



Emotion regulation and support from others: Buffering of body dysmorphic symptoms in adolescent and young adult men but not women

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ABSTRACT

Introduction: Adolescents and young adults who overemphasize the social values placed on an attractive appearance may develop body dysmorphic symptoms (BDS), defined as over-preoccupation with perceived appearance flaws and repetitive behaviors to conceal the flaws. Further, research has found that a heightened expectation of judgement and rejection by others because of appearance (i.e., appearance-based rejection sensitivity [appearance-RS]) is both a maintaining and an aggravating factor in BDS. This study focused on emotion regulation (ER), appearance-related support from others and self-acceptance, expecting they would buffer the negative impact of appearance-RS on BDS.

Methods: Participants included 782 Australian high school and young university students, aged 14–28 years ($M = 17.94$ years, 40% male) who completed a survey to report their BDS, appearance-RS, ER, appearance-related support from others and self-acceptance.

Results: Multiple regression analyses revealed that youth reported more BDS when they were higher in appearance-RS but reported less self-acceptance, ER, and support from others. Further, the association between appearance-RS and BDS was weaker when young people reported higher (relative to lower) ER and support from others. However, when three-way interactions with gender were tested, these buffering effects were only significant for young men.

Conclusion: Findings suggest that ER and appearance-related support from important others are promising targets for intervention, given they could mitigate the risk of appearance-RS in young men. However, further research is needed to consider additional factors that buffer against the negative effects of appearance-RS on BDS for young women.

Given societal messages about the value of an attractive physical appearance, many adolescents experience symptoms of body dysmorphia, defined as excessive preoccupation with perceived appearance defects accompanied by repetitive and even compulsive behaviors as attempts to avoid experiencing the distress associated with facing this perceived defect (e.g., appearance-checking or camouflaging appearance) (Densham, Webb, Zimmer-Gembeck, & Nesdale, 2017; Webb et al., 2015). This may not be surprising given

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that there exists a particularly influential appearance culture during adolescence where peers (in addition to family, media and socio-cultural influences) define, construct and reinforce appearance ideals and expectations (e.g., through appearance-focused conversations) which focus youths' attention on their own and others' perceptions of their attractiveness and beauty in relation to some ideal standard (Webb, Zimmer-Gembeck, & Donovan, 2014). In addition to an appearance saturated adolescent culture, body dysmorphic symptoms (BDS) can also increase, on average, over the course of early to middle adolescence, with more widespread and steeper rates of increase noted for girls than boys but increases also found in a substantial proportion of boys (Zimmer-Gembeck, Webb, Farrell, & Waters, 2018). When very elevated, body dysmorphic symptoms (BDS) can be of concern because they are early signs of a diagnosis of Body Dysmorphic Disorder (Veale et al., 2014), and are often associated with a range of other emotional deficits, such as depression (Lavell, Zimmer-Gembeck, Farrell, & Webb, 2014; Veale, Eshkevari, et al., 2014; Webb et al., 2015), and social problems such as teasing about appearance by parents and peers and relational victimization (Mastro, Zimmer-Gembeck, Webb, Farrell, & Waters, 2016; Webb, Zimmer-Gembeck, & Mastro, 2016).

Clearly, elevated BDS present a significant and increasing risk for adolescent and young adult psychosocial development. Therefore, studies of risk factors for BDS, alongside factors that may reduce such risk, are particularly needed. One specific risk factor for BDS, identified in past research, is appearance-based rejection sensitivity (appearance-RS) (Lavell et al., 2014; Park, 2007; Webb et al., 2014). Appearance-RS refers to the tendency to readily perceive, anxiously expect, and overreact to cues of potential or actual rejection and attribute such rejection to personal physical appearance (Bowker, Thomas, Spencer, & Park, 2013; Park, 2007; Park & Pinkus, 2009; Webb et al., 2014). This style of processing appearance cues develops out of social experiences of appearance-related teasing and victimization (Park, 2007; Webb et al., 2017), and is shown to be a central risk factor for the development of BDS across adolescence (Densham, Webb, Zimmer-Gembeck, Nesdale, & Downey, 2017; Webb et al., 2015; Zimmer-Gembeck et al., 2018) and into young adulthood (Lavell et al., 2014). While prior research has explicitly focused on the negative effects of appearance-RS on BDS, rarely has it considered what may protect and interfere with this association during a period where youth are more likely to internalize and reinforce excessive preoccupations with appearance. More specifically, priority should be placed on identifying factors that can be modified to protect against BDS levels or to mitigate against the ill effects of risk factors for BDS before these appearance concerns continue to increase into young adulthood.

Although we could locate no studies specifically examining factors that may mitigate against the negative impact of appearance-RS on BDS, two studies had investigated buffering agents that reduced the detrimental effects of appearance-RS on socioemotional problems. What was found in these two studies was the importance of support from others. More specifically, the existence of friendships (Bowker et al., 2013) and priming for greater self-affirmation and a sense of security in one's relationships (Park, 2007, study 3) were found to buffer the negative effects of appearance-RS on social avoidance and distress, and self-esteem and negative affect, respectively, for young people. In addition to these studies, support from others can help youth to avoid excessive appearance-related problems and body dissatisfaction. For example, social and emotional support from parents and peers (Ata, Ludden, & Lally, 2007; Stice, Presnell, & Spangler, 2002), nurturance, trust and helpful parent and peer relationships (Michael et al., 2014; O'Koon 1997) have all been found to be correlated with a more positive body image and less body dissatisfaction (see Webb & Zimmer-Gembeck, 2014 for a review).

Individual responses to emotion and stress may also help youth to avoid developing BDS in addition to buffering against the negative effects of appearance-RS on BDS symptoms. Some of these capacities likely involve the adaptive regulation of emotion and greater self-acceptance. First, more adaptive emotion regulation (ER) could be of benefit because it means greater awareness and acceptance of emotions, in order to modulate and flexibly change one's attentional, emotional, and behavioral responses to meet individual goals or adapt to the social environment (Gratz & Roemer, 2004; Thompson, 2019). In terms of appearance-related concerns, endorsement of more adaptive ER strategies (especially perceiving more access to strategies for regulation and greater clarity about emotions) has been associated with lower body dissatisfaction and fewer BDS in previous cross-sectional (Sim & Zeman, 2006) and longitudinal (Lavell, Webb, Zimmer-Gembeck, & Farrell, 2018) research, whereas when emotion dysregulation has been measured, it has been associated with more body dissatisfaction (Hughes & Gullone, 2011; Lavender & Anderson, 2010).

Not only would it be expected that ER would help youth to avoid developing excessive BDS, it also is likely that more adaptive ER would buffer against the ill effects of appearance-RS on BDS. For example, when studying mindfulness, which has been found to correlate highly with ER (Hambour, Zimmer-Gembeck, Clear, Rowe, & Avdagic, 2018), the association of appearance victimization with BDS was weaker when adolescents reported a greater capacity for mindful acting with awareness (Lavell et al., 2018). This is also relevant because emotional awareness has often been cited as a key component of ER (Gratz & Roemer, 2004).

In addition to support from others and ER, greater self-acceptance could serve to reduce the effects of appearance-RS with heightened BDS. In this regard, we turned to research that has identified the importance of maintaining positive self-related thoughts when overly preoccupied with appearance pressures (Maxwell & Cole, 2012). Specifically, active attempts to maintain positive thoughts about the physical self, in the form of engaging in more thoughts of self-acceptance, is a negative correlate of personal appearance-related concerns (Maxwell & Cole, 2012; Park, 2007; Rogers, Webb, & Jafari, 2018). Such thoughts of self-acceptance may also be important as a buffer against the negative effect of appearance-RS on BDS. For example, when high appearance-RS young adults were asked to think about their values and strengths (i.e., a self-affirmation/self-acceptance prime) following exposure to appearance-based threat, they reported significantly greater self-esteem compared to those who received no prime (i.e., the control group) (Park, 2007). Further, those in the control group reported significantly less positive affect and greater perceptions of rejection, whereas these negative outcomes were not found in the self-affirmation group, indicating that the self-affirmation prime completely attenuated the negative impact of the appearance-based threat.

1. Gender as a correlate of Appearance-RS, coping, and appearance anxiety

While the main aim of the current study was to examine factors that may buffer the risk that appearance-RS poses for higher BDS, there are also gender differences in youths' perceptions of interpersonal support, appearance-related stress, ability to cope with such stress, and the resulting emotional distress that are also important to consider (Bowker et al., 2013; Gardner & Webb, 2019; Zimmer-Gembeck et al., 2018). For example, adolescent girls and young women consistently report greater appearance concerns and appearance-related difficulties (Bowker et al., 2013; Densham et al., 2017; Ricciardelli & Yager, 2015) less capacity for adaptive ER and coping (Gardner, Zimmer-Gembeck, & Campbell, 2020; Lavell et al., 2018) and appear to benefit less from supportive interpersonal relationships (O'Connor et al., 2011; Webb & Zimmer-Gembeck, 2014). In some instances, gender has also moderated associations, where one study, for example, found that the positive association between appearance-RS and fear of negative evaluation was higher for girls who perceived less acceptance from their peers (relative to those who perceived greater peer acceptance), but was not significant for boys who perceived less peer acceptance (Bowker et al., 2013). These findings suggest gender-specific patterns in our variables of interest, but also suggest gender would also influence how coping buffers against the adverse effects of appearance-RS on BDS.

2. The current study

In summary, a first aim of the current study was to examine whether support from others, ER and self-acceptance (i.e., the buffering agents) are associated with fewer BDS among adolescents and young adults. However, the more specific aim was to test our hypotheses that higher levels of these factors should mitigate the risk of appearance-RS for BDS. An additional aim was to examine the role that gender plays in these associations, by examining both gender differences and moderations in the linkages between appearance-RS, the three buffering agents and BDS. Finally, given that appearance concerns often demonstrate significant developmental change (Zimmer-Gembeck et al., 2018), and that body mass index (BMI) and social anxiety symptoms are known risk factors for greater appearance concerns or body dissatisfaction (Lavell et al., 2014; Mastro et al., 2016; Webb et al., 2014, 2015), we control for age, BMI and social anxiety when testing these aims.

3. Method

3.1. Participants and procedure

Participants included 782 high school ($n = 271$) and university students ($n = 485$) aged 14–28 years ($M = 17.94$ years, $SD = 1.98$ years; 40% male). High school participants were in grades nine through eleven attending three schools in an urban area of Australia ($M_{\text{age}} = 15.8$, $SD = 1.0$, age range 14–18 years, 48% male). University participants were recruited from all areas of study across a large Australian urban university ($M_{\text{age}} = 19.1$, $SD = 1.4$, age range 14–28 years, 37% male). High school students reported their socio-cultural background, with 80% Caucasian/white Australians, and others identifying as Asian (15%), Aboriginal/Torres Strait Islander (<1%), or a range of other backgrounds (5%). For university students, 63% identified as Caucasian/white Australians, with others identifying as Asian (8%), Aboriginal/Torres Strait Islander (2%) or a range of other backgrounds (27%). The total number of participants who attempted the survey was 806, however 1.6% ($n = 13$) surveys were incomplete (missing > 40% of data). Another 1.4% of the initial pool ($n = 11$) were excluded due to completing less than 90% of the measures of interest in this study, resulting in the final sample of 782.

Study approval was obtained from the Griffith University Human Research Ethics Committee. High school students who participated in an earlier study were re-contacted either by phone or email and new consent was obtained for their participation from parents. Student assent was also obtained. Students with completed consent forms (regardless of participation) were included in a draw to win five \$100 gift vouchers. The original student list represented 42% of the students from the high schools, and, of these, 79% consented to participate in the current study. Students completed the 45-min survey either by mail, during school hours or online. Each participant received a \$20 gift card. University students were approached on the university campus and completed a paper survey under research assistant supervision. Participants were also recruited through the first-year psychology research participation program where they completed the survey online. Participants who completed the paper-and-pencil survey on campus received a chocolate bar or coffee voucher, whereas those recruited through the research participation program received partial course credit (0.5% of the course). Overall, 39% of the university students were psychology students.

3.2. Measures

3.2.1. Body dysmorphic symptoms

The 10-item Appearance Anxiety Inventory (Veale, Eshkevari, et al., 2014) was used to measure symptoms of appearance anxiety (e.g., "I avoid reflective surfaces, photos or videos of myself"), where participants responded to items ranging from 0 (*never*) to 4 (*always or almost always*). The total BDS score was formed by summing all items, with higher scores reflecting more symptoms. Cronbach's $\alpha = 0.91$.

3.2.2. Appearance rejection sensitivity (appearance-RS)

Appearance-RS was measured using the Adolescent Appearance-RS scale (Webb et al., 2014), which was modified from the original

Appearance-RS Scale (Park, 2007) to be more appropriate for adolescents as well as young adults. The modified version included 10 hypothetical scenarios in which participants might anxiously expect to be rejected based on appearance (e.g., “You are leaving your house to go to school/university when you notice a big pimple on your face was changed from You are leaving your house to go on a first date when you notice a blemish on your face”). For each item, participants indicated their concern/anxiety about being rejected based on appearance (e.g., “How concerned or anxious would you feel that others would think you were less attractive because of the way you look?”) on a scale from 1 (*not concerned or anxious*) to 6 (*very concerned*) and their expectation of appearance-based rejection (e.g., “Do you think that other people would find you unattractive?”) on a scale from 1 (*No*) to 6 (*Yes*). A composite appearance-RS was formed by multiplying the degree of anxious concern with the degree of rejection expectation for each item averaging scores from the 10 scenarios so that higher scores indicated greater appearance-RS. Cronbach’s $\alpha = 0.93$.

3.2.3. Emotion regulation

The 36-item Difficulties in Emotion Regulation Scale (Gratz & Roemer, 2004) was used to measure overall emotion dysregulation, where participants responded to items on a scale ranging from 1 (*never*) to 5 (*almost always*). Though the measure comprises six subscales (nonacceptance of emotional responses, difficulties engaging in goal directed behavior, impulse control difficulties, lack of emotional awareness, limited access to emotion regulation and lack of emotional clarity) only the total scale was used, which was created by the average of all the items. For the purposes of this study, the 25 negatively stated items were reverse scored before all items were averaged so that higher scores indicated better emotion regulation. Cronbach’s $\alpha = 0.90$.

3.2.4. Support from important others

Support from important others was measured with a 4-item scale adapted from the Important Other Climate Questionnaire (Williams et al., 2006) and the Body Acceptance by Others Scale (Avalos & Tylka, 2006) and was used to assess participants’ perceptions of the positive appearance-related support they receive from important others (i.e., parents and peers) in their lives (e.g., “Important people in my life make me feel important regardless of how I look”). Responses to items ranged from 1 (*never or very rarely true*) to 5 (*very often or always true*) and items were averaged to form total scores. Higher scores indicate greater perceived support from significant others. Cronbach’s $\alpha = 0.88$.

3.2.5. Self-acceptance of appearance concerns

Self-acceptance was measured with 4 items from the Adolescent Responses to Body Dissatisfaction scale (Maxwell & Cole, 2012). Participants responded to items (e.g., “I say to myself I don’t have to be perfect”), ranging from 1 (*not at all*) to 7 (*a lot*) and total scores were formed by averaging items so that higher scores reflected greater self-acceptance. Cronbach’s $\alpha = 0.86$.

3.2.6. Social anxiety

Social anxiety symptoms were assessed using the 18-item Social Anxiety Scale for Adolescents (La Greca & Lopez, 1998), where participants responded to items (e.g., “I worry about doing something new in front of others”) on a scale ranging from 1 (*not true*) to 5 (*very true*). A composite social anxiety score was formed by averaging the items so that higher scores indicated greater social anxiety symptoms. Cronbach’s $\alpha = 0.95$.

3.2.7. BMI

BMI was also calculated from participants’ self-reported weight and height. BMI scores were calculated by dividing the weight in kilogram by the height in metres² (i.e., weight kg/height m²).

3.3. Overview of statistical analyses

Prior to testing the study hypotheses, data were examined for missing values (largest amount of missing data in an individual participant was 0.3%, $n = 2$) and the distributions of variables were investigated. Means (*Ms*), standard deviations (*SDs*), and *t*-tests to examine differences in the variables by participant gender (a dichotomous choice of male = 0 and female = 1) were then conducted. Prior to examining the main aims, we explored differences in our measures of interest for high school students compared to university students. Here, university students, compared to high school students, reported greater appearance [$t(780) = -3.85, p < .01$] and social anxiety [$t(780) = -2.90, p < .01$] symptoms, appearance-RS [$t(780) = -2.41, p = .02$], and higher BMI [$t(780) = -4.66, p < .01$], but lower ER [$t(780) = 2.01, p = .05$], warranting the inclusion of controlling for age in the primary analyses. Primary analyses included zero-order correlations of all variables, followed by a multiple regression whereby BDS was regressed on appearance-RS, appearance-related support from important others, ER and self-acceptance while controlling for the covariates of gender, age, BMI and social anxiety symptoms. Furthermore, to consider the effects of gender with all predictors in this model, a hierarchical model was then conducted, whereby all the above-mentioned predictors were entered into step 1 of the model, and four interactions with the central predictors (i.e., appearance-RS and buffering agents) and gender were entered into step 2 of the model (e.g., appearance-RS \times gender). Model diagnostics conducted while testing these regression models showed no violations to the assumptions of homoscedasticity, normality, or linearity. Finally, the PROCESS macro for SPSS (Hayes, 2013) was used to test whether each of the coping variables moderated the associations of appearance-RS and BDS, along with whether these moderations were further conditioned by gender (i.e., three-way interactions: appearance-RS \times self-acceptance \times gender). Significant interaction effects were then plotted using simple slopes analyses generated by using plus or minus one standard deviation above and below the mean, respectively.

4. Results

4.1. Descriptive statistics, tests of differences, and correlations

The *Ms*, *SDs*, and gender differences among all variables are shown in Table 1. Young women, compared to young men, reported significantly greater BDS and social anxiety symptoms, greater appearance-RS, and support from important others; but lower appearance-related self-acceptance and ER. Table 2 shows the correlations between all measures. BDS was significantly correlated with all other primary measures in the expected directions, and was also positively associated with BMI, social anxiety, and age. Other measures were also intercorrelated, where appearance-RS and social anxiety were associated with all other measures in the expected directions and the three buffering agents were all related to each other, also in the expected directions.

4.2. Unique and interacting associations of Appearance-RS, coping, and BDS

4.2.1. Unique associations

The results of regressing BDS on all other relevant measures are shown in Table 3. Overall, 58% of the variance in BDS was accounted for by the eight independent variables, $F(8, 773) = 131.23, p < .001$. Appearance-RS was uniquely associated with more BDS, while, support from important others, self-acceptance and ER were uniquely negatively associated with BDS. Additionally, female gender and social anxiety symptoms were uniquely positively associated with BDS. All 2-way interactions with gender and each variable of interest (appearance-RS, support from important others, self-acceptance, and ER) were simultaneously tested in a hierarchical multiple regression model, but none of these were significant correlates of BDS (p 's ranged from 0.09 to 0.59), and this step also did not result in a significant F change [Step 2: $R^2_{chg} = 0.01, F_{chg}(4,769) = 2.07, p = .081$].

4.2.2. Buffering effects on BDS

We next tested three 3-way interactions involving gender (one set for each buffering agent, e.g., appearance-RS \times support from important others \times gender). Of the three tested interactions, two 3-way interactions were significant: appearance-RS \times support from important others \times gender [$B = 0.18, p = .05, \beta = 0.12$ (CI: 0.003–0.360)] and appearance-RS \times ER \times gender [$B = 0.25, p = .04, \beta = 0.17$ (CI: 0.009–0.484)]. As shown in Fig. 1a, support from important others significantly buffered the positive relationship between young men's appearance-RS and BDS, so that the association was weaker when support was high, relative to low. Despite this buffering effect, the positive relationship between appearance-RS and BDS remained significant at both high and low levels of support from important others. This buffering effect was not found for young women (see Fig. 1b). Similarly, ER significantly buffered the positive relationship between young men's appearance-RS and BDS, so that the association was weaker when ER was high relative to low (see Fig. 2a). Again, this buffering effect was not found for young women (see Fig. 2b).

5. Discussion

Youth who report concerns that they are judged and rejected by their peers because of their appearance flaws also tend to report more elevated body dysmorphic symptoms (BDS), such as obsessive checking of appearance and camouflaging appearance (Densham et al., 2017; Lavell et al., 2014; Mastro et al., 2016; Park, 2007). This seems to suggest that BDS may be responses to excessive concerns about appearance-related rejection. With increasing prevalence and increases of such appearance concerns across the adolescent period (Webb & Zimmer-Gembeck, 2014; Zimmer-Gembeck et al., 2018), there is a critical need to move towards identifying how to address these troubling issues facing young people. In examining whether support from others, ER and self-acceptance would mitigate against the risk appearance-RS poses for BDS, three main findings were revealed. Firstly, youth who reported elevated perceptions of appearance-RS were more likely to also report greater BDS across all analyses. Secondly, youth who reported greater ER capacity, more support from important others, and greater self-acceptance of appearance concerns, also perceived fewer BDS. Thirdly, greater capacity for ER and more perceived support from others significantly buffered the risk of appearance-RS for BDS for young men but not young women.

Table 1

Means and *SDs* for all participants, for young men and young women, and tests of gender differences ($N = 782$).

Measure	Overall, <i>M</i> (<i>SD</i>)	Young Men, <i>M</i> (<i>SD</i>) $n = 316$	Young Women, <i>M</i> (<i>SD</i>) $n = 466$	$t(1,780)$	η^2
BDS	19.24 (11.68)	15.88 (10.43)	21.52 (11.93)	−6.83**	0.06
Appearance-RS	11.29 (7.83)	9.02 (6.62)	12.82 (8.21)	−6.85**	0.06
AR: Support from others	4.02 (0.91)	3.85 (0.96)	4.14 (0.85)	−4.37**	0.02
AR: Self-acceptance	3.51 (1.49)	3.67 (1.43)	3.40 (1.51)	2.52*	0.01
Emotion regulation	3.39 (0.64)	3.50 (0.61)	3.32 (0.65)	4.00**	0.02
Social anxiety	2.60 (0.94)	2.40 (0.85)	2.75 (0.97)	−5.09**	0.03
BMI	22.45 (8.29)	22.99 (10.38)	22.08 (6.48)	1.52	0.00

* $p < .05$. ** $p < .01$. BDS = body dysmorphic symptoms. RS = rejection sensitivity. AR = appearance-related.

Table 2
Zero-order correlations between all measures ($N = 782$).

Measure	1	2	3	4	5	6	7
1. BDS	–						
2. Appearance-RS	.72**	–					
3. AR: Support	-.17**	-.11**	–				
4. AR: Self-acceptance	-.36**	-.37**	.25**	–			
5. Emotion regulation	-.56**	-.58**	.24**	.42**	–		
6. BMI	.08*	.09*	-.11**	-.06	-.04	–	
7. Social anxiety	.62**	.67**	-.16**	-.32**	-.62**	.08*	–
8. Age	.13**	.07*	.04	-.02	-.08*	.13**	.08*

* $p < .05$. ** $p < .01$. BDS = body dysmorphic symptoms. RS = rejection sensitivity. AR = appearance-related.

Table 3
Results of regressing body dysmorphic symptoms on Appearance-RS, buffering factors, and covariates ($N = 782$).

Independent variables			95% CI (B)	
	B (SE B)	β	Lower	Upper
Appearance-RS	.71 (.05)	.47***	.61	.81
AR: Support from others	-.65 (.33)	-.05*	-1.29	-.01
AR: Self-acceptance	-.42 (.21)	-.05*	-.83	-.01
Emotion regulation	-2.20 (.60)	-.12***	-3.38	-1.03
Gender (female)	1.77 (.59)	.07**	.62	2.92
BMI	.01 (.03)	.01	-.06	.08
Social anxiety	2.30 (.43)	.19***	1.47	3.14
Age	.39 (.14)	.07**	.11	.66

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

Note. $R^2 = 0.58$, $F(8, 773) = 131.23$, $p < .001$. RS = rejection sensitivity. AR = appearance-related.

5.1. Appearance-RS, coping and BDS

As expected, youth who are more likely to anxiously expect, readily perceive, and defensively overreact to signs of rejection based on their appearance were more likely to report less adaptive ER and poorer coping with appearance concerns, as well as higher symptoms of BDS. The latter finding was even found in our multivariate analysis when simultaneously considering the effects of BMI and social anxiety, known risk factors for BDS during adolescence (Densham et al., 2017; Mastro et al., 2016; Webb et al., 2014, 2015). Our findings therefore support that a heightened expectation of rejection based on appearance is related to BDS, so that youth who reported more concerns about being rejected due to their appearance were also more likely to be engaging in a range of behaviors associated with the emergence of body dysmorphic disorder (e.g., obsessive appearance checking and finding ways to camouflage their perceived appearance flaws). Such behaviors in turn may lead to day-to-day interference in their functioning because of their appearance obsessions and concerns. Furthermore, consistent with previous findings (Park, 2007; Park & Pinkus, 2009; Webb et al., 2014), youth who were more likely to perceive acceptance from others primarily based on their appearance were also more likely to demonstrate poorer coping with both appearance-based threats and additional social stressors (e.g., peer teasing about appearance) in general.

Also, youth who reported greater capacity for ER, in that they were more aware of their emotions, accept them without judgment and feel they have strategies to regulate their emotions reported fewer BDS. On the positive side, young people who coped with appearance concerns through self-acceptance and who had people in their lives who provided positive messages about appearance also reported fewer BDS. These findings were consistent with past studies examining protective correlates of appearance and body image concerns (Ata et al., 2007; Hughes & Gullone, 2011; Maxwell & Cole, 2012). Thus, we identified three strategies (i.e., ER, appearance-related support, and self-acceptance) that might guide future research to continue to explore the ways in which they may be helpful in assisting young people to lessen the risk that appearance-RS confers for heightened BDS.

A primary purpose of the current study was to test whether ER, appearance-related support, and self-acceptance buffer the risk of appearance-RS for elevated BDS. The findings for ER partially supported this hypothesis, mitigating the risk of appearance-RS for young men. These gender-specific findings were consistent with previous findings indicating that, for example young women, across the breadth of the adolescent period are more likely to be more emotive, unregulated and report less emotional acceptance, access to strategies, emotional clarity and goal-directed activity than young men (Gardner et al., 2020; Lavell et al., 2018). As our findings revealed, young women may have greater difficulties successfully coping with the distress that accompanies elevated perceptions of appearance-RS as they may be more likely to place greater value on their appearance as a critical marker for acceptance by their peers. As such, accepting and engaging in adaptive responses may not be enough to down-regulate young women's distress regarding appearance, because they are more likely to place such high value on their appearance. Young men, on the other hand, may find that ER strategies can compensate, given that they may be more likely than young women to also highly value other self-attributes, such as athletic ability (Bowker et al., 2013).

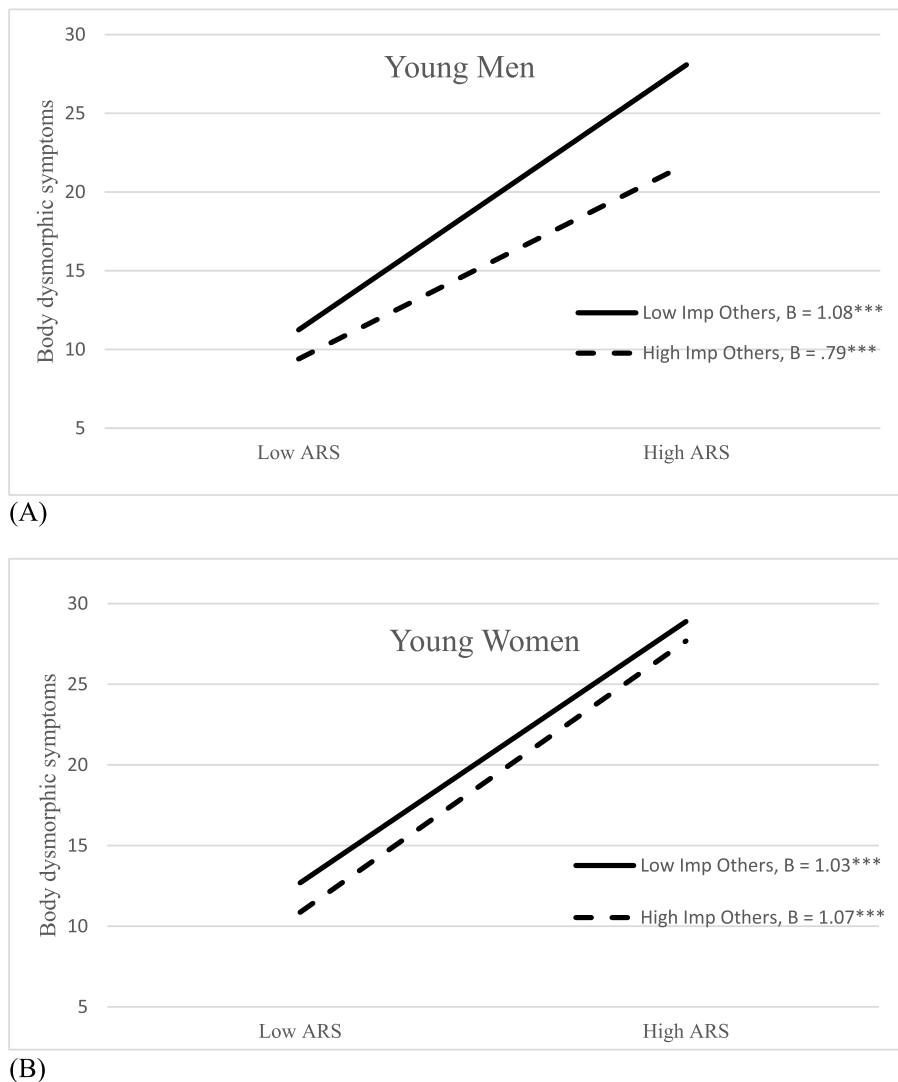


Fig. 1. Illustration of appearance-related support from important others as a moderator of the associations between appearance-RS and body dysmorphic symptoms for young men (A) and young women (B). ($N = 782$). $***p < .001$. **Note.** Imp Others = Appearance-related support from important others. ARS = appearance-related rejection sensitivity.

Additionally, while young women reported greater support from important others (inclusive of their parents and peers), such support may not successfully buffer the effects of appearance-RS on BDS as young women are also more likely to engage in more negative talk and co-rumination about their appearance and weight with others (Nichter, 2000; Vincent & McCabe, 2000) and support from others about appearance may actually serve to place more focus on appearance and not compensate for appearance concerns in young women in the same way that occurs for young men (Webb & Zimmer-Gembeck, 2014). Therefore, it may be that while young men are less likely to turn to others for support related to appearance concerns, when they do turn towards them for this support, they are more likely to find positive support to be useful for reducing their appearance concerns. Whereas for young women, though they are more likely to turn to others for support, this support may further perpetuate, rather than alleviate their appearance-related concerns. Moreover, it may matter who provides the support (e.g., peers vs parents or romantic partners), and this may also differ for young women compared to young men. Overall, our findings indicate that gender plays a role in the motivations and ways in which youth respond to perceived appearance threats.

5.2. Limitations, implications for future research, and conclusion

The current study was one of the first to assess both intrapersonal and interpersonal efforts at coping with appearance concerns. However, it is not without limitations. Firstly, the cross-sectional research design limits our ability to speak to either direction of effects or if these coping efforts may mitigate the effects of appearance-RS against future experiences of BDS. Secondly, all assessments were

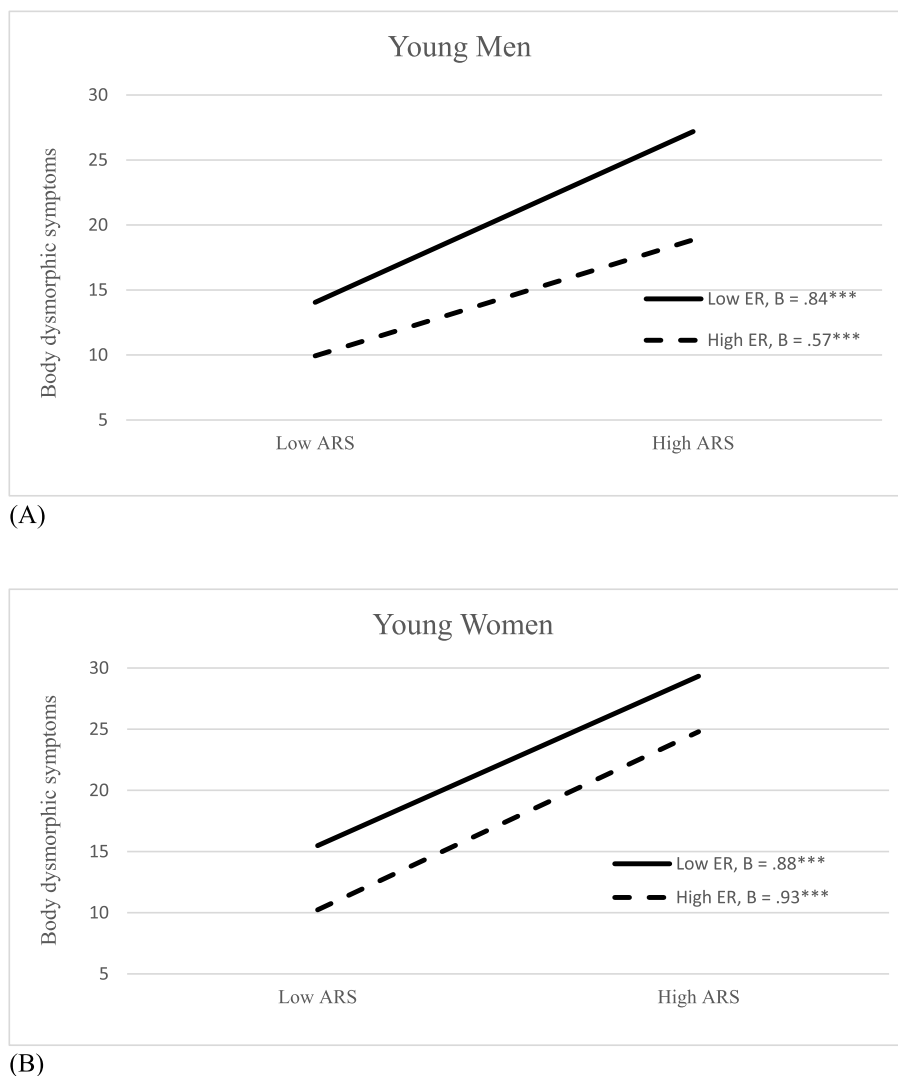


Fig. 2. Illustration of emotion regulation as a moderator of the associations between appearance-RS and body dysmorphic symptoms for young men (A) and young women (B). ($N = 782$). $***p < .001$. **Note.** ER = Emotion regulation. ARS = appearance-related rejection sensitivity.

self-report, possibly inflating associations due to shared-method variance. Future research should consider longitudinal designs along with gathering assessments from other informants (e.g., a parent or best friend) to advance our findings. Additionally, the age range of the participants was from 14 to 28 years. However, we controlled for age in the primary analyses and it is widely known that appearance concerns and body dissatisfaction is a widespread problem for young people across these ages (Lavell et al., 2014; Webb & Zimmer-Gembeck, 2014). Finally, most participants were white or Asian Australians, which could limit the generalizability of the study findings to all adolescents and young adult Australians and to young people in other countries.

Despite these limitations, there are several research and practical implications that stem from these findings. Given that ER and support from others buffered the negative effects of appearance-RS on young men's BDS, future studies may also want to consider additional factors, such as mindfulness, which has protected against the temporal effects of peer victimization based on appearance with BDS in both boys and girls (Lavell et al., 2018). Nonetheless, our findings indicate that for those working with adolescents, efforts at helping them with strategies to use when interacting with friends and social partners who have excessive appearance concerns, enhancing ER capacities and boosting self-acceptance may prove beneficial in allaying appearance-RS and BDS. Because appearance concerns are quite common among young people (Webb et al., 2014; Zimmer-Gembeck et al., 2018), psychoeducation about awareness of the emotional distress associated with appearance concerns, and engaging in adaptive coping strategies such as reappraisal to minimize the emotional impact of such concerns could prove helpful. Overall, our findings indicate the importance for future research to continue examining how young people cope with judgement about appearance or messages about appearance flaws, while simultaneously considering how gender differences may alter the efficacy of such coping efforts, and the resulting effects for either more elevated or reduced psychopathology across development.

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Declaration of competing interest

The authors declare that they have no conflict of interest.

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