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Swami, V., Barron, D., & Furnham, A. (2022). Appearance orientation and dating anxiety in emerging adults: considering the roles of appearance-based rejection sensitivity, social physique anxiety, and self-compassion. Archives of Sexual Behavior, 51(8), 3981-3992. https://doi.org/10.1007/s10508-022-02367-8

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Appearance Orientation and Dating Anxiety in Emerging Adults: Considering the Roles of Appearance-Based Rejection Sensitivity, Social Physique Anxiety, and Self-Compassion

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ACKNOWLEDGEMENTS

We are grateful to Charlotte Robinson for assistance with data collection.

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Administration, Writing – Original Draft; David Barron: Formal Analysis, Writing –

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ABSTRACT

Emerging research has suggested that appearance-related factors, such as greater appearance orientation, are associated with dating anxiety in emerging adults, but much more could be done to understand mechanistic pathways and potential buffers. Here, we tested a moderated mediation model in which appearance-based rejection sensitivity and social physique anxiety were explored as mediators, and self-compassion was explored as a moderator, of the relationship between appearance orientation and dating anxiety. A total of 501 heterosexual emerging adults (248 women, 253 men) from the United Kingdom completed instruments measuring the aforementioned constructs. Relationships among all variables were largely similar across women and men, with only the association between social physique anxiety and appearance-based rejection sensitivity being significantly stronger in women. Mediation analysis in the total sample indicated that both social physique anxiety and appearance-based rejection anxiety were significant mediators. Additionally, we confirmed a serial mediation involving appearance orientation \rightarrow appearance-based rejection sensitivity \rightarrow social physique anxiety -> dating anxiety. Conversely, self-compassion did not moderate the effects of either social physique anxiety or appearance-based rejection sensitivity on dating anxiety, although greater self-compassion was moderately associated lower dating anxiety. We suggest ways in which existing interventions aimed at reducing dating anxiety could be combined with body image interventions to reduce dating anxiety in heterosocial contexts.

Keywords: Dating anxiety; Appearance-based rejection sensitivity; Social physique anxiety; Self-compassion; Moderated mediation

INTRODUCTION

While there are many benefits to intimate and romantic relationships for psychological and physical well-being (for reviews, see Gómez-López et al., 2019), the process of initiating and forming romantic relationships can sometimes be stressful or distressing (Swami, 2021). Indeed, many people may experience *dating anxiety*, defined as the "distress associated with interactions with potential romantic partners prior to the development of a full-fledged relationship" (Hope & Heimberg, 1990, p. 220) that is distinct from social anxiety. In fact, such dating anxiety may be a normative experience in emerging adulthood (Chorney & Morris, 2009; Glickman & La Greca, 2004), a developmental period often characterised by the development, exploration, and integration of romantic commitments (Norona et al., 2017; Shulman & Connolly, 2013; Watkins et al., 2020). Importantly, however, significant levels of dating anxiety in emerging adulthood may have a range of detrimental effects on the psychological well-being of emerging adults.

For instance, dating anxiety may hinder one's ability to form intimate romantic relationships (Adamczyk, 2015; Boyle & O'Sullivan, 2013; Glickman & La Greca, 2004; Hope & Heimberg, 1990) and initiate sexual relationships (Paul, 2021). In the longer term, significant levels of dating anxiety may also lead to various mental health and behavioural concerns, including diminished self-esteem, fewer sexual experiences, feelings of loneliness, a lack of confidence or assertiveness, and poorer self-rated social skills (Adamczyk, 2015; Adamczyk et al., 2021; Boyle & O'Sullivan, 2013; Sumter & Vandenbosch, 2019; Weisskirch, 2017; Welsh et al., 2005). An important task for scholars, therefore, is to identify factors that place emerging adults at greater risk for dating anxiety, such as problematic internet use (Odacı & Kalkan, 2010), negative social interactions (La Greca & Mackey, 2007), and parental rejection (Epli et al., 2021).

Emerging research has also highlighted the role that appearance-related factors may play in shaping dating anxiety. This is perhaps unsurprising given the importance of physical appearance and attractiveness in dating contexts, including in terms of predicting romantic interest and relationship initiation (Frederick & Reynolds, 2022; Swami, 2021). For instance, single individuals may experience pressure to find a partner (e.g., DePaulo & Morris, 2006; see also Frederick et al., 2022), which in turn may heighten concerns about how one appears to others. Indeed, it is possible that individuals who overly emphasise or invest in their physical appearance (e.g., always noticing how they look before going out or believing that it is important to always look good) will be more likely to experience dating anxiety. Consistent with this suggestion, Swami, Robinson and colleagues (2021) reported that greater appearance orientation (i.e., greater degree of investment in one's physical appearance) was positively and moderately associated with dating anxiety in emerging adults from the United Kingdom. Earlier work had similarly shown that self-evaluative salience (i.e., a construct referring to the extent to which individuals define their self-worth in terms of their appearance that is distinct from self-objectification) was positively and moderately associated dating anxiety in a sample of mainly Australian, unpartnered women with breast cancer (Shaw et al., 2018).

Drawing on Cash's (2002) cognitive-behavioural model of body image, Swami, Robinson et al. (2021) further posited that high levels of appearance orientation may also heighten body image-related emotions. One specific body image-related emotion that may be salient in the context of dating and romantic relationships is *social physique anxiety*, which refers to an individual's perceived concern with the presentation of their physique in situations that they perceive others to be evaluating them (Leary & Kowalski, 1990) and is distinct from both dating anxiety (Chorney & Morris, 2008; Glickman & La Greca, 2004) and body image cognitions (Swami, Robinson et al., 2021). Consistent with the

aforementioned theorising, Swami, Robinson et al. (2021) reported that social physique anxiety mediated the relationship between appearance orientation and dating anxiety in their sample from the United Kingdom. In short, unhealthy appearance-related cognitions may provide the basis for developing fears about negative evaluations of one's physique, which in turn heighten anxieties in dating contexts.

Appearance-Based Rejection Sensitivity

Given its emergent nature, the body of work linking appearance-related factors, social physique anxiety, and dating anxiety could be extended further. First, it may be useful to consider the role of *appearance-based rejection sensitivity*, which refers to a tendency to readily expect and be overly concerned about interpersonal rejection because of one's physical appearance (Park, 2007; Park & Pinkus, 2009). Given the importance of peer status, interpersonal evaluations, and acceptance in emerging adulthood (Arnett et al., 2011), it is likely that emerging adults will be especially concerned about appearance-related feedback from others, including potential romantic partners (Deng et al., 2019). This may particularly be the case for emerging adults who have higher appearance orientation: that is, individuals who are more heavily invested in their appearance should be expected to be highly cognisant of how others view them and to be highly sensitive to interpersonal feedback that is perceived to be appearance-related (Cash et al., 2004). Indeed, some research has shown that, in emerging adulthood, appearance-based preoccupations are significantly correlated with appearance-based rejection sensitivity (Hawes et al., 2020; Toosi, 2016).

In turn, appearance-based rejection sensitivity can be expected to increase the likelihood of experiencing dating anxiety, either directly or via associated body image-related emotions, such as social physique anxiety. Although these assumptions have not been previously tested, earlier work has shown that appearance-based rejection sensitivity is significantly associated with appearance-based and social anxiety (e.g., Hawes et al., 2020;

Linardon et al., 2017; Park, 2007; Roberts et al., 2018). Building on this work, it might be suggested that higher appearance orientation increases the tendency to experience appearance-based rejection sensitivity; that is, those who have unhealthy cognitions about the importance of appearance may be highly sensitive to being judged and rejected based on their appearance. In turn, greater appearance-based rejection sensitivity will increase the likelihood of experiencing dating anxiety directly or indirectly via social physique anxiety.

Self-Compassion

Beyond merely extending existing knowledge, practice would be well served by better understanding ways in which the deleterious effects of appearance-related factors on dating anxiety could be mitigated (Swami, Robinson et al., 2021). One particularly promising avenue for exploration centres around the construct of *self-compassion*, which broadly refers to "the ability to be kind and helpful to one's self at times of error or despair" (Ferrari et al., 2019, p. 1455). According to Neff's (2003a, 2003b) conceptualisation, self-compassion is a multidimensional construct with three inter-related components that are exhibited primarily during times of pain, failure, or distress. The three components are: (a) self-kindness (vs. self-judgement), which refers to a forgiving, empathetic, sensitive, and patience approach to one's self, rather than being self-critical; (b) mindfulness (vs. over-identification), which involves awareness of, attention to, and acceptance of the present moment, rather than over-identifying with or avoiding painful thoughts and feelings, and; (c) common humanity (vs. isolation), which involves recognising one's fallibilities as part of the larger human condition, rather than as isolating.

Self-compassion, as operationalised by Neff (2003a, 2003b), has been consistently found to be positively associated with various indices of psychological well-being (for a review, see Swami, Andersen et al., 2021). In particular, studies have indicated that self-compassion is negatively associated with various forms of anxiety, including social anxiety

(e.g., Bates et al., 2021; Callow et al., 2021) and social physique anxiety (e.g., Koç & Ermiş, 2016; Magnus et al., 2010), though we are not aware of any work that has looked at relationships with dating anxiety specifically. Likewise, although studies have indicated that self-compassion is negatively associated with rejection sensitivity (e.g., Sakız & Sarıçam, 2015) and though a similar role has been hypothesised in relation to appearance-based rejection sensitivity (Pickard et al., 2021), the latter association has not been empirically established. Nevertheless, it is possible that self-compassion is an important psychological construct that facilitates resilience and coping in the face of difficult appearance-related emotions (for a review, see Braun et al., 2016). That is, self-compassion may help to transform negative emotional reactions emanating from social physique anxiety and appearance-based rejection sensitivity into more positive experiences, thereby attenuating dating anxiety (Allen et al., 2020; Gilbert, 2005; Neff, 2003b).

The Present Study

Based on the review above, it is possible to propose a serial indirect mediation effect (i.e., a mediation via two or more mediators that are causally and closely associated due to theoretical underpinnings or empirical findings) linking appearance orientation and dating anxiety, via appearance-based rejection sensitivity and social physique anxiety. In this model, we hypothesise that appearance-based rejection sensitivity should precede the emotional processes of social physique anxiety, which would be consistent with the view that anxiety – broadly defined – is an outcome of rejection sensitivity (for a meta-analysis, see Gao et al., 2017). That is, we expected that the order of the assumed mediation would be: appearance orientation \rightarrow appearance-based rejection sensitivity \rightarrow social physique anxiety \rightarrow dating anxiety, though we also allowed for a direct path from appearance-based rejection sensitivity \rightarrow dating anxiety. Additionally, we hypothesised a dual moderating effect of self-compassion on the paths between social physique anxiety and appearance-based rejection sensitivity,

respectively, to dating anxiety. Although self-compassion has been proposed as both a mediator and moderator of psychological outcomes (e.g., Swami, Todd et al., 2021), in the context of dating anxiety, it is more likely to play a moderating role, which would be consistent with the broader literature on other forms of anxiety (e.g., Callow et al., 2021). A graphical depiction of our hypothesised model is presented in Figure 1.

METHOD

Participants

Participants in this study were 248 women and 253 men from the United Kingdom who ranged in age from 18 to 29 years (M = 23.00, SD = 3.30) and in self-reported body mass index (BMI) from 12.17 to 49.95 kg/m² (M = 26.89, SD = 6.51; does not include 17 participants who were missing height and/or weight data and 8 participants with improbable BMI values of < 12 and > 50 kg/m²). In terms of racial background, 77.6% self-identified as White, 12.8% as Asian, 5.8% as Black, 2.8% as mixed race, and 1.0% of another ancestry. In terms of educational attainment, 13.4% had completed their General Certificates of Secondary Education (GCSEs), 31.5% had an Advanced-Level (A-Level) qualification, 36.7% had an undergraduate degree, 14.4% had a postgraduate degree, 1.4% were in full-time education, and 2.6% had another qualification.

Materials

Appearance orientation. Participants were asked to complete the Appearance Orientation (AO) subscale of the Multidimensional Body-Self Relations Questionnaire—Appearance Scales (MBSRQ–AS; Cash, 2000). The 12-item AO subscale measures an individual's degree of investment in their physical appearance (sample items: "Before going out in public, I always notice how I look" and "I check my appearance in a mirror whenever I can"). All items were rated on a 5-point scale ranging from 1 (definitely disagree) to 5 (definitely agree) and four items were reverse-coded prior to computing the mean of all

items, such that higher scores reflect greater appearance orientation. As part of the MBSRQ–AS, the AO subscale has very good indices of reliability and validity in English-speaking populations (Cash, 2000). In the present study, McDonald's ω for AO scores was .90 (95% CI = .89, .91).

Social physique anxiety. Participants were asked to complete the 12-item Social Physique Anxiety Scale (SPAS; Hart et al., 1989), which measures the degree of anxiety associated with perceived evaluation of one's body or physical appearance (sample items: "When it comes to displaying my physique/figure to others, I am a shy person" and "I wish I wasn't so uptight about my physique/figure"). Items were rated on a 5-point scale ranging from 1 (*not at all like me*) to 5 (*like me a lot*). Five items were reverse-coded prior to computing the mean of all items, with higher scores indicating greater social physique anxiety. Scores on the SPAS have been shown to have adequate construct validity, internal consistency, and test-retest reliability (Hart et al., 1989; Motl & Conroy, 2001). Here, McDonald's ω for SPAS scores was .93 (95% CI = .92, .94).

Appearance-based rejection sensitivity. We used the Long Form of the Appearance-Based Rejection Sensitivity Scale (ABRSS; Park, 2007), which assesses the tendency to experience anxious concerns and expectations about being rejected based on one's physical appearance. Participants were presented with 15 hypothetical scenarios in which they might anxiously expect to be rejected based on appearance (e.g., "You are at a party and are shorter than everyone there" and "You are trying on clothes at a store and notice that you a few pounds heavier than last week"). For each scenario, participants were asked to indicate their concern or anxiety about being rejected based on their appearance on a 6-point scale ranging from 1 (very unconcerned) to 6 (very concerned). Additionally, participants were asked to rate their expectation of appearance-based rejection on a 6-point scale ranging from 1 (very unlikely) to 6 (very likely). Appearance-based rejection sensitivity

was computed by multiplying the degree of anxious concern with the degree of rejection expectation in each of the 15 scenarios before computing the mean of all items. Higher scores on this instrument reflected greater appearance-based rejection sensitivity. Scores on the ABRSS have been shown to have adequate reliability and good indices of validity (Park, 2007; Park & Pinkus, 2009). In the present study, McDonald's ω for ABRSS scores was .94 (95% CI = .93, .95).

Self-compassion. To measure self-compassion, we used the Short Form of the Self-Compassion Scale (SCS; Raes et al., 2011). This is a 12-item instrument that measures each of the components of self-kindness, self-judgement, common humanity, isolation, mindfulness, and over-identification (sample items: "I try to be understanding and patient towards those aspects of my personality I don't like" and "When I'm feeling down, I tend to obsess and fixate on everything that's wrong"). Each item was rated on a 5-point scale ranging from 1 (almost never) to 5 (almost always). Scores on six negative component items (i.e., self-judgement, isolation, and self-judgement) were reverse-coded and an overall score was subsequently computed as the mean of all 12 items, with higher scores reflecting greater self-compassion. Given low internal consistencies, subscale score computation is not recommended (Raes et al., 2011). Scores on the Short Form of the SCS have been shown to have a unidimensional factor structure, are strongly correlated with scores on the full form, have adequate internal consistency, and evidence good convergent and incremental validity in women and men (Raes et al., 2011). McDonald's ω in the present study was .86 (95% CI = .85, .88).

Dating anxiety. Dating anxiety was measured using the Fear of Negative Evaluation (FNE) subscale of the Dating Anxiety Scale for Adolescents (DAS–A; Glickman & La Greca, 2004), which is consistent with previous measurement of this construct (Rizvi et al., 2022). The 10-item FNE subscale measures the degree to which an individual is concerned or

worried that a date or member of the opposite sex will judge them in a negative manner (sample items: "I am afraid that the person I am dating will find fault with me" and "I am concerned when I think that a date is forming a negative impression of me"). All items were rated on a 5-point scale ranging from 1 (*Extremely uncharacteristic of me*) to 5 (*Extremely characteristic of me*). An overall score computed as the mean of all items, such that higher scores reflect greater fear of negative evaluation in dating contexts. Although nominally developed for use with adolescents, the DAS–A is widely used with emerging adults, and researchers have documented good indices of validity and reliability in this age group (e.g., Adamcyzk et al., 2021). In the present study, McDonald's ω for FNE scores was .95 (95% CI = .94, .96).

Demographics. Participants were asked to provide their demographic details consisting of their gender identity, age, highest educational qualification, race/ethnicity, height, and weight. Height and weight were used to compute BMI as kg/m², but we elected not to use these data to avoid perpetuating weight stigma (for a discussion, see Calogero et al., 2016).²

Procedures

Ethics approval was obtained from the first author's institution (approval number: PSY-S21-003). All data were collected via the Prolific website (a crowd-working platform that allows scientists to recruit participants; Palan & Schitter, 2018) on November 1-2, 2021. The project was advertised as a study on "attitudes toward the body and psychological well-being" with an estimated completion time (10 min). The advertisement indicated that potential participants were eligible to complete the survey if they were residents and nationals of the United Kingdom (to ensure a culturally homogeneous sample), between the ages of 18 and 29 years (i.e., emerging adulthood; Hochberg & Konner, 2020), single and unpartnered (i.e., not married, cohabiting, or in a romantic/dating relationship), self-identified as

heterosexual (because the DAS–A was designed to measure heterosocial anxieties), and able to complete a survey in English. Prolific ID codes and IP addresses were checked to ensure that no participant completed the survey more than once. After providing digital informed consent, participants were asked to complete the scales described above, which were presented in a counter-balanced order in QualtricsTM. The survey was anonymous and participants were paid £1.20 upon completion. All participants received debriefing information at the end of the survey.

RESULTS

Descriptive Statistics and Preliminary Analyses

Less than 0.4% of the data were missing. These data were missing completely at random (MCAR; Little, 1988), $\chi^2(2679) = 2785.12$, p = .075, and were replaced using mean replacements. In preliminary analyses, we first examined gender differences on all variables using Bonferonni-corrected ($\alpha = p = .05/5 = .01$) independent-samples t-tests. The results revealed significant and moderately-sized gender differences on all constructs: women had greater dating anxiety, appearance orientation, social physique anxiety, and appearance-based rejection sensitivity than men, whereas men had greater self-compassion than women (see Table 1). Next, we examined inter-scale bivariate (Pearson) correlations between all variables. We initially did so separately for women and men, and found that in both groups greater dating anxiety was significantly associated greater appearance orientation, greater social physique anxiety, higher appearance-based rejection sensitivity, and lower selfcompassion. Fisher's z comparisons indicated that the strength of associations across the correlational matrix only differed between women and men for the association between social physique anxiety and appearance-based rejection sensitivity (stronger in women; z = 2.96, p = .002). All other comparisons indicated no significant gendered differences in the strength of the correlations, so the sample was combined for further analyses. Table 1, therefore, presents

the inter-scale correlations for the total sample and all further analyses were conducted with the total sample.

Moderated Mediation Analysis

Moderated mediation analysis was performed with IBM SPSS Statistics v.28 using the PROCESS macros v.3.5 (Hayes, 2018), which provides ordinary least squares regressionbased path analysis with safeguards against irregular sampling distributions (Hayes et al., 2017). The PROCESS macro was suitable for use in the present study because all variables were directly measured and because it was specifically developed to assess complicated regression pathways, including both mediating and moderating variables (Hayes et al., 2017). First, we evaluated a serial mediation model to assess the influence of appearance orientation on dating anxiety via appearance-based rejection sensitivity and social physique anxiety. To do so, we used the PROCESS macro (model 6) bootstrap method (Hayes, 2018), with the recommended 5,000 bootstrap samples drawn from the dataset to calculate indirect and direct effects, as well as bias-corrected 95% CIs (Preacher & Hayes, 2008). Effects were considered to be significant if the respective CI did not overlap zero (Mallinckrodt et al., 2006). Next, to test the significance of conditional interaction effects of self-compassion, we again used the Hayes' (2018) PROCESS method, using macro model 88. As recommended by Preacher et al. (2007), conditional indirect effects were estimated using ordinary least squares regression, using 5,000 bootstrap estimates to generate 95% CIs to probe the moderated mediation effect of self-compassion at the 16th (low), 50th (moderate), and 84th (high) percentiles for a significant index of moderated mediation, as recommended by Hayes (2018). Pathway notations for the overall hypothesised model are presented in Figure 1.

First, the serial mediation model accounted for a significant proportion of the variance, F(1, 499) = 60.76, $R^2 = .11$, p < .001. There was a significant positive standardised indirect effect (c') of appearance orientation on dating anxiety via appearance-based rejection

sensitivity ($a1 \times b1 = 0.208$, bootstrap SE = .044, 95% bootstrap CI = .272, .443). There was also a significant positive standardised indirect effect of appearance orientation on dating anxiety via social physique anxiety ($a2 \times b2 = .053$, bootstrap SE = .016, 95% bootstrap CI = .023, .087). Finally, there was also a significant positive standarised indirect effect of appearance orientation on dating anxiety via both appearance-based rejection sensitivity and social physique anxiety ($a1 \times a3 \times b2 = .096$, bootstrap SE = .019, 95% bootstrap CI = .062, .136). All direct effects had a significant positive pathway in this model, except the non-significant standardised direct effect between appearance orientation and dating anxiety (see Table 2 for direct effect coefficients).

Next, we performed a moderated mediation by investigating interaction effects of self-compassion. Specifically, to the previous model, we added appearance-based rejection sensitivity \times self-compassion (w1) and social physical anxiety \times self-compassion (w2), respectively. This model accounted for a significant proportion of the variance, F(1, 498) =60.66, $R^2 = .11$, p < .001. However, there were no significant indices of moderated mediation for appearance orientation on dating anxiety, through appearance-based rejection sensitivity, moderated by self-compassion ($al \times bl*wl = .021$, bootstrap SE = .021, 95% bootstrap CI = -.158, .071). There was also no significant moderation index for appearance orientation on dating anxiety, through social physique anxiety, moderated by self-compassion ($a2 \times b2*w2$ = .013, bootstrap SE = .008, 95% bootstrap CI = -.004, .028). Finally, there was also no significant moderation index for appearance orientation on dating anxiety, through appearance-based rejection sensitivity and social physique anxiety, moderated by selfcompassion ($a1 \times a3 \times b2*w2 = .023$, bootstrap SE = .014, 95% bootstrap CI = -.007, .048). All standardised direct effects had a significant positive pathway in this model, except the direct effect between appearance orientation and dating anxiety (see Table 2 for direct effect coefficients). Further, while not hypothesised in our model, self-compassion had a significant negative relationship with dating anxiety in this model (estimate = -.292, SE = .006, t = 5.92, p < .001, 95% CI = -.389, -.195).

DISCUSSION

In tandem with renewed interest in the construct and outcomes of dating anxiety (e.g., Adamczyk et al., 2021; Epli et al., 2021; Paul, 2021), recent work has suggested that appearance-related factors – including appearance orientation (Swami, Robinson et al., 2021) and self-evaluative salience of appearance (Shaw et al., 2018) – may be associated with dating anxiety. Additionally, drawing on cognitive-behavioural models of body image (Cash, 2002), it has been suggested that appearance orientation may heighten social physique anxiety, which in turn is associated with greater dating anxiety (Swami, Robinson et al., 2021). The present results are consistent with this suggestion, insofar as we found support for a mediational chain from appearance orientation to dating anxiety via social physique anxiety. As Swami, Robinson and colleagues (2021) have suggested, these findings are likely reflective of the important (perceived and real) role played by physical appearance in romantic relationship initiation. In such a context, unhealthy levels of appearance orientation experience likely provide a basis for developing fears about negative evaluations of one's physique in social settings, which in turn heightens anxieties in dating scenarios specifically.

However, beyond merely replicating previous work, the present findings also extended existing knowledge through the inclusion of appearance-based rejection sensitivity in a serial mediation model. Specifically, our results indicate evidence of a chain in which appearance anxiety is linked to dating anxiety via appearance-based rejection sensitivity and, in turn, social physique anxiety. As we suggested above, emerging adults are likely concerned with appearance-related feedback from others, including potential romantic partners (Deng et al., 2019), as such feedback may play a role in shaping peer status, interpersonal evaluations, and peer acceptance (Arnett et al., 2011). Indeed, emerging adults

tend to be highly aware of the importance of physical appearance for social relational success (Seekis et al., 2022) and must also negotiate societal appearance standards, which are often communicated through social interactions (Menzel et al., 2010). Individuals who are high in appearance orientation may be particularly sensitive to such appearance-related interpersonal feedback, which would explain the first link in our mediational chain – a finding that is consistent with previous work (Hawes et al., 2020; Toosi, 2016).

In turn, appearance-based rejection sensitivity appears to be related to dating anxiety directly (i.e., mediating the link between appearance orientation and dating anxiety). In this case, individuals who are high in appearance-based rejection sensitivity may experience heightened dating anxiety in heterosocial contexts because such contexts are perceived as opportunities for further social rejection; that is, potential romantic partners may be perceived as being less likely to provide acceptance or reassurance about one's physical appearance (Park & Pinkus, 2009). For individuals who are high in appearance-based rejection sensitivity, then, experiences of negative appearance-related feedback or any threat to appearance may lead to interpersonal insecurity chronic worry about appearance-based rejection that contribute to dating anxiety. In this scenario, dating anxiety could be viewed as protective: dating anxiety likely leads to an avoidance of heterosocial interactions (Adamczyk, 2015), which also reduces the likelihood of appearance-based discomfort and emotional distress.

However, our findings suggest that the appearance orientation → appearance-based rejection sensitivity → dating anxiety chain is not the only one in operation; that is, we also found evidence of a serial mediation effect involving both appearance-based rejection sensitivity and social physique anxiety. Although this is the first study to observe a relationship between appearance-based rejection sensitivity and social physique anxiety, previous work has shown that appearance-based rejection sensitivity is significantly

associated with both appearance-based and social anxiety (e.g., Hawes et al., 2020; Linardon et al., 2017; Park, 2007; Roberts et al., 2018). Importantly, Park (2007) has suggested that appearance-based rejection sensitivity may be an important maintaining factor for social anxiety: individuals high in appearance-based rejection sensitivity may be particularly sensitive to anxiety in social settings because they are concerned about being judged based on their appearance. Extending this line of thinking, it seems likely that appearance-based rejection sensitivity also heightens anxieties over the presentation of one's physique in situations where others may be evaluating one's self, thus establishing a mediational chain from appearance orientation → appearance-based rejection sensitivity → social physique anxiety → dating anxiety.

In contrast to the significant mediation effects, however, we found no evidence of moderation effects for self-compassion; that is, self-compassion did not moderate the effects of either appearance-based rejection sensitivity or social physique anxiety on dating anxiety. These null effects were unexpected, in contrast to our hypothesising, and difficult to explain without further data. One possible explanation is that self-compassion may simply not be an effective moderator of the influence of appearance-related factors on dating anxiety.

Theoretically, self-compassion has been postulated as a moderator of the effects of variables, such as shame and stress, and anxiety-related outcomes (Callow et al., 2021; Stutts et al., 2018), but such effects may not be universally applicable. A related possibility is that, in relation to dating anxiety at least, self-compassion may exert stronger moderating effects in combination with constructs that were not measured in the present study. For example, some recent work has suggested that individuals with both high self-compassion and high self-reflection reported lower experience of social anxiety (Stefan & Cheie, 2021).

A different explanation for these null effects is related to the way in which selfcompassion was measured in the present study. Specifically, we used the Short Form of the Self-Compassion Scale (Raes et al., 2011): although this instrument consists of items that measure each of Neff's (2003a, 2003b) three dimensions of self-compassion, subscale scores generally show less-than-adequate internal consistency. This meant that we were reliant on total scores and unable to examine whether specific lower-order dimensions of self-compassion may have exerted moderating effects. This would have been useful particularly as some earlier research has suggested that the positively- (i.e., mindfulness, self-kindness, and common humanity) and negatively-valenced dimensions (i.e., over-identification, self-judgement, and isolation) of self-compassion may be differentially related to outcomes (Muris & Petrocchi, 2017). In future work, therefore, it may be useful to utilise the Long Form of the Self-Compassion Scale, which would enable greater precision in understanding the moderating role of self-compassion in relation to dating anxiety.

Limitations

The present findings should be considered in light of a number of limitations of the study design. Perhaps most importantly, although mediation hypotheses are causal hypotheses (James & Brett, 1984), the statistical models used to test mediation are not inherently causal (Sobel, 2008). Put differently, the cross-sectional nature of our data means that we are unable to make conclusive causal claims, even if our findings are consistent with our theorising (Agler & De Boeck, 2017). For instance, although it would be inconsistent with available theorising (Gao et al., 2017), one may hypothesise a serial mediation model in which social physique anxiety precedes appearance-based rejection sensitivity (i.e., appearance orientation \rightarrow social physique anxiety \rightarrow appearance-based rejection sensitivity \rightarrow dating anxiety). Similarly, it is also possible that heightened dating anxiety leads to greater social physique anxiety and/or appearance-based rejection sensitivity (e.g., non-appearance-based anxieties in heterosocial contexts may trigger general appearance-related anxieties). One way to untangle these issues and provide causal evidence would be through longitudinal

data (e.g., Winkles, 2013), which might also benefit from considering additional variables not considered here (e.g., self-objectification, perceived pressure to attain sociocultural ideals of appearance). Relatedly, we also did not ask participants about their dating history. This may have been important because some of the DAS-A items assume that respondents have some dating experience. In future studies, it may be useful therefor to include items about dating history or the number of dates that participants have been on in the recent past.

Another limitation is that the present work was conducted during the COVID-19 pandemic. Although social distancing requirements had been removed in the United Kingdom during the period when the survey was available for completion, it is very difficult to know to what extent the pandemic and post-pandemic climate affected our findings. For example, some scholars have suggested that the pandemic is likely to have disrupted important developmental tasks in adolescence and emerging adulthood (Fegert et al., 2020), including the social and interpersonal environments in which individuals respond to developmental needs (Orben et al., 2020). Additionally, there is some evidence that that appearance orientation diminished significantly during periods of lockdown (Gullo & Walker, 2021), although it is difficult to know how experience of appearance evaluation may (or may not) have fluctuated across periods of mandated lockdown and reopening. As a result, it may be necessary to view the present results as limited to a particular juncture in time and to post-pandemic experiences in the United Kingdom.

In a similar vein, the sample in the present study consisted of a largely homogenous online community of residents and citizens of the United Kingdom. As such, we cannot be certain that our findings will be generalisable to other national or cultural contexts. For instance, although emerging work has suggested that the construct of dating anxiety may be invariant across nations (Adamcyzk et al., 2021), it is also highly likely that dating experiences vary across cultures (Swami, 2021), which in turn may mean that the factors that

contribute to dating anxiety are context-dependent. Relatedly, although our sample size was adequate (a power calculation with α set to .05 and power set to .08 indicated that a minimum sample size of 164 was necessary to detect a medium effect size), this does not include the impact of conditional indirect effects. Nevertheless, we are confident that our total sample size would have exceeded minimum thresholds for achieving adequate power.

Finally, because the Dating Anxiety Scale for Adolescents was developed with heterosocial contexts in mind (Glickman & La Greca, 2004), we limited our sample to emerging adults who identified as heterosexual. In future research, it may be valuable to extend the present findings to sexual minority groups, for whom experiences of dating anxiety may be contextually-bound. For example, there is some evidence that sexual minority stress is significantly associated with dating anxiety in lesbian, gay, and bisexual youth (Little, 2021). However, to do so, it will first be necessary either to adapt the DAS-A to reword references to "people of the opposite sex" (e.g., by referring to interactions with potential romantic partners) or to develop a new instrument for sexual minority populations. In both cases, however, any such instrument should first be validated for use in the target population.

Implications and Conclusion

Taken together, the present findings corroborate previous findings (Swami, Robinson et al., 2021) showing that appearance-related factors play a role in shaping dating anxiety in heterosexual emerging adults. This may have important implications for clinical practice. For instance, although a number of therapeutic interventions have been developed to reduce dating anxiety (e.g., Bander et al., 1975), these are primarily based on skills training and desensitisation to improve dating outcomes. While efficacious (for a meta-analysis, see Allen et al., 1998), it may be that therapeutic goal outcomes could be improved by promoting healthier appearance-related cognitions and emotions alongside traditional therapeutic

methods. For instance, cognitive-behavioural therapy-based interventions – such as Cash's (1997) 8-step programme – have been shown to be efficacious at reducing unhealthy body image cognitions and promoting healthier appearance orientation (for a meta-analysis, see Jarry & Ip, 2005). Combining such body image interventions with existing dating anxiety therapeutic programmes may be particularly useful, as would combinations involving cognitive dissonance-based interventions – such as the Body Project M (Jankowski et al., 2017) – that have been shown to promote healthier body image outcomes (e.g., lower appearance comparisons and internalisation of appearance ideals).

Despite the lack of significant moderating effects, we also suggest that it may be premature to entirely discount the potential of self-compassion in efforts to mitigate against dating anxiety. Certainly, our correlational analyses indicated that greater self-compassion was significantly associated with dating anxiety, a finding corroborated in our moderated mediation analysis. Clearly, more work is needed to fully understand the role that self-compassion may play in relation to dating anxiety. Given the deleterious effects of dating anxiety in both the short (e.g., Adamczyk, 2015; Boyle & O'Sullivan, 2013; Glickman & La Greca, 2004; Paul, 2021) and longer term (Adamczyk, 2015; Adamczyk et al., 2021; Sumter & Vandenbosch, 2019; Weisskirch, 2017), we encourage greater attention to ways of mitigating against the effects of dating anxiety, especially in emerging adults.

FOOTNOTES

¹The Fear of Negative Evaluation (FNE) of the DAS-A includes one item ("I worry that I may not be attractive to people of the opposite sex") that may be related to body image concerns. Removing this item from the computation of FNE scores did not substantively affect mean scores in women (with the item: M = 3.29, SD = 0.98; without: M = 3.32, SD = 0.99) and men (with: M = 3.71, SD = 1.02; without: M = 3.72, SD = 1.03). Scores on the FNE were also very strongly correlated with and without the offending item (r = .997) and

correlations with all additional variables remained (nearly) identical in all cases. The results of our moderated mediation analysis also remained stable when run with the 9-item FNE. 2 In our dataset, BMI was only weakly correlated with social physique anxiety, self-compassion, and appearance-based rejection sensitivity (all rs < .29) and not significantly correlated with dating anxiety (r = .06). Additionally, when we tested whether BMI moderated the paths between appearance orientation and appearance-based rejection sensitivity and social physique anxiety, respectively, we found a non-significant moderation effect.

DECLARATIONS

Compliance with Ethics Standards

Ethics approval was obtained from the School Research Ethics Panel at the first author's institution (approval number: PSY-S21-003) and all research was conducted in accordance with the 1964 Declaration of Helsinki and its later amendments. All participants provided digital informed consent.

Funding

Not applicable.

Conflicts of Interest/Competing interests

The authors have no conflicts of interest/competing interests to declare.

Availability of Data

The data are available to other scholars on reasonable request.

Code Availability

Not applicable.

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Table 1

Descriptive Statistics, the Results of Independent Samples T-Tests Examining Gender

Differences, and Bivariate Correlations between All Variables for the Total Sample.

		Possible	(1)	(2)	(3)	(4)	(5)
		range					
(1) Dating anxiety - Fear of negative evaluation		1-5		.29*	.68*	.72*	58*
(2) Appearance orientation		1-5			.33*	.33*	16*
(3) Social physique anxiety		1-5				.68*a	54*
(4) Appearance-based rejection sensitivity		6-36					53*
(5) Self-compassion		1-5					
Total sample	M		3.50	3.29	3.44	16.25	2.78
	SD		1.02	0.78	0.98	8.30	0.71
Women	M		3.71	3.50	3.81	18.13	2.61
	SD		1.02	0.70	0.90	8.66	0.69
Men	M		3.30	3.08	3.07	14.41	2.94
	SD		0.98	0.79	0.93	7.50	0.69
	t		4.57 ^b	6.32 ^b	8.98 ^b	5.14 ^b	5.41 ^b
	Cohen's d		0.41	0.56	0.80	0.46	0.46

Note. ^aIndicates a significant gender difference in the strength of the association as determined by Fisher's z; ^bIndicates a significant gender difference at Bonferroni-corrected p = .001; *p < .05, **p < .001.

Table 2

Model Summary (SE) of Standardised Direct Effects in the Hypothesised Model.

Model	Serial Mediation			Moderated Mediation			
Pathway	Coefficient (SE)	t	95% CI	Coefficient (SE)	t	95% CI	
al	3.521 (.452)*	7.80	2.634, 4.409	3.522 (.452)*	7.79	2.634, 4.411	
a2	.147 (.044)*	3.34	.060, .233	.146 (.044)*	3.33	.060, .232	
<i>a3</i>	.076 (.004)*	18.45	.068, .084	.076 (.004)*	18.44	.068, .084	
<i>b1</i>	.059 (.005)*	12.09	.049, .069	.054 (.005)*	10.94	.044, .063	
<i>b2</i>	.362 (.041)*	8.81	.281, .443	.264 (.042)*	6.29	.182, .346	
wI	-	-	-	.006 (.006)	0.95	006, .018	
w2	-	-	-	.088 (.052)	1.70	014, .189	
c1	.018 (.041)	0.45	062, .098	.033 (.039)	0.83	044, .109	

Note. **p* < .001.

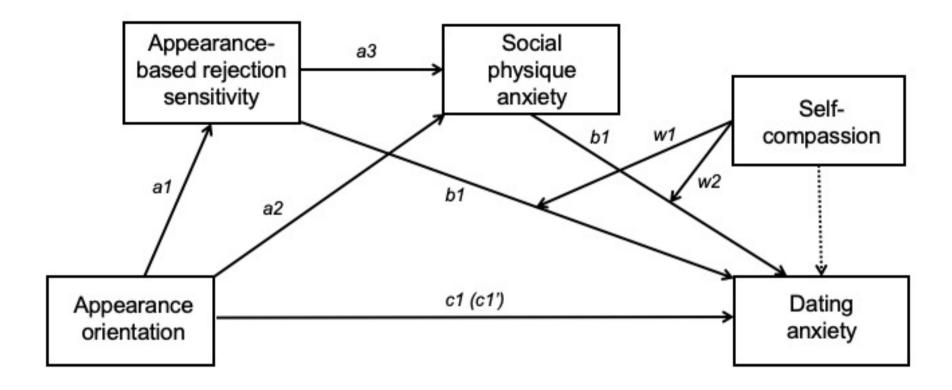


Figure 1. Hypothesised Moderation Mediation Model with Pathway Notations (see Table 2 for Pathway Coefficients).