06	<.01	.11	.35
Conversations → Body dissatisfaction	0.18*	0.06	0.07	0.28	.15*	0.05	<.01	.06	.23
Teasing-distress → Body dissatisfaction	0.10	0.06	-0.02	0.22	.07	0.04	.12	-.02	.15
Friends' values → Body dissatisfaction	-0.03	0.04	-0.10	0.05	-.03	0.04	.52	-.10	.05
Friends' attract. → Body dissatisfaction	0.04	0.04	-0.02	0.12	.04	0.04	.22	-.02	.13
Pressure → Body dissatisfaction	0.16*	0.07	0.01	0.31	.12*	0.05	.04	.01	.22
Internalisation → Body dissatisfaction	0.23*	0.05	0.13	0.32	.20*	0.04	<.01	.12	.29

Comparison → Body dissatisfaction	0.25*	0.05	0.16	0.34	.23*	0.04	<.01	.15	.30
BMI → Body dissatisfaction	0.08*	0.01	0.06	0.10	.24*	0.04	<.01	.18	.32
Personal-RS → Body dissatisfaction	0.01	0.02	-0.02	0.04	.03	0.05	.61	-.09	.15
Depression → Body dissatisfaction	0.44*	0.17	0.07	0.78	.14*	0.05	.02	.02	.24
Social anxiety → Body dissatisfaction	0.25*	0.08	0.11	0.41	.18*	0.06	<.01	.08	.31
Conversations → Appearance-RS	0.53	0.35	-0.14	1.29	.08	0.05	.10	-.02	.19
Teasing-distress → Appearance-RS	0.49	0.31	-0.13	1.09	.06	0.04	.11	-.02	.14
Friends' values → Appearance-RS	0.39	0.22	-0.04	0.82	.07	0.04	.08	-.01	.15
Friends' attract. → Appearance-RS	-0.50*	0.22	-0.93	-0.05	-.09*	0.04	.04	-.17	-.01
Pressure → Appearance-RS	0.20	0.46	-0.79	1.13	.03	0.06	.66	-.09	.15
Internalisation → Appearance-RS	0.13	0.30	-0.48	0.67	.02	0.05	.64	-.07	.11
Comparison → Appearance-RS	1.58*	0.33	0.93	2.26	.25*	0.05	<.01	.15	.35
Body dissatisfaction → Appearance-RS	1.74*	0.31	1.14	2.42	.31*	0.06	<.01	.19	.42
BMI → Appearance-RS	-0.07	0.06	-0.21	0.04	-.04	0.03	.16	-.12	.02
Personal-RS → Appearance-RS	0.13	0.07	-0.05	0.25	.08	0.05	.14	-.03	.16
Depression → Appearance-RS	1.73	1.16	-1.02	4.17	.10	0.06	.15	-.05	.22
Social anxiety → Appearance-RS	0.69	0.49	-0.22	1.75	.09	0.06	.15	-.03	.22
<i>Indirect effects</i>									
Conversations → Appearance-RS	1.51*	0.21	1.12	1.90	.22*	0.03	<.01	.16	.28
Teasing-distress → Appearance-RS	0.24	0.16	-0.09	0.57	.03	0.02	.19	-.01	.07
Friends' values → Appearance-RS	0.08	0.12	-0.17	0.36	.01	0.02	.54	-.03	.06
Friends' attract. → Appearance-RS	0.13	0.12	-0.09	0.40	.02	0.02	.34	-.02	.07
Pressure → Appearance-RS	0.54*	0.19	0.20	0.98	.07*	0.03	<.01	.02	.12
BMI → Appearance-RS	0.13*	0.03	0.08	0.20	.08*	0.02	<.01	.05	.11
Personal-RS → Appearance-RS	0.06	0.04	-0.01	0.15	.04	0.03	.11	-.01	.10
Depression → Appearance-RS	0.59	0.44	-0.33	1.44	.03	0.02	.15	-.02	.08
Social anxiety → Appearance-RS	1.06*	0.27	0.62	1.69	.13*	0.03	<.01	.08	.20
<i>Indirect via body dissatisfaction</i>									
Internalisation → Appearance-RS	0.39*	0.10	0.19	0.59	.06*	0.02	<.01	.03	.09
Comparison → Appearance-RS	0.43*	0.12	0.23	0.67	.07*	0.02	<.01	.04	.11

Note: CI = Confidence interval. Model D fit statistics: $\chi^2(16, N = 380) = 38.34, p = .001, \chi^2/df = 2.40, CFI = .99,$ and $RMSEA = .061$ (90% CI = .036-.086), $p = .22$.

* $p < .05$.

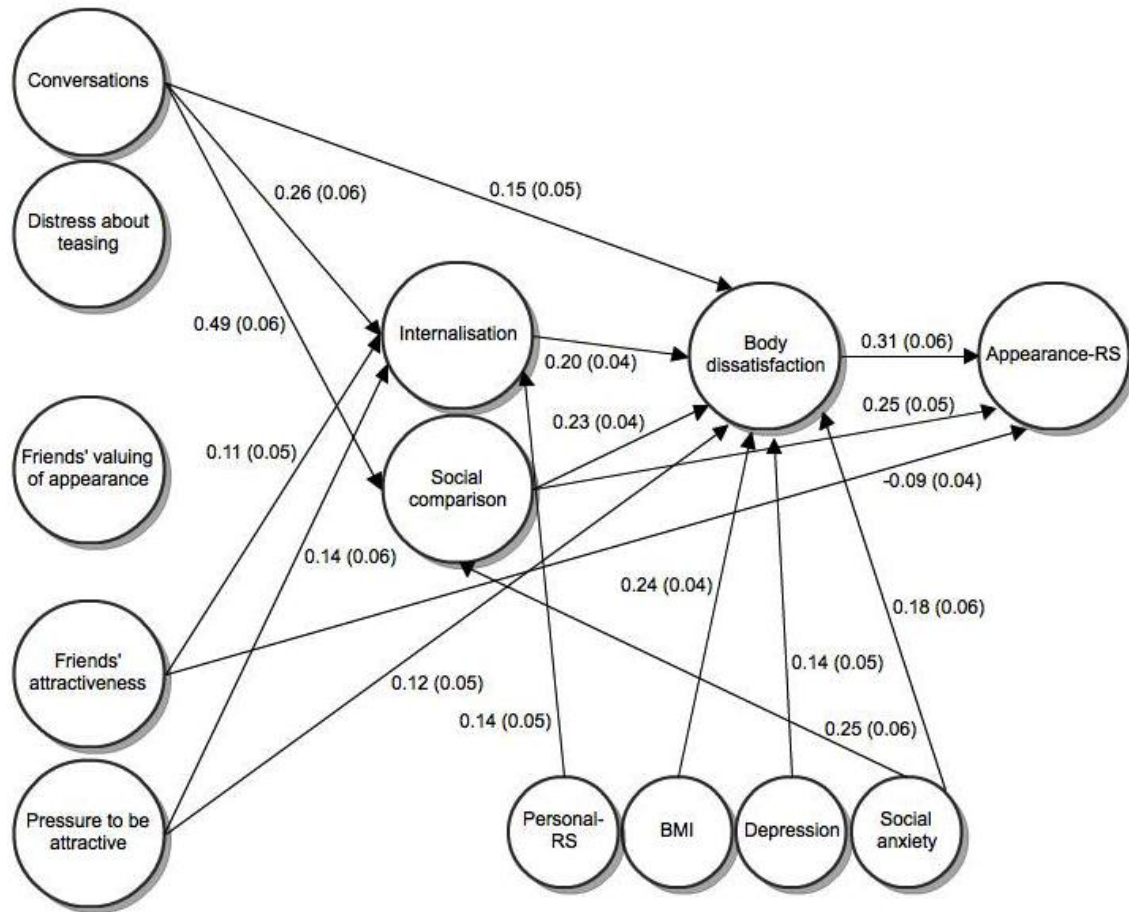


Figure 5.4. Significant paths of Model D. Standardised bootstrapped coefficients, with standard errors in parentheses, are shown here (and see Table 5.5).

The direct effect of social anxiety on appearance-RS was not significant ($\beta = .09, p = .15$), however there was a significant indirect effect of social anxiety on appearance-RS via social comparison and body dissatisfaction ($\beta = .13, p < .01$). Notably, maximum likelihood estimation showed a significant direct effect of depression on appearance-RS ($\beta = .10, p = .04$), while the bootstrapped estimate was the same but returned a more conservative p -value, indicating that the estimate was not significantly greater than 0 ($\beta = .10, p = .15$). There was no indirect effect of depression on appearance-RS.

In summary, the inclusion of social anxiety and depression in this model reduced the direct association of personal-RS with appearance-RS to non-significance. All other direct effects of independent variables and covariates on appearance-RS remained the same as in previous models. In terms of indirect effects, the inclusion of social anxiety and depression in this model resulted in the indirect pathway from distress about teasing to appearance-RS to become non-significant, and the indirect positive effect of pressure to be attractive on appearance-RS was fully explained by higher internalisation and body dissatisfaction, but not social comparison. In relation to the covariates, BMI and social anxiety showed significant indirect pathways to appearance-RS (via body dissatisfaction for BMI, and via social comparison and body dissatisfaction for social anxiety). The indirect effect of personal-RS on appearance-RS became non-significant in this model. Depression showed neither a direct nor indirect effect on appearance-RS.

Model E. The fourth aim of Study 1 was to investigate the behavioural outcomes expected to be associated with greater appearance-RS: restrictive dieting and overexercise. As a first step, only the direct paths from appearance-RS to each of these outcomes were estimated.

This model explained 25.4% of the variance in restrictive dieting and 4.1% of the variance in overexercise. Appearance-RS was associated with more restrictive dieting behaviour ($\beta = .50, p < .01$) and more overexercise ($\beta = .20, p < .01$). However the model had a poor fit with the data, $\chi^2(40, N = 380) = 288.64, p < .001, \chi^2/df = 7.22, CFI = .89$, and $RMSEA = .128$ (90% $CI = .114-.142$), $p < .001$. Figure 5.5 illustrates the significant paths, and provides the standardised bootstrapped coefficients and standard errors.

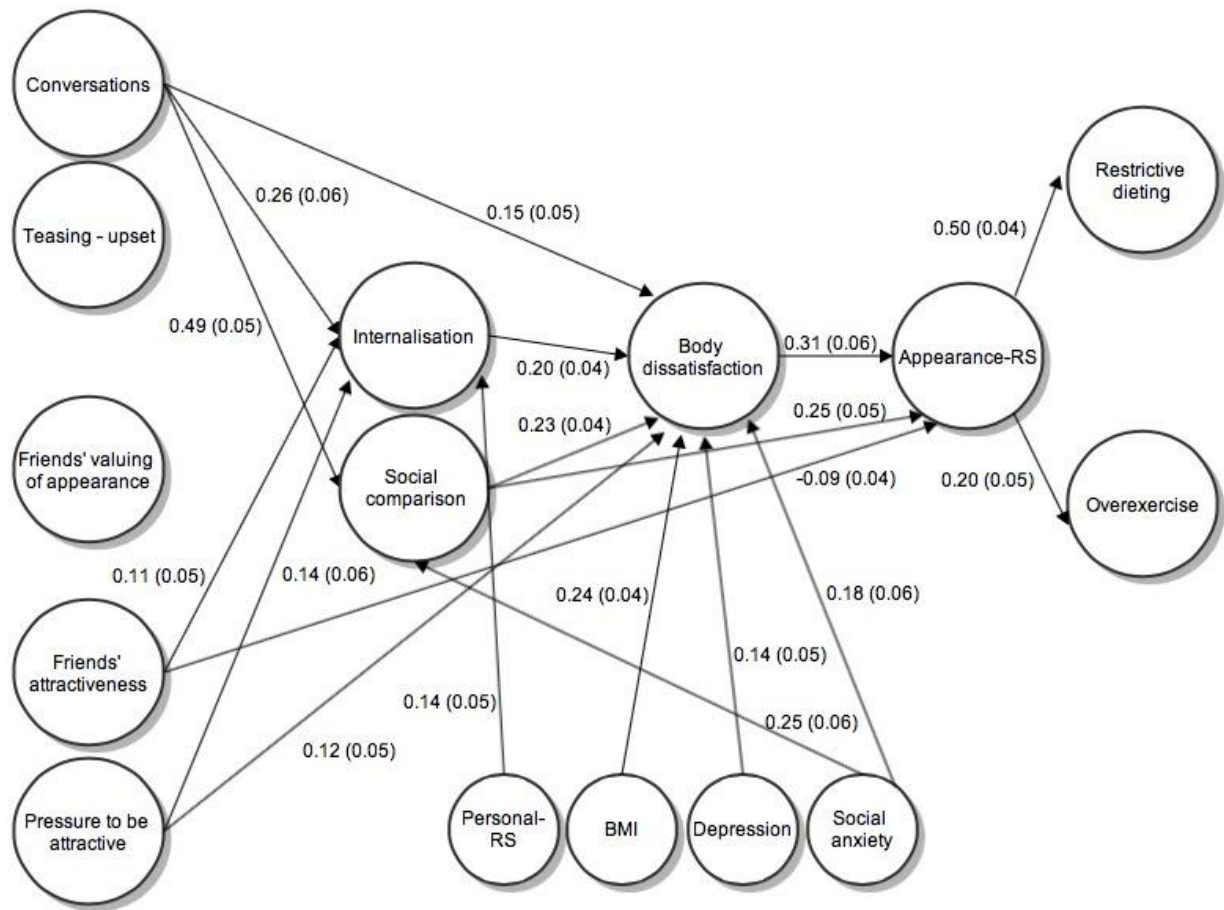


Figure 5.5. Significant paths of Model E. Standardised bootstrapped coefficients, with standard errors in parentheses, are shown here.

Model F. The aim of Model F was to improve the fit of the previous model by adding the known associations of body dissatisfaction with restrictive dieting and overexercise.

This model explained 56.8% of the variance in restrictive dieting ($\Delta R^2 = .31$ cf. Model E) and 8.4% of the variance in overexercise ($\Delta R^2 = .04$ cf. Model E). A good fit with the data was demonstrated, $\chi^2(38, N=380) = 68.12, p = .002, \chi^2/df = 1.79, CFI = .99,$ and $RMSEA = .046$ (90% $CI = .028-.063$), $p = .64$. Figure 5.6 illustrates the significant paths, and provides the standardised bootstrapped coefficients and standard errors.

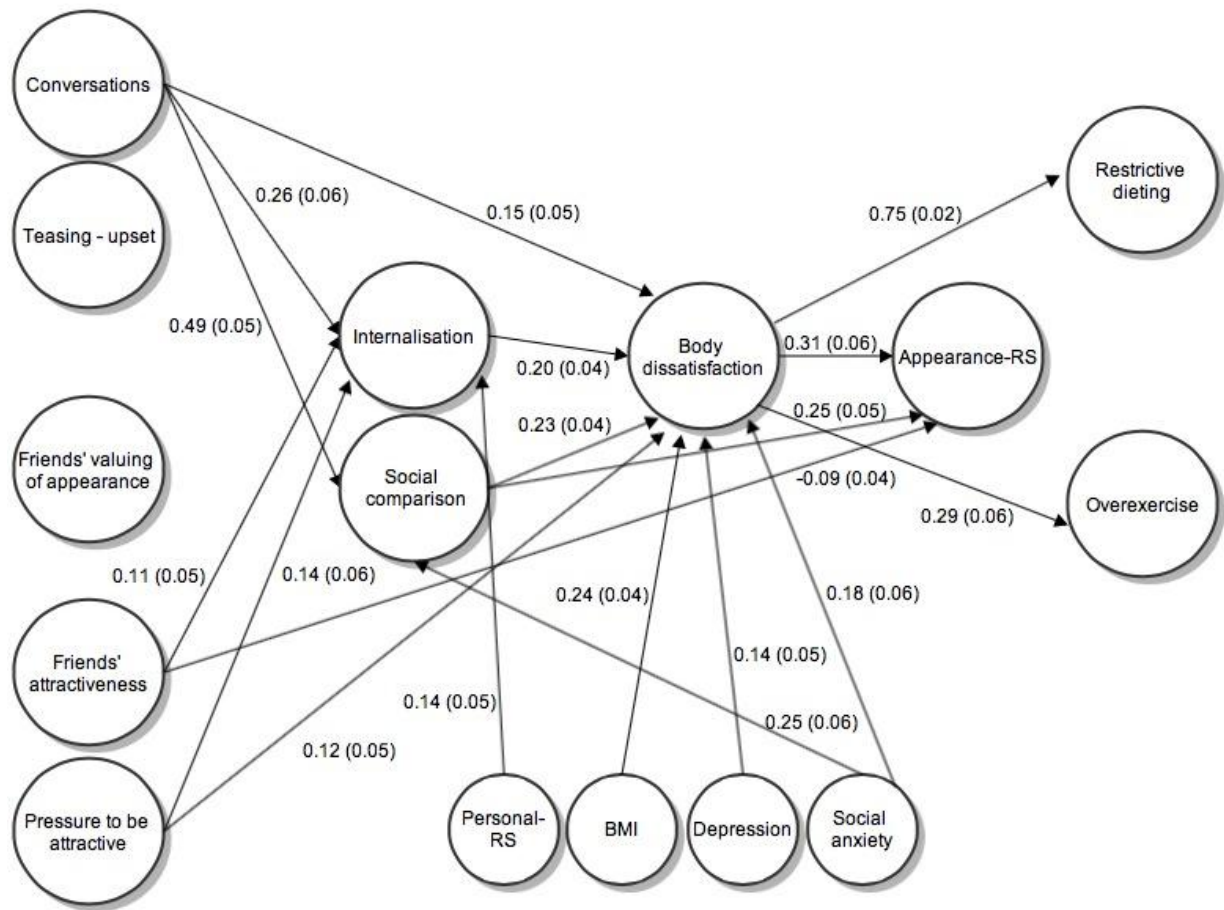


Figure 5.6. Significant paths of Model F. Standardised bootstrapped coefficients, with standard errors in parentheses, are shown here.

Importantly, while direct paths from body dissatisfaction to restrictive dieting ($\beta = .75$, $p < .01$) and overexercise ($\beta = .29$, $p < .01$) were significant, the paths from appearance-RS were no longer significant ($\beta = -.01$, $p = .79$; $\beta = .01$, $p = .94$). Also, the indirect paths from body dissatisfaction via appearance-RS to restrictive dieting ($\beta = -.01$, $p = .79$) and overexercise ($\beta = .01$, $p = .94$) were not significant.

Gender as Moderator

The final aim of this study (Hypothesis 5) was to test whether the associations between friendship characteristics and appearance-RS differed according to gender. Process

(a macro available for SPSS) was used to estimate a simple moderation model with the effect of each independent variable on appearance-RS, moderated by gender. The independent variables were friends' appearance conversations, pressure to be attractive, valuing of appearance, attractiveness, and distress about appearance teasing.

Table 5.6 presents the results of moderated regression analyses. Gender was found to moderate the association between friends' attractiveness and appearance-RS only. The friends' attractiveness x gender interaction term accounted for a significant 1.08% of the variance in appearance-RS (coefficient = 1.22, $p = .04$), when accounting for friends' attractiveness and gender. The interaction of friends' attractiveness x gender on appearance-RS is shown in Figure 5.7. Examination of the association separately for girls and boys showed that a positive association between friends' attractiveness and appearance-RS was found for girls ($B = 0.80$, $p = .04$), and no association was found for boys ($B = -0.41$, $p = .34$). The interaction term was not significant for appearance conversations (coefficient = 0.09, $p = .91$), pressure to be attractive (coefficient = 0.13, $p = .86$), friends' valuing of appearance (coefficient = 0.79, $p = .17$), or distress about teasing (coefficient = 0.60, $p = .46$).

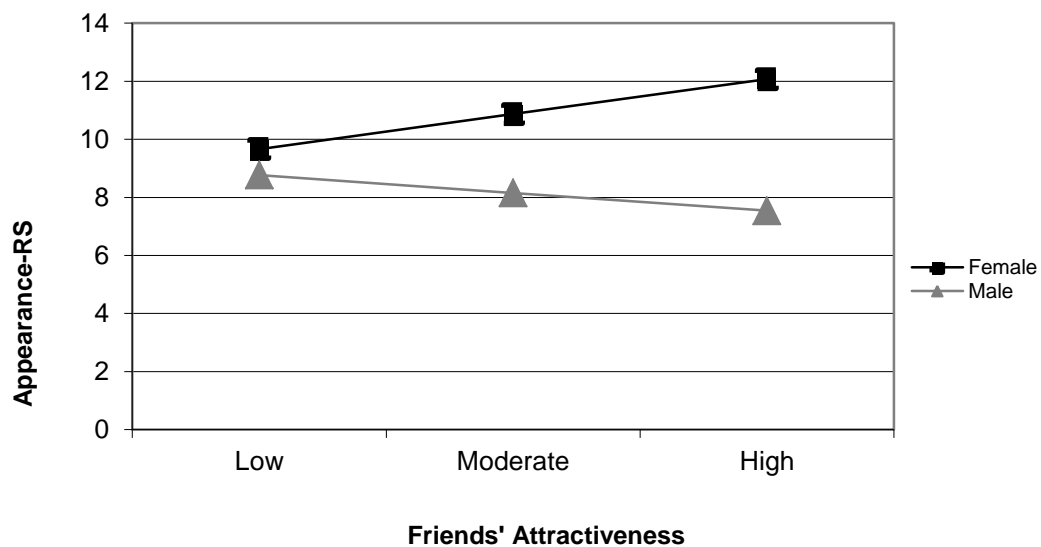


Figure 5.7. Interaction of friends' attractiveness X gender on appearance-RS.

Table 5.6

Gender as Moderator of the Associations Between Friend Characteristics and Appearance-RS (N = 380)

Variables	Coefficient	SE	<i>t</i>	<i>p</i>	<i>F</i> (3, 376)	<i>R</i> ²
Gender	-0.28	0.65	-0.43	.67		
Conversations	3.53***	0.36	9.73	<.001	44.69***	.26
Gender X Appearance conversations	0.09	0.77	0.12	.91		
Gender	2.53***	0.57	4.41	<.001		
Teasing - upset	2.75***	0.40	6.97	<.001	24.93***	.17
Gender X teasing - distress	0.60	0.81	0.74	.46		
Gender	2.38***	0.59	4.06	<.001		
Friends' valuing of appearance	1.65***	0.28	5.84	<.001	20.64***	.14
Gender X Friends' valuing of	0.79	0.58	1.36	.17		
Gender	2.76***	0.63	4.35	<.001		
Friends' attractiveness	0.28	0.29	0.96	.34	9.00***	.07
Gender X Friends' attractiveness	1.22*	0.58	2.08	.04		
Gender	1.74**	0.54	3.20	.002		
Perceived pressure	3.77***	0.36	10.57	<.001	48.68***	.28
Gender X Perceived pressure	0.13	0.74	0.17	.86		

* $p < .05$. ** $p < .01$. *** $p < .001$.

Discussion

The primary purpose of Study 1 was to examine how characteristics within the friendship context – to which young people are exposed to continually across their schooling years – are linked with sensitivity to appearance-based rejection (*appearance-RS*). The individual beliefs and processes that might mediate these associations were also examined, important covariates were considered, and gender differences in the associations between key friendship characteristics and appearance-RS were tested. Finally, problematic levels of dieting and exercise were assessed as correlates of appearance-RS.

Appearance-RS, Peer Relationships, and Friend Interactions

The findings of this study confirm predictions that sensitivity to appearance-based social rejection is higher in adolescents who more frequently engage in appearance conversations with friends, experience appearance teasing that causes distress, and perceive pressure from friends and peers to be attractive. These findings are consistent with preliminary findings on appearance-RS and with the more extensive findings from the body image field that have previously linked friends' appearance conversations (Jones, 2004; Shroff & Thompson, 2006), appearance criticism (Park, Calogero, Harwin, & DiRaddo, 2009), and pressure to be attractive (Peterson et al., 2007; Blodgett Salafia & Gondoli, 2011) with heightened appearance concerns. Unexpectedly, appearance-RS was higher in adolescents who rated their friends lower on attractiveness, although this association was moderated by gender and is discussed further below. Finally, friends' valuing of physical attractiveness may contribute to some extent to a stronger appearance culture between friends (as evidenced by a simple association between appearance-RS and perceptions of friends' appearance valuing), however the results of this study and the study by Park, DiRaddo, and Calogero (2009) showed that the association does not remain significant in multivariate

analyses, and may be subsumed by the link between appearance-RS and other friend influences, such as appearance conversations, pressure to be attractive, and friends' attractiveness.

Amidst the research into the adverse individual and social influences is the lesser-considered yet imperative search to identify influences that may protect against increases in appearance-RS and related concerns. Despite the lack of consistent evidence to suggest that social support from friends is protective of body image, it was hypothesised that, because a core concern in appearance-RS is social rejection and disapproval, social support from friends might help protect against increasing sensitivity to appearance-based rejection through interpersonal support and acceptance. However, no direct association was found between social support and appearance-RS, which is consistent with Bowker and colleagues' (2013) recent findings that appearance-RS in young adolescents was not associated with the presence of friendships or peer-rated acceptance by same-sex or other-sex peers. Interestingly however, these researchers did find that having friendships with, and acceptance by, other-sex peers differentially impacted the association between appearance-RS and indicators of psychological adjustment. Specifically, other-sex friendships were protective for high appearance-RS youth, while peer-rated acceptance by members of the opposite sex posed a risk factor for boys. These findings indicate the complexity of the role of friends and peers in influencing appearance concerns and psychological adjustment, and highlight the need for further research that may identify and clarify the interpersonal processes that are protective of adolescents' body-related well-being and behaviour.

Mediational Pathways

The current findings regarding the role of an appearance-focused friendship context in association with appearance-RS are strengthened by the consideration of the pathways

through which these social experiences might have their influence. Whereas appearance teasing from friends explicitly conveys a degree of interpersonal rejection, the remainder of the measured friendship characteristics (e.g., appearance conversations) may not have such clearly direct implications for self-views and body image concerns. Thus, identifying the processes through which these social influences are linked with appearance-RS is vital if practitioners are to implement effective strategies for intervention. Although associations between appearance-related teasing and appearance-RS were expected to be direct in the present study, it was anticipated that all other associations would be indirect via the roles of internalisation of appearance ideals, social comparison and body dissatisfaction. Overall, the findings were supportive of these mediational pathways. More specifically, the results showed that distress about appearance teasing had, as expected, a direct association with appearance-RS and also had an indirect association via higher body dissatisfaction. Hence, teasing was associated with greater body dissatisfaction, which in turn was associated with elevated appearance-RS. Given the evidence that personal-RS can create a self-fulfilling cycle of greater social problems and more emotional maladjustment over time (Downey, Freitas, Michaelis, & Khouri, 1998), it is possible that appearance-RS will do the same. Young adolescents who are higher in appearance-RS may start to react to teasing by becoming more dissatisfied with their appearance, and more sensitive to being rejected because of the way they look, resulting in increasing problems as they transition into middle and later adolescence.

Also consistent with expectations, the results suggest more indirect associations for other friendship characteristics. Exposure to appearance-related information from friends shapes body dissatisfaction and subsequently appearance-RS, through the personal acceptance or internalisation of society's appearance ideals, and engagement in social comparisons.

Moreover, the effects of engaging in appearance conversations with friends and perceived pressure from friends to be attractive on appearance-RS, were fully mediated by greater internalisation of appearance ideals, social comparison and body dissatisfaction.

Interestingly, there was no mediation effect for the association between friends' attractiveness and appearance-RS. Lower ratings of friends' attractiveness was directly associated with higher sensitivity to appearance-based rejection (i.e., no mediation), although this association must be considered in light of significant gender differences (discussed below). Thus, exposure to a strong appearance culture in the friendship context may promote concerns about appearance-based social rejection via the adoption of unattainable standards of attractiveness, tendencies to evaluate appearance in relation to peers and celebrities, and feeling dissatisfied with how one's appearance measures up to internalised standards and to the attributes born to others. These dysfunctional beliefs and processes may be contributing to an escalating cycle of dissatisfaction, distress and anxiety about social rejection.

Impact of Control Variables

The third aim of this study was to examine whether the relationships between the friendship characteristics and appearance-RS held after accounting for a set of key covariates. BMI and personal-RS were first incorporated in the model, followed by two important mental health issues – depression and social anxiety symptoms – due to their established links with appearance and interpersonal concerns (Park et al., 2010; Paxton et al., 2006). Most importantly, after adding these covariates to the model, both the direct path from distress about appearance teasing to appearance-RS, and the indirect path via body dissatisfaction, were no longer significant. These findings indicate that the links between distress about teasing, body dissatisfaction, and appearance-RS may be explained by the significant associations of BMI, social anxiety, and depressive symptoms, with greater body

dissatisfaction. Researchers have empirically demonstrated that negative affect, concerns about interpersonal acceptance, anxiety disorders and higher BMI are linked with the experience of teasing, body dissatisfaction and appearance-RS (Bowker et al., 2013; Butler, Doherty, & Potter, 2007; Eisenberg, Neumark-Sztainer, & Story, 2003; Lawler & Nixon, 2011; McCabe, Antony, Summerfeldt, Lis, & Swinson, 2003; Park et al., 2010). Overall, it appears that appearance teasing, concerns about appearance and acceptance, and psychological adjustment are numerous and meaningfully linked. Longitudinal research that investigates how teasing, depressive symptoms, social anxiety and appearance-RS may unfold over time is needed, with consideration to the importance of victimization more generally, compared to victimization specific to physical appearance.

Restrictive Dieting and Overexercise

The pathological emotional and behavioural correlates of appearance-RS are increasingly a focus for research in the hope that understanding the underlying psychological processes can inform prevention efforts (e.g., Bowker et al., 2013; Park et al., 2010). In the present study, adolescents who were more sensitive to appearance-based rejection reported higher rates of restrictive dieting and overexercise. However, these associations between appearance-RS, dieting and overexercise did not remain significant after accounting for the significant associations of body dissatisfaction with dieting and overexercise. In contrast, researchers have previously demonstrated that young adults who show heightened sensitivity to appearance-based rejection reported more symptoms of body dysmorphic disorder (preoccupation with and distress about appearance, with comorbid interference in social or occupational functioning), greater endorsement of cosmetic surgery for social or intrapersonal reasons, and stronger consideration to engaging in cosmetic surgery in the future (Calogero et al., 2010; Park et al., 2010). Notably, restrictive dieting and overexercise are two body

change strategies aimed at improving body shape or size, and would therefore be expected to show strong associations with body dissatisfaction. On the other hand, measures to assess body dysmorphic symptoms and attitudes toward cosmetic surgery permit consideration of physical characteristics beyond body shape and size, such as facial features, skin complexion, or hair. In the present study, the findings indicate that the processing bias which results in a tendency to anxiously expect, readily perceive, and overreact to, cues of appearance-based rejection, may not contribute to the understanding of the development or maintenance of problematic eating and exercise in young people, beyond the conclusions that can be drawn from the body dissatisfaction literature. Research into the problematic emotional and behavioural outcomes of appearance-RS might benefit from focusing on efforts to enhance appearance more broadly, rather than focusing on body size and shape.

Gender Differences

The final aim of this study was to investigate whether the associations between friendship characteristics and appearance-RS differed according to gender. In terms of fundamental gender differences, girls were higher than boys on almost all measures, except for the frequency of appearance teasing from friends, which was higher in boys. Unexpectedly however, the associations of the friendship characteristics with appearance-RS rarely differed for boys and girls. The one exception was the association between ratings of friends' attractiveness and appearance-RS. For the overall sample, a negative association between friends' attractiveness and appearance-RS was found. However, moderation analysis showed that girls who perceived their friends as being more attractive reported higher appearance-RS, and no association was found among boys. This discrepancy in direction between the correlation for combined sample and the correlation for girls is unusual, and the results require clarification. However, it appears that in girls, higher ratings of friends'

attractiveness may reflect unfavourable appearance comparisons (i.e., that one's friends are more attractive than oneself), and are thus linked with higher sensitivity to appearance-based rejection. This interpretation is consistent with the findings of Bailey and Ricciardelli (2010), which showed that women who more frequently perceived themselves to be less attractive than peers also reported higher body dissatisfaction.

Overall, the results of this study showed that the ways in which an appearance-focused friendship context is associated with appearance-RS appears to rarely differ between boys and girls. This finding is somewhat surprising given that Bowker and colleagues (2013) found gender differences in the protective versus damaging effect of other-sex peer acceptance on psychological adjustment in association with adolescent appearance-RS. Moreover, gender differences are reported in the associations between body dissatisfaction and friend or peer influences, including appearance teasing, appearance conversations with friends, and friends' modelling of dieting behaviours (see Chapter 2). Thus, further research is needed to clarify the pattern of associations demonstrated for boys and girls, in terms of the links between friendship characteristics and appearance-RS.

Study Limitations and Future Research Directions

Drawing on the body image literature, the present study focused on the role of the friendship context in contributing to the development or perpetuation of appearance-RS. However, the cross sectional design of this study prevents conclusions about the direction of effects. It is possible, and in fact likely, that the pathways are reversed or bidirectional. That is, that high appearance-RS youth are hypervigilant to, and therefore more readily report, pressure or criticism from their friends about appearance. Further, due to their concerns about and preoccupation with appearance, these individuals may themselves create a stronger appearance culture among their friends, through communicating and modelling their

appearance-related concerns and behaviours. This field of research would benefit strongly from studies employing longitudinal designs, which would more clearly elucidate the direction of effects. Despite this limitation, these findings make a valuable contribution to newly emerging literature concerned with understanding the social correlates of appearance-RS.

An important limitation to note, for both Study 1 and 2, is the low response rate (approximately 38%). This rate was predominantly due to one of the participating schools, which had a very large number of students enrolled, and yet a relatively smaller number of consent forms returned. There may be certain demographic differences between respondents and non-respondents, such as level of motivation or perception of social responsibility (Porter, 2004). Readers are therefore encouraged to consider the results of this thesis in light of this response rate, which could reduce the generalisability of the conclusions.

During adolescence, there is an increase in the intimacy within friendships, the frequency of interactions with the opposite sex, and the interest and involvement in romantic relationships (Buhrmester, 1990; Collins, Welsh, & Furman, 2009; Sumter, Bokhorst, Steinberg, & Westenberg, 2009). The onset of dating involvement brings along the possibility of physical attraction and intimacy. Sexual behaviour during adolescence is accompanied by an increased emphasis on physical appearance and attractiveness, and has important implications – positively and negatively – for adolescent adjustment (Collins et al., 2009). In line with the body image research that has begun to uncover important differences in relation to same- and other-sex relationships (Paxton, Norris, Wertheim, Durkin, & Anderson, 2005; Ricciardelli & McCabe, 2001), and the suggestion that appearance-RS is likely to play a key role in the formation of relationships with the opposite sex in particular (Park & Pinkus, 2009), future research regarding appearance-RS should more closely

consider the nature and content of different types of adolescent relationships, including those with the opposite sex and romantic interests.

Finally, researchers have tended to focus on uncovering the potentially harmful correlates and predictors of appearance-RS and associated problems, with the intention to better understand this processing disposition and inform intervention efforts. However, greater focus in future research on the individual and social influences that permit young people to be resilient, would be valuable for reducing appearance-RS and related concerns. For example, Romero-Canyas and Downey (2013) identified that young adults with low levels of personal-RS downplayed negativity directed toward them by a new acquaintance (i.e., they held “positive illusions”), which is likely to facilitate the formation and maintenance of relationships. In another study, the presence of a mutual best friend attenuated the association between personal-RS and social anxiety in adolescents (Bowker, Thomas, Norman, & Spencer, 2011). Theoretically grounded research into the social and individual influences that may be protective of appearance-RS, and assist individuals to cope with appearance threats, would be advantageous.

Conclusion

The findings of this study provide a sound basis for future research seeking to understand the social foundations of appearance-RS in adolescents, and highlight the importance of the friendship context. The many appearance-related overt and inadvertent interactions that occur between friends (such as appearance conversations, perceived pressure to be attractive, and appearance teasing) may create a strong appearance culture within that social context, providing the ideal environment for the development and perpetuation of appearance-RS. The way in which exposure to appearance-focused information from friends may be linked with appearance-RS appears to involve individual acceptance of society’s

appearance ideals, engagement in social comparison, and increased body dissatisfaction. While appearance-RS was linked with problematic eating and exercise habits in young people, these associations did not remain significant when controlling for body dissatisfaction, suggesting that the associations were explained by the common links of appearance-RS and disordered body change strategies with body dissatisfaction. Finally, the associations between characteristics of the friendship context and appearance-RS rarely differed for boys and girls. Taken together, these findings highlight the need for continued research examining socio-cultural influences in the development of adolescent appearance-RS.

CHAPTER 6

This chapter includes a co-authored paper, which has been prepared for publication.

Webb, H. J., & Zimmer-Gembeck, M. J. Body image attitudes and body change strategies within best friend dyads and friendship cliques: Implications for adolescent appearance-based rejection sensitivity. *Manuscript submitted for publication.*

My contribution to the paper involved data collection and analysis, and the writing of the paper.

Haley Webb (Date)

Melanie Zimmer-Gembeck (Date)
(Co-author and Supervisor)

STUDY 2

BODY IMAGE ATTITUDES AND BODY CHANGE STRATEGIES WITHIN BEST FRIEND DYADS AND FRIENDSHIP CLIQUES: IMPLICATIONS FOR ADOLESCENT APPEARANCE-BASED REJECTION SENSITIVITY

Friendships and peer relationships allow adolescents to explore their values, tackle thorny identity issues, and try out novel behaviours (Dishion & Topsord, 2011; Giordano, 1995; Prinstein & Wang, 2005). Moreover, friendships and peer groups can be influential, socializing young people into behaviours and roles they may not have otherwise tried or experienced (Dishion & Topsord, 2011). Notably, there are various types of friendship contexts, such as peers, friendship groups, and best friends, and socialization processes differ across these types of social systems (Giletta et al., 2012). For example, the few researchers that have simultaneously examined the influence of best friends and the friendship group identified that these different social system levels differentially predicted adolescent depression, smoking and alcohol use (Giletta et al., 2012; Urberg, 1992; Urberg, Degirmencioglu, & Pilgrim, 1997). Accordingly, by collecting data from friends within dyads and friendship groups using social network analyses, the aim of the present study was to examine the dyadic and group level friendship characteristics that were associated with early adolescents' sensitivity to appearance-based rejection.

Best Friends

Within the adolescent friend and peer context, one's best friend may be a particularly important socializing agent in terms of appearance-related concerns and behaviours. Research shows that individuals make a distinction between the relationship with their best friend, and the relationship with close and casual friends (Fehr, 1996), with close friendships during adolescence often described as more egalitarian and less judgemental than

relationships with parents (Giordano, 1995). Further, best friend relationships are said to be of higher quality than close friendships (Demir, Ozdemir, & Weitekamp, 2007). Research shows that friendships that are of higher quality and that are reciprocally engaging - as is expected of best friends - may be the most influential with regards to creating behavioural norms, and these friendship norms have been associated with individual adolescents' greater commitment and adherence to those norms (Dishion & Tipsord, 2011; Piehler & Dishion, 2007). Overall, these findings suggest that best friends may have important roles in setting norms and socializing attitudes and behaviours, and highlight the importance of examining appearance-related concerns in the context of best friend relationships.

To date, researchers interested in the role of friends and peers in shaping body image and related concerns have tended to focus on the individual's perceptions of their friends and peers (Hutchinson & Rapee, 2007). While we know that an adolescent's subjective view of their friends is important to understanding their own attitudes and behaviours (Zimmer-Gembeck, Hunter & Pronk, 2007), examining peer influence on the basis on an individual's perceived reports of their friends or peers can be problematic, as these perceptions are subject to inaccuracies, lack of insight, and projection processes (Jaccard, Blanton, & Dodge, 2005). Thus, greater insight into the *self-reported* attitudes and behaviours of best friends (and how they may influence one another) could help to better understand the source and the accuracy of young people's views of their social environment, and inform rejection sensitivity and body image interventions that target the interactions and behaviours that occur between adolescent friends.

Friendship Groups

Research into the influence of adolescent friends in shaping a broad range of attitudes and behaviour has tended to focus on best friend relationships as a primary source of

influence (Giletta et al., 2012). However, the connections among larger groups of friends can also be important and reveal the complexity of these relationships. It is not uncommon for adolescents to report multiple best or close friends, and many young people are not found to have a reciprocal best friend or to have a best friend who is stable over time (Hartup, 1993). Further, the wider friendship group has been found to play an important role in socialization processes in many areas, including delinquent behaviours, depressive symptoms and religious beliefs (Cheadle & Schwadel, 2012; Conway, Rancourt, Adelman, Burk, & Prinstein, 2011; Giletta et al., 2012; Haynie, 2001). Thus, the focus on best friend dyads as well as the wider friendship network in the present study was undertaken to identify the effects of each of these important levels of social influence on adolescents' appearance-RS.

Similarity Between Friends

Similarity between friends, or homophily, has been theorised to occur via the selection of friends on the basis of similar attitudes or behaviours, and the socialization toward similarity over time (Ennett & Bauman, 1994; Fisher & Bauman, 1988). Whereas similarity in generalized rejection sensitivity (personal-RS) was not demonstrated in young adolescent best friends in one previous study (Bowker, Thomas, Norman, & Spencer, 2011), researchers have demonstrated similarity between adolescent best friends in terms of music preferences, alcohol consumption, depression, and self harm (Giletta et al., 2012; Popp, Laursen, Kerr, Stattin & Burk, 2008; Selfhout, Branje, ter Bogt, & Meeus, 2009; You, Lin, Fu, & Leung, 2013). Further, similarity within friendship groups has also been demonstrated across many domains, including academic achievement, personality characteristics, depression, alcohol consumption and sexual behaviour (Burgess, Sanderson, & Umana-Aponte, 2011; Giletta et al., 2012; Van Zalk, Kerr, Branje, Stattin, & Meeus, 2010).

There is also evidence of friends' similarity in body image and related concerns. For example, middle to late adolescent girls have previously shown similarity to their friends in terms of body dissatisfaction (Paxton, Schutz, Wertheim, & Muir, 1999; Woelders, Larsen, Scholte, Cillessen, & Rutger, 2010), as well as disordered body change strategies such as dietary restraint and extreme weight loss behaviours (Hutchinson & Rapee, 2007). The importance of considering appearance-RS within best friend dyads and friendship groups becomes clear when we consider the socialization of a wide range of dysfunctional attitudes and behaviours within adolescent friend and peer groups, a process referred to by some researchers as 'deviancy training' (Dishion & Tipsord, 2011, pp 190). Further, the evidence for socialization of prosocial attitudes and behaviours within friendship groups, such as school enjoyment and achievement, and cooperative behaviour (Barry & Wentzel, 2006; Ryan, 2001), highlights how friends may also be a valuable and positive source of influence. Researchers have not previously explored, in girls or boys, the correspondence between the individual and their friendship group in their reports of appearance-RS, or the correspondence between best friends in their reports of appearance-RS, body dissatisfaction, or eating behaviour. Assessing similarity in appearance-RS between friends could identify whether further exploration of selection and socialization processes is needed, in relation to the development of appearance-RS within these friendship contexts.

Dyadic and Friendship Group Effects

After assessing similarity between friends, another aim of the present study was to begin to address the possibility that friends may socialize appearance-RS by investigating associations of appearance-RS with the self-reported, appearance-related attitudes and behaviours of adolescents' best friends and the individuals within their friendship groups. There has been some empirical research to suggest that such socialization would occur. For

example, adolescent body dissatisfaction has been linked with friends' self-reported body dissatisfaction and dietary restraint (Paxton et al., 1999; Woelders et al., 2010). Further, appearance-RS was positively associated with adolescents' and young adults' perceptions that their friends highly valued attractiveness, and (in girls) with perceptions of their friends' attractiveness (Park, DiRaddo, & Calogero, 2009; see Chapter 5). Taken together, these findings highlight the potential relevance of friends to understanding the development of appearance-related concerns during adolescence.

There is also other evidence that suggests that appearance issues may be particularly susceptible to socialization processes within friendships dyads and groups. Researchers have proposed that observable physical traits and behaviours may more strongly contribute to selection and socialization processes compared to covert attitudes and concerns, due to them being more easily discerned by observers (Hutchinson & Rapee, 2007; Tolson & Urberg, 1993). Thus, a selection of observable physical traits and behaviours and more covert attitudes and concerns were included in this study.

Body dissatisfaction and disordered eating. Researchers have suggested that body dissatisfaction and disordered eating patterns are more prevalent in young people who participate in a social group that has a strong appearance culture, whereby friend and peer pressures to comply with beauty and attractiveness ideals are thought to drive body image concerns (Jones, Vigfusdottir, & Lee, 2004). However, it is likely that the association is reciprocal; individual body dissatisfaction and dieting may also contribute to the appearance culture between friends and provide further pressure to conform. While body dissatisfaction may be concealed from friends, researchers have found that adolescent body dissatisfaction is associated with perceptions of friends' body dissatisfaction (Clark & Tiggemann, 2006), as well as friends' self-reported body dissatisfaction (Paxton et al., 1999; Woelders et al., 2010),

suggesting that body image and related concerns are in fact discussed and shared among friends.

Appearance-conditional self worth. Park (2007) highlighted the potentially close relationship between sensitivity to appearance-based rejection and having a sense of self worth that is dependent on feeling attractive, and found that they are distinct, yet positively associated constructs. Communicating to friends the perceived importance of physical attractiveness to one's self worth, may encourage friends to also invest emotionally in their appearance. When feeling attractive is the foundation of one's self worth, it may be that expectations of social acceptance and approval will also be interpreted in relation to physical appearance.

Appearance-related values. It has been proposed that perceiving friends to place high importance on appearance may encourage adoption of similar attractiveness values, and thus heighten concerns about being rejected because of a perceived inability to meet socially-accepted appearance standards (Park, DiRaddo, & Calogero, 2009). Empirically, perceptions of friends' appearance-related values have shown simple associations with appearance-RS in young adults (Park, DiRaddo, & Calogero, 2009) and adolescents (see Chapter 5), however these associations did not remain in multivariate models and may be subsumed by associations of appearance-RS with other friendship characteristics (such as appearance conversations with friends). Before ruling out the unique importance of friends' valuing of appearance to appearance-RS, this study considered it again, and sought to identify whether friends' self-reported appearance values were linked with appearance-RS.

Self-rated physical attractiveness. Within female friendship pairs it has been found that the less attractive individual perceives more rivalry in the friendship (Bleske-Rechek & Lighthall, 2010), and more broadly, researchers have found that individuals feel threatened by

a friend who is superior to them in terms of a valued trait (Tesser & Campbell, 1982). In relation to a person with high appearance-RS, a highly attractive best friend or friendship group may be experienced as threatening. In line with this idea, Park (2007) demonstrated that poorer self-rated attractiveness in young adults predicted higher appearance-RS. Overall, it appears that physical attractiveness may be an important consideration in relation to concerns about appearance-based social rejection, and accordingly, this study investigated the role of friends' self-rated attractiveness.

BMI. Finally, body size has been found to be positively associated with body dissatisfaction (Paxton, Eisenberg, & Neumark-Sztainer, 2006; Stice & Whitenton, 2002) and related constructs, including dieting behaviour (Byley, Archibald, Graber, & Brooks-Gunn, 2000), and attractiveness ratings (Swami & Tovee, 2005a; 2005b). Despite the finding in Chapter 5 that BMI was not associated with appearance-RS, BMI was assessed in the present study due to the observed relationships between BMI and other appearance concerns and behaviour that are addressed in this study.

Summary. Friends' problematic appearance concerns and behaviours are theorised to create a strong appearance culture within best friend dyads and friendship groups, potentially providing the ideal social environment for escalating distress about appearance and social acceptance. Thus, self-reported body dissatisfaction, body change strategies, appearance-conditional self worth, appearance-related values, self-rated attractiveness and BMI were assessed to determine the importance of these factors to one's friends' appearance-RS.

Best Friends: The Actor-Partner Interdependence Model

Dyadic analysis of best friend data was conducted in this study, as it is useful for determining whether the attitudes and behaviour of one person are related to the attitudes and behaviour of the other person. In particular, the aims were to examine problematic body

image attitudes and behaviours as correlates of appearance-RS within friendship dyads. To do this, the actor-partner interdependence model (APIM; e.g., Kashy & Kenny, 2000) was used.

The APIM is a model of dyadic relationships that assesses the extent to which one person's score on an independent variable may be associated with one's own score on a dependent variable (an actor effect), and also the other person's score on the dependent variable (a partner effect). For example, the following question could be addressed: does one person's valuing of appearance influence their own appearance-RS (an actor effect) as well as their best friend's appearance-RS (a partner effect)? These two effects can be assessed while statistically controlling for the non-independence in the two individuals' responses (Kenny & Ledermann, 2010). This study assessed whether one member of the dyad's appearance-related attitudes and behaviours predicted their own appearance-RS (actor effect), and their best friend's appearance-RS (partner effect). Also unique to this study was the assessment of similarity in appearance-RS between best friends.

Friendship Groups: Socio-cognitive Mapping

A third aim of the present study was to examine associations between adolescent appearance-RS and the potentially problematic body image attitudes and behaviours reported by their friendship group members. To do this, socio-cognitive mapping (SCM; Cairns, Perrin, & Cairns, 1985) was used.

SCM is a widely used peer-report method of identifying friendship groups. Individuals are asked to list groups of people within a particular social context (e.g., a school classroom) whom they know to spend time together (Gest, Farmer, Cairns, & Xie, 2003). Adolescents witness every day, the activities and interactions of those they attend school with; a viewpoint that is difficult to match using other methods (Kindermann, 2007). Thus, SCM

utilises participants' insider knowledge of their peers' friendship networks. A valid affiliation between two individuals requires that their peers confirm that alliance. The use of multiple observers in this approach is beneficial because the level of agreement across observers can be established, observer agreement about social affiliation helps to control for the tendency to exaggerate affiliation with well-behaving or popular individuals, and agreement about social affiliation across multiple observers has demonstrated consistency with independent observations of social interactions (Cairns & Cairns, 1994; Gest et al., 2003; Kindermann, 2007). Whereas researchers have tended to construct discrete groups when exploring the links between body image and related concerns within friendship groups (e.g., Hutchinson & Rapee, 2007; Paxton et al., 1999), Kindermann (2007) proposes that natural social groups are more complex than this method suggests, as an individual may not be a member of one distinct friendship group; they may affiliate with many different individuals and subgroups. Fortunately, SCM can be used in a way that permits the definition of friendship groups according to the individual. In the present study, each individual was considered to have his or her own unique friendship network.

Gender

A fourth aim of the present study was to examine gender differences in the correspondence between friends' appearance-RS, and in associations between appearance-RS and the body image attitudes and behaviours reported by one's friends. Gender differences in terms of severity of body image and appearance concerns have been reported in the literature (Bowker, Thomas, Spencer, & Park, 2013; White & Halliwell, 2010), as well as differences in how these concerns may relate to friend or peer influences. For example, some researchers have shown that body dissatisfaction is more strongly associated with appearance conversations and perceived pressure to be thin in girls than in boys, while the opposite is

sometimes found for appearance teasing (Halliwell & Harvey, 2006; Jones et al., 2004; Vincent & McCabe, 2000). Notably, much of the research concerning body image and related concerns has not included boys, precluding examination of gender differences.

More broadly, gender differences have been found in the nature of close friends and friendship groups during adolescence and young adulthood. Within young adult same-sex dyads, females have reported engaging more frequently in relationship maintenance behaviours than did males, including being supportive and open, and spending time together (Oswald, Clark, & Kelly, 2004). There was no gender difference in the level of positivity or enjoyment between best friends. During a conflict resolution task, adolescent girls demonstrated better communication and support validation with their best friend compared to boys, while boys demonstrated more withdrawal during the task, and reported experiencing higher conflict with their best friend (Black, 2000). Interestingly, in a study examining similarity between adolescent best friends in terms of psychological distress, behavioural problems, and perception of the relationship, girls were more similar to their best friend than were boys (Selfhout, Branje, & Meeus, 2007). It has been suggested that girls' best friend relationships are stronger and more interpersonally rewarding than are boys', and that boys may be more strongly influenced by a wider peer group than by dyadic relationships (Thomas & Daubman, 2001). In terms of friendship groups, a review of gender differences in relationship processes found that girls had higher levels of conversation and self-disclosure, support seeking, emotional expression, and rumination in response to stress (Rose & Rudolph, 2006). In contrast, boys were more likely to participate in rough-and-tumble and competitive play, emphasise self-interest and dominance goals, experience peer victimization, and use humour in response to stress (Rose & Rudolph, 2006).

Notably, in Chapter 5, it was generally shown that associations between adolescent appearance-RS and perceptions of the appearance culture among friends did not differ between boys and girls. However, the broader findings that show dissimilarities between male and female friendships, as well as some evidence of gender differences in body image and related concerns, highlight the importance of considering gender differences when examining appearance-RS in the context of best friend dyads and friendship groups. Overall, the findings described above indicate that girls may be more strongly influenced by their best friend and friendship group than boys. Accordingly, it was expected that best friends' appearance-related attitudes and behaviours would be more strongly associated with appearance-RS in girls than in boys. Further, as boys tend to show lower rates of appearance-RS, body dissatisfaction and dieting behaviour (Bowker et al., 2013; Wang, Byrne, Kenardy, & Hills, 2005; White & Halliwell, 2010), a higher percentage of boys within each friendship group was predicted to be protective of appearance concerns and related body change behaviours among their friends.

Study 2 Aims and Hypotheses

There were seven aims of Study 2: three relating to best friends and four relating to friendship groups. The aims, and the hypotheses associated with each aim, are described below.

Best friend similarity in appearance-RS. To assess dyadic level effects, the APIM for indistinguishable pairs was used (Olsen & Kenny, 2006; Kenny & Ledermann, 2010). In APIM, both actor and partner effects can be tested, while also estimating similarity between friends on the "effects" (exogenous variables) and modelling correlations between the "outcomes" (endogenous variables; see Figure 6.1 for a general illustration of the APIM). Thus, the first aim of Study 2 was to test the prediction that best friends' self-reported

appearance-RS would be positively associated (i.e., there would be similarity between friends). Similarity in other measures was also examined.

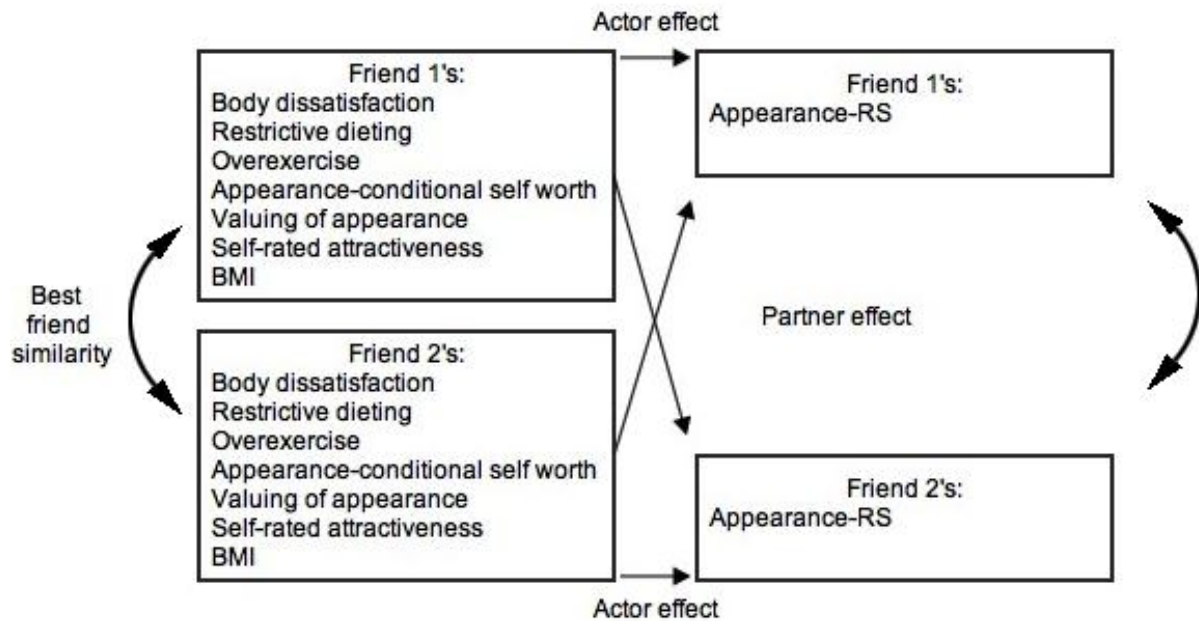


Figure 6.1. Graphical illustration of the APIM.

Associations of best friends' characteristics with appearance-RS. The second aim of this study was to examine actor and partner correlational effects on appearance-RS within best friend dyads. It was expected that self-reported body dissatisfaction, restrictive dieting, overexercise, appearance-conditional self worth, valuing of appearance and BMI would be positively associated with one's own and one's best friend's appearance-RS. Self-rated attractiveness was expected to be negatively associated with own appearance-RS, and positively associated with appearance-RS reported by one's best friend.

Associations of best friends' characteristics with appearance-RS in girls. The third aim of the present study was to examine the associations in girls only. Given the small number of boy dyads in the sample, moderation analyses were not tested. It was predicted that associations of self-reported body dissatisfaction, restrictive dieting, overexercise,

appearance-conditional self worth, and valuing of appearance with one's best friend's appearance-RS would be stronger when examined among girls only. It was also predicted that greater best friend similarity in appearance-related attitudes and behaviour would be demonstrated when examined among girls only.

Similarity in appearance-RS within friendship groups. The fourth aim of this study was to examine associations between individual appearance-RS and their friendship group's self-reported appearance-RS, aggregated across all members of that group. A positive correlation was expected.

Associations of friendship group characteristics with appearance-RS. The fifth aim of the present study was to test the prediction that individual appearance-RS would be positively associated with their friends' self-reported body dissatisfaction, restrictive dieting, overexercise, appearance-conditional self worth, valuing of appearance and attractiveness. Further, these associations were predicted to remain significant while controlling for individual BMI and the mean of friends' BMI.

The sixth aim of Study 2 was to test whether associations between individual appearance-RS and their friends' self-reported body dissatisfaction, restrictive dieting, overexercise, appearance-conditional self worth, valuing of appearance, and self-rated attractiveness would remain when controlling for the individual's self-reported scores on these same variables. It was expected that associations would remain significant.

Gender differences in associations of friendship group characteristics with appearance-RS. Finally, the seventh aim of Study 2 was to examine gender differences in the associations between individual appearance-RS and their friends' self-reported body dissatisfaction, restrictive dieting, overexercise, appearance-conditional self worth, valuing of appearance and attractiveness. It was predicted that all associations would be stronger for

girls than boys. Associations between the percentage of males in the group and the individual's and their friendship group's scores on each variable were also examined. It was predicted that a higher percentage of males in the group would be associated with lower appearance-RS, body dissatisfaction, restrictive dieting, overexercise, appearance-conditional self worth, and valuing of appearance. A higher percentage of males in the group were expected to be associated with higher self-rated attractiveness.

In summary, the hypotheses of Study 2 were:

1. Best friends' self-reported appearance-RS, body dissatisfaction, restrictive dieting, overexercise, appearance-conditional self worth, valuing of appearance, attractiveness and BMI would be positively associated.
2. Self-reported body dissatisfaction, restrictive dieting, overexercise, appearance-conditional self worth, valuing of appearance, and BMI would be positively associated with one's own and one's best friend's appearance-RS. Self-rated attractiveness was expected to be negatively associated with own appearance-RS, and positively associated with appearance-RS reported by one's best friend.
3. Associations of self-reported body dissatisfaction, restrictive dieting, overexercise, appearance-conditional self worth, valuing of appearance, attractiveness, and BMI, with one's best friend's appearance-RS would be stronger when examined in girls only.
4. Adolescents' appearance-RS would be positively associated with their friendship groups' self-reported appearance-RS, aggregated across all members of the group.
5. Adolescents' appearance-RS would be positively associated with their friendship groups' self-reported body dissatisfaction, restrictive dieting, overexercise, appearance-conditional self worth, valuing of appearance, and attractiveness. These

associations would remain significant after controlling for individual BMI and the mean of their friends' BMI.

6. Associations between adolescents' appearance-RS and their friendship groups' self-reported body dissatisfaction, restrictive dieting, overexercise, appearance-conditional self worth, valuing of appearance, and attractiveness, would remain significant when controlling for the individual's scores on these same independent variables.
7. Associations between adolescents' appearance-RS and their friendship groups' self-reported body dissatisfaction, restrictive dieting, overexercise, appearance-conditional self worth, valuing of appearance, and attractiveness would be stronger for girls than boys. Having a higher percentage of males in one's friendship group would be associated with lower appearance-RS.

Method

Participants

The participants were the same as those reported in Study 1. For the dyadic analyses, a subgroup of 132 participants was identified as members of reciprocally nominated best friend dyads. Thus 66 same-sex dyads were formed, comprised of 96 girls and 36 boys, aged 12.7 to 15.5 years ($M = 13.84$, $SD = .63$). Participants were predominantly Caucasian (86.7%), Asian (6.3%), or Aboriginal or Pacific Islander (1.6%).

Data from all participants were utilised in the process of forming friendship groups and/or in calculating friendship group average scores on each variable. However, a subset of the total sample was the focus of the friendship group analyses (i.e., the ‘target participants’). These were participants who completed a questionnaire, had an identified friendship group, and had at least 50% of their friendship group complete the survey. Three target participants were excluded as only one person in each of their friendship groups completed the survey, creating dyads. This resulted in maintaining 186 target participants, aged 12.7 to 15.4 years ($M = 13.83$, $SD = .60$). There were 135 girls and 51 boys, and they were predominantly Caucasian (85.7%), Asian (10.1%), or Aboriginal or Pacific Islander (0.5%).

To retain all participants in all analyses, multiple imputation was used whenever possible and pooled results are reported. For structural equation modelling, full information maximum likelihood was used to retain all 132 participants in the dyadic analyses.

Measures

Participants completed a number of measures. The measures pertaining to a number of variables have already been described in Chapter 4 or Chapter 5, including demographics, appearance-RS, body dissatisfaction, disordered body change strategies, appearance-conditional self worth, appearance-related values, and self-rated attractiveness. Only measures unique to this chapter are described here.

Best friend nomination. Participants were asked to provide the ID code of their closest friend for examination of dyadic level effects. Only reciprocally nominated best friend dyads were included.

Friendship group nomination. A social network assessment measure based on the methods developed by Cairns and colleagues (1985) was used to form friendship groups. Similar to the procedure used by Kindermann (2007), participants were asked to list groups of kids in their grade who hang out together. A form was provided that permitted identification of up to 20 groups, each with 20 members. Using a list of student names with corresponding ID codes, participants were instructed to identify their peers via ID codes. Participants were also instructed to include the same children in different groups if relevant, to include dyads, and to remember to include themselves.

Friendship groups were then constructed through the use of a computer program (Leung, 1994), which is based on the Social Cognitive Map procedure developed by Cairns and colleagues (1985; 1988). This program forms a co-occurrence matrix with each participant listed on a row and column. Each matrix cell presents the frequency with which peers nominated each participant as a member of the same group as every other student. Each column in the matrix provides a co-nomination profile that indicates the frequency with which peers nominated a particular participant as being in the same friendship group as each of the students in their grade. The diagonal cells present the number of times each participant was nominated as belonging to any group. A correlation matrix is then produced by inter-correlating the matrix columns. The cell contents of the correlation matrix present the similarity between the co-nomination profiles of each participant pair, with higher correlations reflecting greater profile similarity (Gest et al., 2003). In accordance with the recommendations by Cairns and Cairns (1994), a correlation between two participant profiles

of more than .40 was taken to indicate a reliable affiliation. Similarly to Kindermann (2007), unique friendship groups were then formed for each target participant by identifying all the individuals with whom each target participant was reliably affiliated. Target participants were included in analyses only if at least 50% of their friendship group completed the questionnaire, resulting in aggregated friendship group scores being based on the reports of at least 50% of the group.

Procedure

The procedure for this study was described in Chapter 5 (Study 1).

Overview of Analyses

Data screening and inspection of distributions were first conducted to ensure the analysis assumptions were met.

Best friend analyses. APIMs were estimated with AMOS software (IBM Corporation). As the dyad members were indistinguishable, each participant was listed in the database twice: once as friend 1, and once as friend 2. Following the recommendations for estimating the APIM for indistinguishable dyads (Olsen & Kenny, 2006; Kenny & Ledermann, 2010), six equality constraints were applied: equal means and variances of the causal variables, equal intercepts of the outcome variables, equal error variances, equal actor effects, and equal partner effects. The prediction of appearance-RS by each independent variable (body dissatisfaction, restrictive dieting, overexercise, appearance-conditional self worth, valuing of appearance, attractiveness and BMI) was individually assessed in seven separate models. Next, correlations between best friends' scores on each variable were examined to test similarity between best friends. Finally, the APIMs predicting appearance-RS were estimated for girls only, to examine whether the associations were stronger than for the whole sample of friendship dyads. As there were only a small number of boys in this

study ($n = 36$), gender moderation analyses were not tested. Bootstrapped estimates of paths, standard errors, and confidence intervals were reported, but these were similar to the estimates based on maximum likelihood estimation.

Friendship group analyses. Based on the procedures outlined by Kindermann (2007), and using a computer program (Leung, 1994) derived from the Social Cognitive Map procedure (Cairns et al., 1985; 1988), unique friendship groups were formed for each target participant by identifying all the individuals with whom each target participant was reliably affiliated. Aggregating the scores of group members, not including the target member, formed friendship group scores for each variable. Data screening and inspection of distributions was then conducted to ensure the analysis assumptions were met. Next, characteristics of the friendship groups were examined, and correlations between individual scores and the aggregated friendship group scores for each variable were produced. Finally, Process (a macro available for SPSS; Hayes, 2013) was employed to estimate regression models to test the moderating effect of gender on the associations between individual and friendship group scores.

Results

Tests of Statistical Assumptions

The data were screened for linearity, normality and outliers. Linearity between appearance-RS and each independent variable, and between individual scores and friendship group scores for each variable was observed in scatterplots, and no unusual scores were identified. Body dissatisfaction, in both the best friend and the friendship group databases, showed significant, but minor positive skew (skew statistic / std. error = 4.45 & 5.90). The distributions were not deemed problematic as the skew of body dissatisfaction was not severe, and no unusual scores were identified. The untransformed, raw data was therefore retained for all analyses reported here.

Best Friends

Similarity between best friends' appearance-RS and other measures. The first aim of the present study was to test similarity in best friends' self-reported appearance-RS, body dissatisfaction, restrictive dieting, overexercise, appearance-conditional self worth, valuing of appearance, attractiveness and BMI. Significant similarity was expected. Overall, friends were moderately similar in their concerns about appearance, engagement in disordered body change strategies, and beliefs about attractiveness. As predicted (Hypothesis 1), self-reported appearance-RS within best friend dyads was significantly and positively correlated ($r = .30, p = .01$). Significant associations between best friends' scores were also found for body dissatisfaction ($r = .29, p < .01$), restrictive dieting ($r = .36, p < .01$), overexercise ($r = -.18, p = .04$), appearance-conditional self worth ($r = .27, p < .01$), valuing of appearance ($r = .30, p < .01$), attractiveness ($r = .28, p < .01$), and BMI ($r = .35, p < .01$).

Actor-Partner Interdependence Models. The second aim was to examine actor and partner correlational effects on appearance-RS within best friend dyads. Table 6.1 presents

the bootstrapped estimates of paths, standard errors, and 95% confidence intervals. As expected (Hypothesis 2), significant actor effects were found in all APIMs. Appearance-RS was significantly associated with adolescents' own body dissatisfaction ($\beta = .69, p < .01$), restrictive dieting ($\beta = .52, p < .01$), overexercise ($\beta = .27, p < .01$), appearance-conditional self worth ($\beta = .54, p < .01$), valuing of appearance ($\beta = .45, p < .01$), and attractiveness ($\beta = -.29, p < .01$). All associations were positive except for self-rated attractiveness, where rating oneself as less attractive was associated with higher appearance-RS. Appearance-RS was not associated with own BMI ($\beta = .02, p = .79$).

In addition, of the seven APIMs tested, two significant partner effects were found. Adolescents' appearance-RS was significantly and positively associated with best friends' restrictive dieting ($\beta = .16, p < .01$) and with best friends' appearance-conditional self worth ($\beta = .15, p < .01$). Contrary to expectations, appearance-RS was not associated with best friends' body dissatisfaction ($\beta = .07, p = .16$), overexercise ($\beta = -.04, p = .53$), valuing of appearance ($\beta = .09, p = .07$), attractiveness ($\beta = .05, p = .43$) or BMI ($\beta = -.04, p = .49$), when controlling for actor effects and the association between best friends' scores on each independent variable.

Females only. The third aim was to examine girls only, to identify whether actor and partner effects were stronger when compared to the APIMs for the whole sample. Table 6.2 presents the bootstrapped estimates of paths, standard errors, and confidence intervals for girls only. A very similar pattern of results was produced when models were estimated with girls only, compared to the combined sample. Differences between coefficients did not reach significance (all $ps > .41$).

Table 6.1

Bootstrapped Estimates of The Actor-Partner Interdependence Models Predicting Appearance-RS (N = 132 individuals)

Variables	Unstandardised				Standardised				
	Estimate	SE	Lower 95% CI	Upper 95% CI	Estimate	SE	<i>p</i>	Lower 95% CI	Upper 95% CI
Actor Effect									
Own:									
Body dissatisfaction	3.89*	0.25	3.41	4.40	.69*	0.03	<.01	.62	.75
Restrictive dieting	7.43*	0.70	6.04	8.76	.52*	0.04	<.01	.43	.60
Overexercise	2.35*	0.51	1.29	3.28	.27*	0.06	<.01	.15	.37
Appearance-conditional self worth	4.70*	0.48	3.76	5.82	.54*	0.05	<.01	.45	.63
Valuing of appearance	3.12*	0.41	2.40	3.92	.45*	0.05	<.01	.35	.54
Self-rated attractiveness	-1.53*	0.33	-2.25	-0.91	-.29*	0.06	<.01	-.43	-.17
BMI	0.03	0.11	-0.19	0.27	.02	0.06	.79	-.09	.14
Partner Effect									
Best friend's:									
Body dissatisfaction	0.40	0.30	-0.19	1.04	.07	0.05	.16	-.03	.18
Restrictive dieting	2.22*	0.75	0.96	3.89	.16*	0.05	<.01	.07	.28
Overexercise	-0.33	0.51	-1.27	0.59	-.04	0.06	.53	-.14	.07
Appearance-conditional self worth	1.31*	0.41	0.57	2.15	.15*	0.05	<.01	.06	.25
Valuing of appearance	0.61	0.35	-0.05	1.29	.09	0.05	.07	-.01	.19
Self-rated attractiveness	0.26	0.28	-0.32	0.76	.05	0.05	.43	-.06	.15
BMI	-0.07	0.10	-0.28	0.13	-.04	0.05	.49	-.14	.06

Note: *CI* = Confidence Interval

* $p < .01$.

Table 6.2

Bootstrapped Estimates of The Actor-Partner Interdependence Models Predicting Appearance-RS in Girls Only (N = 96 individuals)

Variables	Unstandardised				Standardised				
	Estimate	SE	Lower 95% CI	Upper 95% CI	Estimate	SE	<i>p</i>	Lower 95% CI	Upper 95% CI
Actor Effect									
Own:									
Body dissatisfaction	3.94*	0.32	3.34	4.59	.69*	0.05	<.01	.59	.78
Restrictive dieting	8.55*	0.82	6.90	10.27	.57*	0.04	<.01	.48	.66
Overexercise	2.42*	0.69	0.80	3.71	.26*	0.07	<.01	.09	.41
Appearance-conditional self worth	4.05*	0.59	2.93	5.31	.47*	0.06	<.01	.35	.57
Valuing of appearance	2.87*	0.51	1.97	4.06	.43*	0.06	<.01	.30	.57
Self-rated attractiveness	-1.35*	0.42	-2.23	-0.42	-.25*	0.08	<.01	-.40	-.09
BMI	0.07	0.16	-0.23	0.40	.04	0.07	.54	-.11	.18
Partner Effect									
Best friend's:									
Body dissatisfaction	0.46	0.38	-0.49	1.05	.08	0.07	.31	-.08	.20
Restrictive dieting	2.75*	0.88	0.89	4.35	.18*	0.06	<.01	.06	.29
Overexercise	0.29	0.67	-1.11	1.47	.03	0.07	.79	-.12	.17
Appearance-conditional self worth	1.86*	0.45	0.89	2.67	.21*	0.09	<.01	.11	.31
Valuing of appearance	0.93	0.45	-0.07	1.82	.14	0.07	.07	-.01	.29
Self-rated attractiveness	0.56	0.34	-0.10	1.19	.10	0.06	.11	-.02	.23
BMI	-0.03	0.14	-0.26	0.27	-.01	0.07	.85	-.13	.13

Note: CI = Confidence Interval

* $p < .05$.

There was one difference between analyses based on the combined sample compared to analyses for girls only; the negative association between best friends' self-reported overexercise found in the combined sample ($r = -.18, p < .01$) was not significant in the analyses for girls only ($r = -.08, p = .41$). Although the difference between $-.18$ and $-.08$ was not significant, this finding suggests that the association is not significant in girls only and may be more elevated in boys.

Significant actor effects were found for girls for all independent variables. Appearance-RS was significantly predicted by own body dissatisfaction ($\beta = .69, p < .01$), restrictive dieting ($\beta = .57, p < .01$), overexercise ($\beta = .26, p < .01$), appearance-conditional self worth ($\beta = .47, p < .01$), valuing of appearance ($\beta = .43, p < .01$), and self-rated attractiveness ($\beta = -.25, p < .01$), when controlling for partner effects and the association between best friends' scores on each independent variable. All associations were positive except for self-rated attractiveness, where rating oneself as less attractive was associated with higher appearance-RS. Appearance-RS was not associated with own BMI ($\beta = .04, p = .54$).

Also consistent with analyses based on the combined sample, girls' appearance-RS was significantly and positively associated with their best friend's restrictive dieting ($\beta = .18, p < .01$) and appearance-conditional self worth ($\beta = .21, p < .01$). Girls' appearance-RS was not associated with their best friend's body dissatisfaction ($\beta = .08, p = .31$), overexercise ($\beta = .03, p = .79$), valuing of appearance ($\beta = .14, p = .07$) self-rated attractiveness ($\beta = .10, p = .11$), or BMI ($\beta = -.01, p = .85$), when controlling for actor effects and the association between best friends' scores on each independent variable.

Friendship Groups

The target participants had an average of 12.9 members in their friendship group (ranging from 2 to 32 members). Fifty six percent of groups were homogenous in terms of gender, while the remainder of the groups had a least one girl and one boy.

Similarity between the individual and their friendship group. The fourth study aim was to examine similarity in appearance-RS between the individual and their friendship group. Table 6.3 presents correlations between individual and friendship group appearance-related attitudes and behaviour. Consistent with expectations (Hypothesis 4), individual appearance-RS was positively associated with their friends' aggregated, self-reported appearance-RS ($r = .34, p < .001$). Significant associations were found between adolescents' scores and their friends' aggregated scores for body dissatisfaction ($r = .32, p < .001$), appearance-conditional self worth ($r = .18, p = .02$), valuing of appearance ($r = .24, p = .001$) and BMI ($r = .23, p = .002$). The associations between the adolescent and their friendship group were not significant for restrictive dieting ($r = .06, p = .39$), overexercise ($r = .12, p = .41$), or self-rated attractiveness ($r = .12, p = .10$).

Associations of the friendship group's appearance concerns with own appearance-RS. The fifth aim of Study 2 was to examine associations between individual appearance-RS and other appearance-related attitudes and behaviours reported by their friendship group. It was expected that individual appearance-RS would be positively associated with their friends' aggregated, self-reported body dissatisfaction, restrictive dieting, overexercise, appearance-conditional self worth, valuing of appearance and attractiveness. These associations were expected to remain significant while controlling for individual BMI and the mean of friends' BMI (Hypothesis 5). Consistent with expectations, individual appearance-RS was positively associated with friends' body dissatisfaction ($r = .28$

$p < .001$), restrictive dieting ($r = .24, p < .001$) and appearance-conditional self worth ($r = .23, p = .001$). Individual appearance-RS was negatively associated with friends' BMI ($r = -.15, p = .03$). On the other hand, individual appearance-RS was not associated with friends' overexercise ($r = -.04, p = .60$), valuing of appearance ($r = .04, p = .57$) or self-rated attractiveness ($r = -.10, p = .19$). The correlations between individual appearance-RS and friends' attitudes and behaviours did not significantly change when controlling for BMI ($ps > .42$).

The sixth aim of this study was to test whether the significant associations between individual appearance-RS and friends' body dissatisfaction, restrictive dieting, appearance-conditional self worth and BMI remained when controlling for the individual's scores on these same variables. Consistent with expectations (Hypothesis 6), individual appearance-RS was positively associated with friends' restrictive dieting ($\beta = .22, p < .001$) and appearance-conditional self worth ($\beta = .15, p = .02$), and negatively associated with friends' BMI ($\beta = -.17, p = .03$), even when controlling for the individual's restrictive dieting, appearance-conditional self worth, and BMI. Unexpectedly, individual appearance-RS was not associated with friends' body dissatisfaction when controlling for the individual's body dissatisfaction ($\beta = .08, p = .14$).

Table 6.3

Correlations Between Individual and Aggregated Friendship Group Scores (N = 186)

Individual appearance concerns:	Friendship Group appearance concerns								% male in the group
	1	2	3	4	5	6	7	8	
1. Appearance-RS	.34***	.29***	.26***	-.04	.23**	.04	-.10	-.16*	-.24*
2. Body dissatisfaction		.32***	.14	.04	.28***	.06	-.10	-.13	-.30**
3. Restrictive dieting			.06	-.04	.12	.07	-.16*	-.07	-.20**
4. Overexercise				.12	-.06	-.03	.17*	-.12	.15*
5. Appearance-conditional self worth					.18*	-.02	-.10	-.10	-.28***
6. Own valuing of appearance						.24**	.03	-.04	.09
7. Self-rated attractiveness							.12	-.02	.11
8. BMI								.23**	.13

* $p < .05$. ** $p < .01$. *** $p < .001$.

Gender. The final aim of this study was to test whether the associations between individual appearance-RS and friends' attitudes and behaviours differed according to the individual's gender. Process (a macro available for SPSS) was used to estimate a simple moderation model with the effect of each friendship group variable on individual appearance-RS, moderated by gender. The friendship group variables were appearance-RS, body dissatisfaction, restrictive dieting, overexercise, appearance-conditional self worth, valuing of appearance, and self-rated attractiveness.

Table 6.4 presents the results of the moderated regression analyses. Gender was not found to moderate the association between individual appearance-RS and the friendship group's appearance-RS (coefficient = .05, $p = .90$), body dissatisfaction (coefficient = -.84, $p = .77$), restrictive dieting (coefficient = 2.37, $p = .73$), overexercise (coefficient = 2.56, $p = .37$), appearance-conditional self worth (coefficient = -1.36, $p = .76$), valuing of appearance (coefficient = 1.07, $p = .65$), or self-rated attractiveness (coefficient = 3.50, $p = .14$).

There were, however, significant links between the gender constitution of the group and individual appearance-related concerns and behaviours. As can be seen in Table 6.3, individuals who had a higher percentage of males in their friendship group reported lower appearance-RS ($r = -.24$, $p = .001$), body dissatisfaction ($r = -.30$, $p < .001$), restrictive dieting ($r = -.20$, $p = .007$), appearance-conditional self worth ($r = -.28$, $p < .001$), and higher levels of overexercise ($r = .15$, $p = .04$).

Table 6.4

Gender as Moderator of the Associations Between Individual Appearance-RS and Their Friendship Group's Attitudes and Behaviours (N = 186)

Variables	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>F</i> (3, 182)	<i>R</i> ²
Gender	1.38	1.12	1.24	.22		
Friends' appearance-RS	0.65***	0.16	4.04	<.001	8.71***	.13
Gender X Friends' appearance-RS	0.05	0.40	0.13	.90		
Gender	1.01	1.32	0.77	.44		
Friends' body dissatisfaction	3.47**	1.12	3.11	.002	6.17***	.09
Gender X Friends' body dissatisfaction	-0.84	2.92	-0.29	.77		
Gender	1.97	1.08	1.82	.07		
Friends' restrictive dieting	8.28**	2.96	2.80	.006	5.45**	.08
Gender X Friends' restrictive dieting	2.37	6.76	0.35	.73		
Gender	2.68**	0.99	2.69	.008		
Friends' overexercise	0.07	1.41	0.05	.96	2.95*	.05
Gender X Friends' overexercise	2.56	2.82	0.91	.37		
Gender	1.55	1.31	1.19	.24		
Friends' appearance-conditional self worth	3.67*	1.66	2.21	.03	4.45**	.07
Gender X Friends' appearance-conditional self worth	-1.36	4.45	-0.31	.76		
Gender	2.89**	1.01	2.86	.005		
Friends' valuing of appearance	1.18	1.09	1.09	.28	3.11*	.05
Gender X Friends' valuing of appearance	1.07	2.37	0.45	.65		
Gender	2.46*	1.00	2.47	.01		
Friends' self-rated attractiveness	-0.72	1.16	-0.62	.53	3.69*	.06
Gender X Friends' self-rated attractiveness	3.50	2.37	1.48	.14		

* $p < .05$. ** $p < .01$. *** $p < .001$.

Discussion

This is the first study to examine both dyadic and group friendship factors that may be linked to the development of appearance-RS in adolescents. Only two previous studies have examined aspects of this, with one study examining the presence of friendship and peer acceptance as moderators of associations between appearance-RS and psychological functioning in adolescents (Bowker et al., 2013), and the other study examining associations of appearance-RS in young adults with peers' valuing of appearance and perceptions that peer acceptance is conditional on appearance (Park et al., 2009). Hence, this was the first study to look in detail at the self-reported appearance concerns and behaviours within best friend dyads and friendship groups, and the implications for adolescent appearance-RS.

The literature on body image provided sound theoretical and empirical foundations for this study. In particular, previous research on body image has shown that friends and other peers can play key roles in shaping appearance-related attitudes and behaviours more generally, as well as appearance-RS specifically (see Chapter 2; also see Jones, 2004; Jones et al., 2004; Paxton et al., 1999). Expanding on the findings presented in Chapter 5, which examined the links between appearance-RS and adolescent perceptions of their friend and peer group environment, in the present study, appearance-RS was examined within the intimate context of the best friend relationship, and the somewhat broader context of the friendship group. Similarity in appearance-RS was examined between best friends, and between adolescents and their friendship groups. Further, this study examined the links between adolescents' appearance-RS and their best friends' and friendship groups' appearance-related attitudes and behaviours, including body dissatisfaction, restrictive dieting, overexercise, appearance-conditional

self worth, valuing of appearance, self-rated attractiveness, and BMI. Finally, gender differences were considered.

Similarity Between Friends

The first aim of this study was to test the prediction that there would be similarity between the adolescent and both their best friend and their friendship group in terms of self-reported appearance-RS, as well as other appearance-related attitudes and behaviours. Researchers have previously demonstrated best friend and friendship group similarity across many domains, including academic achievement, personality characteristics, depression, alcohol consumption, sexual behaviour and self harm (Burgess et al., 2011; Giletta et al., 2012; Popp, Laursen, Kerr, Stattin, & Burk, 2008; Van Zalk et al., 2010; You et al., 2013). Notably, similarity between best friends was not demonstrated for personal-RS (Bowker et al., 2011), but has been observed within friendship groups in terms of body dissatisfaction and body change strategies (Hutchinson & Rapee, 2007; Paxton et al., 1999; Woelders et al., 2010).

Consistent with these past findings, similarity in self-reported appearance-RS between adolescent best friends and between the individual and their friendship group were found in the present study. Further, best friends reported similarity in their body dissatisfaction, restrictive dieting, appearance-conditional self worth, valuing of appearance, attractiveness and BMI. Likewise, similarity between adolescents and their friendship group members was demonstrated for body dissatisfaction, appearance-conditional self worth, valuing of appearance, and BMI, but not for restrictive dieting or attractiveness. These results indicate that best friends, as well as adolescents who belong to the same friendship groups, exhibit similarity in their appearance concerns and values, self-conceptions, as well as body size. These similarities may be due to friendships forming on the basis of pre-existing similarities, through the modelling,

reinforcement, and adoption of appearance-related values and beliefs over time between friends, or due to friends sharing the same or similar socio-cultural environment, which may foster comparable experiences, and the development of like attitudes and values (Jussim & Osgood, 1989; Paxton et al., 1999). Importantly, multiple mechanisms contributing to friends' similarity may operate simultaneously (Van Zalk et al., 2010).

That similarity between best friends was demonstrated for appearance-RS, but not personal-RS, could be understood in terms of the core focus of these constructs. Appearance-RS involves heightened concerns about one's physical appearance, and it is theorised that a strong appearance culture within one's social context may contribute to appearance-RS through the strengthening of unhealthy appearance ideals, and by providing pressure to meet, and evaluate oneself according to, these ideals. As previously mentioned, similarity between friends has been demonstrated across multiple appearance-related domains, such as body dissatisfaction and engagement in weight loss behaviours (Dishion & Tipsord, 2011). On the other hand, personal-RS focuses on concerns about being rejected more generally, and no previous study could be identified that has found similarity between friends on a construct relating to these more general social concerns, such as social anxiety or worry about peer acceptance.

Whereas similarity in dieting habits and self-perceptions of personal attractiveness was observed between best friends, significant similarity was not found for dieting and perceptions of attractiveness when the focus was on wider friendship groups. The finding for dieting habits is inconsistent with previous research, which found similarity within girls' friendship groups for dietary restraint and extreme weight loss behaviours (Hutchinson & Rapee, 2007; Paxton et al., 1999; Woelders et al., 2010). This discrepancy may be due to a difference in methodologies. Specifically, the previous studies (Hutchinson & Rapee, 2007; Paxton et al., 1999; Woelders et al., 2010)

formed discrete friendship groups, and examined intra- versus inter- friendship group variability. In contrast, in the present study, unique friendship networks were formed according to adolescents' reported social connections, and correlations were calculated between each adolescent's own report and the average of the reports from members of their friendship group. Forming a unique network for each participant permits inclusion of all individuals (within a particular social setting) with whom the participant reliability affiliates. In contrast, the process of converting naturally occurring social networks into discrete groups may artificially inflate within-group similarity on some measures. That is, important social connections may be excluded to enable the formation of discrete groups, potentially resulting in a more homogenous group. The differential impact of these group formation methodologies on study findings requires empirical clarification in future research.

In summary, these findings support the notion that adolescent appearance concerns and behaviours are similar between best friends and within their larger friendship groups. This similarity supports the possibility that adolescents select friends who have similar concerns about appearance and appearance-related behaviours, but also may be susceptible to socialization effects within friendship contexts (Brechtwald & Prinstein, 2011). As such, these findings highlight the need for further research into the processes that contribute to similarities in appearance-RS and related concerns between best friends, and between the individual and their friendship group (e.g., selection and socialization). If socialization is found to be a prominent source of similarity between friends, then future research could identify the ways in which we can intervene to modify these processes in order to prevent the proliferation of dysfunctional attitudes and behaviours.

Dyadic and Friendship Group Effects

The findings of this study are consistent with the emerging literature on sensitivity to appearance-based rejection, which suggests that appearance-RS is higher in young people who are preoccupied or dissatisfied with their appearance (Park, Calogero, Young, & DiRaddo, 2010), have a sense of self worth that is dependent on feeling attractive (Park, 2007), and consider themselves to be less attractive (Park, DiRaddo, & Calogero, 2009). Previous research has also identified that young adults who are sensitive to appearance-based rejection reported greater interest in cosmetic surgery to enhance their appearance (Park, Calogero, Harwin, & DiRaddo, 2009). The present study assessed restrictive dieting and overexercise – two body change strategies often reported by adolescents that have been associated with a range of serious emotional and physical health concerns, such as binge eating and substance use problems, emotional stress, suicide risk, and concerns about peer acceptance (Davis, Blackmore, Katzman, & Fox, 2005; French, Story, Downes, Resnick, & Blum, 1995; Lowry, Galuska, Fulton, Burgeson, & Kann, 2005). Appearance-RS was found to be higher in adolescents who engaged more frequently in these problematic body change strategies. Consistent with the findings in Chapter 5, appearance-RS was not associated with personal BMI.

Unique to the present study, however, was the investigation of the ways in which best friends' and friendship groups' attitudes may be associated with adolescents' appearance-RS, even after considering the roles of personal attitudes and perceptions about body and appearance. The results showed that sensitivity to appearance-based rejection was higher in adolescents whose best friends and friendship groups self-reported higher levels of restrictive dieting. Appearance-RS was also elevated when best friends and friendship groups reported a greater sense of self worth as dependent on

feeling attractive. These associations were strong enough to hold even after controlling for adolescents' own attitudes and behaviours. Park (2007) drew attention to the parallels between appearance-conditional self worth and appearance-RS, suggesting that an individual who tends to base their self worth on physical appearance may perceive their acceptance by others to be similarly determined. Interestingly, sensitivity to appearance-based rejection was positively linked with the tendency for one's best friend or friendship group to derive self worth from feelings of attractiveness. In terms of friends' restrictive dieting, findings from the body image literature indicate that adolescents report more body dissatisfaction when their friends or peers engage in dieting or weight loss behaviour (Blowers et al., 2003; Lieberman, Gauvin, Bukowski, & White, 2001). Indeed, in a qualitative study, mid-adolescent girls reported that dieting behaviour of close friends made them feel that they too ought to be dieting (Wertheim, Paxton, Schutz, & Muir, 1997). Overall these findings seem to suggest that restrictive dieting and appearance-conditional self worth may be communicating powerful messages between adolescent friends about socio-cultural standards of an attractive appearance (e.g., beauty and slimness for girls and attractive features and muscular physique for boys). Drawing from the findings presented in Chapter 5, modelling of dieting behaviour and a sense of self worth that is conditional on appearance may encourage one's friend to internalise society's appearance ideals (i.e., the desirability of leanness in both males and females), and compare their appearance to their friends and to other relevant targets. Dissatisfaction with, and concerns about, social rejection because of appearance may result from unfavourable social comparisons to unattainable appearance standards (Myers & Crowther, 2007).

Interestingly, appearance-RS was higher in adolescents whose friendship groups were lower in BMI, as measured as part of the study. This result is congruent with

findings in Chapter 5, which suggested that sensitivity to appearance-based rejection was higher in girls who rated their friends as more attractive. It may be that a friendship group with a lower BMI is experienced as threatening in comparison to one's own appearance (Bailey & Ricciardelli, 2010). Thus, having lean friends may elicit greater concerns about being rejected because of appearance. Notably, appearance-RS was not associated with best friends' BMI. The higher quality relationship typical of best friends (Demir et al., 2007) may protect against the appearance threat posed by having a best friend with a lower BMI.

Finally, appearance-RS was also higher in adolescents whose friendship group reported greater body dissatisfaction. However, the association with friends' body dissatisfaction did not remain when controlling for the individual's own body dissatisfaction, suggesting that friends' concerns about their body and their appearance-based social acceptance are multiply linked. Individual appearance-RS was not associated with their best friend's or their friendship group's overexercise, appearance valuing, or self-rated attractiveness.

Gender

The final aim of the present study was to examine female dyads in isolation due to there being a larger sample of female friendship dyads, and to examine gender differences in associations between peer group characteristics and individual appearance-RS (i.e., gender moderation). Gender differences in the associations between friend or peer influences and body dissatisfaction have been previously reported (Jones et al., 2004; Halliwell & Harvey, 2006; Vincent & McCabe, 1999), and the literature examining friendship during adolescence and young adulthood suggests that girls may be more strongly influenced by their best friend and friendship group than are boys, because their relationships tend to be more intimate and supportive, and they

demonstrate better communication in challenging situations (Black, 2000; Oswald et al., 2004; Rose & Rudolph, 2006; Thomas & Daubman, 2001). These findings lead one to expect that friends' appearance-related attitudes and behaviours would be more strongly associated with appearance-RS in girls than in boys. However, in Chapter 5, the associations between adolescent appearance-RS and perceived reports of the appearance culture among friends did not tend to differ between boys and girls. Similarly in the current study, the role of best friends and the friendship group in association with adolescent appearance-RS was either similar among girls when compared to the whole sample, or did not generally differ between boys and girls. In general, the findings suggest few differences between boys and girls.

More specifically, for the best friend dyads associations were calculated for the entire sample, and then repeated for girls only. The pattern of results was very similar when models were estimated with girls only, compared to the combined sample. There was one difference identified: the negative association between best friends' overexercise found in the combined sample was not significant in the analyses for girls only. The significant, negative association in the combined sample may therefore reflect a negative association in best friends' exercise patterns in boys. This result would suggest that the more excessive an adolescent boy's exercise habits become, the less excessive their best friend becomes. However, in light of this result only just reaching significance, and the small number of boys in this study, this unusual result requires replication.

Turning to the friendship group findings, associations between adolescents' appearance-RS and their friendship groups' attitudes and behaviours did not differ between boys and girls. Notably however, results confirmed expectations that having a higher percentage of boys within a friendship group would be protective of appearance

concerns and restrictive dieting, because boys tend to show lower rates of appearance-RS, body dissatisfaction and dieting behaviour than girls (Bowker et al., 2013; Wang et al., 2005; White & Halliwell, 2010). In particular, adolescents with more boys in their friendship group reported fewer concerns about appearance-based rejection, as well as lower body dissatisfaction, restrictive dieting, and appearance-conditional self worth. On the other hand, a higher percentage of boys in the friendship group was associated with greater overexercise. This last finding can be understood in relation to the higher level of physical activity undertaken in general by boys compared to girls (te Velde et al., 2007). The excessive exercise scale may not be differentiating clearly between high frequency and excessive levels of exercise, as items relating to duration and frequency of exercise, following a regular exercise plan, and the importance of exercise may reflect healthy attitudes toward physical activity.

Study Limitations and Future Research Directions

The cross sectional design of the present study precludes conclusions about the direction of effects, and the mechanisms by which appearance-related attitudes and behaviours of best friends and members of friendship groups become linked. Research employing longitudinal designs that specifically aim to differentiate selection from socialization processes in relation to appearance-RS and related concerns is therefore needed, and would be invaluable in informing prevention and intervention efforts. Furthermore, the significant physical, emotional, and social changes experienced from late childhood to late adolescence indicate that studies spanning this developmental period and assessing changes in adolescent friendship contexts and appearance concerns, will be particularly revealing.

The small number of male dyads in the present study prevented the assessment of gender as a moderator of associations between best friends, and somewhat weakens

the conclusion that associations between best friends do not differ according to gender. Research concerning adolescent boys and their best friends are encouraged to employ recruitment strategies tailored specifically for boys, to increase the participation rate of boys, and to provide a better chance of capturing male best friend dyads.

Targeting adolescent friendships within grades at school captures an important and influential social context. However, other important social relationships may have been omitted, including friendships with adolescents in other grades or outside of school. The protective effect of friendships outside one's grade at school, particularly in the context of discordant friend and peer relationships within the school grade, may be an interesting avenue for future research.

There are unique benefits associated with research based on perceived reports of friends, as well as research based on friends' self-reports; however both methods also involve inherent limitations. Researchers have predominantly examined perceived reports of friend and peer influences in association with body dissatisfaction (Hutchinson & Rapee, 2007), and this focus is likely due to the evidence that one's subjective interpretation of the environment is important to understanding one's own beliefs and behaviours (Ryan, 2000; Zimmer-Gembeck, Hunter, & Pronk, 2007). However, perceived reports of friends are subject to inaccuracies, projection processes, and overestimation of similarities (Jaccard et al., 2005; Ryan, 2000). Although the use of friends' self-reports overcome these issues (Jaccard et al., 2005), it is argued that adolescent perceptions of their friends are more important than the reality (Ryan, 2000). As such, both methods were employed in this thesis, and the evidence was clear that adolescent appearance-RS is linked with characteristics within the friendship context, regardless of whether assessments are based on perceived reports of friends (see Chapter 5), or on friends' self-reports (present chapter). However, a limitation of this

thesis is that perceived reports and friends' self-reports were not collected on the same constructs (i.e., perceived reports of, and self-reported body dissatisfaction of one's friends'). Future research that converges both forms of assessment would permit elucidation of the relative role of perceived reports compared with friends' self-reports in predicting appearance-RS (e.g., Wasyliw & Williamson, 2013). This research could inform intervention efforts by identifying the value of modifying individual interpretations of the social environment, in comparison to intervening in friend and peer group attitudes and behaviour.

Conclusion

The present study highlights the relevance of adolescents' relationships with their best friends and within their wider friendship groups to understanding sensitivity to appearance-based rejection. Best friends tend to be similar in terms of their dissatisfaction with, and concerns about, social rejection because of appearance, as well as their restrictive dieting behaviour, appearance-conditional self worth, valuing of appearance, and self-rated attractiveness. The same can be said about similarities between the individual and their friendship group, except for restrictive dieting and self-rated attractiveness. However, the impact of using different methodologies to form friendship groups on measurements of similarities between friends is unclear, and requires clarification. Consistent with expectations, sensitivity to appearance-based rejection was higher in adolescents whose best friends and friendship group self-reported higher levels of restrictive dieting, and a sense of self worth that was dependent on feeling attractive. In general, associations did not differ for boys and girls, but having more male friends in one's friendship group may be protective of appearance concerns, appearance-conditional self worth and restrictive dieting. Thus, across multiple social system levels, that is at the level of the best friend and friendship

group, exposure to friends' appearance concerns, beliefs and body change strategies may create a culture focused on physical appearance within that social system, communicating and reinforcing unhelpful appearance standards, and fostering adolescent concerns about appearance-based social acceptance.

CHAPTER 7

GENERAL DISCUSSION

Whereas enduring hypervigilance to, and anguish about, appearance-based social rejection is, in itself, distressing and functionally disruptive (Park, Calogero, Young, & DiRaddo, 2010), newly emerging research is suggesting that individuals with elevated concerns about appearance-based rejection also experience a range of debilitating issues, including symptoms of depression and social anxiety, poor self-esteem, a sense of self-worth that is dependent on feeling attractive, body dissatisfaction, body dysmorphic symptoms, and a greater interest in enhancing appearance through extreme measures, such as cosmetic surgery (Bowker, Thomas, Spencer, & Park, 2013; Calogero, Park, Rahemtulla, & Williams, 2010; Park, 2007). Previous studies have examined some of the psychological and social correlates of appearance-RS, and the discreet social interactions that activate this processing bias (e.g., Park, 2007; Park et al., 2010; Park & Harwin, 2010; Park & Pinkus, 2009). However, in terms of understanding the social influences that could drive the onset and development of appearance-RS, the literature is particularly scarce. Drawing upon existing theory and research on appearance-RS, personal-RS, and body dissatisfaction, and on two studies that examined the links between appearance-RS and interactions within social relationships (Bowker et al., 2013; Park, DiRaddo, & Calogero, 2009), the general purpose of this thesis was to identify some of the important social correlates of appearance-RS during adolescence. Specifically, the literature on the role of friends and peers in adolescent body dissatisfaction was first reviewed and critiqued to inform the subsequent investigation of the characteristics of the friendship context as they relate to adolescent appearance-RS. Next, the Appearance-RS Scale was modified for use with adolescents, creating the Adolescent Appearance-Based Rejection Sensitivity

Scale (AA-RSS). Using this measure, a model was tested in Study 1, which identified appearance-RS as a correlate of multiple aspects of the perceived friendship context (i.e., the appearance culture between friends), as mediated via internalisation of appearance ideals, social comparison and body dissatisfaction. In addition, dieting and exercise behaviours were added as outcomes of appearance-RS in this model, and gender differences and moderation were tested. Finally, Study 2 expanded upon these findings by examining appearance-RS within the context of best friend dyads and naturally occurring friendship groups.

Thesis Findings

There were seven key findings of this thesis. These findings included: 1) the utility of the new AA-RSS measure; 2) the significant associations between appearance-focused friendship characteristics and heightened appearance-RS; 3) the mediation of many of the associations between friendship characteristics and appearance-RS by internalisation of appearance ideals, social comparison and body dissatisfaction; 4) the positive associations between appearance-RS and engagement in dieting and exercise that failed to reach significance when controlling for body dissatisfaction; 5) the similarity in appearance-RS between adolescents and their best friends and friendship groups; 6) the significant associations between adolescents' appearance-RS and other appearance concerns and behaviours reported by their best friends and friendship groups, and; 7) the associations across both studies between appearance-RS and friendship characteristics that did not tend to differ between boys and girls.

A new measure. The first key finding was the usefulness and reliability of the AA-RSS for assessing appearance-RS in adolescents. This measure was founded on Park's (2007) Appearance-RS Scale and will be useful for research spanning late childhood to middle adolescence (i.e., from approximately 9 to 16 years), considering

the content and language of the items, the format on which it was based (CRSQ; Downey, Lebolt, Rincon, & Freitas, 1998), and that body image and appearance concerns have been found to emerge in children as young as six years of age (Lowes & Tiggemann, 2003). Based on the language of the AA-RSS items, it is recommended that the Appearance-RS Scale be used for young people aged from around 17 years. Evidence to support this suggestion comes from a study by Park and colleagues (2010), whereby the Appearance-RS Scale demonstrated high internal consistency in a sample that had a lower age range of 17 years.

The AA-RSS is recommended for use in boys and girls given that the items were modified directly from the Appearance-RS Scale and were designed to be relevant for both sexes, and that the items demonstrated high internal consistency for boys and girls. Given the tendency of researchers in this field to focus on the concerns of girls (McCabe & Ricciardelli, 2003), continued research addressing appearance concerns in both boys and girls is encouraged.

Bowker and colleagues (2013) recently published a study employing a version of the Appearance-RS Scale modified for use in early adolescents. In comparing the item content, internal consistency, and factor solutions between the AA-RSS and Bowker and colleagues' scale, they seem similar. Future research comparing these two scales directly may be needed to determine whether findings based on these two scales can be meaningfully compared, or whether one of these scales in particular is recommended. Moreover, further research is needed to examine how the AA-RSS (and Bowker et al.'s measure) operates in different populations, including for example, adolescents with eating disorders and physical disabilities, and adolescents from more diverse socio-cultural backgrounds.

Finally, longitudinal research concerning the development and implications of appearance-RS has not yet been conducted. However, such research is necessary, and researchers are encouraged to investigate the psychometric properties of the AA-RSS (and/or the Appearance-RS Scale and Bowker and colleagues' revisions) longitudinally.

Friendship characteristics and appearance-RS are associated. A second key finding derives from Study 1, whereby multiple measures of adolescents' perceptions of the appearance-related values and attitudes of their friends were associated with greater appearance-RS. Hence, these findings suggest that when boys and girls (between the ages of 12 and 15.5 years) are embedded within an appearance culture, they more anxiously expect, and readily perceive, cues of interpersonal rejection based on the way they look. Future research should expand these findings to consider longitudinal and bidirectional associations between friendship characteristics and appearance-RS. Just as it has been proposed and found in studies of personal-RS in children and adolescents (Downey & Feldman, 1996; McLachlan, Zimmer-Gembeck, & McGregor, 2010; London, Downey, Bonica, & Paltin, 2007), it is likely that appearance-related rejection experiences (such as appearance teasing), leave a psychological legacy in the form of appearance-RS.

Many associations between friendship characteristics and appearance-RS were indirect. Because of the expected strong impact of rejection experiences on appearance-RS, a direct association was expected between distress about appearance teasing and appearance-RS. However, the remaining friendship characteristics – appearance conversations, pressure from friends and peers to be attractive, and friends' attractiveness – were not expected to be directly linked with appearance-RS through the conferral of interpersonal rejection. Thus, a third interesting outcome of this study regarded the indirect associations (i.e., mediated pathways) of appearance conversations

with friends and perceived pressure from friends to be attractive, with appearance-RS via greater internalisation of appearance ideals, social comparison and body dissatisfaction. That is, adolescents who perceived a greater appearance-focused friendship context had heightened appearance-RS to the extent that they personally endorsed society's appearance ideals, compared their appearance to others' appearance, and felt dissatisfied with their appearance. Appearance teasing, however, maintained a direct association with appearance-RS, as well as having an indirect association with appearance-RS via higher body dissatisfaction. This was expected given that appearance teasing explicitly conveys appearance criticism and interpersonal rejection.

Notably, the inclusion of BMI, depression and social anxiety in the model resulted in both the direct and the indirect paths from teasing to appearance-RS becoming non-significant. In consideration of previous findings that negative affect, concerns about interpersonal acceptance, anxiety, and BMI are linked with teasing, body dissatisfaction and appearance-RS (Bowker et al., 2013; Butler, Doherty, & Potter, 2007; Eisenberg, Neumark-Sztainer, & Story, 2003; Lawler & Nixon, 2011; McCabe, Antony, Summerfeldt, Lis, & Swinson, 2003; Park et al., 2010), the present findings suggest that appearance teasing, concerns about appearance and acceptance, and psychological adjustment are numerous and meaningfully linked.

The Tripartite Influence Model of body dissatisfaction and eating disturbance (Keery, van den Berg, & Thompson, 2004; Thompson et al., 1999) provides one model for understanding how these factors may be linked. This model proposes that socio-cultural pressures (including peers' appearance teasing) lead to body dissatisfaction via internalisation and social comparison, and body dissatisfaction in turn leads to problematic eating and poorer psychological adjustment. However, in their review of prospective and experimental studies of the risk factors for eating pathology, Stice

(2002) found negative affect to be a causal risk factor for body dissatisfaction and caloric intake, as well as a potentiating factor that amplifies the effects of other risk factors. Further, Stice (2002) showed BMI to be a risk factor for body dissatisfaction and eating behaviour, and body dissatisfaction was shown to be a risk factor for eating behaviour. Considering these elements together, exposure to socio-cultural influences, including friends' appearance teasing, may lead to greater body dissatisfaction. Furthermore, BMI may be a vulnerability factor for body dissatisfaction and eating pathology, as a greater deviation from the lean ideal is likely to attract increased socio-cultural pressure (Stice, 2002). Eating pathology and appearance-RS may be outcomes of body dissatisfaction, whereby dietary restraint is taken up to comply with socio-cultural pressure and reduce body size, and concerns about social rejection develop because appearance standards are not perceived to be met. However, direct links to eating pathology and appearance-RS from socio-cultural influences are also likely, such as from appearance teasing, due to the inherent threats to one's appearance and social acceptance. Importantly, negative affect may be a core psychological risk factor, with important links at all points of this developmental process, including as a consequence of appearance teasing and body dissatisfaction, and also as a correlate of eating pathology and appearance-RS (Stice & Shaw, 2002; van den Berg, Thompson, Obremski-Brandon, & Covert, 2002). It is clear that longitudinal research is needed to examine a more complex model, such as the one drafted on this page, which could identify how this complex pattern of emotional and behavioural problems unfolds over time.

Restrictive dieting and overexercise. A fourth finding of this thesis was the links of appearance-RS with adolescents' elevated levels of restrictive dieting and overexercise prior to, but not after, adjusting for body dissatisfaction. This finding is

not surprising given that the strategies of dieting and exercising are focused on reducing body size, rather than changing appearance more generally. Thus, although appearance-RS and body dissatisfaction are each important correlates of dieting and exercise in adolescents, the stronger correlate would be body dissatisfaction.

Friendship dyads and groups are similar in their appearance-RS and other appearance concerns and behaviours. A fifth finding comes from Study 2 where the investigation of friendship characteristics was extended by examining appearance-RS within the context of best friend dyads and friendship groups. Reciprocally nominated best friends dyads were formed, and peer nominations were used to identify reliable friendship affiliations. Reports from members of each dyad and from members of each friendship group were used in these analyses, and in this way, the results were extended beyond the use of adolescents' perceived reports of their friends.

In these analyses, adolescents showed significant similarities to their best friend and their friendship group in terms of their self-reported appearance-RS, as well as other appearance-related concerns and behaviours. These findings highlight the need for longitudinal research to elucidate the mechanisms by which friends show resemblance to one another. In particular, similarity between friends may be due to the selection of friends based on existing similarities, and/or due to friends influencing or socializing one another over time (Kandel, 1978; Ryan, 2000). In an examination of selection and socialization processes in relation to body dissatisfaction and eating behaviour, similarity between female adolescent friends was found to be due to selection, rather than socialization, with changes over time being the result of individual traits, such as age, BMI, body dissatisfaction, and negative affect (Rayner, Schniering, Rapee, Taylor, & Hutchinson, 2013). These findings highlight the importance of identifying how appearance-RS in adolescent friends becomes similar, as the

mechanism of action will determine the ways in which clinicians can make use of, or intervene in, the behaviours of adolescent friends to address concerns about appearance-based rejection.

Within dyads and groups, attitudes and behaviours of friends were associated with the others' appearance-RS. The sixth finding is also drawn from Study 2, whereby the links between adolescents' appearance-RS and the problematic concerns and behaviours reported by their friends were examined. Adolescents reported greater appearance-RS when their best friends and friendship groups reported higher levels of restrictive dieting, and a sense of self worth that is dependent on feeling attractive. These findings suggest that the propensity of one's best friend and friendship group to base their self worth on physical appearance, and to engage in dieting or weight loss behaviours, may communicate powerful messages about socio-cultural standards of beauty and attractiveness, and thus be linked with greater sensitivity to appearance-based rejection. This view is supported by qualitative research finding that dieting behaviour by close friends leads adolescent girls to feel that they too ought to be dieting (Wertheim, Paxton, Schutz, & Muir, 1997).

Boys compared to girls. The final key finding of this thesis pertains to the pattern of findings for boys compared to girls. Associations of adolescents' appearance-RS with their perceptions of appearance-focused friendship characteristics, and with their friends' self-reported appearance characteristics, did not generally differ between boys and girls. These findings are important given that researchers have sometimes found body dissatisfaction to be more strongly linked with appearance conversations and perceived pressure to be thin in girls (Halliwell & Harvey, 2006; Jones et al., 2004), and appearance teasing in boys (Vincent & McCabe, 1999). However, there remains a bias in the body image research toward sampling only

females, potentially preventing disconfirming evidence (see Chapter 2). Interestingly however, having male friends was found to be protective for appearance-RS, body dissatisfaction, restrictive dieting, and appearance-conditional self worth in both boys and girls. This is consistent with a previous study that showed adolescent girls' plutonic involvement with boys to be associated with higher body satisfaction (Compian, Gowen, & Hayward, 2004). In their exploration of adolescent girls with healthier body attitudes, Kelly and colleagues (2005) found that girls with higher body satisfaction were less likely to have peers who diet to lose weight, and were more likely to have peers who cared about being fit and exercising. Having more boys in one's friendship group may be protective because they tend to have more positive appearance attitudes and behaviours, including lower rates of appearance-RS, body dissatisfaction, and dieting behaviour than girls (Bowker et al., 2013; Wang, Houshyar, & Prinstein, 2005; White & Halliwell, 2010). In summary, the associations between appearance-RS and characteristics of the friendship context did not generally differ according to gender. This finding is important for our understanding of the social foundations of appearance-RS in boys and girls, especially considering the tendency of researchers to focus solely on girls.

Summary. The findings of this thesis contribute to the newly emerging literature concerned with understanding the social underpinnings of appearance-RS, by confirming – across several social system levels – the important role that friends play in adolescent appearance-RS. The comprehensive model confirmed that exposure to an appearance-focused friendship context, in conjunction with key individual beliefs and processes, is predictive of appearance-RS in adolescents. Further, the innovative use of dyadic and social network analyses revealed important links between best friends and

members of friendship groups in terms of their concerns about appearance-based rejection, as well as related attitudes and behaviours.

These findings also add to the large body of work on adolescent body dissatisfaction by providing further support for the important connections between friendship influences and body dissatisfaction, as well as the roles of internalisation of appearance ideals and social comparison as mediators of these associations. Moreover, the present findings highlight the need to consider other important mental health issues that may be associated with body dissatisfaction, beyond the symptoms of depression and anxiety (such as appearance-RS).

Clinical Implications

The foremost implication of these findings in terms of relevance to prevention and intervention efforts is the identification of potentially modifiable individual beliefs and interpersonal behaviours. Each component of the model predicting appearance-RS can be targeted in a multi-level treatment approach. For example, interventions could focus on increasing young people's understanding of the damaging effects of a strong appearance culture, reducing the focus of friend and peer groups on appearance by targeting specific appearance-related interactions and behaviours between friends, breaking down acceptance of unhealthy appearance standards, increasing resistance to socio-cultural pressures to conform to impossible attractiveness ideals, increasing awareness of the futility and impact of social appearance comparisons, and directly addressing dissatisfaction with appearance and the tendency to readily perceive and over-react to cues of appearance-based rejection. Drawing from existing personal-RS and appearance-RS theory and research, and the finding that friends who more closely match widely accepted standards of attractiveness appear to be experienced as threatening, it may also be beneficial to teach individuals high in appearance-RS

specific strategies to cope with their tendency to perceive and overreact to appearance threats.

As mentioned in the review in Chapter 2, Paxton (1996) identified the potential benefits of drawing upon adolescent friend and peer groups in prevention efforts around body image concerns (Paxton, 1996), with preliminary findings highlighting the need for further applied research in this area (Richardson & Paxton, 2010; Steese et al., 2006; Thompson, Russell-Mayhew, & Saraceni, 2012). *Happy Being Me* (Richardson & Paxton, 2010) is one such theoretically derived school-based intervention aiming to intervene in the causal risk factors of adolescent body dissatisfaction, including appearance conversations, fat talk, appearance teasing, social comparisons, internalisation of appearance ideals, and media literacy. Across two locations, *Happy Being Me* produced positive changes in body dissatisfaction and problematic eating behaviour, and saw a reduction in appearance conversations and social comparisons in girls (Bird, Halliwell, Diedrichs, & Harcourt, 2013; Richardson & Paxton, 2010). Unfortunately, the intervention was not as effective in boys, and distress about appearance teasing did not decline in either girls or boys.

An important consideration for clinicians and researchers is the possibility of iatrogenic effects. There is evidence to suggest that peer group interventions with adolescents, particularly those with conduct problems, have produced negative effects. That is, group treatment may result in poorer outcomes due to the reinforcing influence of a deviant peer culture (Bootzin & Bailey, 2005; Dishion, McCord, & Poulin, 1999). Thus, caution must be taken when gathering together a group of high-risk adolescents. It has been recommended that iatrogenic effects could be reduced through a skilled group facilitator who can effectively prevent attention being given to unhelpful or deviant attitudes and behaviours, and who can form a positive connection with young

participants (Dishion, Poulin, & Burraston, 2001). In relation to body image and body change strategies, the potential to produce harm has been raised with school-based interventions for eating disorders (Carter, Stewart, Dunn, & Fairburn, 1997), as it is thought they might prompt concerns about weight, and provide participants with knowledge about harmful weight management strategies. Thus, it is important to consider the information being provided, and whether a susceptible audience could use it in a harmful manner. While to the knowledge of the author of this thesis no iatrogenic effects have been identified in body image interventions targeting socio-cultural risk factors (and a controlled trial of the study cited above did not show iatrogenic effects; Stewart, Carter, Drinkwater, Hainsworth, & Fairburn, 2001), the possibility of deviancy training and the harmful use of psychoeducational material should be considered.

Finally, the finding that having more male friends may be protective of adolescent appearance-RS and related concerns has implications for single-sex schooling. It has been suggested that single-sex girls' schools may pose a risk factor for the development of problematic body image attitudes and eating behaviour through communicating conflicting gender role messages, and due to the greater number of same-sex peers with whom to make appearance comparisons (Carey, Donaghue, & Broderick, 2013; Mensinger, Bonifazi, & LaRosa, 2007). The present findings add support to the argument that single-sex girls' schools may pose a risk for body image and appearance concerns, as girls attending single-sex schools are prevented from forming potentially protective male friendships at school (Compian et al., 2004).

Conclusion

In summary, these findings are consistent with predictions of the socio-cultural model of body image (see Muris, Meesters, van de Blom, & Mayer, 2005), and

highlight the importance of the friendship context in understanding appearance-RS in adolescents. The many appearance-related overt and inadvertent interactions that are perceived to occur between friends and peers (such as appearance conversations, pressure to be attractive, and appearance teasing) may create a strong appearance culture within that social context, providing the ideal environment for the development and perpetuation of appearance-RS. The way in which exposure to appearance-focused information from friends may be linked with appearance-RS appears to involve individual acceptance of society's appearance ideals, engagement in social comparison, and increased body dissatisfaction.

Furthermore, this study confirms the relevance of adolescents' best friend relationships and wider friendship groups for understanding sensitivity to appearance-based rejection. Adolescents tend to be similar to their best friends and friendship groups in terms of their concerns about appearance-based social rejection, as well as related attitudes and behaviours. Furthermore, appearance-RS is higher in adolescents whose best friends and friendship groups self-report elevated levels of restrictive dieting and appearance-conditional self worth, and when their friendship group has a lower BMI. In general and across all levels examined, the role of the friendship context in association with adolescent appearance-RS did not differ between boys and girls. However, having more male friends in one's friendship group was found to be protective of appearance concerns and dieting behaviour.

Through comprehensively exploring the role of friends in adolescent appearance-RS this research provides a significant contribution to the emerging literature concerned with identifying the social underpinnings of appearance-RS. Moreover, it highlights the need for continued research into the social and individual

factors that drive the onset of, or perpetuate appearance-RS, as well as those qualities which may help young people be resilient and maintain healthy appearance attitudes.

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