

# Body Dissatisfaction in Adolescent Boys and Girls: Objectified Body Consciousness, Internalization of the Media Body Ideal and Perceived Pressure from Media

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**Abstract** The aim of the present study was to examine a theoretical model describing the relationships between body shame and body surveillance (components of objectified body consciousness), internalization of the media body ideal, perceived pressure from media, body mass index and body dissatisfaction in Swiss adolescent boys and girls. A sample of 819 boys and 791 girls aged 14–16 years completed self-report measures of the mentioned concepts. As expected, girls had higher body shame and body surveillance than boys. Structural equation modelling supported the proposed model in both boys and girls. The findings suggest processes that may contribute to body dissatisfaction.

**Keywords** Body dissatisfaction · Objectified body consciousness · Internalization · Pressure · Adolescent boys and girls

## Introduction

Body dissatisfaction is a substantial concern amongst adolescents (e.g. Barker and Galambos 2003; Jones 2004; Neumark-Sztainer et al. 2006), particularly amongst adolescent girls (Barker and Galambos 2003; Levine and Smolak 2002; Wardle and Marsland 1990). However, why

girls are more concerned with their bodies than boys and whether associations between sociocultural influences and body dissatisfaction differ by gender is not fully understood. The first purpose of this study was to test whether, as originally proposed by McKinley and Hyde (1996), the two components of objectified body consciousness, body shame and body surveillance, contribute to the explanation of gender differences in body dissatisfaction. The second purpose was to provide a more detailed understanding of body dissatisfaction in Swiss adolescent boys and girls by testing a theoretical model describing how body shame, body surveillance, internalization of the media body ideal and perceived pressure from media are associated with body dissatisfaction.

Many studies about body dissatisfaction have been conducted in the US, Australia and Great Britain. A recent study about Swiss adolescents' health has also demonstrated that body dissatisfaction was one of the major problems reported by Swiss adolescents. The Swiss Multicenter Adolescent Survey on Health 2002 (SMASH-2002; Narring et al. 2004) included a representative sample of 7,420 adolescents in the study. Dissatisfaction with appearance and with one's own body was reported by 40% of the girls and 18% of the boys. These prevalence rates of body dissatisfaction in Swiss adolescents are comparable with results from studies conducted in other Western countries such as the US and Great Britain. For example, Muth and Cash (1997) showed in their study of body dissatisfaction in adults that 40% of the females and 22% of the males reported body dissatisfaction. Wardle and Marsland (1990) reported similar results in a study of adolescents reporting that 53% of the girls and 28% of the boys were dissatisfied with their body.

Objectified body consciousness is a concept that has been proposed to explain why females tend to be more

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dissatisfied with their bodies than males (McKinley and Hyde 1996). According to McKinley and Hyde (1996), females are more likely than males to learn to view their bodies from an outsider's perspective. This external view of one's own body is termed 'objectified body consciousness'. Theories about the objectification of the body propose that the development of body dissatisfaction can partly be explained by the experience of sexual objectification that results in objectified body consciousness (Fredrickson and Roberts 1997; McKinley 1998; McKinley and Hyde 1996). Fredrickson and Roberts' (1997) objectification theory and McKinley and Hyde's (1996) objectified body consciousness construct are based on a social construction perspective and are highly comparable. Both theories assume that the female body compared to the male body is more likely to be looked at, evaluated and potentially objectified. According to these models, this objectification may lead to body dissatisfaction or even to disordered eating in women. McKinley and Hyde (1996) showed that two components of objectified body consciousness contributed to body dissatisfaction, body surveillance and body shame. Body surveillance (a similar construct to 'self-objectification' proposed by Fredrickson and Roberts 1997) describes self-monitoring of one's own appearance in terms of viewing one's own body as an outside observer. Body shame is defined as an emotion women may feel when one's own body does not conform to internalized body ideals (McKinley and Hyde 1996). It has been suggested that body surveillance can result in body shame by contributing to the realization of a discrepancy between one's own body and an internalized body ideal (Fredrickson and Roberts 1997; McKinley 1998). Empirical tests of this relationship have indicated that body surveillance predicted body shame (Noll and Fredrickson 1998; Slater and Tiggemann 2002; Tiggemann and Slater 2001; Tylka and Hill 2004). A third proposed component of objectified body consciousness, control beliefs, has not been shown to be correlated significantly with body dissatisfaction (McKinley and Hyde 1996), and nor have gender differences been found in control beliefs (McKinley 1998, 2006). Furthermore, control beliefs have not been found to significantly predict body dissatisfaction nor contribute to the explanation of gender differences in body dissatisfaction (McKinley 2006). Consequently, we are not conceptualizing appearance control beliefs as a component of objectified body consciousness in this study. From this point on, we define objectified body consciousness as body surveillance and body shame both within extant research and the present study.

Several studies have shown that women report higher objectified body consciousness than men and that in Western culture women learn to internalize an objectifying observer's perspective of their bodies more than men (Fredrickson et al. 1998; McKinley 1998, 2006; Tiggemann and Kuring

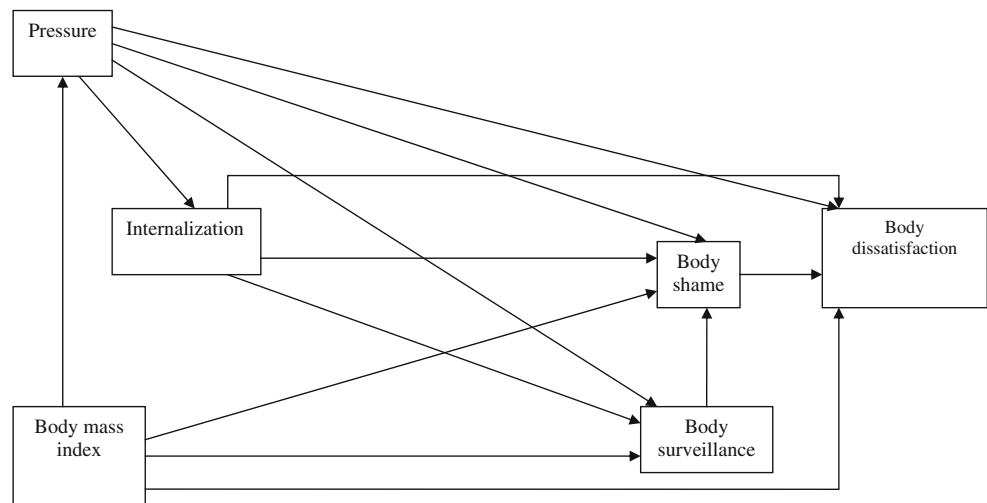
2004). McKinley (1998, 2006) found that gender differences in body esteem disappeared after controlling for objectified body consciousness and weight dissatisfaction (discrepancy between actual and ideal weight) in young adults. McKinley (1998) suggested that the ideal to which bodies are compared is an important factor for the explanation of these gender differences. Therefore, weight dissatisfaction was considered to account for gender differences in body dissatisfaction. One aim of this study was to replicate McKinley's (1998, 2006) results and to evaluate if gender differences in body dissatisfaction can be explained by objectified body consciousness (i.e., body surveillance and body shame) and weight dissatisfaction in Swiss adolescent boys and girls.

Objectified body consciousness has been shown to be associated with different psychological problems (Muehlenkamp and Saris-Baglama 2002) including disordered eating (Noll and Fredrickson 1998; Piran and Cormier 2005; Slater and Tiggemann 2002; Tiggemann and Slater 2001) and depressed mood (Tiggemann and Kuring 2004). However, to date only a limited number of studies have investigated the relationship between objectified body consciousness and body dissatisfaction (Forbes et al. 2006; McKinley 1998, 2006). In addition, little is known about the extent to which boys experience objectified body consciousness or about the manner in which it may contribute to body dissatisfaction in boys and girls.

Furthermore, earlier research has not consistently observed differential associations between objectified body consciousness and other psychological variables in boys and girls. Fredrickson et al. (1998) found that body surveillance led to increased body shame, and that body shame led to restrained eating in women, but not in men. However, Tiggemann and Kuring (2004) showed with a sample of undergraduate students that body surveillance was associated with depressive mood and disordered eating in both men and women. In this study, we aimed to examine relationships amongst body surveillance, body shame and body dissatisfaction in both boys and girls, and in light of the findings of Tiggemann and Kuring (2004), we aimed to test the same model in both boys and girls. In particular, we proposed that body shame would mediate the association between body surveillance and body dissatisfaction in both boys and girls (see Fig. 1). A variable functions as a mediator if it accounts for the relation between the independent and the dependent variable (Baron and Kenny 1986).

Factors that have also been proposed to be related to objectified body consciousness are internalization of the media body ideal (Forbes et al. 2006; Moradi et al. 2005) and perceived pressure from media to conform to the body ideal (Forbes et al. 2006; Tylka and Hill 2004). Internalization of the media body ideal is an adoption of a socially defined body ideal as a personal standard. The culturally

**Fig. 1** Proposed model predicting body dissatisfaction in adolescent boys and girls.



determined and internalized body ideal may lead to an increase in both components of objectified body consciousness, (i.e., body surveillance and body shame), when a person compares his or her own body with an internalized body ideal. Sinclair (2006) demonstrated in a sample of female undergraduate students that internalization of the media body ideal explains a significant proportion of variance in body surveillance, as well as in body shame and Moradi et al. (2005) found that internalization of the body ideal was significantly related to body surveillance and body shame. Although the relationship between objectified body consciousness and pressure to conform to the media ideal has not often been investigated, Tylka and Hill (2004) proposed that body shame can result from perceived pressure to be thin, without engaging in body surveillance. Therefore, we propose that internalization as well as pressure both predict body surveillance and body shame (Fig. 1).

Internalization of the media ideal and perceived pressure to conform to the ideal have not only been found to be predictors of objectified body consciousness, they have also been found to directly predict body dissatisfaction in female preadolescents and adolescents (Cafri et al. 2005; Sands and Wardle 2003; Stice and Bearman 2001). A meta-analysis of cross-sectional studies found that internalization has medium-to-large associations with body dissatisfaction (Cafri et al. 2005) in female samples. Several longitudinal studies have also provided empirical evidence that internalization of the thin ideal is a significant predictor of increases in body dissatisfaction, particularly for girls (Jones 2004; Stice and Bearman 2001; Stice and Whitenton 2002), although this relationship has not consistently been observed (Presnell et al. 2004). Perceived pressure has been shown to predict internalization, as well as body dissatisfaction (Stice and Bearman 2001). Therefore, we proposed that perceived pressure predicts internalization. In addition, we

proposed that perceived pressure and internalization are both direct predictors of body dissatisfaction (Fig. 1).

The final factor considered in our model of predictors of body dissatisfaction was body mass index (BMI). BMI has been shown to be an important predictive factor for body dissatisfaction (e.g., Barker and Galambos 2003; Jones 2004; Paxton et al. 2006; Presnell et al. 2004; Sands and Wardle 2003). In girls, larger body size has consistently been observed to predict greater body dissatisfaction. In boys, some studies have confirmed this relationship (Jones et al. 2004; Paxton et al. 2006; Ricciardelli et al. 2006) whilst others have not (Barker and Galambos 2003; Jones 2004; Presnell et al. 2004). Body dissatisfaction is mostly related either to a desire to lose or gain weight or to be more muscular (Cohane and Pope 2001; Smolak and Stein 2006; Smolak et al. 2001; Ricciardelli and McCabe 2001). It has been suggested that higher BMI is also associated with perceived pressure from media (Stice 2002; Stice and Whitenton 2002). In our model, it was proposed that BMI would predict body dissatisfaction in both boys and girls. We also proposed that boys and girls with a larger body size would perceive a greater discrepancy between their body size and the social ideal. Consequently, we proposed that boys and girls with higher BMI would perceive greater pressure from media, show higher body shame and higher body surveillance (Fig. 1).

Although it has been suggested that objectified body consciousness develops during adolescence, to date only a few studies have examined objectified body consciousness in adolescents (Lindberg et al. 2006; Slater and Tiggemann 2002). Research has shown that during puberty, girls begin to objectify their bodies (Fredrickson and Roberts 1997; Lindberg et al. 2006) and that younger women objectify their bodies more than older women (McKinley 2006; Tiggemann and Lynch 2001). Slater and Tiggemann (2002) have

suggested that objectification theory, although mainly used with undergraduate or adult samples, also appears to be appropriate for adolescents. Therefore we propose that the model illustrated in Fig. 1 describing relationships between internalization, pressure, objectified body consciousness, BMI and body dissatisfaction would be supported in an adolescent sample.

In summary, the main purpose of the present study was to examine the relationships amongst body surveillance, body shame, internalization, perceived pressure, BMI and body dissatisfaction in a large sample of Swiss adolescent girls and boys. It was hypothesised that: (1) adolescent girls would have higher objectified body consciousness (body surveillance and body shame) scores than adolescent boys; (2) gender differences in body dissatisfaction would disappear after controlling for body surveillance, body shame and weight dissatisfaction (discrepancy between actual and ideal weight) according to McKinley's (1998, 2006) findings; and (3) that the model proposed in Fig. 1, describing relationships amongst body surveillance, body shame, internalization of the media ideal, perceived pressure to conform to the ideal, BMI and body dissatisfaction would be supported in both adolescent boys and girls.

## Method

### Participants

Participants were 1,610 adolescents, 791 girls and 819 boys aged 14 to 16 years (total mean age=14.9 years,  $SD=.73$ ; girls' mean age=14.84,  $SD=.71$ ; boys' mean age=14.96,  $SD=.75$ ). Respondents were drawn from 58 public co-educational schools in the German-speaking part of Switzerland from a wide range of socioeconomic status areas. They were enrolled in Grades 7–10 and 92% of the sample attended 7th or 8th grade.

### Procedure

Schools were contacted, informed about the study and asked for permission to conduct the study. Parental consent was obtained and respondents were asked to participate in a study concerning how they feel about their body. Participants were informed that participation was voluntary. However, all students who were asked to be involved agreed to participate. All participating adolescents completed anonymous questionnaires in the classroom during a class period. A research assistant explained the procedure and the questionnaire and answered any questions. The class teacher was also present, but asked not to intervene, unless there were disciplinary problems. On average, it took participants between 20 and 30 minutes to complete the questionnaire.

## Measure

### *Body Dissatisfaction, Body Mass Index and Weight Dissatisfaction*

Body dissatisfaction was assessed with a combination of two measures. The Negative Body Evaluation subscale of the Body Image Questionnaire (Clement and Löwe 1996) contained ten items such as "Sometimes I wish I looked completely different" and "There is something wrong with my appearance". This scale assesses dissatisfaction with one's own appearance and one's own body. Items are rated from 1 (strongly disagree) to 5 (strongly agree). High scores were indicative of high body dissatisfaction. Clement and Löwe (1996) found this scale yielded internally reliable scores and showed satisfactory criterion validity in a sample of young adults. Body dissatisfaction was also assessed with 10-items from the Frankfurter Body Concept Scales (FBCS; Deusinger 1998), including items such as "I am satisfied with my appearance" and "I would like to change some parts of my body". These items were also rated from 1 (strongly disagree) to 5 (strongly agree). High scores were indicative of high body dissatisfaction. In a sample of adolescents and young adults, the FBCS has yielded internally reliable scores, good retest reliability and concurrent validity (Carigiet 2002; Deusinger 1998). Principal components analysis on the combined 20 items from the two body dissatisfaction measures was performed. Examination of the scree plot of eigenvalues suggested that, according to Catell's scree test (Catell 1966), the items loaded on one factor. Therefore, all items were summed to create one body dissatisfaction scale score (body dissatisfaction). All items were appropriate for both boys and girls as they did not refer to a gender specific body ideal. In this study, the internal consistency (Cronbach's alpha) of the resulting body dissatisfaction scale scores was  $\alpha=.94$  for girls and  $\alpha=.94$  for boys.

BMI ( $\text{kg}/\text{m}^2$ ) was calculated using self-reported weight and height. Participants were also asked to report their ideal weight in kg. Weight dissatisfaction was calculated by subtracting the actual weight in kg from the ideal weight in kg (similar to McKinley 1998, 2006).

### *Objectified Body Consciousness*

Objectified Body Consciousness was measured with a slightly modified version and German translation of the Objectified Body Consciousness Scale (OBC scale; McKinley 1998; McKinley and Hyde 1996). The body surveillance subscale of the OBC scale consisted of 11 items such as "During the day, I think about how I look many times". The second subscale of the OBC scale, body shame, consisted of 10 items such as "I feel ashamed of

myself when I haven't made the effort to look my best". Items were rated on a four-point scale from strongly disagree (1) to strongly agree (4). High scores were indicative of high body surveillance and of high body shame. A pilot study was conducted with 90 psychology students in which participants completed the questionnaires and were asked to comment on the items. Following the pilot study, the original scales of eight items were extended by items which were suggested by participants and had high face validity. Three items were added to the body surveillance subscale and two items to the body shame subscale. The seven-point response scale proposed by McKinley (1998) and McKinley and Hyde (1996) has been changed to a four-point response scale as participants in the pilot study indicated that a four-point scale is easier to answer for adolescent participants. Principal components analysis showed that the items loaded on the two expected factors. The OBC scale has been shown to yield reliable and valid scores for young women (McKinley and Hyde 1996) and men (McKinley 1998). For this sample the internal consistency (Cronbach's alpha) for the body surveillance subscale scores was  $\alpha=.76$  for girls and  $\alpha=.70$  for boys. For the body shame subscale scores the internal consistency was  $\alpha=.82$  for girls and  $\alpha=.74$  for boys.

#### *Internalization of Media Body Ideals and Perceived Pressure from Media*

Internalization of the media body ideal was assessed with a German translation of the Sociocultural Attitudes Towards Appearance Questionnaire internalization subscale (Heinberg et al. 1995; Smolak et al. 2001). The internalization subscale has a girls' version which includes items such as "Women who appear in TV shows and movies have the type of appearance that I see as my goal" and a boys' version which contains items such as "I believe that clothes look better on muscular men". Following our pilot study that included all eight items of the internalization scale, the items "I would like to look like the models in the magazines" and "I wish I looked like a swimsuit model" were reduced to one item "I wish I looked like a model" because the responses from the pilot study indicated that these items were regarded as repetitive. The item "I often read magazines like Cosmopolitan, Vogue, and Glamour and compare my appearance to the models" was excluded because of its low factor loadings in the study of Smolak et al. (2001) and because of its similarity to "I tend to compare my body to people in magazines and on TV". Therefore, the internalization subscale consisted of six instead of eight items in the original scale. Items were rated from 1 (strongly disagree) to 5 (strongly agree). High scores were indicative of high internalization. The internalization subscale has shown good internal consistency and acceptable concurrent validity by predicting the use of weight

control techniques in a sample of girls and muscle building techniques in a sample of boys (Smolak et al. 2001). Furthermore, the internalization subscale yielded scores demonstrating good test-retest reliability in a sample of adolescent girls (Schutz et al. 2002) and scores demonstrating good concurrent validity in a female sample (Griffiths et al. 1999). In this study, Cronbach's alpha was  $\alpha=.88$  for girls and  $\alpha=.84$  for boys.

Perceived pressure to achieve the media body ideal was assessed with a German translation and slightly modified version of the pressure subscale of the Sociocultural Attitudes Towards Appearance Scale-3 (Thompson et al. 2004). The scale contained items such as "I have felt pressure from TV or magazines to have a perfect body". Items were rated from 1 (strongly disagree) to 5 (strongly agree). Based on results of our pilot study, the number of items was reduced from 7 to 5. The boys' version differed on one item from the girls' version. Boys were not asked if they felt pressure from the media to diet because the first item assessed perceived pressure to lose weight. Instead they were asked if they felt pressure from the media to have a hairless body because hairless is besides muscular an additional characteristic of the current male body ideal promoted in advertisements. Advertisements released in Switzerland to promote hair removal products for men indicated that a hairless body is promoted by media. Muscularity seems not to be the only component of the male body ideal. Boroughs and Thompson (2002) showed in their qualitative study that body depilation, (i.e., reduction or removal of body hair below the neck) seems to be a novel body image issue for men. Findings of a quantitative study (Boroughs et al. 2005) about body hair removal in men supported this by indicating that 64% of the 118 men reported to be engaged in body depilation. These findings suggest that a hairless body is a new component of the male body ideal. The scale scores from a female sample have shown good internal reliability and convergent validity (Thompson et al. 2004). In the current study, Cronbach's alpha for the pressure subscale scores was  $\alpha=.89$  for girls and  $\alpha=.85$  for boys.

## **Results**

Descriptive characteristics for body dissatisfaction, body surveillance, body shame, internalization, pressure, BMI and weight dissatisfaction are presented in Table 1. An independent *t*-test showed that girls had significantly higher body dissatisfaction than boys, the difference indicative of a medium effect size of  $d=.72$  (Cohen 1988; Table 1). In support of hypothesis 1, girls showed significantly higher objectified body consciousness than boys. They had higher body surveillance and higher body shame with medium and small effect sizes (body surveillance:  $d=.59$ ; body shame:  $d=.40$ ).

**Table 1** Means and standard deviations for variables for girls and boys.

Variable	Scale range <sup>a</sup>	Girls		Boys		<i>t</i>	<i>df</i>	<i>d</i>
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Body dissatisfaction	20–100	47.46	15.00	37.10	11.63	15.44***	1483	.72
Body surveillance	11–44	29.96	5.63	26.41	5.77	12.48***	1602	.59
Body shame	10–40	18.41	5.77	16.25	4.91	8.06***	1544	.40
Internalization	6–30	13.37	6.00	11.30	5.10	7.47***	1542	.37
Pressure	5–25	11.69	5.25	8.58	4.21	13.08***	1509	.34
BMI	–	20.43	3.02	20.64	2.90	–1.38	1529	.07
Weight dissatisfaction	–	–3.76	4.85	.21	7.89	–10.38***	912	.59

\*\*\**p*<.001<sup>a</sup> Low scores indicate low levels of the attribute described

Girls internalized the media ideal significantly more (*d*=.37), perceived more pressure from media (*d*=.34) and also reported higher weight dissatisfaction than boys (*d*=.59). The mean BMI of girls and boys did not significantly differ.

Table 2 shows correlations between variables for girls and boys separately. For girls, there was no significant correlation between BMI and body surveillance. The correlations between internalization and BMI as well as between weight dissatisfaction and body surveillance were significant but low. All other variables correlated significantly with each other and the strengths of these correlations were medium to large. In boys, the correlation between BMI and body surveillance was not significant and the correlations between BMI and all other variables were low. The correlation between weight dissatisfaction and body surveillance was not significant and the correlation between weight dissatisfaction and body shame, pressure and internalization were

low. All other variables correlated significantly with each other with medium to high strength.

#### Explaining Gender Differences in Body Dissatisfaction

To test hypothesis 2, that the gender differences in body dissatisfaction could be explained by objectified body consciousness and weight dissatisfaction, a hierarchical multiple regression analysis was performed after McKinley (1998, 2006) with body dissatisfaction as the criterion variable, and objectified body consciousness, weight dissatisfaction and gender as predictor variables (Table 3). Objectified body consciousness (body surveillance and body shame) was entered in the first step, weight dissatisfaction in the second, and gender in the third step. In the third equation, all three predictor variables were still significant predictors of body dissatisfaction. Therefore, after controlling for objectified

**Table 2** Correlations amongst variables for girls and boys.

	1	2	3	4	5	6	7
Girls							
1. Body dissatisfaction	–						
2. Body surveillance	.44***	–					
3. Body shame	.71***	.47***	–				
4. Internalization	.62***	.59***	.51***	–			
5. Pressure	.61***	.54***	.61***	.71***	–		
6. BMI	.38***	.04	.30***	.22***	.29***	–	
7. Weight dissatisfaction	–.50***	–.15***	–.44***	–.42***	–.40***	–.77***	–
Boys							
1. Body dissatisfaction	–						
2. Body surveillance	.33***	–					
3. Body shame	.64***	.39***	–				
4. Internalization	.38***	.42***	.47***	–			
5. Pressure	.41***	.41***	.49***	.55***	–		
6. BMI	.26***	–.02	.15***	.07*	.12**	–	
7. Weight dissatisfaction	–.34***	–.03	–.27***	–.08*	–.16***	–.50***	–

\**p*<.05; \*\**p*<.01; \*\*\**p*<.001

**Table 3** Summary statistics for multiple regression analyses predicting body dissatisfaction from gender, objectified body consciousness and weight dissatisfaction.

	Model 1		Model 2		Model 3	
	$\beta$	$t$	$\beta$	$T$	$\beta$	$t$
Body surveillance	.19***	8.34	.19***	8.86	.15***	7.05
Body shame	.61***	26.73	.52***	22.75	.52***	23.38
Weight dissatisfaction			-.24***	-11.35	-.20***	-9.30
Gender					-.15***	-7.22
$R^2$	.50		.55		.57	
$R^2\Delta$	.50		.05		.02	

\*\*\* $p < .001$

body consciousness variables and weight dissatisfaction, gender was still a unique significant predictor of body dissatisfaction. Interestingly, objectified body consciousness explained a large proportion of the variance in body dissatisfaction, whereas weight dissatisfaction added only 5% and gender only 2% of the variance.

**Test of Proposed Model of the Prediction of Body Dissatisfaction**

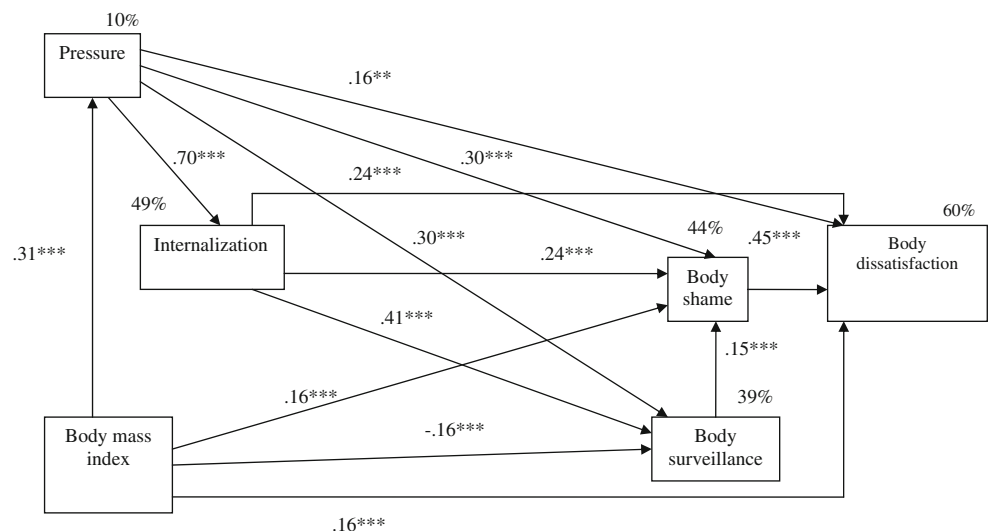
To test hypothesis 3, that there would be support for our proposed theoretical model presented in Fig. 1, the fit of the model was examined for boys and girls separately using structural equation modelling (SEM) using AMOS (Arbuckle 1999). Path analysis was used to analyze the data with total scale/subscale scores serving as indicators for their respective observed variable. The two models were estimated using covariance matrices and maximum likelihood estimation. The fit indices used to evaluate the model fit were chi-square values, root mean square error of approximation (RMSEA), goodness of fit index (GFI), normed fit index (NFI) and comparative fit index (CFI). A RMSEA value at or above .10 indicates a poor model fit, a value between .05 and .09 indicates a fair model fit and a value below .05 indicates a

close model fit. All other indices should be above .90 for an acceptable model fit, but preferably above .95 (Hu and Bentler 1999).

In girls, the proposed model showed good fit to the data. The goodness of fit indices for the girls' model were  $\chi^2_{(2)} = 2.79$  ( $p = .25$ ,  $N = 751$ ), RMSEA = .023, GFI = .999, NFI = .999 and CFI = 1.00. Figure 2 presents the standardised regression weights of the paths for the girls. The model explained 60% of the variance in body dissatisfaction, 44% of the variance in body shame, 49% of the variance in internalization, 39% of the variance in body surveillance and 10% of the variance in pressure. All paths in the proposed model were significant ( $p \leq .01$ ) with the exception of the non-significant path between body surveillance and body dissatisfaction. A chi-square difference test has been calculated to identify whether the trimmed model was not significantly different from the original model. The results showed that the chi-square difference was non-significant  $\chi^2_{diff}(1, N = 767) = 1.53$ ,  $p < .01$ . Consequently, the trimmed, more parsimonious model has been chosen and this path was removed from the girls' model. It was unexpected that the path between BMI and body surveillance was negative.

In boys, the proposed model (Fig. 1) also showed good fit to the data. The goodness of fit indices for the boys' model

**Fig. 2** Path standardized regression weights and percentage of variance explained for the model for the girls. \*\* $p \leq .01$ , \*\*\* $p \leq .001$ .



were  $\chi^2_{(2)} = 1.66$  ( $p=.44$ ,  $N=767$ ),  $RMSEA=.000$ ,  $GFI=.999$ ,  $NFI=.999$  and  $CFI=1.00$ . Figure 3 presents the standardized regression weights of the paths for the boys. The model explained 44% of the variance in body dissatisfaction, 31% of the variance in body shame, 30% of the variance in internalization, 28% of the variance in body surveillance and 2% of the variance in pressure. All paths in the proposed model were significant ( $p \leq .05$ ) with the exception of a non-significant path between internalization and body dissatisfaction. A chi-square difference test has been calculated. The results showed that the chi-square difference was non-significant  $\chi^2_{diff}(1, N=751)=2.43$ ,  $p < .01$ . Consequently, the trimmed, more parsimonious model has been chosen and this path was removed from the boys' model. It was unexpected that the path between BMI and body surveillance was negative.

### Indirect Effect between Body Surveillance and Body Dissatisfaction

A bias-corrected bootstrap analysis was performed to test the statistical significance of the indirect effect between body surveillance and body dissatisfaction (Mallinckrodt et al. 2006; Shrout and Bolger 2002). Bootstrap data-resampling procedures were used to establish confidence intervals for testing the statistical significance of the indirect effect. The sampling distribution of the indirect effect is not symmetrical. The use of bootstrap analysis allows developing an empirical specification of the sampling distribution, without the sampling distribution of indirect effects having to be symmetrical. We requested 1,000 bootstrap samples and chose a 95% confidence interval. The results of the bootstrap analysis showed that the 95% confidence interval of the standardized indirect effect did not include zero (see Table 4). Therefore, we can conclude that the indirect effect

**Table 4** Bootstrap analysis of magnitude and statistical significance of indirect effect between body surveillance → body shame → body dissatisfaction for girls and boys.

	$\beta^a$	95% confidence interval <sup>b</sup>
Girls	$(.15) \times (.45) = .0678$	.034, .108*
Boys	$(.14) \times (.52) = .0728$	.038, .107*

\* $p < .01$

<sup>a</sup> Standardized path coefficient and product

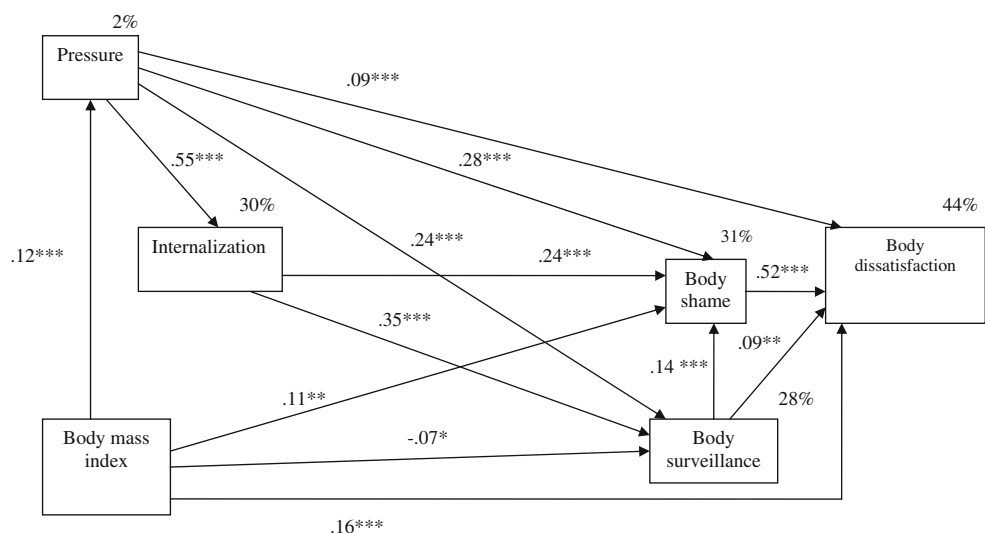
<sup>b</sup> Confidence interval for standardized indirect effect

between body surveillance and body dissatisfaction is statistically significant at the .01 level in both boys and girls and that the relationship between body surveillance and body dissatisfaction was fully mediated in girls and partially mediated in boys.

### Discussion

The present study extended previous research by examining the prediction of body dissatisfaction by objectified body consciousness variables, body surveillance and body shame, internalization of the body ideal, perceived pressure and BMI in both adolescent boys and girls. In support of our first hypothesis, girls showed higher objectified body consciousness (body surveillance and body shame) than boys. However, we did not replicate the findings of McKinley (1998, 2006) in our adolescent sample. After controlling for objectified body consciousness and weight dissatisfaction, gender was still a significant predictor of body dissatisfaction. Consistent with our third hypothesis, our findings provided support for our proposed model in both boys and girls. The same pattern of relationships was observed for the boys except the direct relationship between internaliza-

**Fig. 3** Path standardized regression weights and percentage of variance explained for the model for the boys. \* $p \leq .05$ , \*\* $p \leq .01$ , \*\*\* $p \leq .001$ .





tion and body dissatisfaction was not significant and the relationship between body surveillance and body dissatisfaction was not fully mediated by body shame. The amount of variance in body dissatisfaction explained by the path model provides support for its predictive value, especially in girls. In boys and girls, 44% and 60% of the variance of body dissatisfaction respectively, was explained by the variables.

The gender differences in objectified body consciousness have been supported in our study with girls showing higher body shame and higher body surveillance than boys. According to the objectified body consciousness theory and findings of several studies (Fredrickson et al. 1998; McKinley 1998, 2006; Tiggemann and Kuring 2004), girls internalize an objectifying observer's perspective more than boys. As noted earlier, McKinley and Hyde (1996) suggested that higher objectified body consciousness in girls results from sexual objectification of the female body. Consistent with this theory, a recent American Psychological Association task force examining sexualisation of girls in media and advertising, confirmed that sexualisation of girls can have negative consequences such as eating disorders, low self-esteem, depressed mood and body dissatisfaction (APA 2007). However, although gender differences in objectified body consciousness were supported by our results, from this study it is not possible to conclude that these differences are the result of the experience of sexual objectification. Further research is needed to identify how different media sources such as internet, television and magazines contribute to sexual objectification and to investigate the effects of sexual objectification on body dissatisfaction.

The concept of objectified body consciousness was developed to contribute to the explanation of gender differences in body dissatisfaction (McKinley and Hyde 1996). The findings of the present study suggest that objectified body consciousness is a significant predictor of body dissatisfaction. However, contrary to studies of adults (McKinley 1998, 2006), in our study of adolescents, objectified body consciousness variables and weight dissatisfaction did not fully explain gender differences in body dissatisfaction. Therefore, it must be assumed that additional factors contribute to these gender differences. One factor could be levels of self-esteem. It has been shown that girls report lower self-esteem compared to boys (e.g. Frost and McKelvie 2004) and that self-esteem is a significant prospective predictor of body dissatisfaction in girls (Paxton et al. 2006). Forbes et al. (2001) also suggested in their study of gender differences in body dissatisfaction that differences in levels of global self-esteem may be an explanatory factor.

In our model, the relationship between body surveillance and body dissatisfaction was mediated by body shame. This observation was similar to previous findings where the relationship between body surveillance and disordered eating (as distinct from body dissatisfaction) was mediated by body

shame (Noll and Fredrickson 1998; Slater and Tiggemann 2002; Tiggemann and Slater 2001; Tylka and Hill 2004), and suggests that monitoring the body is significantly related to body shame which is related to body dissatisfaction. This relationship between body surveillance and body dissatisfaction was fully mediated in girls and partially mediated in boys and shows that boys and girls differed in the way body surveillance was related to body shame and body dissatisfaction. It could be that monitoring one's own body and comparing it to a more unrealistic body ideal results in a fully mediated relationship between body surveillance and body dissatisfaction in girls compared to boys. In addition, the two components of objectified body consciousness were predicted by internalization of ideals in both boys and girls. The prediction of body shame and body surveillance by internalization is consistent with findings of previous research (Sinclair 2006). As proposed by Tylka and Hill (2004), our findings suggest that perceived pressure from media is uniquely related to body shame. Sociocultural influences such as pressure and internalization might lead to an increase in an external view of one's own body which finally may lead to body dissatisfaction. However, causal directions cannot be confirmed in our cross-sectional data.

Internalization was also a direct predictor of body dissatisfaction but only in girls. In boys, internalization of the media body ideal did not significantly predict body dissatisfaction. This could suggest that boys, who have been found to internalize the media body ideal to a lesser degree than girls (Knauss et al. 2007), are not as strongly influenced by these ideals and don't compare their bodies with these ideals to the same extent as girls. Consistent with previous research (Stice and Bearman 2001), perceived pressure from media predicted body dissatisfaction and internalization of the media body ideal.

BMI predicted body dissatisfaction in adolescent boys and girls, unlike in previous studies (Barker and Galambos 2003; Jones 2004; Presnell et al. 2004), in which BMI was not a consistent predictor of body dissatisfaction in boys. BMI might be becoming a more significant factor for boys' body dissatisfaction. This might be due to growing attention to physical appearance and weight issues in boys. Interestingly, the proposed relationship between BMI and pressure was significant in boys and in girls. Therefore, the extent to which girls and boys perceive pressure from the media does seem to be related to their actual body size in terms of BMI. An unexpected result was that although BMI and body surveillance were not directly correlated there was a negative relationship between these variables in our model. It might be that boys and girls with larger body size actively avoid surveillance of their body to protect themselves against experiencing a discrepancy between body ideal and actual body. The relationship between BMI and body surveillance needs to be further explored in future studies.

A number of limitations of this study need to be considered. Due to the cross-sectional design used, although the model suggested possible directional relationships amongst variables, it is not possible to confirm causal pathways and further prospective research is needed in order to do this. In addition, in terms of generalizability of the results, it is relevant to point out that this study was conducted in a large sample of Swiss adolescents. It is unclear to what extent findings from this sample generalize to other cultural environments. However, Switzerland is a Western country with very similar sociocultural influences as the US. Further, German translations of the SATAQ subscales and the OBCS were used and the question may arise, whether these concepts are likely relevant to Swiss adolescents. However, Switzerland is a Western culture and, therefore, there is no particular reason to assume that the findings could not be generalised to other Western cultures or that the scales would not be appropriate. A further limitation of this study is that the items have not been back-translated. However, the translations were made by a fluent German and English speaker. Minor modifications of scales, as described in the method section, could mean that extant reliability and validity data do not necessarily generalize to the modified scales. However, only minor modifications have been made and internal consistencies (Cronbach's alphas) of the measures were moderate to high for nearly all subscales with the exception of the subscale body surveillance (Girls:  $\alpha=.76$ ; boys:  $\alpha=.70$ ) and the subscale body shame for boys ( $\alpha=.74$ ). A final methodological consideration is the high correlation amongst some variables. Notably, the model we tested was built on theories of body dissatisfaction proposed in the literature and the measures used were specifically designed to test the variables outlined in these theories. Future research could further explore ways in which these variables could be operationalized.

In summary, the findings demonstrate that although objectified body consciousness and weight dissatisfaction do not fully explain gender differences in body dissatisfaction it is an important variable in relation to body dissatisfaction. Future studies should further investigate gender differences in body dissatisfaction to inform effective ways to provide both girls and boys with skills to manage the influence of media body ideals with the aim of reducing body dissatisfaction and its negative consequences.

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