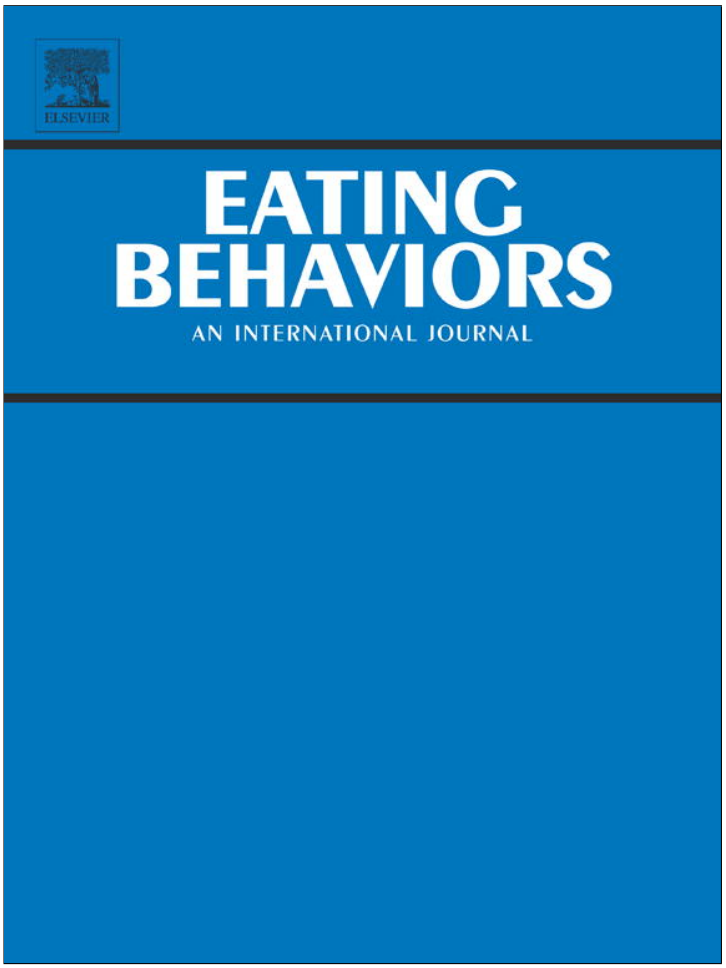

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Mirror, mirror on the wall: How women learn body dissatisfaction

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ABSTRACT

Extensive research indicates that exposure to media as well as pressure and modeling by sociocultural agents, such as peers and family, are predictive of the development of body image dissatisfaction (BID). This influence is mediated by social comparison and internalization of the thin-ideal. In the current study we assessed comparisons between participants and other women with whom they were in close relationships, (e.g. mother, sister and close female friend), and hypothesized that these would influence women's BID and drive-to-thinness. 283 women between the ages of 18–42 (mean = 25.04; SD = 3.53) sampled through social networking completed an online self-report which included the original Figure Rating Scale, which yielded self-ideal disparity, as well as a modified version comparing self to mother, self to sister closest-in-age, and self to best friend and then were asked to directly compare themselves to these women. In addition they completed the EDI-2's drive-for-thinness and body dissatisfaction subscales, and reported on Body Mass Index (BMI). Results indicate that comparisons to mothers, sisters, and best friend, were all associated with self-ideal disparity. BMI only slightly mediated this effect. Comparison to sister and to best friend, but not to mother, influenced drive-for-thinness and body dissatisfaction. Positive correlations were found between direct and indirect comparisons to others. Comparison to best friend was the most influential on body ideal. We conclude that comparison to others in close proximity greatly influences women's body ideal and may have a formative role in the development of women's body dissatisfaction. While women cannot choose their mother and sister closest in age, they do choose their best friend; and it is interesting that the comparison to the best friend is so influential.

1. Introduction

Exposure to media and social comparisons has been found to be associated with body image dissatisfaction (BID), especially in women. Western culture places a growing emphasis on an ultra-thin body ideal, and this is reflected in the media (Anschutz, Engels, & Van Strien, 2008; Borzekowski, Robinson, & Killen, 2000; Calado, Lameiras, Sepulveda, Rodriguez, & Carrera, 2011; Carlson Jones, 2001; Dittmar & Howard, 2004). Research has found associations between exposure to media and BID, even in very young girls (Anschutz & Engels, 2010; Anschutz, Engels, & Van Strien, 2012; Anschutz, Spruijt-Metz, Van Strien, & Engels, 2011; Blowers, Loxton, Grady-Flesser, Occhipinti, & Dawe, 2003; Calado et al., 2011). Anschutz and Engels (2010), for example, found that girls as young as 11–12 years old compared their body image unfavorably to those viewed on TV.

However, in an extensive review of the influence of the media on body dissatisfaction, Ferguson, Winegard, and Winegard (2011) concluded that media exposure in itself is not a main contributor to the internalization of the thin ideal. They argue that meta-analyses reveal only modest effect sizes and that this leaves much room to explore other reasons for BID in young girls and women (Ferguson, 2009; Ferguson et al., 2011). Media exposure, therefore, should be considered only as one of many contributing risk factors.

Objectification theory (Fredrickson & Roberts, 1997) 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. Fredrickson and Roberts (1997) also bring ample evidence to support their claim that this may be one of the major causes for the rise of eating disorders in the past two decades, and the fact that it is a disorder most commonly found in women. Much research since then has continued to find support for objectification theory as a predictor of disordered eating (Lindner, Tantleff-Dunn, & Jentsch, 2012; Tylka & Hill, 2004).

Although much has been said on the influence of media on internalization of the thin-body image ideal, less is known of peer and family influences. Festinger's (1954) social comparison theory proposes that humans seek out objective standards to assess their own personal worth and subjective status. When objective standards cannot be found, social comparison, (i.e. comparison to relevant others) will be

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implemented. In most cases, people prefer to compare themselves in a way that helps them perceive themselves more positively, (Morrison, Kalin, & Morrison, 2004). In addition, individuals are more likely to compare themselves to friends and family than to more dissimilar images, and distant images, such as those portrayed in the media (Bosveld, Koomen, & Pligt, 1994). In contrast, research on body image has consistently shown that women tend to compare themselves to other women whom they perceive as more beautiful than themselves, even though this leaves them feeling bad about themselves (Fitzsimmons-Craft, 2011; Morrison et al., 2004; O'Brien et al., 2009), and that this comparison may contribute to body dissatisfaction and to disordered eating (Fitzsimmons-Craft, 2011; Fitzsimmons-Craft, Harney, Brownstone, Higgins, & Bardone-Cone, 2012; O'Brien et al., 2009). It is possible that social comparison of women's body shape is both driven by their objectification, and is a vehicle of body objectification.

Festinger (1954) talks of spontaneous choice of comparison figures, and of the process being spontaneous or in other words pre- or un-conscious. In the current study we hypothesized that indirect comparisons are the more spontaneous, and thus would exert a greater influence on body dissatisfaction than direct more conscious comparisons.

Adolescent girls place much importance on peer's judgment of appearance and this influences their body (dis)satisfaction (Shroff & Thompson, 2006). Peers may influence body dissatisfaction directly through verbal communication, beauty expectations, or by associating beauty with personal worth. There may also be an unconscious focus on bodily comparisons between peers (Ferguson et al., 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). Clark and Tiggemann (2008) showed that for preadolescent girls, social communication by peers was more influential on body dissatisfaction than direct media exposure. They propose that peer's beliefs and attitudes are a significant influence on the way young girls represent their body image, beliefs about appearance and the importance of appearance. In a unique study, 30 10th grade girls underwent semi-structured interviews regarding weight-watching and concerns about body weight. Although none of the girls reported being teased or directly pressured to lose weight, about half reported spontaneously that they compared themselves to their immediate friends and that friends diets or comments on their weight affected their own self-conscious weight concerns (Wertheim, Paxton, Schutz, & Muir, 1997).

Family may also play a crucial role, in concern for body weight and dieting. The influence of family on body image can be transmitted directly via comments about the body or indirectly, via general familial preoccupation with weight, body image and dieting or disordered eating (Hardit & Hannum, 2012; Kluck, 2010). The family's focus on appearance and the daughter's body dissatisfaction both predict disordered eating, and there is a strong positive correlation between familial criticism, teasing, and encouragement about weight or size with body dissatisfaction (Kluck, 2010). Nonetheless, in a study concerning attachment, media, parent, and peer influence on body dissatisfaction, Hardit and Hannum (2012) found that while media predicted body dissatisfaction, parental or peer criticism did not.

To date, studies concerning the impact of familial and peer pressure on body dissatisfaction have not focused on women's social comparison. Most studies focus on direct communication from others and the impact of this communication on feelings of personal worth. Ferguson et al. (2011) point out that unconscious comparisons to peers might be more influential in body dissatisfaction than conscious comparison to media. In this study we wish to examine the impact of women's own direct, (i.e. conscious), and indirect, (i.e. preconscious), comparisons to significant women surrounding them on their feelings of body dissatisfaction and drive for thinness.

Young women's BMI may exert an influence of its own on drive for thinness and evaluation of body image. In a short longitudinal study, Clark and Tiggemann (2008) found that preadolescent girls with a higher BMI reported more body dissatisfaction and a higher drive for thinness one year later, even after taking into account these measures at outset. They also found that girls with a higher BMI's were prone to more social comparison, less body satisfaction, and a higher drive for thinness. Clark and Tiggemann (2008) study assessed social comparison by girl's reports on appearance-conversations with peers and not on direct subjective comparisons (i.e. asking the girl if she thinks she's fatter than her friends). Although comparisons can be made on many different aspects of appearance, previous studies focus on extreme and unrealistic thinness as they seem to be a central drive of body dissatisfaction. This is why we chose to focus on thinness as a major aspect of BID in this paper.

In this study we examine women's comparison of body image with those of females close to them and the impact of this comparison on their BID, drive for thinness and the disparity of Self-Ideal body image. We also examine the difference between direct and indirect comparisons. In addition we examine the hypothesis that arises from Festinger's (1954) social comparison theory that women will choose comparison figures that enhance their self-esteem. For this to be supported in the current study more than half the women should compare themselves to a best friend that they perceive to be less thin than their own body image. We focus on the best friend since participants cannot choose their mother, and some may have only one sister; but best friends are surely a choice an adult woman can make.

We hypothesized, following Festinger, that women would feel that their mother/sister/friend were heavier than themselves so as to maintain a positive self image.

We asked women to rate their perception of their own body and then to rate their perception of ideal body image, their mother's body shape, their sister closest-in-age body shape, and their closest female friend's body. This comparison is indirect, as women were not asked to compare themselves to these significant women, simply to rate them, each on a separate scale. We then asked these same women directly to compare their own body with that of their mother, sister-closest-in-age, and closest female friend. We hypothesized that: 1. Women would choose comparison figures heavier than themselves (both sisters and best-friends) in order to maintain positive self-esteem. 2. Indirect and direct comparisons would be correlated. 3. Unfavorable comparisons (i.e. feeling that others are thinner than oneself) would be associated with greater self-ideal disparity, higher body dissatisfaction, and more drive to thinness. 4. Indirect comparisons would be more powerful than direct comparisons when predicting drive to thinness and body dissatisfaction.

2. Methods

2.1. 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 18–42 (mean = 25.04; SD = 3.53) completed Hebrew 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 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 representative of middle class women from all parts of Israel, all of whom had internet access.

2.2. Statistical power

In order to compute the power of our study, 1-β was calculated. Given our sample size n = 283, statistical power for multiple regressions is .997. This shows that we have an ample sample size.

2.3. Measures

2.3.1. Dissatisfaction with body image

The Eating Disorder Inventory-2 (EDI-2; Garner & Garfinkel, 1979) was used to obtain a measure of eating pathology. The EDI-2 has been used extensively on non-clinical populations (Lee, Lee, Leung, & Yu, 1997; Shore & Porter, 1990). We used a Hebrew version of this inventory (on a 6-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 0.93 for Drive for Thinness and 0.90 for Body Dissatisfaction.

2.3.2. Indirect comparisons — Idealized body image

The Stunkard Figure Rating Scale (FRS, Stunkard, Sorenson, & Schlusinger, 1983) contains an array of 7 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 et al., 2010), and Hebrew (Bachner-Melman, Zohar, & Ebstein, 2006) and has been widely used in research concerning body image (Cobelo et al., 2010; Gruszka et al., 2011; Lai et al., 2013), and even in congenitally blind (Rocha Morgado, Ferreira, Campana, Rigby, & Tavares, 2013), and has been adapted for adolescent girls (Sherman, Iacono, & Donnelly, 1995). The FRS in Hebrew has been extensively used in research on clinical and non-clinical populations, and found to correlate positively with eating pathology, and BMI, and negatively with self-esteem (Bachner-Melman et al., 2006).

2.3.3. 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 were 1 = "I am very thin compared to her" and 5 = "I am very fat compared to her". The questions were:

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.

3. Results

Hypothesis 1. Women would choose comparison figures heavier than themselves (both sisters and best-friends) in order to maintain positive self-esteem.

This hypothesis was tested by three one sample z-tests for proportion. In each case: comparison to mother, to sister and to best friend, p = .5. When comparing to mother, our hypothesis was not confirmed. Only 28.6% of the women reported their mother as being thinner than themselves. Nonetheless, when comparing to sister, 62.6% of the women reported their sister being thinner than themselves (Z = 3.41, p < .001). And when comparing to best-friend, even more women (66.3%; Z = 4.41, p < .001) reported themselves as being heavier.

Hypothesis 2. Indirect and direct comparisons will be correlated.

This hypothesis was tested by Pearson moment correlations. As can be seen in Table 1, all the comparisons were highly correlated, and the indirect and direct comparisons to the same person were very high indeed ($r \geq .8$, $R^2 > 60\%$).

Hypothesis 3. Unfavorable comparisons (i.e. feeling that others are thinner than oneself) would be associated with greater self-ideal disparity, higher body dissatisfaction, and elevated drive to thinness.

This hypothesis was tested by hierarchical regression analyses, presented in Table 2, one for each hypothesized dependent variable. As can be seen in Table 2, all three are significantly predicted by the comparison variables. In particular, self-ideal body image discrepancy is predicted by comparison to mother, friend and sister: Adjusted R^2 was 60% with BMI adding only 3% explained variance; Drive for Thinness 31% explained variance with the comparison variables for predictors and an additional 1% for BMI; and BID 40% explained variance with BMI adding 2% explained variance. In all the analyses the most powerful single predictor was comparison to close friend.

Hypothesis 4. Indirect comparisons will be more powerful than direct comparisons when predicting drive to thinness and body dissatisfaction.

To this end, a structural equation model (SEM) was conducted to assess if indirect comparisons, mediated by direct comparisons, would predict Body Dissatisfaction, Drive for Thinness, and Self-Ideal Disparity. As a combined rule for the acceptance of our model, we chose the following values: NFI (Normed Fit Index) >.90 (Bentler & Bonett, 1980), and RMSEA (Root Mean Square Error of Approximation) <.08 (Browne & Cudeck, 1993). The chi-square goodness-of-fit index represented an excellent fit for the data, ($\chi^2_{(19)} = 60.08$; $p = .00$; $NFI = .96$; $RMSEA = .08$). The statistically significant path coefficients are provided as standardized estimates in Fig. 1.

As shown in Fig. 1, indirect and direct comparisons to mother, sister, and best friend are all highly positively correlated. Furthermore, direct comparisons are also highly and significantly correlated. Significant positive correlations were also found between outcome variables: Body Dissatisfaction, Drive for Thinness, and Self-Ideal Disparity. Direct comparisons to significant other's body mediated indirect comparison's influence on body dissatisfaction, drive for thinness, and disparity between self body image and ideal body image. Indirect and direct comparisons to mother was not associated with any of the body dissatisfaction indices. Indirect and direct comparisons to the sister were associated only with self-ideal disparity, but not with any of the other

Table 1
Correlations between direct and indirect comparisons of perceived body image of significant others and self-ideal disparity.

Indirect comparison / Direct comparison	To mom	To best friend	To sister	To self-ideal
To mom	.81*	.49*	.48*	.48*
To best friend	.56*	.80*	.55*	.72*
To sister	.43*	.46*	.80*	.46*

* p < .001.

Table 2
Hierarchical regression analysis predicting body dissatisfaction indices from attachment, indirect comparisons to mom's, sisters, and best friend's body, controlling for BMI.

Predicting	Drive for thinness (EDI)	Body dissatisfaction (EDI)	Self-ideal disparity (FRS)
Step 1			
R^2/Adj. R^2	.32/.31	.40/.40	.60/.60
F	(3182) = 93.63***	(3182) = 41.20***	(3182) = 93.63***
Mom	.02	.06	.18**
Friend	.37***	.47***	.49***
Sister	.24**	.18*	.23***
Step 2			
R^2/Adj. R^2	.33/.32	.43/.42	.64/.63
ΔR^2	.01*	.03**	.03***
F	(4181) = 22.70***	(4181) = 34.32***	(4181) = 79.75***
Mom	−.02	.01	.12*
Friend	.30***	.36***	.38***
Sister	.22**	.16*	.20***
BMI	.17*	.23**	.25***

N = 283. *p < .05, ***p < .001.

body dissatisfaction indices. Only indirect, but not direct, comparison to best friend's body was associated with all of the body dissatisfaction indices.

4. Discussion

This study examined the association of direct and indirect comparisons of women with other close women. In the direct approach women reported how thin they felt they were compared to their mother, their sister closest-in-age, and to their best girlfriend. In the indirect approach, women rated themselves on the Figure Rating Scale, where they chose the silhouette that best described their own body image and their ideal body image. Later, they chose silhouettes that best resembled their mother's, their sister's, and their best friend's body. The difference between these silhouettes were computed and represent indirect, or subconscious, comparisons to significant others.

Direct and indirect comparisons to other's body image were highly positively correlated. Women who chose silhouettes that resembled greater disparity between their own body image and those of their significant others (indirect comparisons) also reported directly that they felt that they were fatter than them. Women who felt that they were fatter than their close female relations, felt this on a subconscious as well as on a conscious level.

Women on the whole choose comparison figures that they perceive to be thinner than them. Thus they do not engage in social comparison in order to maintain positive self esteem (Festinger, 1954); rather they are victims of the societal thin ideal, and further their objectification by perceiving themselves as fatter than their sister and best-friend.

Direct comparisons to significant other women positively influenced self-ideal disparity, explaining 60% of its variance. Women who felt that their close others were thinner than themselves, also felt farther from their own body ideal. Drive for Thinness and Body Dissatisfaction were also associated with these direct comparisons (explaining 32% and 42%, respectively). Friends were more influential than sisters. Comparison to mothers did not significantly contribute to explaining this variance. Adding women's BMI did little to change the monumental influence of direct comparisons for explaining body image dissatisfaction.

Ferguson et al., 2011 review self-other comparisons. Most research uses questionnaires that assess general social cultural influence (Hardit & Hannum, 2012) and are not focused on specific comparisons to close others, or utilize questions ascertaining peers' direct comments or teasing (Hardit & Hannum, 2012; Shroff & Thompson, 2006). In our study, women reported the way they felt about themselves when comparing

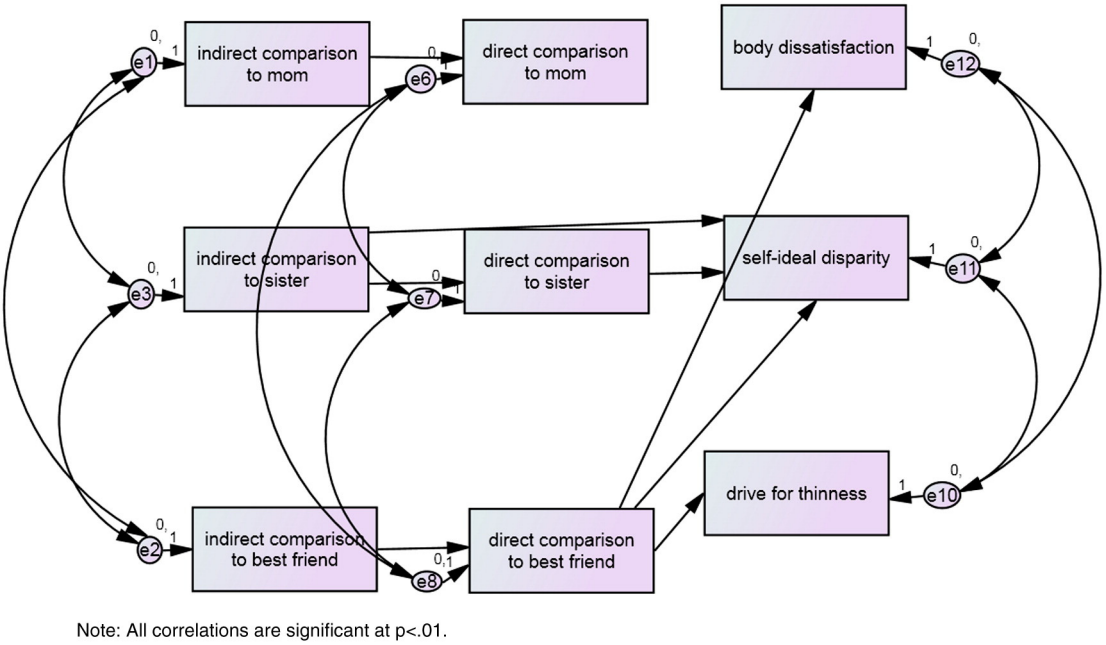

Fig. 1. Structural equation model of indirect comparisons, direct comparisons, and body image dissatisfaction.

themselves to their closest friend and family. As seen, these direct comparisons (i.e. women telling themselves that their friends, mothers or sisters are thinner than themselves) and indirect comparisons (i.e. subconsciously checking how an outfit complements her friend, mother or sister and feeling she wouldn't look as well in this outfit) have a powerful influence of the way women perceive themselves.

Although ample research addressed the issue of direct comparison, less attention has been given to indirect comparison. Research that has attempted to breach this subject usually uses discrete methods, such as having women look at beauty magazines or at media adds and assess their own body image before and after this exposure (Grabe, Ward, & Hyde, 2008). This research usually includes teenage girls or young women. In a review that focused on middle aged women, Slevec and Tiggemann (2011a,b) found only two studies conducted on the impact of peer and media influences on middle-aged women. Their review concludes that although sociocultural influence may have an effect on middle aged women's body dissatisfaction, the research to date is not sufficient to fully understand its influence. Our study concludes that women across a broader age span are actively comparing themselves to significant others concerning their body image.

After assessing these results, we attempted to build a comprehensive model that would further our understanding of direct and indirect comparisons, and their influence on body dissatisfaction. We found that direct and indirect comparisons were highly and significantly correlated to each other. Significant positive correlations were found between outcome variables: Body Dissatisfaction, Drive for Thinness, and Self-Ideal Disparity. Direct comparisons to significant other's body mediated indirect comparison's influence on body dissatisfaction, drive for thinness, and disparity between self body image and ideal body image. Indirect and direct comparisons to mom's body did not influence any of the body dissatisfaction indices. Indirect and direct comparisons to sister's body both individually influenced only self-ideal disparity, but none of the other body dissatisfaction indices. Only indirect, but not direct, comparison to best friend's body influenced all of the body dissatisfaction indices.

Our findings should be viewed while taking some limitations into account. First, this is a correlational study. Although social comparison theory and objectification theory both point out that there is a difference between direct and indirect social comparisons and suggest that indirect comparisons precede direct comparisons, all measures were correlational. Second, all measures were self-reported. We asked women to first indirectly compare themselves to other women who they were in close contact with, and then, asked them to directly compare themselves to them Though these questions did not directly follow one another and one used visual aid and the other a direct line of questioning, we cannot be sure that these two ways of measuring did not influence each other. Third, this study was conducted via the internet and the participants were women from middle socioeconomic background in Israel, with computer and internet access and thus are generalizable to this specific community, and possibly to other educated middle class women in developed countries.

It seems that woman construct their immediate social surroundings in a way that reflects and enhances the construction of their body dissatisfaction and drive-for-thinness. This might be one of the processes that make body dissatisfaction so pernicious and so hard to change. The processes of direct and indirect social comparisons help tighten the noose women build around themselves. The relative importance of indirect and possibly subconscious comparisons, found in this study, suggests an intervention, of making women aware of these judgments and testing the efficacy of making them explicit on the improvement of body image.

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Contributors

None.

Conflict of interest

The authors have no conflict of interest to report.

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