

Investigating the Role of Attachment in Social Comparison Theories of Eating Disorders within a Non-Clinical Female Population

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Abstract

Objective: The present study aimed to integrate attachment theory and sociocultural theory as predictors of disordered eating, thereby combining two previously distinct literatures in order to provide a more comprehensive model of eating disorder development. It was specifically proposed that women's attachment style may influence their tendency to socially compare themselves to idealised others.

Method: Participants ($N = 213$) were non-clinical female undergraduates. Sociocultural attitudes to appearance, social comparison, attachment and eating disorder symptomatology were assessed using self-report questionnaires.

Results: Consistent with the hypothesis, social comparison was found to mediate the relationship between attachment anxiety and disordered eating. In addition, attachment avoidance, was not significantly associated with either internalisation of cultural ideals or social comparison but was significantly related to eating psychopathology.

Conclusion: The findings suggest that attachment anxiety and avoidance influence disordered eating via different pathways, with attachment anxiety specifically being implicated in sociocultural models of disordered eating. Copyright © 2009 John Wiley & Sons, Ltd and Eating Disorders Association.

Keywords

attachment; social comparison; eating disorders; body dissatisfaction

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Different models have been proposed to explain aetiological and perpetuating factors of disordered body image and eating pathology. One of these theories, the sociocultural theory, asserts a link between body dissatisfaction or disordered eating and the unrealistic beauty ideals stressed by today's society and mass-media (Thompson, Coovet, & Stormer, 1999). There is a great deal of evidence to support the theory that media-related factors, including exposure to images of ultra thin models, and the internalisation of these

idealised images contribute directly to body dissatisfaction and eating-related pathology (e.g. Stice, Schupak-Neuberg, Shaw, & Stein, 1994; Heinberg & Thompson, 1995; Groesz, Levine, & Murnen, 2002). However, despite the pervasiveness of today's media ensuring that virtually all women will be subject to these cultural ideals, only a minority of women will internalise these messages and even fewer go on to develop eating disorders. Accordingly, sociocultural models have been refined and developed to suggest specific vulnerability

factors and psychological processes that may influence the extent to which these pressures affect women (Stice et al., 1994; Dittmar & Howard, 2004; Dittmar, 2005). These more specific pathways are still not fully understood however and as such further examination of mediating variables and psychological processes implicated in increasing an individual's vulnerability to societal pressures is still required.

Social comparison theory

Social comparison theory (Festinger, 1954) has been widely used to explain how media exposure and socio-cultural pressure may influence eating related pathology. It has been proposed that women who actively choose inappropriate targets to compare themselves with (e.g. idealised images), and make frequent comparisons with these targets, are more vulnerable to sociocultural appearance pressure (Wood, 1996). The role of social comparison has been well documented in the literature (e.g. Thompson et al., 1999; Cattarin, Thompson, Thomas, & Williams, 2000; Tiggemann & McGill, 2004). Close examination of this literature reveals that individual differences in the frequency of social comparisons appear to be an important predictor of body dissatisfaction, weight anxiety and disordered eating; with more frequent appearance related social comparisons with both models and attractive peers being related to increases in each of these variables (Cattarin et al., 2000; Groesz, Levine, & Murnen, 2002; Tiggemann & McGill, 2004; Engeln-Maddox, 2005). Our understanding of social comparison is still limited however by the lack of studies investigating what motivates some individuals to engage in more social comparison than others. Social comparison has been shown to be related to uncertainty about the self as well as a desire for self-reassurance (Eurich & Byrne, 2004). Attachment theory has been widely used to explain how individuals relate to themselves and to others. As such, this study will attempt to add to the social comparison literature by investigating early attachment as a factor in increasing social comparison tendencies, thus combining these two previously distinct literatures.

Attachment theory

Attachment styles have previously been linked to the eating disorders as well as to disordered eating in non-clinical samples (O'Kearney, 1996; Ward, Ramsay, & Treasure, 2000). Previous authors have found high rates

of attachment anxiety and low attachment avoidance in early and intimate relationships within eating disorder samples (Cash, Theriault, & Milkewicz Annis, 2004; Alfonso, Paola, & Massimo, 2005; Evans & Wertheim, 2005).

Individuals with high attachment anxiety, are motivated to engage in close relationships and have a tendency to idealise others while devaluing themselves. Individuals with avoidant attachment styles strive to deactivate their attachment needs and avoid relationships with others. Recently, Greenwood and Pietromonaco (2004) found that women with high attachment anxiety reported increased identification with, idealisation of and feelings of closeness towards media characters. These attachment relevant feelings were, in turn, partially related to them showing greater body image concerns, body shape and body surveillance. The authors concluded that attachment needs may drive relational engagement with idealised media figures, which in turn, because of the high importance placed on thinness in the media, may exacerbate body image concerns. Attachment avoidance was not found to be related to any of these variables suggesting that the two dimensions may be differentially related to the eating disorders. Theoretically this can be understood in terms of the conceptual differences between attachment anxiety and avoidance. Whilst high attachment anxiety increases an individual's desire to engage in close relationships, individuals with high attachment avoidance are, by definition, reluctant to engage in social relationships and are inclined to exert protective behaviours by distancing themselves from others (Collins & Reed, 1990). These individuals may therefore be less likely to attend to, and be concerned with, societal ideals of beauty and less likely to engage in social comparisons with others. As such, it is possible that attachment anxiety and not attachment avoidance may be implicated in sociocultural theories of eating disorders and as such the two dimensions were depicted differently in the model tested.

The model tested in the current research proposes that the links between attachment and disordered eating may be partially accounted for their influence on an individual's degree of felt closeness and similarity to idealised others, and thus possibly their social comparison with these others. More specifically, it was proposed that the relationship between attachment anxiety and eating related psychopathology would be mediated by social comparison. In addition attachment

avoidance was expected to have a direct relationship with disordered eating but not to be implicated within a socio-cultural framework. Attachment anxiety and internalisation of sociocultural norms were allowed to covary within the structural model. This study will build on the work of previous research in three ways. Firstly the association between attachment and frequency of social comparison will be explored. Secondly, in line with advances in the field of attachment research, a dimensional construction of attachment will be employed rather than a categorical approach. Thirdly, the relevance of attachment to social comparisons with both models and peers will be explored in order to examine whether attachment may be driving comparisons with media images specifically, or social comparisons more generally.

Method

Participants and procedure

Two hundred thirteen female university undergraduate students from three different universities within the UK were recruited for the present study. All participants gave informed consent. The participants' ages ranged between 18 and 34 years ($M = 21$, $SD = 4.1$). The average Body Mass Index (BMI Kg/m²) for the sample was 22.1 ($SD = 4.9$, range 16.1–35.5). Participants were recruited in one of two ways. Firstly, students signed up to take part in the study in return for class credits ($N = 55$). Alternatively participation was solicited during a designated class period. Questionnaires were handed out at the beginning of the class and were returned to the researcher on completion ($N = 158$). The present research was reviewed and approved by the University of Plymouth Research Governance Committee

Measures

Eating disorder inventory (Bulimia, Drive for Thinness and Body Dissatisfaction subscales only). The EDI (Garner, Olmstead, & Polivy, 1983) is a self-report measure used to assess eating attitudes and related characteristics. Higher scores on the EDI represent increased eating disorder pathology. The EDI has been widely used with both eating disordered and non-clinical samples and has been shown to have good psychometric properties (Garner, 1991). Internal consistency reliability estimates for all three subscales within first and second year female psychology students

have been high (Vanderheyden, Fekken, & Boland, 1988; .91 Drive for thinness; .82 Bulimia; .93 Body dissatisfaction). Cronbach's alpha for the EDI in the present sample was $\alpha = .75$

Experiences in close relationships questionnaire—Revised. The ECRQ-R (Frayley et al., 2000) is a revised version of Brennan, Clark, and Shaver's (1998) Experiences in close relationships (ECR) questionnaire. The ECR-R is designed to assess individual differences with respect to attachment-related anxiety and attachment-related avoidance. The ECRQ-R has been shown to have good psychometric properties (Sibley & Liu, 2004) with estimates of internal consistency reliability being above .90 (Fraleay, 2005). Items of the ECRQ-R were modified in line with suggestions by the scales authors to incorporate parental or peer relationships as well as romantic relationships. In this study, the ECRQ-R had high Cronbach's alpha reliabilities for both the anxiety (0.88) and avoidance (0.87) subscales.

Physical appearance comparison scale. The PACS (Thompson, Heinberg, & Tantleff, 1991) is a 5-item self-report measure designed to measure levels of appearance comparison. Higher scores represent more frequent social comparisons. Psychometric characteristics have been found to be adequate with a university sample (Thompson et al., 1991). The PACS has previously been shown to have good internal consistency ($\alpha = .78$) and test—retest reliability ($\alpha = .72$) (Thompson et al., 1991). Cronbach's alpha for the scale in this study was 0.81. The PACS has also been shown to be a useful measure of social comparison within eating disorder samples (Thompson, Coovert, & Stormer, 1999).

The social comparisons to models and peers scale. The SCMPS (Jones, 2001) has previously been used with adolescent samples to assess the frequency of comparisons to two different targets (models and same sex peers) on a series of physical and social attributes. Responses are made on a 5-point likert scale. The SCMPS has not previously been used with adult samples however internal consistency for the present sample was high ($\alpha = .83$).

Sociocultural attitudes towards appearance questionnaire—3. The SATAQ-3 (Thompson, van den Berg, Roehrig, Guarda, & Heinberg, 2004) is a revised version of the original SATAQ (Heinberg, Thompson, & Stormer, 1995). It is a 30-item self-report measure used to assess internalisation of both thin and athletic ideals, awareness of media pressures and awareness of

media as an information source. Higher scores represent greater endorsement of sociocultural ideals. The SATAQ-R has been previously assessed for reliability and validity in a female college sample (Heinberg et al., 1995). Internal consistency reliability in the present sample was good ($\alpha = .84$). The SATAQ-R has also been used within eating disorder samples to assess endorsement of sociocultural ideals (e.g. Calogero, Davis, & Thompson, 2004).

Statistical analysis

Structural equation modelling procedures using EQS6 (Bentler, 2006) were employed to test the hypothesised model comprising three latent variables (sociocultural attitudes towards appearance, social comparison and eating disorder psychopathology) and two observed variables (attachment anxiety and attachment avoidance). Analyses were based on the covariance matrix using maximum likelihood estimation.

Results

The purpose of the present study was to determine the relationship between attachment, awareness and internalisation of sociocultural pressures to be thin, social comparison and eating disorder psychopathology. Descriptive statistics for the whole sample are presented in Table 1.

Preliminary analyses were performed to assess departures from basic assumptions for multivariate analyses. All variables were within the theoretical ranges expected of them. Values of kurtosis and skewness for

all variables with the exception of the bulimia subscale of the EDI were inferior to 2, ranging from 75 to 1.85 and 31 to 1.50, respectively. The bulimia variable was transformed using SPSS prior to statistical analysis to enable the use of the maximum likelihood procedure used in this study. The skew and kurtosis for the transformed bulimia variable were $z = 1.01$ and 0.57, respectively, indicating a normal distribution. The original bulimia variable was highly correlated to the transformed bulimia variable ($r = .91$), therefore the transformed variable was used in all subsequent analyses. The distribution of attachment categories was slightly different to the distribution found in previous studies. On examination of the data, means of both the avoidance and anxiety dimensions were higher than those quoted in previous samples (anxiety: 4.3; avoidance: 3.9, present study vs. anxiety 3.3; avoidance 3.0; Fraley, 2005). As a result a higher proportion of individuals were rated as preoccupied or disorganised than in previous research.

Correlation matrix for all variables

Table 2 presents the Pearson's correlation matrix for all variables. Attachment anxiety showed a significant positive correlation with all variables with the exception of awareness of the media as an information source. Attachment avoidance showed no significant correlation with any attitudes towards sociocultural ideals or social comparison variables. Attachment avoidance was however, positively correlated with all three measures of eating disorder psychopathology

Table 1 Descriptive statistics for whole sample, attachment dimensions (anxiety, avoidance) and attachment categories (secure, preoccupied, avoidant, fearful)

Variable	Whole Sample ($N = 213$)	Secure ($N = 44$)	Preoccupied ($N = 73$)	Avoidant ($N = 19$)	Fearful ($N = 77$)
	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
Age	21.4 (4.1)	21.31 (3.3)	21.39 (3.4)	22.05 (5.3)	21.3 (4.9)
BMI	21.5 (7.0)	20.8 (5.2)	22.1 (7.0)	20.3 (8.6)	21.5 (7.5)
Pressure	21.2 (7.3)	19.3 (7.0)	21.3 (7.1)	16.9 (7.0)	23.2 (7.1)
Information	25.2 (10.0)	25.5 (8.6)	24.9 (9.8)	21.9 (10.3)	26.2 (10.9)
Internalisation—general	13.8 (4.3)	13.0 (4.5)	13.9 (4.4)	12.1 (3.7)	14.6 (4.2)
Internalisation—athlete	28.3 (9.2)	26.1 (8.7)	28.3 (8.8)	24.8 (10.4)	30.2 (9.0)
PACS	15.4 (3.9)	13.8 (3.5)	15.9 (3.6)	13.9 (3.3)	16.2 (4.1)
Social comparison (P)	19.6 (6.5)	17.6 (5.1)	20.2 (6.6)	16.5 (6.4)	20.9 (6.7)
Social comparison (M)	24.5 (6.7)	21.7 (5.6)	25.8 (6.9)	20.7 (6.7)	25.7 (6.4)
Drive for thinness	3.9 (4.9)	2.2 (3.3)	3.7 (4.7)	2.9 (4.2)	5.4 (5.5)
Body dissatisfaction	9.5 (7.2)	6.3 (5.7)	9.1 (6.6)	8.5 (6.0)	12.0 (8.1)
Bulimia	0.8 (1.0)	0.3 (0.7)	0.9 (0.9)	0.9 (0.9)	1.0 (1.1)

Key: PACS = Physical appearance comparison scale, (P) = Peers, (M) = Models.

Table 2 Pearson's *r* correlations between ECRQ-R, SATAQ-3, PACS, CWMPs, EDI-3 (drive for thinness, body dissatisfaction, bulimia subscales) (*N* = 213)

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1 Attachment anxiety	—											
2 Attachment avoidance	.215**	—										
3 SATAQ—info	.078	.054	—									
4 SATAQ—pressure	.261**	.087	.503**	—								
5 SATAQ—internalisation general	.202**	.074	.398**	.567**	—							
6 SATAQ—internalisation athlete	.236**	.128	.562**	.788**	.617**	—						
7 Social comparison (peers)	.400**	.096	.413**	.564**	.454**	.570**	—					
8 Social comparison (models)	.422**	.045	.415**	.516**	.387**	.523**	.702**	—				
9 Physical appearance comparison	.340**	.098	.479**	.559**	.427**	.567**	.604**	.598**	—			
10 Drive for thinness	.360**	.200**	.258**	.508**	.349**	.510**	.516**	.488**	.566**	—		
11 Body dissatisfaction	.295**	.276**	.253**	.526**	.460**	.457**	.401**	.413**	.467**	.646**	—	
12 Bulimia	.349**	.202**	.165*	.270**	.146*	.244**	.288**	.338**	.263**	.457**	.390**	—

*Correlation is significant at the 0.5 level (2-tailed); **Correlation is significant at the 0.01 level (2-tailed).

(body dissatisfaction, drive for thinness, bulimia). In line with the previous literature supporting the sociocultural model of eating disorders, both internalisation of sociocultural norms and social comparison were positively correlated with eating disorder psychopathology. Finally, social comparisons with models and peers were highly correlated in the present sample and this did not differ according to attachment type. Therefore in the proposed structural model they were treated as equivalent.

Structural equation modelling

Maximum likelihood procedures using EQS6 were used to assess the fit of the data to the proposed model. The model proposed comprised three latent variables (internalisation of sociocultural attitudes, social comparison and disordered eating) and two observed variables (attachment anxiety and attachment avoidance). Confirmatory factor analysis was first used to develop an acceptable measurement model, before testing the proposed structural model. χ^2 statistic was used to assess model fit however, as this statistic is very sensitive to sample size, other fit statistics were also used to evaluate the model in line with suggestions by Hu and Bentler (1999) and Quintana and Maxwell (1999).

An initial test of the measurement model resulted in a good fit to the data, χ^2 ($X^2(32, N = 213) = 59.13, p < 0.001, CFI = .96, SRMR = 0.04, RMSEA = .06$). In addition, all of the loadings of the measured variables were statistically significant ($p < 0.05$) therefore all the latent variables appear to have been adequately measured by their respective indicators.

Figure 1 shows the structural model that was tested. Attachment anxiety was predicted to have an indirect effect on disordered eating via social comparison. Attachment avoidance was predicted to have a direct effect on disordered eating. Attachment anxiety, attachment avoidance and internalisation of sociocultural attitudes were allowed to covary within the hypothesised model. The fit of the hypothesised model to the data from female undergraduates was very good (χ^2 (49, $N = 213$) = 84.77, $p < 0.001$; RMSEA = .06; CFI = .97; SRMR = .04). Decomposition of indirect effects indicated that attachment anxiety had a significant mediated effect on disordered eating through social comparison (mediated effect = 2.02, SE = 0.37, $z = 5.39, p < 0.05$). Internalisation also had a significant mediated effect on disordered eating through social comparison (mediated effect = .36, SE = .05, $z = 7.07, p < 0.05$). Overall, this model was able to account for 63% of the variance in eating behaviours and 72% of the variance in social comparison.

Discussion

The present study aimed to investigate the contribution of attachment to the sociocultural model of disordered eating, specifically proposing that high attachment anxiety but not attachment avoidance would increase rates of social comparison with both models and peers and that as a result these individuals would have higher rates of body dissatisfaction and eating related psychopathology. Our results supported the hypotheses with social comparison mediating the relationship

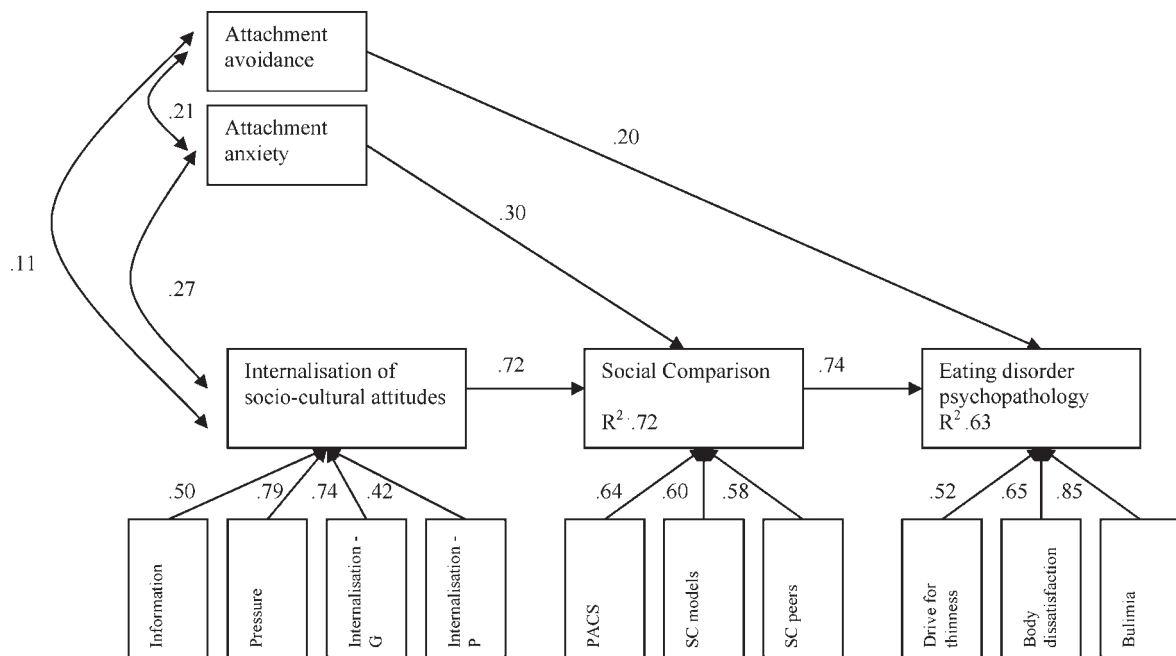


Figure 1 Relation of attachment dimensions to the sociocultural model of disordered eating in female undergraduates. All estimates are standardised and significant at the .05 level.

between attachment anxiety and disordered eating but not the relationship between attachment avoidance and disordered eating. This finding suggests that the two dimensions of attachment may be related to eating disorder psychopathology via different pathways. Accordingly, these different dimensions will be discussed consecutively.

Attachment anxiety

Structural equation modelling revealed that the association between attachment anxiety and eating disorders in the present sample was mediated by social comparisons. In addition, equivalent relationships emerged in the correlations for comparisons with peers and comparisons with models suggesting that attachment is driving social comparison in general rather than, as suggested by Greenwood and Pietromonaco (2004), solely with idealised media images or characters. Individuals with high attachment anxiety tend to devalue themselves and use others for reassurance or validation. This tendency may heighten their vulnerability to using others as a source of comparison in order to evaluate themselves. One explanation for this increased social comparison can be taken from cognitive models of general anxiety. Cognitive models propose that hypervigilance and attention bias are key

features of anxiety (Eysenck, 1992, 1997; Williams, Watts, Macleod, & Matthews, 1997; Mogg & Bradley, 1998; Harvey, Watkins, Mansell, & Shafran, 2004; Fraley, Davis, & Shaver, 1998). As such anxiety results in individuals excessively scanning the environment for any threatening stimuli, preferentially attending to threat when it is present. Individuals who are highly anxious about relationships, may thus be considered to be showing increased hypervigilance (or social comparison) to others in their environment who they perceive as threatening. In addition, it is possible that these individuals will show an attention bias to idealised others who they are likely to view as more threatening i.e. they are likely to show increased social comparison in an upwards direction which is likely, in turn, to increase body dissatisfaction and disordered eating. This finding is important as it suggests that if appearance based social comparison can be reduced in individuals who are highly anxious about relationships, their disordered eating behaviour may also be reduced.

Attachment avoidance

The results of this study also suggested that attachment avoidance, despite being positively correlated with eating disorder psychopathology, was not significantly

associated with internalisation of sociocultural norms or frequency of social comparison. Individuals high in attachment avoidance tend to deactivate normal attachment responses diverting their attention away from distress evoking stimuli or attachment related thoughts (Schmidt & Treasure, 2006). Therefore it holds that attachment avoidance would not motivate an individual to engage in increased awareness or comparison with others in the media or social environment. Whilst these results suggest that attachment avoidance may not be implicated in sociocultural models of eating disorders, high attachment avoidance was directly associated with eating disorder psychopathology. There may be a number of explanations for this finding. Avoidance of emotions and relationship intimacy have previously been linked to eating both restrictive and bulimic pathologies (e.g. Fairburn, Cooper, & Doll, 1999; Geller, Cockell, & Goldner, 2000; Corstophine, Mountford, Tomlinson, Waller & Meyer, 2007). Thus, the development of an eating disorder may serve a direct function to individuals with high attachment avoidance by helping the individual to achieve emotional and social avoidance (by focussing on food and weight and withdrawing from social activities). Alternatively, the relationship between attachment avoidance and disordered eating may be mediated by variables other than social comparison. Exploration of possible mediating variables linked to both attachment avoidance and disordered eating is clearly required to better understand this relationship.

Despite the strengths of the present study there are several limitations which should be considered when interpreting the results. First, the present study did not control for the impact of other factors including anxiety, depression and low self-esteem. This was felt to be beyond the scope of the current research and the theory behind the model investigated strong enough to warrant initial investigation of the current relationship only. However understanding of the relationship between attachment, social comparison and disordered eating would now be improved by exploring the impact of each of these factors. Secondly, the sample consisted of mainly white female undergraduate students which limit the generalisability of the findings. It is also unclear, due to the use of a non-clinical population, whether the results of this study would extend to individuals with clinically diagnosable eating disorders. It is possible that the relationship would be stronger within a clinical population due to the severity of the

disordered eating, however, further research is required to determine whether this is the case. Thirdly, despite the use of sophisticated data analytic procedures in this study, greater understanding as to the causal nature of this relationship awaits future longitudinal research.

The current research only investigated social comparison as a mediating factor between attachment and disordered eating. As such, various suggestions for future research can be drawn from this study. Firstly, examining the influence of other factors in this relationship (e.g. self-esteem, perfectionism; generalised anxiety) would further increase understanding of the complex relationship between attachment and eating disorder psychopathology. Secondly, this research did not explore the direction of, or motivation for, social comparison. Whilst the link between increased social comparison and greater eating disorder psychopathology within this study suggests that attachment anxiety is motivating upwards social comparison for purposes of self-evaluation, explicit exploration of the influence of attachment on different aspect of social comparison would be both an interesting and valuable avenue for future research.

This research highlights the role of intrapersonal factors in increasing an individuals' vulnerability to societal ideals. In particular, this study suggests that the literature on attachment may usefully be integrated into sociocultural models of disordered eating in order to provide a more comprehensive understanding of eating disorder development. By integrating attachment styles into sociocultural models of disordered eating it may be possible to identify individual susceptibility to negative effects from media exposure as well as to highlight potentially useful targets for interventions.

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