RESEARCH ARTICLE

Show Me Your Friends, and I Shall Show You Who You Are: The Way Attachment and Social Comparisons Influence Body Dissatisfaction

Lilac Lev-Ari^{1*}, Inbar Baumgarten-Katz^{1,2} & Ada H. Zohar¹

Abstract

Women with attachment insecurity have greater eating disorder symptoms and poorer prognosis. Socio-cultural agents, such as peers and family, are predictive of the development of body image dissatisfaction (BID). The present study examines the association of insecure attachment styles and direct and indirect social comparisons of body image to women's BID and drive to thinness. Two hundred and eighty three women aged 18–42 years completed online self-reports concerning attachment styles, body mass index (BMI), drive for thinness, body image satisfaction, the Figure Rating Scale (FRS), as well as a modified FRS comparing self to mother, to sister closest in age and to best friend. Hierarchical Linear Models reveal that anxious-ambivalent, but not avoidant attachment style, along with indirect and direct comparisons to best friend and to sister influence drive for thinness and body dissatisfaction, even after controlling for BMI and age. Of all social comparisons, feeling one's best friend is thinner than yourself is the most detrimental to body ideal. Copyright © 2014 John Wiley & Sons, Ltd and Eating Disorders Association.

Keywords

attachment styles; body image; body dissatisfaction; BMI; drive for thinness; Figure Rating Scale; social comparison; objectification theory

*Correspondence

Lilac Lev-Ari, Ruppin Academic Center, Emek Hefer 40250, Israel.

Email: Idlevari@zahav.net.il

Published online in Wiley Online Library (wileyonlinelibrary.com) DOI: 10.1002/erv.2325

Introduction

We are essentially social animals, and therefore, we are constantly judging our status and worth in relation to others. However, the outcome of these judgements is highly reliant on whom we choose to compare ourselves to, and on what dimensions. Social comparison theory notes that humans seek out objective standards to assess their own personal worth and subjective status (Festinger, 1954), and when such objective standards cannot be found, they will selectively compare themselves to close others in order to reach this goal. Following this hypothesis, later researchers have found that in most cases, people prefer to compare themselves to others in a way that heightens their own self-worth (Morrison, Kalin, & Morrison, 2004). On the other hand, research regarding body image has consistently shown that women tend to compare themselves to other women whom they perceive as more beautiful than themselves, often leaving them feeling bad about themselves (Fitzsimmons-Craft, 2011; Morrison et al., 2004; O'Brien et al., 2009).

One of the possible explanations for this comparison behaviour in women may be found in objectification theory (Fredrickson & Roberts, 1997). This theory contends that women in Western culture are constantly objectified and that their body is used by others as a way of assessing their personal worth. Through socialization, women internalize that their self-worth is largely based on the way other people view them, and this, in turn, leads to their

own continuous sub-conscious social comparisons of their body image to others. Objectifying messages about appearance make women focus more on their appearance, and thus compare their body with other women's bodies as a guide for how to look and to evaluating their worth (Tylka & Sabik, 2010). Women who report greater self-objectification (i.e. emphasize weight and shape in their own self-evaluations) are also more acutely aware of other women's appearance (Lindner, Tantleff-Dunn, & Jentsch, 2012; Strelan & Hargreaves, 2005).

Social comparison theory (Festinger, 1954) and objectification theory (Fredrickson & Roberts, 1997) both claim that social comparisons can be made either directly or indirectly. Women can consciously (directly) or subconsciously (indirectly) compare themselves to others. Comparisons can also be made through direct or indirect communication about appearance, either initiated by the woman herself or by others surrounding her (Ferguson, Winegard, & Winegard, 2011; Matera, Nerini, & Stefanile, 2012).

Most of the research concerning peer influence is based on direct communication of social expectations (Clark & Tiggemann, 2008; Matera et al., 2012). Studies have shown that women are more likely to compare themselves to friends and to family than to more dissimilar images, such as those portrayed in the mass media (Bosveld, Koomen, & Pligt, 1994), and that adolescent girls place much importance on peer's judgement of appearance, and this may impact their own report of body satisfaction (Shroff & Thompson, 2006).

¹Ruppin Academic Center, Israel

²Sha'ar Menashe Mental Health Center Hadera, Israel, affiliated to Rappaport Faculty of Medicine, Technion, Israel Institute of Technology, Israel

Family may also play a crucial role, as peers do, in concern for body weight and dieting. Research on the influence of family on body image usually focuses on familial comments about the body or general familial preoccupation with weight, body image, and dieting or disordered eating (Hardit & Hannum, 2012; Kluck, 2010). These studies have found that family-appearance-focus and daughter's body dissatisfaction both predicted disordered eating and that a strong positive correlation was found between familial criticism, teasing and encouragement about weight or size with body dissatisfaction (Kluck, 2010). Two studies based on social comparison theory, which focused uniquely on sisters closest in age, predicted that sisters would be modelling agents for weight and body image concerns. They found that sisters were very similar to each other on measures of body image dissatisfaction (BID) and drive for thinness (Coomber & King, 2008; Tsiantas & King, 2001). Both studies, however, limit their generalizability because of small sample sizes (less than 48 pairs) and therefore argue for the need for further studies in this area.

Research concerning social comparisons and body dissatisfaction has consistently shown that comparisons between women may lead to body dissatisfaction and to disordered eating (Fitzsimmons-Craft, 2011; Fitzsimmons-Craft, Harney, Brownstone, Higgins, & Bardone-Cone, 2012; O'Brien et al., 2009). Research has also examined relationships between attachment styles, body satisfaction and body image in women (Elgin & Pritchard, 2006; McKinley & Randa, 2005), resulting in conflicting outcomes and using a wide array of measures to assess attachment. Some studies have shown that secure attachment positively predicts body satisfaction (Cash, Thériault, & Annis, 2004) and negatively predicts drive for thinness (Elgin & Pritchard, 2006), whereas other attachment styles do not. Others found significant relationships between insecure attachment styles and body or weight concerns (Bamford & Halliwell, 2009; Brennan & Shaver, 1995; Cash et al., 2004; Cheng & Mallinckrodt, 2009; Evans & Wertheim, 1998; McKinley & Randa, 2005; Sharpe et al., 1998) and between insecure attachment styles and disordered eating (Armstrong & Roth, 1989; Broberg, Hjalmers, & Nevonen, 2001; Friedberg & Lyddon, 1996; Salzman, 1997; Sharpe et al., 1998; Tasca, Ritchie, & Balfour, 2011). Whereas consistent associations have been shown between anxious (preoccupied) attachment style and body dissatisfaction (Cash et al., 2004; McKinley & Randa, 2005), the findings are less clear cut with respect to the avoidant (dismissing and fearful) attachment style (Cash et al., 2004; Cole-Detke & Kobak, 1996; Friedberg & Lyddon, 1996; Latzer, Hochdorf, Bachar, & Conetti, 2002; McKinley & Randa, 2005; Tasca et al., 2011).

In a recent study, Koskina and Giovazolias (2010) showed that body dissatisfaction fully mediates the relationship between anxious attachment and disordered eating, whereas avoidant attachment directly impacts disordered eating. This means that the relationship between anxious attachment style and disordered eating is an indirect one. Anxiously attached individuals are actually more concerned with their body image than with the eating behaviours, whereas avoidant attached individuals are less concerned with body image, even when they have disordered eating. Findings such as these highlight the importance of understanding the role of body dissatisfaction in attachment styles and eating disorders.

To date, only a few studies have attempted to examine the complex relationship between attachment, social comparisons and body dissatisfaction. Bamford and Halliwell (2009) examined 213 nonclinical female undergraduates in order to assess the relationship between attachment, internalization of socio-cultural pressures to be thin, social comparisons and eating disorders. Using Structural Equation Modelling (SEM), they found that anxious attachment directly influenced social comparisons and that this, in turn, influenced disordered eating, whereas, avoidant attachment directly influenced disordered eating (and was not mediated by social comparisons). These direct and indirect paths might be explained by the different modalities of anxious and avoidant individuals. Anxious individuals are more dependent on others and would be, therefore, more likely to contend in social comparing behaviour, whereas, avoidant individuals are more self-reliant, and therefore less socially driven. It is interesting to note that both anxious and avoidant individuals exhibited disordered eating and that the avoidant attachment style was not a resilient factor in this study. Therefore, the different ways in which the two attachment insecurity dimensions contribute to the development of body dissatisfaction and eating disorders highlights the importance of understanding and distinguishing between them (Bamford & Halliwell, 2009; Koskina & Giovazolias, 2010).

The goals of the current study were to examine the impact of attachment styles and women's own direct and indirect comparisons to significant women surrounding them on their feelings of body dissatisfaction, drive for thinness and self-ideal discrepancy. In addition, we aimed to include not only young women but also middle-aged women and to include social comparisons to significant female others: mother, sister closest in age and best friend using direct and indirect methods. We asked women to rate their perception of their own body image and then to rate their perception of their ideal body image, their mother's body image, their sister closest in age's body image and their closest female friend's body image. We hypothesized the following: (1) Anxious, but not avoidant attachment styles, would predict body dissatisfaction. (2) Unfavourable comparisons (i.e. feeling that others are thinner than oneself) would lead to greater disparity between self-ideal body image, higher body dissatisfaction and more drive to thinness, after taking attachment styles into account. (3) We also attempted to build a model describing inter-correlations between attachment, social comparisons and body dissatisfaction.

Methods

Participants and procedure

All women self-reported on an online questionnaire. Participants were recruited through social networking using a 'snowball' procedure. Personal contacts (i.e. friends, family members, other researchers and students) were asked to volunteer and were also requested to send the study on to other female friends and family members. Only women who had sisters were included in the final analysis. In total, 283 Israeli women between the ages of 18 and 42 years (mean = 25.04; SD = 3.53) completed online self-reports, including the Figure Rating Scale (FRS), the Eating Disorder Inventory-2's (EDI-2) drive for thinness and body dissatisfaction subscales, and self-reported their body mass index (BMI). About half (50.5%) of our participants were high school graduates,

34.2% had a college degree and the rest had a graduate degree. Overall, this was a convenience sample of middle class women (as evidenced by their having internet access. For a detailed description of participants and procedures, see Lev-Ari, Baumgarten-Katz, and Zohar (2014)).

Statistical power

In order to compute the statistical power of our study, $1 - \beta$ was calculated. Given our sample size n = 283, statistical power for multiple regressions was .997, enough to reject our hypotheses.

Measures

Dissatisfaction with body image

The EDI-2 (Garner & Garfinkel, 1979) was used to obtain a measure of eating pathology. The EDI-2 has been used extensively on nonclinical populations (Lee, Lee, Leung, & Yu, 1997; Shore & Porter, 1990). We used a Hebrew version of this inventory (on a six-point scale), which has been previously used in research and found to have excellent psychometric properties (Bachner-Melman et al., 2004). The current study used two of the subscales: drive for thinness, which assesses excessive concern for dieting and preoccupation with weight gain, and body dissatisfaction, which assesses dissatisfaction with overall shape and size of body parts that are of the greatest concern to those with eating disorders. In the current study, the internal consistency of the subscales had Cronbach's alpha values of .93 for drive for thinness and .90 for Body Dissatisfaction.

Attachment styles

The Experiences in Close Relationships—Short form (ECR-S) scale is a self-reported measure that assesses attachment. The ECR-S is the result of a combination of factor analysis performed on all self-report measures of attachment created in the 1990s (Brennan, Clark, & Shaver, 1998). The questionnaire consists of two 18-item subscales that pertain to both of the nonsecure attachment styles: avoidance and anxious. The two measures are, therefore, continuous. One can either be low on both axes (secure attachment), high on avoidant axis and low on the anxious axis (unsecure attachment-avoidant), high on the anxious axis and low on the avoidant axis (unsecure attachment—anxious), or high on both axes (unsecure attachment—preoccupied or fearful). The authors advise using the ECR-S in its continuous form but also supply statistics helpful in building the four known attachment styles suggested by Ainsworth (Ainsworth & Bowlby, 1991; Bartholomew & Horowitz, 1991). The ECR was translated into Hebrew by Mikulincer and Florian (2000), who also validated its two-factor structure on an Israeli sample, with high internal reliability (Cronbach's alpha = .92 for anxious attachment and .93 for avoidant attachment) To our knowledge, the ECR-S in Hebrew has not been studied in relation to eating disorders.

Indirect comparisons—Idealized body image

The Stunkard FRS (Stunkard, Sorenson, & Schlusinger, 1983) contains an array of seven hand-drawn silhouettes of women that increase linearly in body fat. The first silhouette presents a slender woman with little body fat, and the last one represents an obese woman. Participants are asked to identify (1) their current body

size, (2) their ideal body size, (3) the woman who is best looking and (4) the healthiest woman. The discrepancies between the current figure and ideal, healthy and best looking figures are then calculated. In each case, a score of 0 indicates body satisfaction, a negative score indicates a desire to be larger and a positive score indicates a desire to be thinner.

The FRS has been translated into many languages, including Chinese (Lai et al., 2013; Lo, Ho, Wong, Mak, & Lam, 2011), Italian (Morotti et al., 2013), Portuguese (Cobelo, Estima de Chermont Prochnik, Nakano, Conti, & Cordás, 2010) and Hebrew (Bachner-Melman, Zohar, & Ebstein, 2006), has been widely used in research concerning body image (Cobelo et al., 2010; Lai et al., 2013; Gruszka et al., 2011) and has been adapted for adolescent girls (Sherman, Iacono, & Donnelly, 1995). The FRS in Hebrew has been extensively used in research on clinical and nonclinical populations, and found to correlate positively with eating pathology, and BMI, and negatively with self-esteem (Bachner-Melman et al., 2006).

Direct comparisons

Each woman was asked to compare her own body image to that of her mother, her sister closest in age and her closest female friend. Answers were assessed on a 1-5 Likert type scale where 1= 'I am very thin compared to her' and 5= 'I am very fat compared to her'. The questions were as follows:

- A. 'Please take a moment and try to imagine your mother. Compared to your mother, you are...' 1 = much thinner; 2 = thinner; 3 = the same—more or less; 4 = heavier; 5 = much heavier.
- B. 'Please take a moment and try to imagine your sister, closest to you in age. (If you do not have a sister, please continue to the next question.) Compared to your sister, closest in age, you are...' (If you do not have a sister, please continue to the next question.) 'Compared to your sister closest in age, you are...' 1 = much thinner; 2 = thinner; 3 = the same—more or less; 4 = heavier; 5 = much heavier.
- C. 'Please take a moment and try to imagine your best female friend. Compared to your best friend, you are...' 1 = much thinner; 2 = thinner; 3 = the same—more or less; 4 = heavier; 5 = much heavier.

This brief questionnaire was taken from a former study using this same form of questioning (Lev-Ari et al., 2014).

Data analysis

The main purpose of our study was to try and differentiate between anxious and avoidant attachment styles and their respective contribution to body dissatisfaction. Furthermore, we wished to examine the additive role of direct and indirect comparisons to women's body dissatisfaction. For this, we built multiple hierarchical regression models and regressed body dissatisfaction measures on attachment styles, indirect and direct comparisons to mother's, sister's and best friend's body. We then built a Structured Equation Model aimed at depicting the relations between attachment, social comparisons and body dissatisfaction.

Results

We correlated attachment styles, and direct and indirect comparisons. Attachment styles were not correlated to any of the comparisons. Indirect and direct comparisons between mother, sister and best friend were all highly positively correlated.

We then conducted regression analyses. Anxious, but not avoidant attachment style positively predicted drive for thinness. Adding indirect comparisons revealed that comparisons to sister's and to best friend's, but not to mother's body, further predicted drive for thinness. Cumulatively, they explained 30% of the variance. Adding direct comparisons and holding BMI and age constant did not strengthen this model (Table 1). Thus, the more anxiously attached, and the more indirect comparisons are made, the more women are driven to be thinner.

Anxious, but not avoidant attachment style also positively predicted body dissatisfaction. Adding indirect comparisons to this model also revealed that comparisons to sister's and to best friend's, but not to mother's body, further predicted body dissatisfaction. Cumulatively, they explained 38% of the variance. In this case, adding direct comparison to best friend was found to be statistically significant, and diminished the indirect comparison to friend's significance. Thus, for body dissatisfaction, anxious attachment style and direct comparison to best friend's body seem to be the most influential (Table 1).

Prediction of discrepancy between self body image and ideal body image revealed a more elaborate model. Anxious attachment style in itself did not predict body dissatisfaction. Nonetheless, when indirect comparisons were added to the model, anxious attachment and all three comparisons (to mother, to friend and to sister) were revealed as significant positive predictors. Cumulatively, they explained 58% of the variance. In this case, adding direct comparisons diminished mother's indirect influence, but all direct comparisons (i.e. to mother, to friend and to sister) were found to be predictors of discrepancy between self body image and ideal body image. Only direct comparison to sister's body was found to negatively predict discrepancy between self body image and ideal body image, that is, the more women rated their sister as being thinner, the better they felt about their own body image. BMI positively predicted BID (i.e. the higher the BMI the higher the discrepancy between self body image and ideal body image; Table 1).

In order to examine a more comprehensive model of attachment and direct comparisons to significant others and their cumulative influence on body dissatisfaction measures, we built an SEM model in which avoidant and anxious attachment styles were predictors, direct and indirect comparisons were latent variables and all three body dissatisfaction measures (body dissatisfaction, drive to thinness, and discrepancy between self body image and ideal body image) were predicted variables. The χ^2 test assesses the fit of the model by comparing the obtained sample correlation matrix with the correlation matrix estimated under the model. Small values indicate a good fit, reflecting the small discrepancy between the structure of the observed data and the hypothesized model. Additional fit indices were considered because the χ^2 test is extremely sensitive to sample size. The Normed Fit Index (NFI) compares the hypothesized model to a 'null' or worst fitting model, taking into account model complexity, and NFI > .90 indicates a good fit. The root mean square error of approximation (RMSEA) reflects how close the model fit approximates a reasonably

Table 1 Hierarchical regression analysis predicting body dissatisfaction indices from attachment, indirect and direct comparisons to mother's, sister's and best friend's body, controlling for age and BMI

Predicting	Drive for thinness (EDI)	Body dissatisfaction (EDI)	Self-ideal disparity (FRS)
Step 1			
$R^2/Adj. R^2$.06/.05	.05/.04	.03/.02
F	$(2180) = 5.35^{**}$	(2180) = 4.67*	(2180) = 2.74
Avoidant	.04	.05	.08
Anxious	.23**	.21**	.14
Step 2			
$R^2/Adj. R^2$.35/.34	.43/.41	.61/.60
ΔR^2	.30***	.38***	.58***
F	(5177) = 19.37***	$(5177) = 26.72^{***}$	(5177) = 54.59***
Avoidant	01	01	.01
Anxious	.22***	.20***	.13**
Indirect	.01	.06	.18**
mother			
Indirect	.24**	.18*	.22***
sister			
Indirect	.36***	.45***	.49***
friend			
Step 3			
$R^2/Adj. R^2$.37/.34	.50/.47	.66/.64
ΔR^2	.02	.07	.01*
F	$(10\ 172) = 10.18^{***}$	(10 172) = 16.84***	(10 172) = 33.61***
Avoidant	01	.02	.03
Anxious	.19**	.17**	.08
Indirect	.05	06	.17*
mother			
Indirect	.32***	.26*	.34***
sister			
Indirect	.22	.14	.18*
friend			
Direct	10	.09	08
mother			
Direct	12	17	21*
sister			
Direct	.12	.40***	.32***
friend			
Age	02	08	01
BMI	.14	.08	.17*

EDI, Eating Disorder Inventory-2; FRS, Figure Rating Scale; BMI, body mass index. N = 283.

fitted model, and indicates good model fit with values <.08. Thus, as a combined rule for the acceptance of our model, we chose the following values: NFI > .90 (Bentler & Bonett, 1980), and RMSEA < .08 (Browne & Cudeck, 1993). We first built this model using both direct and indirect comparisons for explaining the influence of attachment styles on body dissatisfaction. But this model fit was less than optimal (ss = 643.20; p = .000; NFI = .61; RMSEA = .24), as none of the attachment styles correlated to the direct comparison latent variable, and the direct comparison latent variable did not correlate to any of the body dissatisfaction measures.

We then built a second model in which only indirect comparisons were included. This model had good fit indices

^{*}p < .05. ***p < .001.

 $(\chi^2_{(18)} = 51.12; p = .000; \text{NFI} = .94; \text{RMSEA} = .08; \text{Figure 1}).$ As can be seen in Figure 1, the latent variable of indirect comparisons had high, significant, positive loadings on all three indirect comparisons (comparison to mother r = .69; comparison to sister r = .72; comparison to friend r = .79. All comparisons were statistically significant at p < .001). The paths from avoidant and anxious attachment styles were both low and positively correlated with indirect comparisons (r = .16, r = .13, respectively, p < .05 for both). Indirect comparisons were highly positively correlated to all three body dissatisfaction indices (r = .68, p < .001 for body dissatisfaction; r = .85, p < .001 for self-ideal disparity; and r = .56, p < .001 for drive for thinness). Furthermore, the body dissatisfaction indices were positively correlated with one another (Figure 1).

Discussion

The purpose of this study was to examine the complicated roles of attachment and social comparisons in the emergence of body dissatisfaction in an adult female community sample. For this purpose, we had women compare their own body image with that of their mother, their sister closest in age and their best girl friend, directly and indirectly.

Our first hypothesis was that anxious but not avoidant attachment styles would positively predict body dissatisfaction. This hypothesis was mostly confirmed. Anxious attachment style positively predicted drive for thinness and body dissatisfaction, but did not predict self-ideal discrepancy. Avoidant attachment did not predict any of the body image indices. Furthermore, anxious attachment style continued to predict body image, even after controlling for social comparisons, age and BMI.

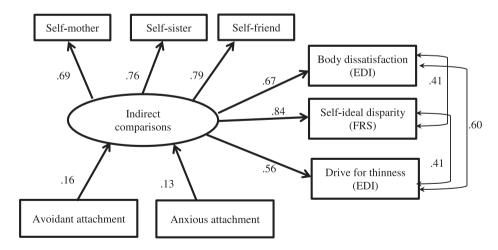
It seems that anxious, but not avoidant attachment style plays a major role in the formulation of body dissatisfaction and drive for thinness. Women who are anxiously attached are more preoccupied with social interactions and with interpersonal relationships, than those with avoidant attachment style, and thus may be more inclined to feel body dissatisfaction. They may be deeply

committed to internalizing what other people expect of them, and base their self-worth on learned social expectations. Thus, in accordance with social learning theory and objectification theory, they place more of their self-worth on their body image than do avoidantly attached women. This is in accordance with previous research in showing that there are different pathways that lead from insecure attachment styles to body image in women (Troisi et al., 2006; Zachrisson & Skårderud, 2010). Anxious attachment style has been previously found to fully mediate the relationship between body dissatisfaction and disordered eating (Koskina & Giovazolias, 2010), whereas avoidant attachment style has not been found to predict body dissatisfaction (Cash et al., 2004; Friedberg & Lyddon, 1996; McKinley & Randa, 2005).

Our second hypothesis was that unfavourable comparisons (i.e. feeling that others are thinner than oneself) would lead to greater self-ideal body image disparity, higher body dissatisfaction and drive to thinness, even after taking attachment styles into account. For sisters closest in age, we found that indirect comparisons contribute to body satisfaction. This means that women are less conscious of this comparison (and may actually reject it if asked) and that, still, they are preoccupied with their sisters body image and the way it affects their own, but all this is carried out on a preconscious level.

Sisters have previously been found to have a strong reciprocal impact on body dissatisfaction in women, and have been found to influence body dissatisfaction both directly and indirectly (Coomber & King, 2008). Although sisters share a common home environment, there is evidence that unshared environmental influences play a greater role than shared environmental influences in many psychopathologies (Klump, Miller, Keel, McGue, & Iacono, 2001), including disordered body image and eating disorders. In the current study, it is interesting to note that indirect comparisons to sister positively predicted body dissatisfaction indices.

We also found that comparing themselves to their best female friends, both directly and indirectly, may render women to feel



Note: The correlations between Anxious attachment and indirect comparisons and between Avoidant attachment and indirect comparisons are p<.05; All other correlations are p<.001.

Figure 1. Structural Equation Model: predicting body dissatisfaction indices from attachment styles and indirect comparisons

bad about themselves. This is a new and highly significant finding. Women choose their best female friend and usually invest a significant amount of time and energy in order to sustain this friendship. The fact, then, that this relationship may also bring negative aspects concerning self-worth is interesting, and resonates with objectification theory. Friends and peers are important components of unshared environment, which exercises a considerable influence on BID and eating disorders (Klump et al., 2001).

Both social comparison theory and objectification theory conclude that much of the comparisons women utilize for ascertaining their self-worth is spontaneously (i.e. preconsciously, Festinger, 1954) internalized and felt as a part of the self (Fredrickson & Roberts, 1997). Still, from a social comparison stand point, we would expect that women would choose their best friend in a way that would make them feel better about themselves. Controversially, objectification theory would claim that women who are more acutely aware of their own body image and concerned regarding their own weight would also be more outwardly focused towards those around them and that these comparisons to others would leave them feeling worse off with themselves, as we have found. It is also interesting that women directly compare themselves to their best friend, meaning that they are more conscious of this comparison. This could mean that they talk about weight and dieting with their friend or directly address issues of body concern and self-worth.

Finally, we built a model describing inter-correlations between attachment styles, social comparisons and body dissatisfaction. When entering direct comparisons into the model, the model fit indices proved insignificant. Therefore, we entered only indirect comparisons into the model, with accordance to both social comparison theory and objectification theory. In our model, attachment styles (avoidant and anxious) positively and significantly predicted the latent variable of indirect comparisons. This, in turn, significantly and positively predicted all three body dissatisfaction indices. We showed that there is an additive effect when taking attachment styles into account on the effect of indirect comparisons on body dissatisfaction.

Although avoidant attachment had no predictive power in the regression analysis, it did contribute to BID indices in the SEM. The SEM model is a different approach, not only statistically but also conceptually. In the SEM model, a latent variable is constructed in which attachment insecurity and social comparisons all take part. The SEM model shows that indirect comparisons (as a latent variable) are a strong mediator of BID indices. However, avoidant attachment style by itself does not directly predict BID indices, on itself.

The question of relationships between attachment, social comparisons and body dissatisfaction is a complex one. Anxiously attached individuals are preoccupied with relationships and with others. They are driven from a profound fear of abandonment and constantly seek proximity to others, often feeling that others are disappointing and unresponsive to their continuous need of support and reinforcement. When feeling threatened (as in feelings because of issues related to BID and low self-esteem), they will turn to others for emotional support and will usually find themselves disappointed. Avoidant individuals are highly self-regulated. They do not seek support in others and are usually self-reliant. When feeling threat or damage to their self-worth, they will usually refrain from including others in their distress, and will use massive down regulatory behaviours in order to stop themselves from feeling discomfort.

The results reported here should be evaluated keeping in mind the limitations of this study. All data were self-reported, and the participants were a convenience sample, and thus may not be representative of the general population. Direct and indirect social comparisons were taken at the same time. Further research including these variables, and taking a longitudinal approach, would be very helpful to understanding the relationships and the processes that bring them about.

Our study shows that only anxiously attached individuals report body dissatisfaction. Although anxious and avoidant individuals both engage in indirect social comparisons, only anxious individuals are aware of the impact of these comparisons to their own BID. From a clinical view point, we should take into account the very different paths in which the attachment styles may lead to body dissatisfaction and to disordered eating. Although anxiously attached women use others as important references for their own self-worth and as a means of judging their own body image, it would seem that avoidantly attached women use the restriction of eating as a way of down regulating their emotion. If this is true, clinicians should not try and draw unnecessary focus to social comparisons while treating eating disorders in avoidantly attached women. In these cases, it would be wise to pinpoint the way that eating helps regulate emotions. When treating anxiously attached women, clinicians should give more attention to the possible detrimental effect that relationships pose for these patients.

Acknowledgements

We would like to thank Dana Dahan and Liron David for their contribution to data collection for this study.

REFERENCES

Ainsworth, M. D. S., & Bowlby, J. (1991). An ethological approach to personality development. American Psychologist, 46, 333–341.

Armstrong, J. G., & Roth, D. M. (1989). Attachment and separation difficulties in eating disorders: A preliminary investigation. *International Journal of Eating Disorders*, 8, 141–155.

Bachner-Melman, R., Zohar, A. H., & Ebstein, R. P. (2006). An examination of cognitive versus behavioral components of recovery from anorexia nervosa. The Journal of Nervous and Mental Disease. 194, 697–703. Bachner-Melman, R., Zohar, A. H., Elizur, Y., Nemanov, L., Gritsenko, I., Konis, D., & Ebstein, R. P. (2004). Association between a vasopressin receptor AVPRIA promoter region microsatellite and eating behavior measured by a self-report questionnaire (Eating Attitudes Test) in a family-based study of a non-clinical population. *International Journal of Eating Disor*ders, 36, 451–460.

Bamford, B., & Halliwell, E. (2009). Investigating the role of attachment in social comparison theories of eating disorders within a non-clinical female population. European Eating Disorders Review. 17, 371–379.

Bartholomew, K., & Horowitz, L. M. (1991). Attachment styles among young adults: A test of a four-category model.

Bentler, P. M., & Bonett, D. G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin*, 88, 588–606.

Bosveld, W., Koomen, W., & Pligt, J. (1994). Selective exposure and the false consensus effect: The availability of similar and dissimilar others. *British Journal of Social Psychology*, 33, 457–466.

Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult attachment. In J. A. Simpson, W. S. Rholes

- (Eds.), Attachment theory and close relationships. New York, US: The Guilford Press, pp. 46–76.
- Brennan, K. A., & Shaver, P. R. (1995). Dimensions of adult attachment, affect regulation, and relationship functioning. Personality and Social Psychology Bulletin, 21, 267–283.
- Broberg, A. G., Hjalmers, I., & Nevonen, L. (2001). Eating disorders, attachment and interpersonal difficulties: A comparison between 18- to 24-year-old patients and normal controls. *European Eating Disorders Review*, 9, 381–396.
- Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. Testing Structural Equation Models, 154, 136–162.
- Cash, T. F., Thériault, J., & Annis, N. M. (2004). Body image in an interpersonal context: Adult attachment, fear of intimacy and social anxiety. *Journal of Social and Clinical Psychology*, 23, 89–103.
- Cheng, H., & Mallinckrodt, B. (2009). Parental bonds, anxious attachment, media internalization, and body image dissatisfaction: Exploring a mediation model. *Journal of Counseling Psychology*, 56, 365–375.
- Clark, L., & Tiggemann, M. (2008). Sociocultural and individual psychological predictors of body image in young girls: A prospective study. *Developmental Psychology*, 44, 1124–1134.
- Cobelo, A. W., Estima de Chermont Prochnik, C., Nakano, E. Y., Conti, M. A., & Cordás, T. A. (2010). Body image dissatisfaction and eating symptoms in mothers of adolescents with eating disorders. Eating and Weight Disorders-Studies on Anorexia, Bulimia and Obesity, 15, 219–225.
- Cole-Detke, H., & Kobak, R. (1996). Attachment processes in eating disorder and depression. Journal of Consulting and Clinical Psychology, 64, 282–290.
- Coomber, K., & King, R. M. (2008). The role of sisters in body image dissatisfaction and disordered eating. Sex Roles, 59, 81–93.
- Elgin, J., & Pritchard, M. (2006). Adult attachment and disordered eating in undergraduate men and women. *Journal of College Student Psychotherapy*. 21, 25–40.
- Evans, L., & Wertheim, E. H. (1998). Intimacy patterns and relationship satisfaction of women with eating problems and the mediating effects of depression, trait anxiety and social anxiety. *Journal* of Psychosomatic research, Special Issues: Current Issues in Eating Disorder Research, 44, 355–365.
- Ferguson, C. J., Winegard, B., & Winegard, B. M. (2011). Who is the fairest one of all? How evolution guides peer and media influences on female body dissatisfaction. Review of General Psychology, 15, 11–28.
- Festinger, L. (1954). A theory of social comparison processes. Human Relations, 7, 117–140.
- Fitzsimmons-Craft, E. (2011). Social psychological theories of disordered eating in college women: Review and integration. Clinical Psychology Review, 31, 1224–1237. doi: 10.1016/j.cpr.2011.07.011.
- Fitzsimmons-Craft, E. E., Harney, M. B., Brownstone, L. M., Higgins, M., & Bardone-Cone, A. M. (2012). Examining social physique anxiety and disordered eating in college women: The roles of social comparison and body surveillance. Appetite, 59, 796–805.
- Fredrickson, B. L., & Roberts, T. (1997). Objectification theory.

 *Psychology of Women Quarterly, 21, 173–206.

- Friedberg, N. L., & Lyddon, W. J. (1996). Self-other working models and eating disorders. Journal of Cognitive Psychotherapy: An International Quarterly, 10, 193–203.
- Garner, D. M., and Garfinkel, P. E. (1979). The eating attitudes Test: An index of symptoms of anorexia nervosa. *Psychological Medicine*. 9, 273–279.
- Gruszka, W., Olszanecka-Glinianowicz, M., Kocełak, P., Wikarek, T., Dąbrowski, P., Mucha, Z., et al. (2011). Body self-perception in subjects beginning a three-month multifaceted group weight loss programme. Archives of Psychiatry & Psychotherapy. 2, 31–35.
- Hardit, S. K., & Hannum, J. W. (2012). Attachment, the tripartite influence model, and the development of body dissatisfaction. *Body Image*, 9, 469–475. doi: 10.1016/j.bodyim.2012.06.003.
- Kluck, A. S. (2010). Family influence on disordered eating: The role of body image dissatisfaction. *Body Image*, 7, 8–14. doi: 10.1016/j. bodyim.2009.09.009.
- Klump, K. L., Miller, K. B., Keel, P. K., McGue, M., & Iacono, W. G. (2001). Genetic and environmental influences on anorexia nervosa syndromes in a population-based twin sample. *Psychological Medicine*, 31, 737–740.
- Koskina, N., & Giovazolias, T. (2010). The effect of attachment insecurity in the development of eating disturbances across gender. The role of body dissatisfaction. The Journal of Psychology, 144, 449–471.
- Lai, C., Mak, K., Pang, J. S., Fong, S. S., Ho, R., & Guldan, G. S. (2013). The associations of sociocultural attitudes towards appearance with body dissatisfaction and eating behaviors in Hong Kong adolescents. *Eating Behaviors*, 14, 320–324.
- Latzer, Y., Hochdorf, Z., Bachar, E., & Conetti, L. (2002). Attachment style and family functioning as discriminating factors in eating disorders. Contemporary Family Therapy: An International Journal, 24, 581–599.
- Lee, S., Lee, A. M., Leung, T., & Yu, H. (1997). Psychometric properties of the Eating Disorders Inventory (EDI-1) in a nonclinical Chinese population in Hong Kong. *International Journal of Eating Disorders*, 21, 187–194.
- Lev-Ari, L., Baumgarten-Katz, I., & Zohar, A. H. (2014). Mirror, mirror on the wall: How women learn body dissatisfaction. *Eating Behaviors*, 15, 397–402.
- Lindner, D., Tantleff-Dunn, S., & Jentsch, F. (2012). Social comparison and the 'circle of objectification'. Sex Roles, 67, 222–235. doi: 10.1007/s11199-012-0175-x.
- Lo, W., Ho, S., Wong, B. Y., Mak, K., & Lam, T. (2011). Validity and test-retest reliability in assessing current body size with figure drawings in Chinese adolescents. *International Journal of Pediat*ric Obesity, 6, e107–e113.
- Matera, C., Nerini, A., & Stefanile, C. (2012). The role of peer influence on girls' body dissatisfaction and dieting. Revue Européenne De Psychologie Appliquée/European Review of Applied Psychology. doi: 10.1016/j.crap.2012.08.002.
- McKinley, N. M., & Randa, L. A. (2005). Adult attachment and body satisfaction: An exploration of general and specific relationship differences. *Body Image*. 2, 209–218.
- Mikulincer, M., & Florian, V. (2000). Exploring individual differences in reactions to mortality salience: Does attachment style

- regulate terror management mechanisms? Journal of Personality and Social Psychology, 79, 260-273.
- Morotti, E., Battaglia, B., Paradisi, R., Persico, N., Zampieri, M., Venturoli, S., et al. (2013). Body mass index, Stunkard figure rating scale, and sexuality in young Italian women: A pilot study. The Journal of Sexual Medicine, 10, 1034–1043.
- Morrison, T. G., Kalin, R., & Morrison, M. A. (2004). Body-image evaluation and body-image investment among adolescents: A test of sociocultural and social comparison theories. Adolescence, 39, 571–592.
- O'Brien, K. S., Caputi, P., Minto, R., Peoples, G., Hooper, C., Kell, S., et al. (2009). Upward and downward physical appearance comparisons: Development of scales and examination of predictive qualities. Body Image, 6, 201–206. doi: 10.1016/j.bodyim.2009.03.003.
- Salzman, J. P. (1997). Ambivalent attachment in female adolescents: Association with affective instability and eating disorders. *International Journal of Eating Disorders*, 21, 251–259.
- Sharpe, T. M., Killen, J. D., Bryson, S. W., Shisslak, C. M., Estes, L. S., Gray, N., et al. (1998). Attachment style and weight concerns in preadolescent and adolescent girls. International Journal of Eating Disorders, 23, 39–44.
- Sherman, D. K., Iacono, W. G., & Donnelly, J. M. (1995). Development and validation of body rating scales for adolescent females. *International Journal of Eating Disorders*, 18, 327–333.
- Shore, R. A., & Porter, J. E. (1990). Normative and reliability data for 11 to 18 year old on the eating disorder inventory. *International Journal of Eating Disorders*, 9, 201–207.
- Shroff, H., & Thompson, J. K. (2006). Peer influences, body-image dissatisfaction, eating dysfunction and self-esteem in adolescent girls. *Journal of Health Psychology*, 11, 533–551.
- Strelan, P., & Hargreaves, D. (2005). Women who objectify other women: The vicious circle of objectification? Sex Roles, 52, 707–712. doi: 10.1007/s11199-005-3737-3.
- Stunkard, A., Sorenson, T., & Schlusinger, E. (1983). Use of the Danish Adoption Registry for the study of obesity and thinness. In S. Kety (Ed.), The genetics of neurological and psychiatric disorders. New York: Raven, pp. 115–120.
- Tasca, G. A., Ritchie, K., & Balfour, L. (2011). Implications of attachment theory and research for the assessment and treatment of eating disorders. *Psychotherapy*, 48, 249.
- Troisi, A., Di Lorenzo, G., Alcini, S., Nanni, R. C., Di Pasquale, C., & Siracusano, A. (2006). Body dissatisfaction in women with eating disorders: Relationship to early separation anxiety and insecure attachment. *Psychosomatic Medicine*, 68, 449–453.
- Tsiantas, G., & King, R. M. (2001). Similarities in body image in sisters: The role of sociocultural internalization and social comparison. *Eating Disorders*, 9, 141–158.
- Tylka, T. L., & Sabik, N. J. (2010). Integrating social comparison theory and self-esteem within objectification theory to predict women's disordered eating. Sex Roles, 63, 18–31.
- Zachrisson, H. D., & Skårderud, F. (2010). Feelings of insecurity: Review of attachment and eating disorders. European Eating Disorders Review, 18, 97–106.