
Pergamon

Available online at www.sciencedirect.com
SCIENCE DIRECT®

Eating Behaviors 4 (2003) 229–244

EATING BEHAVIORS

# The relationship between sociocultural pressure to be thin and body dissatisfaction in preadolescent girls

Lucy C. Blowers, Natalie J. Loxton, Megan Grady-Flesser, Stefano Occhipinti, Sharon Dawe*

*School of Applied Psychology, Griffith University, Mt. Gravatt, 4111, Brisbane, Queensland, Australia*

**Abstract**

This study investigates the relationships among sociocultural pressures to be thin, internalisation of the thin ideal, social comparison, body mass index, and body dissatisfaction in young girls. One hundred and fifty-three 10–13 year old girls completed measures assessing sociocultural pressure to be thin, media exposure, body dissatisfaction, social comparison, and internalisation of the thin ideal. Although sociocultural factors, as a group, were significantly associated with internalisation of the thin ideal, perceived media pressure was the only sociocultural influence uniquely related to internalisation of the thin ideal. Perceived pressure to be thin delivered by the media was found to be associated with body dissatisfaction via internalisation of the thin ideal. The relationship between internalisation of the thin ideal and body dissatisfaction was also partially influenced by social comparison. Body mass was found to have a direct association with body dissatisfaction. A model incorporating the relationships among media pressure, internalisation of the thin ideal, social comparison, and body dissatisfaction is proposed.
© 2003 Elsevier Ltd. All rights reserved.

*Keywords:* Body image; Sociocultural factors; Social comparison; Human-females; Mass media; Peer pressure

## 1. Introduction

While increasing rates of obesity in the general population have been noted, and some weight control behaviours are considered healthy, many women who are within the normal

* Corresponding author. Tel.: +61-7-3875-3371.
*E-mail address:* s.dawe@mailbox.gu.edu.au (S. Dawe).

1471-0153/03/$ – see front matter © 2003 Elsevier Ltd. All rights reserved.
doi:10.1016/S1471-0153(03)00018-7

weight range still express dissatisfaction with some aspect of their body shape or weight (Brownell, 1991; Huon, 1994). Indeed, the term normative discontent has been used to describe the pervasiveness of body image concerns among women in our society (Rodin, Silberstein, & Striegel-Moore, 1985). In recent times, this preoccupation with body image has extended downwards from adult and adolescent women to prepubescent girls with approximately 39% of Australian girls aged between 8 and 12 years reporting significant levels of body dissatisfaction (Kelly, Ricciardelli, & Clarke, 1999; Rolland, Farnill, & Griffiths, 1997). Unfortunately, girls who report high levels of body dissatisfaction also engage in unhealthy weight loss behaviours such as restricting food intake, purging, and over-exercising behaviours that have a number of detrimental health effects including retarded growth and delayed puberty (Ricciardelli & McCabe, 2001). Therefore, further research on risk factors associated with body dissatisfaction in preadolescent girls is critical to inform future prevention and treatment programs.

Although a wide range of factors have been found to play a role in the development and maintenance of body image disturbance and disordered eating behaviours, sociocultural values in Western society, particularly those portrayed in mainstream media, are frequently proposed as a major contributor to the increase in women's body dissatisfaction (e.g., Stice, 1994). Media sources have increasingly reflected a view that the thin look is both desirable and obtainable, when it is in fact difficult for the average woman to achieve without resorting to extreme or unhealthy weight loss efforts (Brownell, 1991). Stice, Schupak-Neuberg, Shaw, and Stein (1994) investigated the extent to which young women may be influenced by the portrayal of such values by the media. In a sample of undergraduate women, Stice et al. found a direct relationship between media exposure to a high proportion of ideal body images and disordered eating behaviour in a sample of undergraduate women.

Theoretical models investigating the specific mechanisms by which sociocultural factors influence body image and disordered eating behaviours, have only recently appeared in the literature. Stice et al. (Stice, 1994, 1998; Stice, Ziemba, Margolis, & Flick, 1996) have proposed three primary sources of sociocultural influences—families, peers, and the media. It has been suggested that these three sources of sociocultural pressure, individually or in combination, may lead to individuals internalising societal messages about the importance of thinness and that this, in turn, may lead to a schematic set of beliefs about the importance of thinness and beauty for success in a woman's life (Smolak, Levine, & Schermer, 1999; Stice, 1998). Furthermore, the relative influence of these three sources are thought to be transmitted via two processes—*perceived pressure to be thin* and *modelling* of disordered eating behaviours (Stice, 1998). Perceived pressure to be thin is defined as comments or actions by others that may serve to perpetuate the thin ideal (e.g., critical comments regarding weight, encouragement to diet, and exposure to media containing thin ideal images), whereas modelling refers to the process of directly copying a behaviour performed by others (Bandura, 1969). To support this proposal, Stice (1998) found perceived pressure to be thin by family, peers, and the media to be positively correlated with bulimic symptoms, and family and peer modelling of dysfunctional eating behaviours to be predictive of bulimic symptoms over a 9-month period in a sample of undergraduate women.

Notwithstanding the above, the vast majority of Western women are exposed to these sources of pressure and modelling yet do not develop body dissatisfaction to the extreme levels that predispose them to engage in clinically significant disordered eating behaviour. Accordingly, the relationship between sociocultural pressure to be thin and extreme body dissatisfaction is likely to be mediated by other psychological variables. One such variable believed to link sociocultural factors and body dissatisfaction is internalisation of the thin ideal, whereby certain women come to accept and maintain a rigid belief that being thin is necessary to be attractive. Internalisation of the thin ideal has consistently been found to predict levels of body dissatisfaction and eating disturbance (Heinberg, Thompson, & Stormer, 1995), and to differentiate between eating disordered women and noneating disordered controls (Griffiths et al., 1999). It is argued that mere exposure may be insufficient to explain body image disturbance, but rather women are likely to vary in terms of how much they internalise societal ideals generated by the media, and it is via this internalisation that women experience body dissatisfaction.

Heinberg and Thompson (1992) and Thompson, Coovert, and Stormer (1999) propose that the relationship between internalisation of thin ideal and body dissatisfaction is further influenced by the effects of individual social comparison processes. Social comparison refers to the process of thinking about information about other people in relation to the self, either passively (i.e., by acquiring social information automatically and somewhat subconsciously) or actively (i.e., engaging in goal directed behaviour such as selecting a comparison "target" that is suitable for one's ultimate aim of making comparisons; Festinger, 1954). In terms of the development of disordered eating attitudes and behaviour, it has been proposed that women who actively choose inappropriate targets to compare themselves with (e.g., models from magazines) are more vulnerable to sociocultural appearance pressure (Thompson et al., 1999). Indeed Thompson et al. found social comparison to operate as a mediator between negative social feedback (e.g., teasing about appearance) and body dissatisfaction in undergraduates (Thompson et al., 1999).

Perhaps women who engage in frequent social comparison and who also choose "superior targets" (i.e., upward comparison) are also more likely to experience body dissatisfaction and possibly engage in disordered eating behaviours (Wood, 1996). Cattarin, Williams, Thomas, and Thompson (2000), for instance, found an interaction between social comparison and internalisation of the thin ideal on change in body dissatisfaction. Specifically, women with high scores on a measure of internalisation of the thin ideal who viewed women that were considered highly representative of the thin, attractive ideal in a series of television commercials (i.e., engaged in social comparison) experienced a significant increase in body dissatisfaction. There was no change in body dissatisfaction for women low in internalisation of the thin ideal after viewing the commercials. Conversely, women who viewed a commercial with female models considered *not* highly representative of the thin, attractive ideal, showed a significant *decrease* in body dissatisfaction, regardless of internalisation of the thin ideal status. Thus, body dissatisfaction was heightened only in those women high in internalisation of the thin ideal who compared themselves with a representation of the thin, attractive ideal (i.e., a "superior" target). When presented with women who were not representative of the thin-ideal, participants actually reported an

improvement in body image, independent of how much they had internalised the thin ideal. This study demonstrated the importance of including social comparison as a moderator of internalisation of the thin ideal on body dissatisfaction. This study, however, did not explore whether social comparison may also function as a mediator of internalisation of the thin ideal.

Thus, it appears that sociocultural factors are affected by individual differences in specific psychological factors such as internalisation of the thin ideal and social comparison. Moreover, there is considerable evidence that internalisation of the thin ideal operates as a mediating (intervening) variable between sociocultural factors and body dissatisfaction. The limited studies on the role of social comparison on body dissatisfaction suggest that social comparison operates as a mediator between sociocultural factors and body dissatisfaction and as a moderator of internalisation of the thin ideal on body dissatisfaction. However, it is not known at this time whether social comparison is best considered a moderator or mediator of internalisation of the thin ideal with body dissatisfaction.

Finally, actual body weight (indexed by body mass index [BMI]) is strongly related to body dissatisfaction in both adolescent and preadolescent girls (Ricciardelli & McCabe, 2001; Stice 1998). In young girls, being overweight has been found to consistently predict body dissatisfaction and disordered eating behaviour. Stice (1994) argues further that body weight may act as a moderator between sociocultural pressure to be thin and body dissatisfaction; that is, being overweight will not produce body dissatisfaction unless the thin ideal has been internalised. Thus, girls who are overweight and who believe that being thin is highly desirable will be more likely to experience a discrepancy between ideal and real weight, subsequently leading to body dissatisfaction. It is clear that actual body weight is related to body dissatisfaction. However, whether this relationship is moderated by internalisation of the thin ideal has not been tested.

Although there are now a number of studies investigating the role of sociocultural influences on the development of body dissatisfaction and disordered eating, these have focused on older adolescents and college-age women. Relatively little attention has focused on how these influences effect preadolescent girls. Girls begin to internalise messages regarding the importance of thinness from an early age (Collins, 1991). Even from as young as 7 years, both girls and boys endorse statements such as "thin people are happy people" and "fat people have few friends" (Shapiro, Newcomb, & Loeb, 1997). However, it is possible that sociocultural pressures experienced by young girls differ from those experienced by adolescent girls and college-age women. For example, parental attitudes to weight and modelling of weight loss behaviours may be more important than peer attitudes in preadolescence, as girls spend more time socializing with family, compared to later adolescence when greater time is spent with same-sex peers (Graber, Archibald, & Brooks-Gunn, 1999). Although there some evidence to support the relationship between parental pressure for daughters to diet and body dissatisfaction (e.g., Smolak et al., 1999), to date no studies have attempted to ascertain the relative contribution of perceived peer, family, and media pressure to be thin on levels of body dissatisfaction in this younger age group. Furthermore, psychological factors, such as internalisation of the thin ideal and social

comparison, and body mass that may moderate or mediate the relationship between sociocultural pressures and body dissatisfaction have not been investigated in this age group.

Accordingly, the aims of the current study are to (1) address the relative contribution of family, peer, and media influences on the development of body dissatisfaction in preadolescent girls, and (2) to examine how individual factors of internalisation of thin ideal, social comparison, and body weight, mediate, and moderate the relationship between the sociocultural pressures and body dissatisfaction. Fig. 1 shows the proposed relationships among sociocultural variables, internalisation, social comparison, BMI, and body dissatisfaction. Specifically, peers, family, and the media are included as the salient transmitters of societal pressure to be thin. It is hypothesized that the relative influence of these three sources will be promoted via two processes: perceived pressure and modelling (Stice, 1998). Next, it is hypothesized that these three sources of pressure lead to girls internalising the thin ideal, which mediates the relationship between sociocultural pressures and body dissatisfaction. It is also proposed that internalisation of the thin ideal and body dissatisfaction will be influenced by social comparison, either as a

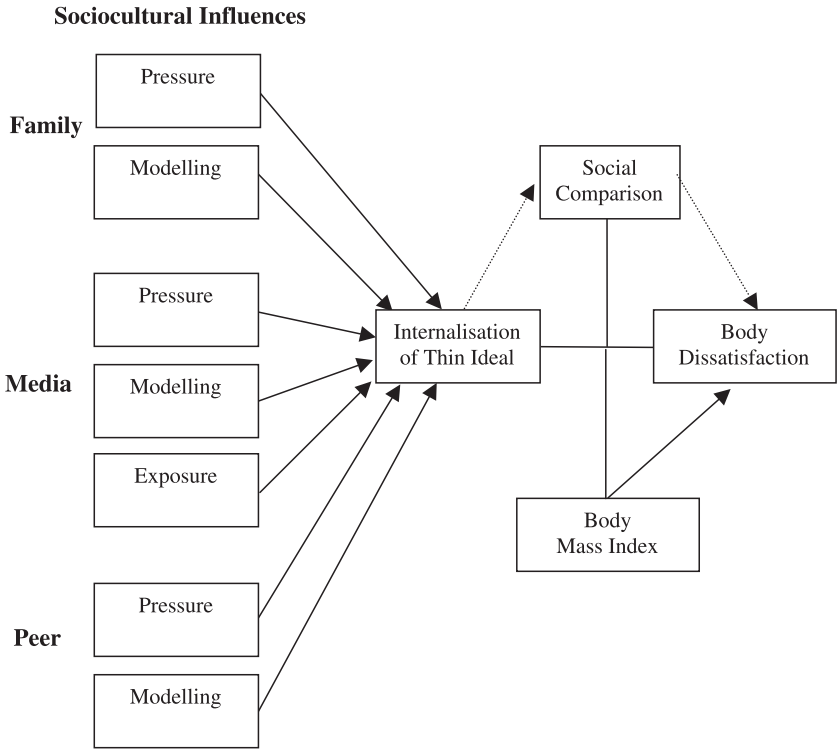


Fig. 1. Proposed model of the relationships among sociocultural factors, BMI, internalisation of the thin ideal, social comparison, and body dissatisfaction.

moderator or mediator. Finally, it is proposed that body weight will have a direct effect on body dissatisfaction and will also moderate internalisation of the thin ideal and body dissatisfaction.

## 2. Method

### *2.1. Participants*

The participants were 153 primary school girls, aged between 10 and 13 years ($M = 11.12$, S.D. = 0.77). Participants were recruited from two private schools in a major metropolitan centre in southeast Queensland, Australia. The sample was primarily Caucasian (89%) with smaller proportions of Asians (5%) and others (6%).

### *2.2. Measures*

#### *2.2.1. Body dissatisfaction*

The nine-item Body Dissatisfaction subscale of the Eating Disorders Inventory (EDI-BD, Garner, 1991) was used to measure participants' satisfaction with their bodies and body image concerns. Scores can range from 0 to 27, with higher scores indicative of greater body dissatisfaction. The EDI manual reports strong internal consistency ($\alpha$=.91) in girls aged 11–18 years. Validity checks in the current study also revealed good internal consistency ($\alpha$=.83).

#### *2.2.2. Internalisation of the thin ideal*

The eight-item Sociocultural Attitudes Towards Appearance Questionnaire-Revised: Internalisation Scale (SATAQ-I; Heinberg et al., 1995) was used to measure internalisation and acceptance of societal sanctioned standards regarding thinness. Negatively worded items were reversed to avoid confusion in this younger age group. Scores on the SATAQ-I range from 8 to 40 with higher scores indicating greater internalisation. The reliability and validity of the SATAQ-I is well supported with an internal consistency of .88 (Heinberg et al., 1995). Scores on the SATAQ have been found to differentiate eating disordered women from controls and to correlate with scores on the Eating Disorders Inventory subscales in eating disordered samples (Griffiths et al., 1999). Although the SATAQ has not been used with prepubescent girls, internal reliability was found to be very good in the current sample ($\alpha$=.96).

#### *2.2.3. Social comparison*

The seven-item Physical Appearance Comparison Scale (PACS; Thompson, Heinberg, & Tantleff, 1991) was used to measure the degree to which participants compared their bodies and physical appearance to others. Scores range from 7 to 35 with higher scores indicating greater comparison with others. High scores on the PACS have been found to correlate highly with body dissatisfaction and eating disturbance (Thompson et al., 1991). The PACS has good internal consistency ($\alpha$=.78) and test–retest reliability ($r$=.72). Again the PACS has not

been used with prepubescent girls; however internal consistency in the current sample was good (α=.83).

*2.2.4. Perceived sociocultural pressure*

Perceived pressure by family, peers, and the media to be thin was measured by three questionnaires based on those used by Stice (1998). While Stice used two items to tap perceived pressure from each source (i.e., family, peer, media), the current study incorporated five items for family and peer pressure, and three items for media pressure. Participants were required to respond on a five-point scale from "strongly agree" to "strongly disagree." An example of an item from this scale is "I've noticed a strong message from my family to have a thin body." Totals from each scale are averaged to form a mean perceived pressure variable for peer, family, and media pressure. It was necessary to slightly change some of the items on these measures due to the age of the participants and our interest in body dissatisfaction as the criterion variable rather than bulimia nervosa. Reliability checks in the current study found adequate internal consistency with Cronbach alphas ranging from .69 (media pressure) to .82 (family pressure).

*2.2.5. Modelling of disordered eating behaviours*

Again, based on items used by Stice (1998), three measures were constructed to measure the extent to which participants were aware of such behaviours in their family and peers or had observed on television. All modelling scales consisted of five items and participants were required to respond on a five-point scale from "always" to "never." An example of an item from this scale is "I have learnt about ways to control my weight from friends." Totals from each scale are averaged to form a mean modelling of disordered eating behaviour variable for peer, family, and media modelling. Reliability checks of the scales again found adequate internal consistency (α ranging from .63 [family] to .71 [media]).

*2.2.6. Media exposure*

The Television Exposure Scale (TES) was an extension of the measure developed by Stice et al. (1994) in which participants were required to report the number of hours they had spent viewing comedy, drama, and game shows over the past week. In the current study, a checklist was provided of all the programs that aired in the 7 days proceeding testing to cue participants' memory.

*2.2.7. Body mass index (BMI)*

The participants body weight and height was calculated using the formula: BMI = $kg/m^2$.

## 3. Procedure

After gaining parental and participant consent, the girls completed the questionnaires during class time, alone and anonymously. A research assistant was available to answer any questions. Upon completion of the questionnaires, participants were individually weighted and measured by the researcher.

## 4. Results

### 4.1. Descriptive statistics

Prior to analyses, three participants' data were deleted. Of these, one case was an outlier on all scales and two cases contained extensive missing data. Table 1 presents descriptive data for all variables. The mean score for EDI-BD was similar to that found in North American primary school students (Garner, 1991). Mean BMI was also comparable to that found in a sample of sixth grade girls from the United States (Schur, Sanders, & Stein, 2000).

### 4.2. Simple associations among sociocultural and psychological measures, body weight, and body dissatisfaction

As shown in Table 2, zero-order correlations showed body dissatisfaction to be associated with the sociocultural variables of family and media pressure to be thin, as well as family and peer modelling of dysfunctional eating behaviour. Psychological variables of internalisation of the thin ideal and social comparison were even more strongly related with body dissatisfaction and BMI.

### 4.3. Tests of direct and indirect relationships

A series of regression analyses was used to examine direct and indirect relationships between sociocultural variables and other variables described in Figure 1. Specifically, analyses were conducted in four steps: (i) a test of the direct relationships between sociocultural variables and internalisation of the thin ideal, (ii) tests of internalisation of

Table 1
Means and standard deviations for criterion and predictor variables ($N = 151$)

| Construct (Measure) | *M* | S.D. |
|---|---|---|
| Body dissatisfaction (BD) | 6.60 | 5.72 |
| Internalisation of the thin ideal (SATAQ) | 23.40 | 11.67 |
| Social comparison (PACS) | 12.12 | 5.14 |
| BMI | 18.58 | 2.99 |
| Perceived social pressure | | |
| Family | 1.67 | 0.74 |
| Peers | 1.64 | 0.73 |
| Media | 2.25 | 1.03 |
| Modelling of disordered eating | | |
| Family | 1.86 | 0.66 |
| Peers | 1.38 | 0.47 |
| Media | 2.10 | 0.72 |
| Media Exposure (TES) | 22.67 | 13.65 |

Table 2
Correlations among measures of sociocultural influences, internalisation of the thin ideal, social comparison and body dissatisfaction

| | | BD | SATAQ (thin ideal) | PACS (social comparison) | BMI | Perceived pressure | | | Modelling | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Family | Peers | Media | Family | Peers | Media |
| | SATAQ | .37*** | – | | | | | | | | |
| | PACS | .39*** | .57*** | – | | | | | | | |
| | BMI | .44*** | .22** | .33*** | – | | | | | | |
| Pressure | Family | .25** | .35*** | .35*** | .29** | – | | | | | |
| | Peers | .15 | .34*** | .46*** | .09 | .44*** | | | | | |
| | Media | .20* | .47*** | .47*** | .10 | .29** | .36*** | – | | | |
| Model | Family | .22** | .36*** | .27** | .17* | .41*** | .33*** | .30** | – | | |
| | Peers | .16* | .24** | .31*** | .22** | .41*** | .36*** | .28** | .41*** | – | |
| | Media | .09 | .30** | .28** | .11 | .11 | .19* | .49*** | .40*** | .22 * | – |
| | TES | −.17* | .05 | .02 | − .02 | −.05 | −.03 | −.01 | −.08 | −.06 | .06 |

* $P < .05$.
** $P < .01$.
*** $P < .001$.

the thin ideal as a mediating factor in the relationship between sociocultural variables and body dissatisfaction, (iii) tests of social comparison as a moderating and/or mediating factor in the relationship between internalisation and body dissatisfaction, and (iv) tests of moderating and direct effects of BMI on body dissatisfaction.

Tests for mediation and moderation were based on the definitions and procedures outlined by Baron and Kenny (1986). Mediation is demonstrated when a significant correlation between two variables becomes nonsignificant when a third variable, which also correlates with the first two variables, is partialled from the relationship. On the other hand, a moderator variable functions as a significant interaction between itself and another independent variable.

### *4.4. Association between sociocultural variables and internalisation of the thin ideal*

First, to test the relationship between sociocultural variables and internalisation of the thin ideal, a multiple regression analysis was performed with sociocultural variables (family pressure, family modelling, peer pressure, peer modelling, media pressure, media modelling, and total television exposure) entered as the predictors and internalisation of the thin ideal scores entered as the criterion. Tests of multivariate assumptions revealed an absence of multicollinearity with all bivariate correlations between predictor variables below .7. Tolerance was also acceptable with no predictors being below .001 suggesting an absence of redundancy between the predictors.

Together sociocultural variables accounted for 31% of the variance in internalisation of the thin ideal ($R$=.55, $F$[7,145] = 8.74, $P < .001$). However, as shown in Table 3, only perceived media pressure was a significant individual predictor of internalisation

Table 3
Multiple regression of sociocultural variables on internalisation of the thin ideal (SATAQ; $N = 151$)

| Sociocultural variables | $B$ | $\beta$ | $sr^2$ |
|---|---|---|---|
| Family pressure | 2.26 | .142 | .01 |
| Family modelling | 2.59 | .144 | .01 |
| Media pressure | 3.54 | .310*** | .06 |
| Media modelling | 0.80 | .049 | ~0 |
| Media exposure | 0.01 | .060 | ~0 |
| Peer pressure | 2.15 | .134 | .01 |
| Peer modelling | −0.34 | −.013 | ~0 |
| | | $R^2$=.31 | |
| | | $R$=.55*** | |

Total unique variance=.09; shared variance =.22.
*** $P < .001$.

of thin ideal. As such, all other sociocultural variables were excluded from further analysis.

### *4.5. Association among media pressure, internalisation of the thin ideal, and body dissatisfaction*

Second, we tested whether internalisation of the thin ideal, as measured by the SATAQ, mediated the relationship between media pressure and body dissatisfaction. In accord with the definition of mediation proposed by Baron and Kenny (1986), body dissatisfaction was first regressed onto media pressure. Media pressure scores were found to significantly predict level of body dissatisfaction ($\beta$=.20, $P < .05$; $R^2$=.04). With internalisation of the thin ideal entered into the equation ($\beta$=.37, $P < .001$; $R^2$=.13), the slope between media pressure and body dissatisfaction was reduced markedly in magnitude and became nonsignificant ($\beta$=.04, *ns*; $\Delta R2$=.00). To examine this further, as recommended by Baron and Kenny, a Sobel test was conducted that indicated significant mediating paths ($t = 3.45$, $P < .001$). Internalisation of the thin ideal therefore functioned as a fully mediating variable between perceived media pressure and body dissatisfaction. Thus, perceived pressure to be thin delivered by the media influences internalisation directly, which in turn influences body dissatisfaction.

### *4.6. Association among internalisation of the thin ideal, social comparison, and body dissatisfaction*

In this step, social comparison was tested to see whether this variable acts as a mediator or a moderator of internalisation of the thin ideal and body dissatisfaction. Social comparison was first tested as a moderating variable between internalisation of the thin ideal and body dissatisfaction. As shown in Table 4, entering the cross product of internalisation of the thin ideal did not add significantly to explained variance after

Table 4
Test of social comparison as a moderating variable between internalisation of the thin ideal and body dissatisfaction (EDI-BD)

| Variables | *B* | *β* | Partial $r^2$ |
|---|---|---|---|
| *Step 1* | | | |
| Main effects | | | .185*** |
| Internalisation of thin ideal | 0.57 | .201 * | |
| Social comparison | 0.29 | .264 ** | |
| *Step 2* | | | |
| Interaction | | | |
| Internalisation of Thin Ideal × Social Comparison | ∼0.00 | .051 | .002 |
| | | $R^2$=.19 | |
| | | $R$=.43 | |

Internalisation of the thin ideal (SATAQ); Social comparison (PACS); Internalisation of Thin Ideal × Social Comparison = cross product of both (after centering).
* $P<.05$.
** $P<.01$.
*** $P<.001$.

controlling for the main effects of internalisation of the thin ideal and social comparison on body dissatisfaction. Hence, social comparison did not moderate the relationship between internalisation of the thin ideal and social comparison.

Next, we tested whether social comparison acted as a mediator between internalisation and body dissatisfaction. In this analysis body dissatisfaction was first regressed onto internalisation of the thin ideal. Internalisation of the thin ideal scores were found to significantly predict level of body dissatisfaction ($\beta$=.37, $P<.001$; $R^2$=.13). With social comparison entered into the equation ($\beta$=.40, $P<.001$; $R^2$=.16), the slope between internalisation of the

Table 5
Test of BMI as a moderating variable between internalisation of the thin ideal and body dissatisfaction (EDI-BD)

| Variables | *B* | *β* | Partial $r^2$ |
|---|---|---|---|
| *Step 1* | | | |
| Main effects | | | .27*** |
| ITI | 0.14 | .281*** | |
| BMI | 0.71 | .371*** | |
| *Step 2* | | | |
| Interaction | | | .004 |
| ITI × BMI | ∼0.00 | .067 | |
| Intercept = − 9.90 | | $R^2$=.275 | |
| | | $R$=.524 | |

ITI = internalisation of the thin ideal (SATAQ); ITI × BMI = cross product of ITI and BMI (after centering).
*** $P<.001$.

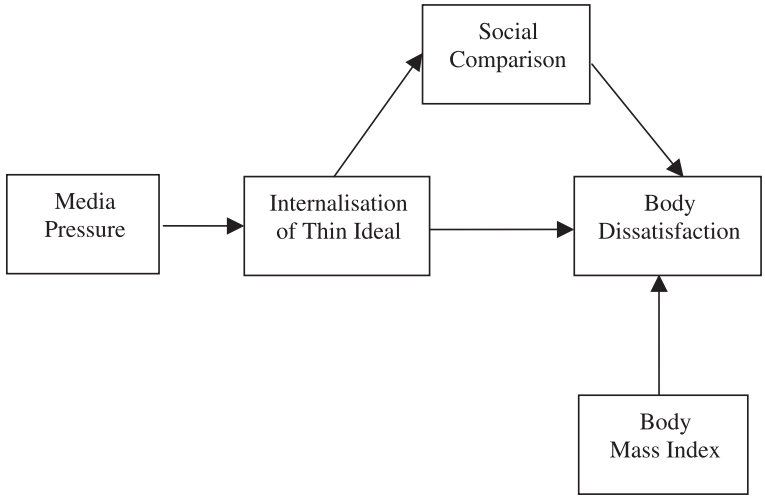


Fig. 2. Modified model of the relationships among media pressure, BMI, internalisation of the thin ideal, social comparison, and body dissatisfaction.

thin ideal and body dissatisfaction was substantially reduced in magnitude, but remained significant ($\beta$=.21, $P<.05$; $\Delta R^2$=.03). To examine this further, a Sobel test also indicated mediating paths ($t=2.23$, $P<.05$). Social comparison therefore functioned as a partially mediating variable between internalisation of the thin ideal and body dissatisfaction. Thus, internalisation of the thin ideal influences body dissatisfaction both directly and indirectly through its relationship with social comparison.

### *4.7. Association among internalisation of the thin ideal, BMI, and body dissatisfaction*

Finally, BMI was tested as a moderating variable between internalisation and body dissatisfaction. As shown in Table 5, entering the cross product of internalisation of the thin ideal and BMI did not add significantly to explained variance after controlling for the main effects of internalisation of the thin ideal and BMI on body dissatisfaction. Hence, BMI did not moderate the relationship between internalisation of the thin ideal and body dissatisfaction in this age group. BMI though, was directly correlated with body dissatisfaction ($r$=.44, $P<.001$). Fig. 2 shows a reduced model based on significant paths.

## 5. Discussion

The primary objective of the current study was to examine the relationship between sociocultural pressure to be thin by media, family, and peers, and body dissatisfaction in young girls. Social comparison, internalisation of thin ideal, and BMI were also investigated as intervening variables in this relationship. A number of findings emerged

from this study. First, while sociocultural variables as a group showed moderately strong bivariate correlations with internalisation of the thin ideal and body dissatisfaction, only perceived pressure by the media played a significant unique role in the extent to which girls internalised this thin ideal. This finding was somewhat unexpected as previous research suggests that family influences play a central role in influencing the weight concerns of preadolescent girls (Graber et al., 1999). However, family influences may have less importance on shaping attitudes about the importance of being thin compared to media influences. Family pressure though was more strongly related to body dissatisfaction than perceived pressure from the media or their peers. Thus, while it appears family pressure affects body dissatisfaction more than other sources of pressure, media pressure shapes the internalisation of the thin ideal rather than directly affecting body dissatisfaction per se. Further, body dissatisfaction was significantly correlated with perceived pressure to be thin by family and media, but not peer, and with modelling by family and peers, but not by the media. Thus, young girls may consider that thinness is a desirable attribute by their family and the media, but may model body dissatisfaction displayed by their family and peers.

Additionally, while this study did not look at the content of TV programs over time, in light of the significant unique relationship with perceived pressure to be thin by the media, it could be speculated that perceived pressure to be thin has been influenced by the subtle shift in program content with a number of recent popular programs aimed at a (predominantly female) teen audience. These programs almost all feature a central character or characters who are young girls or women and who have below average weight, are attractive and in some cases even possess superhuman powers (e.g., *Friends*, *Buffy the Vampire Slayer*, *Charmed*). While this is speculative, examination of those specific aspects of the media that may be influential in determining how young girls internalise the thin ideal could be the focus of future research.

Second, as hypothesized, internalisation of the thin ideal fully mediated the relationship between media pressure for the thin ideal and body dissatisfaction, a finding consistent with previous research (e.g., Stice et al., 1996). Thus, women who are exposed to societal pressures to be thin do not necessarily experience body dissatisfaction unless they believe that they need to be thin to be attractive. The importance of internalisation of the thin ideal in predicting body dissatisfaction and disordered eating in college-aged women is now well established. The current study extends this work by demonstrating that even as young as 10 and 11 years, the extent to which girls believe that being thin is highly desirable contributes to their own satisfaction with their current body shape.

Third, although a previous study (Cattarin et al., 2000) found social comparison moderated the relationship between internalisation of the thin ideal and body dissatisfaction, in this age-group, social comparison acted as a partial mediator between internalisation of the thin ideal and body dissatisfaction. As such, even though internalisation of the thin ideal directly correlated with body dissatisfaction, girls who internalised the thin ideal were also more likely to engage in social comparison, which in turn contributed to their dissatisfaction. Currently, there is considerable theoretical and methodological overlap between the constructs of social comparison and internalisation of the thin ideal, although they are

purportedly theoretically different. A number of measures of internalisation include social comparison items, and vice versa. A clearer understanding of how these processes develop, operate, and interact may provide crucial information to guide the content of intervention programs.

Fourth, body weight, although highly correlated with body dissatisfaction, did not, as hypothesized, moderate the relationship between internalisation of the thin ideal and body dissatisfaction. However, the strong association between body weight and body dissatisfaction, regardless of internalisation of the thin ideal, further supports previous research that has shown body dissatisfaction and disordered eating in young girls to be more influenced by physical changes related to puberty (i.e., increased body weight) than psychosocial influences (Attie & Brooks-Gunn, 1989).

In short, the relationship between sociocultural influences and body dissatisfaction is as complex in young girls as in older women, and both psychological factors (e.g., internalisation, social comparison) and physical features (e.g., body mass) are contributing factors to body dissatisfaction. To test the pathways between sociocultural factors and body dissatisfaction, a diagram based on the findings of the current study has been proposed. If this model was found to be supported in subsequent studies, it suggests that intervention programs might be best focused at challenging the ''thin ideal'' as a measure of ''female success.''

It should be noted that the interpretation of this study are limited by the use of a cross-sectional design and thus, it is not possible to determine developmental pathways from sociocultural factors to body dissatisfaction. However, these findings do suggest that psychological factors such as internalisation of the thin ideal and social comparisons contribute significantly to the relationship between sociocultural influence and body discontent in young girls.

In conclusion, the results of this study indicate perceived media pressure to be thin to be an important pressure for young girls, and holds a stronger association than family or peer pressure with the attitude that thin is the ideal body shape for women. However, while only media pressure was a unique predictor of internalisation of the thin ideal, sociocultural variables, both independently and as a group, were significantly associated with the thin ideal. To understand whether risk factors change across developmental periods, and how sociocultural pressures interact with other individual moderators such as internalisation of the thin ideal and social comparison, further cross-sectional and longitudinal research is needed.

## References

Attie, I., & Brooks-Gunn, J. (1989). Development of eating problems in adolescent girls: A longitudinal study. *Developmental Psychology*, *25*, 70–79.

Bandura, A. (1969). Social learning theory of identification processes. In D. A. Goslin (Ed.), *Handbook of socialization theory and research* (pp. 213–262). Chicago: Rand McNally.

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*, 1173–1182.

Brownell, K. D. (1991). Dieting and the search for the perfect body: Where physiology and culture collide. *Behavior Therapy*, *22*, 1–12.

Cattarin, J., Williams, R., Thomas, C. M., & Thompson, K. J. (2000). Body image, mood, and televised images of attractiveness: The role of social comparison. *Journal of Social and Clinical Psychology*, *19*, 220–239.

Collins, M. E. (1991). Body figure perceptions and preferences among preadolescent children. *International Journal of Eating Disorders*, *10*, 199–208.

Festinger, L. (1954). A theory of social comparison processes. *Human Relations*, *7*, 117–140.

Garner, D. M. (1991). *Manual for the Eating Disorders Inventory-2 (EDI)*. Odessa, FL: Psychological Assessment Resources.

Graber, J. A., Archibald, A. B., & Brooks-Gunn, J. (1999). The role of parents in the emergence, maintenance, and prevention of eating problems and disorders. In N. Piran, M. P. Levine, & C. Steiner-Adair (Eds.), *Prevention of eating disorders: A handbook of intervention and special challenges* (pp. 44–62). Philadelphia: Brunner/Mazil.

Griffiths, R. A., Beumont, P. J. V., Russell, J., Schotte, D., Thornton, C., Touyz, S., & Varano, P. (1999). Sociocultural attitudes towards appearance in dieting disordered and nondieting disordered subjects. *European Eating Disorders Review*, *7*, 193–203.

Heinberg, L. J., & Thompson, J. K. (1992). Social comparison: Gender, target importance ratings, and relation to body image disturbance. *Journal of Social Behavior and Personality*, *7*, 335–344.

Heinberg, L. J., Thompson, J. K., & Stormer, S. (1995). Development and validation of the Sociocultural Attitudes Toward Appearance Questionnaire (SATAQ). *International Journal of Eating Disorders*, *17*, 81–89.

Huon, G. F. (1994). Towards the prevention of dieting-induced disorders: Modifying negative food- and body-related attitude. *International Journal of Eating Disorders*, *16*, 395–399.

Kelly, C., Ricciardelli, L., & Clarke, J. D. (1999). Problem eating attitudes and behaviours in young children. *International Journal of Eating Disorders*, *25*, 281–286.

Ricciardelli, L., & McCabe, M. (2001). Children's body image concerns and eating disturbances: A review of the literature. *Clinical Psychology Review*, *21*, 325–344.

Rodin, J., Silberstein, L. R., & Striegel-Moore, R. H. (1985). Women and weight: A normative discontent. In T. B. Sonderegger (Ed.), *Psychology and gender: Nebraska Symposium on Motivation, 1984* (pp. 267–278). Lincoln, NE: University of Nebraska Press.

Rolland, K., Farnill, D., & Griffiths, R. A. (1997). Body figure perceptions and eating attitudes among Australian school aged children aged 8 to 12 years. *International Journal of Eating Disorders*, *21*, 273–278.

Schur, E. A., Sanders, M., & Steiner, H. (2000). Body dissatisfaction and dieting in young children. *International Journal of Eating Disorders*, *27*, 74–82.

Shapiro, S., Newcomb, M., & Loeb, T. B. (1997). Fear of fat, disregulated-restrained eating, and body esteem: Prevalence and gender differences among eight- to ten-year olds. *Journal of Clinical Child Psychology*, *26*, 358–365.

Smolak, L., Levine, M. P., & Schermer, F. (1999). Parental input and weight concerns among elementary school children. *International Journal of Eating Disorders*, *25*(3), 263–271.

Stice, E. (1994). Review of the evidence for a sociocultural model of bulimia nervosa and an exploration of the mechanisms of action. *Clinical Psychology Review*, *14*, 633–661.

Stice, E. (1998). Modeling of eating pathology and social reinforcement of the thin ideal predict onset of bulimic symptoms. *Behaviour Research and Therapy*, *36*, 931–944.

Stice, E., Schupak-Neuberg, E., Shaw, H. E., & Stein, R. E. (1994). Relation of media exposure to eating disorder symptomatology: An examination of mediating mechanisms. *Journal of Abnormal Psychology*, *103*, 836–840.

Stice, E., Ziemba, C., Margolis, J., & Flick, P. (1996). The dual pathway model differentiates bulimics, subclinical bulimics, and controls: Testing the continuity hypothesis. *Behavior Therapy*, *27*, 531–549.

Thompson, J. K., Coovert, M. D., & Stormer, S. (1999). Body image, social comparison, and eating disturbance: A covariance structure modeling investigation. *International Journal of Eating Disorders*, *26*, 43–51.

Thompson, J. K., Heinberg, L. J., & Tantleff, S. (1991). The Physical Appearance Comparison Scale (PACS). *Behavior Therapist*, *14*, 174.

Wood, J. V. (1996). What is social comparison and how should we study it? *Personality and Social Psychology Bulletin*, *22*, 520–538.