Body Image and Body Change Strategies within Friendship Dyads and Groups:

Implications for Adolescent Appearance-Based Rejection Sensitivity

Haley J. Webb

and

Melanie J. Zimmer-Gembeck

School of Applied Psychology and Griffith Health Institute, Behavioral Basis of Health, Griffith

University, Australia

Contact:

Haley J Webb

PhD

Griffith University-Gold Coast Campus

School of Psychology

Griffith University QLD 4222

Australia

Tel: 61 7 5678 8688

e-mail: h.webb@griffith.edu.au

Abstract

Appearance-based rejection sensitivity (appearance-RS) consists of concerns about, and expectations of, rejection because of the way one looks (Park, 2007). This study examined dyadic and group level friendship characteristics as correlates of early adolescents' appearance-RS. Using subgroups of an initial sample of 380 participants ($M_{\text{age}} = 13.84$), appearance-RS was examined within best friend relationships ($N = 132$, $M_{\text{age}} = 13.84$), and friendship groups ($N = 186$, $M_{\text{age}} = 13.83$). Overall, best friends were found to be similar in their appearance-RS and body dissatisfaction, as well as their restrictive dieting, appearance-conditional self worth, appearance values, 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) dieting. It was also found that appearance-RS was higher in adolescents whose best friends and friendship groups reported higher levels of restrictive dieting, and self worth that is dependent on feeling attractive. In general, associations did not differ for boys and girls, but having a higher proportion of boys in the friendship group was associated with lowered appearance concerns, perhaps because boys tend to have more positive attitudes toward their appearance.

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Attractive individuals are treated more positively, receive more attention, and are perceived as more socially competent, assertive, and intelligent (Langlois et al., 2000; Maner et al., 2003). With first impressions and interpersonal attraction also resting heavily on physical appearance (Feingold, 1990), it seems understandable that many individuals are sensitive to social rejection based on their looks – a processing disposition referred to as appearance-based rejection sensitivity (appearance-RS; Park, 2007). In contrast to the general processing disposition, rejection sensitivity (Downey & Feldman, 1996), which involves the tendency to anxiously or angrily expect, readily perceive, and overreact to cues of rejection, appearance-RS is focused on when these perceptions are specific to concerns about rejection because of appearance. Individuals with high appearance-RS experience a range of debilitating issues, including depression and social anxiety, poor self-esteem, self-worth that is dependent on feeling attractive, body dissatisfaction, body dysmorphic symptoms, and greater endorsement of cosmetic surgery (Bowker, Thomas, Spencer, & Park, 2013; Park, 2007, XXX blinded for review).

Although much is known about the adjustment difficulties associated with appearance-RS, only three studies have investigated why appearance-RS varies among adolescents. First, Park, DiRaddo, and Calogero (2009) considered the role of friends in their assessment of socio-cultural influences on appearance-RS, and identified that friends' valuing of appearance and perceiving friends' acceptance as being conditional on appearance were linked with appearance-RS in young adults ($Mdn_{age} = 19$). Second, XXX (blinded for review) showed that appearance-RS was higher in adolescents ($M_{age} = 13.8$) who were exposed more often to an "appearance culture" within their friendship context. An appearance culture included appearance

conversations with friends, pressure to be attractive, distress from appearance teasing, and having friends who valued attractiveness highly. In the third study, Bowker et al. (2013) found that relationships with other-sex peers were associated with appearance-RS and psychological distress in young adolescents ($M_{\text{age}} = 13.05$), with high acceptance by other-sex peers a risk factor and other-sex friendships a protective factor. Extending upon these findings, the goals of the present study were to more closely examine whether friends are similar in appearance-RS and whether friends' appearance concerns and behaviours are associated with heightened appearance-RS. This was accomplished by identifying reciprocated dyadic friendships and larger friendship groups, and examining associations within these dyads and groups. Thus, self-reports from each dyad member could be correlated with each other to examine similarity between friends, and self-reports of each friendship group member could be correlated with reports from all other group members.

Best Friends and Friendship Groups

There are various types of friendship contexts, such as peers, friendship groups, and best friends, and socialisation processes can differ across these types of social systems (Giletta et al., 2012). Within the adolescent friend and peer context, one's best friend may be a particularly important source of influence. 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 parental relationships (Giordano, 1995). Further, best friend relationships tend 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 adolescents' greater commitment and adherence to those norms (Dishion & Tipsord, 2011; Piehler & Dishion, 2007). However, the connections among larger groups of friends can also be important. It is not uncommon for adolescents to report multiple best or close friends, and many young people do not have a best friend that is stable over even a short length of time (potentially due to the normal instability of early friendships, or the emotional or social difficulties sometimes observed in children without a close friend; Bowker, 2004; Hartup, 1993; 1996). The wider friendship group has been found to play an important role in socialisation processes in many areas, including delinquency, depressive symptoms and religious beliefs (Cheadle & Schwadel, 2012; Giletta et al., 2012). Thus, our focus on best friends and the wider friendship network permitted identification of the effects of each of these important levels of social influence on adolescents' appearance-RS.

Early adolescence is an important point at which to examine appearance-RS and its social correlates. Early adolescence is characterised by an increase in the saliency of appearance ideals, and physical development that heightens awareness of one's appearance and can contribute to a deviation from appearance ideals (Attie & Brooks-Gunn, 1989). Thus, young people in this developmental period are at high risk for developing concerns about their appearance and eating problems (Hutchinson & Rapee, 2007). Moreover, it is during the transition from childhood to adolescence that friends and peers are particularly influential (Thompson et al., 1999). Although people of all ages can be concerned with belonging (Baumeister & Leary, 1995), significant changes in friendship networks occur during adolescence (La Greca & Harrison, 2004) with new relationships forming and other relationships ending. By examining appearance-RS within the friendship context among early adolescents, it will be possible to capture the period of development when the transmission of appearance ideals is gaining momentum, concerns about

acceptance peak, and the combination of these factors may be most critical to the emergence of appearance-RS.

In light of the common concerns about physical appearance, researchers have examined, and verified, the positive association between appearance-RS and body dissatisfaction (Calogero et al., 2010; XXX blinded for review). Researchers propose that adolescents exposed to an appearance-focused friendship context are likely to report heightened body image concerns, due to the sharing and strengthening of attractiveness norms and ideals (Jones, 2004; Webb & Zimmer-Gembeck, 2013). We speculate that friends' body image concerns and body change strategies are important contributors to the peer appearance culture, and may show important links with appearance-RS. The relevance of examining body image and body change strategies in our early adolescent sample as contributors to the peer appearance culture is clear when considering that, in multiple Western countries, children as young as six have internalised societal body shape ideals and are aware of dieting as a weight reduction method, and given that concerning levels of body dissatisfaction and various body change strategies are present by adolescence (Lowes & Tiggemann, 2003; Paxton et al., 1991).

The literature on the role of peers in association with body image and related concerns has tended to focus on individual perceptions of peer influence (Hutchinson & Rapee, 2007). While it is known that adolescents' subjective views of their friends are important to understanding their own attitudes and behaviours (Zimmer-Gembeck, Hunter, & Pronk, 2007), examining peer influence on the basis of individual perceptions can be problematic, as these perceptions are subject to inaccuracies, lack of insight, and projection processes (Jaccard, Blanton, & Dodge, 2005; Zimmer-Gembeck & Ducat, 2010). Greater insight into the *self-reported* attitudes and behaviours of 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 interactions and behaviours between friends.

Similarity Between Friends and Influence of Friends

Similarity. Similarity between friends has been theorised to occur via the selection of friends on the basis of similar attitudes or behaviours, and the socialisation toward similarity over time (Ennett & Bauman, 1994). Whereas similarity in personal-RS was not demonstrated in young adolescent best friends (Bowker, Thomas, Norman, & Spencer, 2011), researchers have demonstrated similarity between adolescent best friends and within friendship groups across many domains (e.g., Giletta et al., 2012; Van Zalk, Kerr, Branje, Stattin, & Meeus, 2010). Importantly, adolescent girls have demonstrated similarity to their friends in terms of body dissatisfaction, dietary restraint and extreme weight loss behaviours (Paxton, Schutz, Wertheim, & Muir, 1999; Woelders, Larsen, Scholte, Cillessen, & Rutger, 2010). The importance of considering appearance-RS within best friend dyads and friendship groups becomes clear when we consider the socialisation of a wide range of dysfunctional attitudes and behaviours within adolescent peer groups (Dishion & Tipsord, 2011). Researchers have not explored the correspondence between adolescents and their friendship groups in their reports of appearance-RS, or the correspondence between best friends in relation to appearance-RS, body dissatisfaction, or eating behaviour. Thus, the first aim of our study was to examine similarity in appearance-RS, as well as related concerns and behaviours, between adolescents and their best friends and friendship groups.

Friend and group correlational effects. Our second aim was to examine associations between adolescent concerns about appearance-based rejection and other appearance-related attitudes and behaviours reported by one's best friend and friendship group. We anticipated that appearance-focused interactions could communicate strong messages to friends about the

importance of attractiveness, foster the formation of appearance ideals, and encourage self-evaluation through social comparisons. In support of this idea, adolescent body dissatisfaction has been linked with friends' self-reported body dissatisfaction and dietary restraint (Paxton et al., 1999; Woelders et al., 2010). Accordingly, it was expected that appearance-RS would be higher in adolescents whose best friends and friendship groups reported greater body dissatisfaction and restrictive dieting.

It was also expected that 1) the level of appearance-dependent self-worth, 2) physical attractiveness, and 3) the importance placed on appearance reported by adolescents' best friends and friendship group members would be associated with their own self-reported appearance-RS. First, regarding self-worth dependent on attractiveness, Park (2007) highlighted the potentially close association between appearance-RS and appearance-dependent self-worth. Adolescents who place more importance on physical attractiveness for self-worth may encourage their 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. Second, regarding physical attractiveness, researchers have found that individuals feel threatened by friends who are superior to them on a valued trait (Tesser & Campbell, 1982), and within female friendship pairs it has been found that the less attractive individual perceives more rivalry in the friendship (Bleske-Rechek & Lighthall, 2010). Thus, a highly attractive friend or friendship group may be experienced as threatening and culminate in greater appearance-RS. Third, perceiving friends to place high importance on appearance has been theorised to encourage adoption of similar attractiveness values, and heighten concerns about being rejected because of an inability to meet society's appearance standards (Park et al., 2009). Empirically, perceptions of friends' appearance-related values have been associated with adolescents' (XXX blinded for review) and young adults' appearance-RS

(Park et al., 2009). Taken together, these previous findings suggest that early adolescents' appearance-RS may be higher when they have friends who report a higher level of appearance-dependent self-worth, when they have friends who report high attractiveness, and when they have friends who place more importance on appearance.

Gender

Gender differences in the severity of body image and appearance concerns are sometimes reported (Bowker et al., 2013; White & Halliwell, 2010), as well as differences in how these concerns relate to friend or peer influences (Halliwell & Harvey, 2006; Jones, Vigfusdottir, & Lee, 2004). However, XXX (blinded for review) found that associations between adolescent appearance-RS and exposure to friends' appearance-focused interactions did not differ between boys and girls, in general. More broadly, gender differences have been found in the nature of friendship during adolescence and young adulthood. Within young adult same-sex dyads, females engaged more frequently in relationship maintenance behaviours than did males (Oswald, Clark, & Kelly, 2004), and adolescent girls were found to be more similar to their best friend than were boys, in their psychological distress, behavioural problems, and relationship perceptions (Selfhout, Branje, & Meeus, 2007). These findings indicate that girls may be more strongly influenced by their best friend and friendship group than 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), a higher percentage of boys within one's friendship group was expected to be protective of appearance concerns.

Study Aims and Hypotheses

1. To investigate whether friends would show similarity in appearance-RS. A positive association was expected between best friends' self-reported appearance-RS. It was also

expected that adolescent appearance-RS would be positively associated with his or her friendship group's aggregated appearance-RS.

2. To identify whether adolescent appearance-RS would be associated with appearance concerns and behaviours reported by his or her best friend and friendship group. It was expected that appearance-RS would be positively associated with one's best friend's and friendship group's body dissatisfaction, restrictive dieting, overexercise, appearance-conditional self-worth, appearance values, attractiveness, and BMI.
3. To investigate whether associations differed according to gender. It was predicted that associations between adolescent appearance-RS and his or her best friend's and friendship group's body dissatisfaction, restrictive dieting, overexercise, appearance-conditional self-worth, appearance values, attractiveness, and BMI would be stronger in girls than boys. It was also predicted that a higher percentage of boys in one's friendship group would be associated with lower individual appearance-RS.

Method

Participants

Five schools in an urban area of Australia were approached to participate; three schools accepted. Participants were 380 Australian students (43% male) from one public and two private secondary schools. Across the three schools, participants ranged from low to middle-high income. Participants were aged 12 to 15.5 years ($M = 13.84$, $SD = 0.63$), and were predominantly Caucasian (82.6%), Asian (7.9%), or Aboriginal or Pacific Islander (3.4%). For the dyadic analyses, 132 of the 380 participants were identified as members of reciprocally nominated best friend dyads. Thus, 66 same-sex dyads were formed (27.3% males), aged 12.7 to 15.5 years ($M = 13.8$, $SD = 0.63$). For friendship group analyses, data from all 380 participants were utilised to form groups and/or in calculating friendship group average scores. However, a

subset of the total sample was the focus of the group analyses. These were participants who completed a questionnaire, had an identified friendship group with more than one member, and had at least 50% of their group complete the survey. This resulted in 186 target participants (27.4% males), aged 12.7 to 15.4 years ($M = 13.8$, $SD = 0.60$). Participants included in the friendship analyses were compared on all demographic measures to excluded participants. Chi-square analysis with follow-up z tests revealed that there was a significantly smaller proportion of individuals who identified as being Aboriginal or Pacific Islander, and a higher proportion of girls than boys included in analyses ($p < .05$).

To retain the identified subsets of 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 132 participants in the APIM's.

Measures

Best friend nomination. From a provided list of all classmates, participants specified the ID code of their best friend.

Friendship group nominations. A social network assessment measure based on the methods developed by Cairns and colleagues (1985) was used to form friendship groups. Participants were asked to list, using ID codes, groups of children in their grade who hang out together. They were permitted to identify up to 20 groups each with 20 members, and were prompted to include themselves, dyads, and the same children in different groups if relevant.

Friendship groups were then constructed based on participants' lists of classmates who spent time together (Gest, Farmer, Cairns, & Xie, 2003). Collecting reports from all participants allowed affiliations between two students to be confirmed across multiple reporters. A computer program (Leung, 1994), based on the Social Cognitive Map procedure (Cairns, Perrin, & Cairns, 1985), was used to construct groups. 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 matrix column provides a co-nomination profile that indicates the frequency with which peers nominated a participant as being in the same 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 produced by inter-correlating the matrix columns, with the cell contents presenting the similarity between the co-nomination profiles of each participant pair, with higher correlations indicating greater profile similarity (Gest et al., 2003). A reliable affiliation required a correlation $\geq .40$ between two participant profiles (Cairns & Cairns, 1994). Whereas researchers previously formed 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) proposed that natural social groups are more complex than this method suggests, as an individual may affiliate with many different individuals and subgroups. Accordingly, unique friendship groups were formed for each target participant by identifying all the individuals with whom they were reliably affiliated. Target participants were included in analyses if at least 50% of their group completed the survey.

Appearance-RS. Appearance-RS was measured using the Appearance-RS Scale (Park, 2007), which was modified to be age appropriate. For example, “You are at a dance club...” was changed to “You are at a dance/disco...”, and “You are leaving your house to go on a first date...” was changed to “You are leaving your house to go to school...”. Across 10 hypothetical scenarios (e.g., “You are at a dance/disco and all of your friends have been asked to dance except you), participants indicated on a six-point scale their anxiety/concern about appearance-related rejection (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 that it is because of the way you look that no one has asked you to dance?”; 1 = *No!!*, 6 = *Yes!!*). Response options two to five on this latter scale were unlabelled, and reflected less definitive responses. To obtain the appearance-RS score, anxious concern was multiplied by expectation of rejection for each item, and these 10 product scores (range 1 to 36) were averaged, with a higher score indicating greater appearance-RS. Cronbach’s α was .89 for girls and .85 for boys.

Body dissatisfaction. The shortened eight-item Body Shape Questionnaire (Evans & Dolan, 1993) was used to evaluate body dissatisfaction. Participants rated, on a six-point scale (1 = *never*, 6 = *always*), how they were feeling about their body weight and shape over the past four weeks (e.g., “Have you felt ashamed of your body?”) Three items were modified to make them suitable for females and males. Items were averaged, and a higher score indicated greater body dissatisfaction (Cronbach’s α = .90 for girls & .88 for boys).

Disordered body change strategies. To assess disordered eating and exercise habits, the Restraint Scale (Herman & Polivy, 1975) and the 10-item Excessive Exercise Scale (McCabe & Vincent, 2009), which were modified for adolescents, were used. The Restraint Scale measured dieting behaviours, concern with food and eating, and history of weight loss and weight gain. Items were averaged to form a total score, and a higher score indicated greater restrictive dieting. Cronbach’s α was .73 for girls and .69 for boys. The Excessive Exercise Scale assessed participants’ focus on and need for exercise (e.g., “Do you still exercise if you are tired, injured, or sick?”; 1 = *never*, 5 = *always*). Averaging all items formed a total score, and a higher score indicated greater excessive exercise. Cronbach’s α in this sample was .84 for girls and boys.

Appearance-conditional self-worth. The five-item Appearance Subscale of the Contingencies of Self-Worth Scale (Crocker, Luhtanen, Cooper, & Bouvrette, 2003) was used to

assess appearance-conditional self-worth (e.g., “When I think I look attractive, I feel good about myself”; 1 = *strongly disagree*, 5 = *strongly agree*). Items were averaged to form a total score, and a higher score indicated a stronger appearance-conditional self-worth. Cronbach's α in this sample was .74 for girls and .40 for boys.

Appearance values. A three-item scale was devised to assess participants' appearance values. Participants rated how much they valued appearance-related characteristics, such as an attractive body or face, and wearing nice clothing (1 = *very unimportant*, 5 = *very important*). Averaging all items created a total score. Cronbach's α was .89 for girls and .50 for boys.

Attractiveness. An item used by Bleske-Rechek and Lighthall (2010) was employed to assess self-rated attractiveness (“Compared with other girls or boys your age, how physically attractive are you?”; 1 = *not at all attractive*, 7 = *extremely attractive*).

BMI. Participants' height and weight were measured individually, with participant consent, by a trained researcher. These values were used to calculate a body mass index (BMI; weight kg / height m²) for each participant.

Procedure

Approval for this study was obtained from the University Human Research Ethics Committee. Active parental consent was obtained, with consent forms sent home with children and returned to the school. Students who returned their consent forms were entered into a draw to win a prize, and participating students received a small gift when the survey was completed. Participants completed the questionnaire in their classrooms over two days. The portion of the questionnaire used in the current study took about 45 minutes to complete.

Results

Table 1 presents the means and standard deviations of participants on all measures.

Best Friends

Overview of analyses. Correlations between best friends' scores on each variable were examined to test similarity between best friends. The Actor-Partner Interdependence Model (APIM; e.g., Kashy & Kenny, 2000) was used to assess the extent to which one person's score on an independent variable was associated with his or her own score on a dependent variable (actor effect), and also his or her best friend's score on the dependent variable (partner effect), while statistically controlling for the non-independence in the two individuals' responses (Kenny & Ledermann, 2010). APIMs for indistinguishable dyads were estimated with AMOS software (IBM Corporation). 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 (Kenny & Ledermann, 2010). The association of the independent variables with appearance-RS was assessed in seven separate models. 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 boy dyads ($n = 18$), gender moderation was 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.

Similarity between best friends' appearance-RS and other measures. As predicted (Hypothesis 1), best friends' appearance-RS scores were significantly and positively correlated with each others' ($r = .30, p = .01$). Significant associations were also found between best friends' body dissatisfaction ($r = .29, p < .01$), restrictive dieting ($r = .36, p < .01$), overexercise ($r = -.18, p = .04$), appearance-conditional self-worth ($r = .27, p < .01$), appearance values ($r = .30, p < .01$), attractiveness ($r = .28, p < .01$), and BMI ($r = .35, p < .01$).

Actor-Partner Interdependence Models. Table 2 presents the bootstrapped estimates of model paths, standard errors and 95% confidence intervals of the actor and partner correlational effects. Two of seven possible partner effects were significant (Hypothesis 2). Adolescents' appearance-RS was significantly and positively associated with their best friends' restrictive dieting ($\beta = .16, p < .01$) and appearance-conditional self-worth ($\beta = .15, p < .01$). Notably, significant actor effects were found in all APIMs. Appearance-RS was 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 ($\beta = .54, p < .01$), appearance values ($\beta = .45, p < .01$), and attractiveness ($\beta = -.29, p < .01$). All associations were positive except for attractiveness, whereby rating oneself as less attractive was associated with higher appearance-RS. Appearance-RS was not associated with own BMI ($\beta = .02, p = .79$).

Females only. Because of the smaller set of male relative to female dyads, APIMs were estimated for girls only and compared to the results for the total sample (Hypothesis 3). A very similar pattern of results was produced, and differences between coefficients did not reach significance (all $ps > .41$). One difference was noted: the negative association between best friends' overexercise in the combined sample ($r = -.18, p < .01$) was not significant in 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 and may be more elevated in boys.

Friendship Groups

Overview of analyses. Unique friendship groups were formed for each target participant by identifying all the individuals with whom each were reliably affiliated. Aggregating the scores of group members, not including the target member, formed friendship group scores for each variable. Characteristics of the friendship groups were examined, and correlations between

individual scores and the aggregated friendship group scores for each variable were produced.

Process (Hayes, 2013) was employed to estimate regression models to test the moderating effect of gender on the associations between individual and friendship group scores.

Friendship group characteristics. 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. Table 3 presents correlations between adolescents' and their friendship groups' appearance concerns and behaviour. Consistent with expectations (Hypothesis 1), individual appearance-RS was associated with friends' aggregated, self-reported appearance-RS ($r = .34, p < .001$). Associations were also found for body dissatisfaction ($r = .32, p < .001$), appearance-conditional self-worth ($r = .18, p = .02$), appearance values ($r = .24, p = .001$) and BMI ($r = .23, p = .002$).

Associations of the friendship group's appearance concerns with own appearance-RS. As predicted (Hypothesis 2), adolescent appearance-RS was associated with the friendship groups' body dissatisfaction ($r = .28, p < .001$), restrictive dieting ($r = .24, p < .001$), appearance-conditional self-worth ($r = .23, p = .001$), and BMI ($r = -.15, p = .03$). On the other hand, adolescent appearance-RS was not associated with their friendship groups' overexercise ($r = -.04, p = .60$), appearance values ($r = .04, p = .57$), and attractiveness ($r = -.10, p = .19$). The correlations between individual appearance-RS and friends' attitudes and behaviours did not change when controlling for the individual's BMI and the mean of his or her friendship group's BMI ($ps > .42$). Further, 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 the friendship groups' BMI ($\beta = -.17, p = .03$), even when controlling

for the individual's scores on these same measures. Individual appearance-RS was not associated with the friendship groups' body dissatisfaction when controlling for the individual's body dissatisfaction ($\beta = .08, p = .14$).

Gender. Process (Hayes, 2013) was used to test gender as a moderator of associations of all variables with appearance-RS (Hypothesis 3). No association was moderated by gender ($ps > .13$). However, as seen in Table 3, individuals with a higher percentage of boys 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 ($r = .15, p = .04$).

Discussion

Research into the social correlates of appearance-RS in adolescents and young adults has received only limited research attention (e.g., Bowker et al., 2013; Park et al., 2009). What is emerging from this literature and from body image research, is the key role that friends and peers may play in shaping appearance-related attitudes and behaviours more generally, as well as appearance-RS specifically (Jones, 2004; Jones et al., 2004; Park et al., 2009; XXX, blinded for review). This is the first study to examine both dyadic and group friendship factors that may be linked to the development and perpetuation of appearance-RS in adolescents. Three previous studies have examined portions 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 (e.g., Bowker et al., 2013), and the other two studies examining associations of appearance-RS in adolescents and young adults with perceptions of appearance-focused characteristics of the friend and peer context, including for example appearance conversations with friends, perceived pressure to be attractive, and perceptions that peer acceptance is conditional on appearance (Park et al., 2009; XXX blinded for review). Hence, this

was the first study that looked at the self-reported appearance concerns and behaviours within best friend dyads and friendship groups, and the implications for adolescent appearance-RS.

Similarity Between Friends

Researchers have demonstrated friend similarity across many domains, including academic achievement, depression, alcohol consumption, sexual behaviour and self harm (Burgess, Sanderson, & Umana-Aponte, 2011; Giletta et al., 2012; Van Zalk et al., 2010). Notably, similarity has been observed within friendship groups in terms of body dissatisfaction and body change strategies (Paxton et al., 1999; Woelders et al., 2010). Consistent with these findings, similarity in appearance-RS between adolescent best friends, and between adolescents and their friendship groups, was found in the present study. Further, best friends demonstrated similarity in their body dissatisfaction, restrictive dieting, appearance-conditional self-worth, appearance values, attractiveness and BMI. Likewise, similarity between adolescents and their friendship groups was demonstrated for body dissatisfaction, appearance-conditional self-worth, appearance values, and BMI, but not restrictive dieting or attractiveness. These results indicate that best friends and friendship groups exhibit similarity in their appearance concerns and values, and body size. These similarities may be due to friendships forming on the basis of pre-existing similarities, through the modelling, reinforcement, and adoption of values and beliefs over time between friends, or due to friends' sharing a socio-cultural environment, fostering comparable experiences and the development of like attitudes (Paxton et al., 1999).

In contrast to previous research that has reported similarity within girls' friendship groups for dietary restraint and extreme weight loss behaviours (Hutchinson & Rapee, 2007; Paxton et al., 1999; Woelders et al., 2010), significant similarity was not found in the present study for dieting within friendship groups. This discrepancy may be due to a difference in methodologies. Whereas previous studies formed discrete groups and examined intra- versus inter- friendship

group variability, we formed unique friendship networks according to each adolescent's social connections, and correlations were calculated between adolescents' own scores and the average score for the other members of their friendship group. Forming a unique network for each participant permits inclusion of all individuals within a social setting with whom the participant reliably 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 formation of discrete groups, potentially resulting in greater homogeneity. The differential impact of these group formation methodologies requires empirical clarification.

Dyadic and Friendship Group Effects

Restrictive dieting and overexercise are two behaviours often reported by adolescents as strategies for changing their appearance, and have been associated with serious emotional and physical health concerns, such as binge eating and substance use, emotional stress, and suicide risk (Davis, Blackmore, Katzman, & Fox, 2005; Lowry, Galuska, Fulton, Burgeson, & Kann, 2005). Extending upon findings that showed that young people with higher appearance-RS rated themselves as less attractive (Park et al., 2009) and reported greater interest in cosmetic surgery to enhance their appearance (Calogero et al., 2010), the present study found restrictive dieting and overexercise to be elevated in adolescents who reported higher appearance-RS.

Unique to the present study, however, was the investigation of how best friends' and friendship groups' attitudes may be associated with adolescents' appearance-RS, even after considering the roles of personal attitudes about body and appearance. The results showed that appearance-RS was higher in adolescents whose best friends and friendship groups self-reported greater restrictive dieting and greater appearance-dependent self-worth. These associations were strong enough to hold even after controlling for the individual's own attitudes and behaviours.

Park (2007) drew attention to the parallels between appearance-conditional self-worth and appearance-RS, whereby an individual who bases his or her self-worth on physical appearance may perceive acceptance by others to be similarly determined. Interestingly, sensitivity to appearance-based rejection was positively correlated with the tendency of 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, Loxton, Grady-Flessner, Occhipinti, & Dawe, 2003; Lieberman, Gauvin, Bukowski, & White, 2001), and in a qualitative study, mid-adolescent girls reported that dieting behaviour by close friends made them feel that they, too, ought to be dieting (Wertheim, Paxton, Schutz, & Muir, 1997). Overall, these findings suggest that restrictive dieting and appearance-conditional self-worth may be communicating powerful messages between adolescent friends about socio-cultural standards of beauty and attractiveness, potentially encouraging interpersonal competition, and thus correlating with heightened appearance-RS. In addition, adolescents with heightened appearance-RS may be selecting friends who demonstrate similar concerns and behaviours, including dieting and self-worth that is dependent on appearance.

Interestingly, appearance-RS was *higher* in adolescents whose friendship groups had lower average BMIs. This result is congruent with the findings of XXX (blinded for review), who found appearance-RS to be 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 one's 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 and/or having a best friend with a higher BMI may not protect against appearance-RS.

Gender

Gender differences in the associations between friend or peer influences and body dissatisfaction have been previously reported (Jones et al., 2004; Vincent & McCabe, 2000), and the literature examining friendship during adolescence and young adulthood suggests that girls may be more strongly influenced by their friends than are boys because their relationships are more intimate and supportive, and they demonstrate better communication in challenging situations (Black, 2000; Oswald et al., 2004; Rose & Rudolph, 2006). 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, dyadic and friendship group results did not support this assumption. Only one gender difference was 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 boys, suggesting that the more excessive an adolescent boy's exercise habits become, the less excessive his best friend becomes. However, in light of the small number of boys sampled, this unusual result requires replication.

On the other hand, our results confirmed expectations that a higher percentage of boys within friendship groups would be protective of appearance concerns. This is likely to be due to the lower rates of appearance-RS, body dissatisfaction and dieting found among boys compared to girls (Bowker et al., 2013; Wang et al., 2005). In particular, adolescents with more boys in their friendship group reported lower appearance-RS, 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 finding could be

explained by the higher level of physical activity undertaken in general by boys than girls (te Velde et al., 2007), and is consistent with a previous study that showed adolescent girls' platonic involvement with boys to be associated with higher body satisfaction (Compian, Gowen, & Hayward, 2004). Further, the overexercise 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.

Limitations and Future Research Directions

A few study limitations should be noted. First, the small number of male dyads in this study prevented assessment of gender as a moderator of associations between best friends, somewhat weakening our conclusions that associations between best friends and members of friendship groups do not differ according to gender. Our method of having participants name one best friend may have been one reason for the identification of a lower number of boy than girl dyads. Boys' friendship groups tend to be larger and less intimate (Rose & Rudolph, 2006), making a single reciprocated nomination less likely. As such, future research might benefit from assessing participants' three closest friends and utilising the first reciprocated match, in order to capture more male dyads in particular. Second, the findings relating to appearance-conditional self-worth should be considered in light of the low internal consistency produced on this measure among boys ($\alpha = .40$). This suggests that the items on this measure may not be eliciting a consistent response from boys in this sample, and may require modification when used among early adolescent boys. The most notable study limitation, however, is the cross sectional design, which precludes conclusions about the direction of effects, and mechanisms by which friends' appearance-related attitudes and behaviours become linked.

There is one applied implication of the study findings to mention briefly. Having more male friends may be protective of adolescent appearance-RS and related concerns, which could have 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). Our findings suggest that girls' schools may pose a risk for body image and appearance concerns because their students are prevented from forming potentially protective male friendships within the school environment (Compian et al., 2004). However, as the present study did not specifically evaluate the appearance concerns of students attending single-sex versus co-educational schools, this interpretation requires empirical evaluation.

In summary, the present findings highlight the relevance of relationships with one's best friend and interactions within wider friendship groups during adolescence for understanding sensitivity to appearance-based rejection. 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.

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Table 1

Means and Standard Deviations on all Measures

	Friendship group sample <i>M (SD)</i>	Dyadic sample <i>(SD)</i>	<i>M</i>
Age	13.83 (0.60)	13.85 (0.63)	
Appearance-RS	9.38 (6.08)	10.71 (6.16)	
Body dissatisfaction	2.11 (0.99)	2.34 (1.09)	
Restrictive Dieting	1.90 (0.40)	1.94 (0.43)	
Overexercise	2.92 (0.74)	2.89 (0.69)	
Appearance-conditional self-worth	3.11 (0.73)	3.29 (0.71)	
Appearance values	3.07 (0.90)	3.25 (0.89)	
Attractiveness	4.00 (1.09)	3.92 (1.17)	
BMI	20.99 (3.07)	20.53 (3.12)	

Table 2

Bootstrapped Estimates from The Actor-Partner Interdependence Models of Appearance-RS (N = 66 dyads)

Variables	Unstandardised		Standardised		
	Estimate	SE	Estimate	SE	<i>p</i>
Actor Effect					
Own:					
Body dissatisfaction	3.89	.25	.69	.03	<.01
Restrictive dieting	7.43	.70	.52	.04	<.01
Overexercise	2.35	.51	.27	.06	<.01
Appearance-conditional self-worth	4.70	.48	.54	.05	<.01
Appearance values	3.12	.41	.45	.05	<.01
Attractiveness	-1.53	.33	-.29	.06	<.01
BMI	0.03	.11	.02	.06	.79
Partner Effect					
Best friend's:					
Body dissatisfaction	0.40	.30	.07	.05	.16
Restrictive dieting	2.22	.75	.16	.05	<.01
Overexercise	-0.33	.51	-.04	.06	.53
Appearance-conditional self-worth	1.31	.41	.15	.05	<.01
Appearance values	0.61	.35	.09	.05	.07
Attractiveness	0.26	.28	.05	.05	.43
BMI	-0.07	.10	-.04	.05	.49

Table 3

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

Individual appearance concerns:	Friends' appearance concerns								% male in 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. Appearance values						.24**	.03	-.04	.09
7. Attractiveness							.12	-.02	.11
8. BMI								.23**	.13

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