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Gender, Pubertal Development, and Peer Sexual Harassment Predict Objectified Body Consciousness in Early Adolescence

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Objectified body consciousness (OBC)—the tendency to view one's body as an object for others to look at and evaluate—is theorized to emerge during sexual maturation as adolescents, particularly adolescent girls, experience sexual objectification. Although OBC generally is discussed in developmental terms, research so far has examined primarily the experiences of undergraduates and adults. Our goal in this study was to examine early adolescent experiences with OBC and to explicitly test the idea that OBC is linked to experiences of sexual objectification, such as peer sexual harassment, that early adolescents face as their bodies reach maturity. We tested several structural models of OBC and its relation to puberty, peer sexual harassment, and negative body experience. The prevailing model supported OBC theory's premise that pubertal development and peer sexual harassment increase adolescent girls' tendency toward self-surveillance, which in turn leads to greater body shame. Several pathways in the model were not significant for boys.

The amplification of adolescents' body image concerns is one of the most well-documented phenomena in adolescence research. As they reach adolescence, children become more aware of their bodies (e.g., Truby & Paxton, 2002), experience greater concern about weight and more body dissatisfaction (e.g., Adams et al., 2000; Stice, 2003), and many engage in unhealthy behaviors to control their bodies (e.g., Labre, 2002; Striegel-Moore & Cachelin, 1999). These changes in body attitudes have

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been linked to psychological distress, most commonly depression (e.g., Angold, Costello, & Worthman, 1998) and disordered eating (e.g., Graber, Brooks-Gunn, Paikoff, & Warren, 1994; Stice, Agras, & Hammer, 1999).

Although changes in adolescents' body image are well documented, less is known about the process by which adolescents become ashamed of their bodies. We argue that *objectified body consciousness* (OBC)—the tendency to view one's body as an object for others to look at and evaluate—plays a key role in this process and partially explains how adolescents become vulnerable to negative body image and disordered eating. The current study examined a structural model of early adolescents' experiences with OBC and tested process variables thought to mediate the relation between pubertal development and body shame.

OBC

OBC theory (McKinley & Hyde, 1996; see also objectification theory, Fredrickson & Roberts, 1997) posits that adolescents, especially adolescent girls, experience increasing amounts of sexual objectification by others as their bodies develop. Over time, the experience of being chronically objectified by other people leads some adolescents to internalize the other's perspective. That is, they begin to view themselves as objects to be looked at and evaluated, and they perceive their bodies in terms of their outward appearance instead of their subjective experience. This phenomenon is called OBC. People with high levels of OBC internalize cultural standards of appearance, engage in body-monitoring thoughts and behaviors, and experience heightened body shame when they believe that their appearance does not match cultural standards (McKinley & Hyde, 1996). In the literature, the term OBC has been used interchangeably with the term self-objectification. In this article, we use the term OBC to refer to an overall state of mind marked by the internalization of others' perspectives and the view that one's body is an object to be looked at and evaluated.

McKinley and Hyde (1996) theorized three components of OBC: self-surveillance, body shame, and appearance control beliefs. Here, we use these terms to refer to the measurable cognitive and affective manifestations of OBC. *Self-surveillance* is the primary, cognitive, and behavioral manifestation of OBC. It occurs when a person monitors his or her body and views it as an outsider. Self-surveillance is marked by recurrent thoughts about appearance and habitual self-checking to see if the body is aligned with cultural standards. *Body shame* is the secondary, affective component of OBC. It occurs when a person feels shame because he or she believes that the body does not conform to cultural standards. Finally, *appearance control beliefs* represent the extent to which a person

believes that he or she can control the body's appearance. Control beliefs moderate a person's response to the other components of OBC, determining whether self-surveillance and body shame lead to negative outcomes like disordered eating or depression. Appearance control beliefs are not well developed in early adolescence, perhaps because most early adolescents still lack experience trying to control their appearance (Lindberg, Hyde, & McKinley, 2006), so our model of OBC in early adolescence focuses exclusively on self-surveillance and body shame.

OBC is related to but distinct from body esteem and body dissatisfaction, which have received more attention in the adolescent literature (for reviews, see Feingold & Mazzella, 1998; Stice, 2003). Specifically, OBC is a type of self-perception—i.e., the tendency to perceive the self in terms of the body's outward appearance instead of its subjective experience—rather than an affective evaluation of the body. Furthermore, self-surveillance, the primary behavioral component of OBC, provides an explanatory mechanism for how negative affect about the body (e.g., negative body esteem, body dissatisfaction, body shame) develops. Finally, although the body shame component of OBC is similar to body esteem and body dissatisfaction, research shows that they are empirically distinct (e.g., Lindberg et al., 2006).

Many correlational studies and a few experiments have linked OBC to negative outcomes in undergraduates and adults. These negative outcomes include low body esteem (McKinley, 1998, 1999; McKinley & Hyde, 1996; Noll & Fredrickson, 1998), depressive symptoms (Miner-Rubino, Twenge, & Fredrickson, 2002; Muehlenkamp & Saris-Baglama, 2002), restrictive or disordered eating (Fredrickson, Roberts, Noll, Quinn, & Twenge, 1998; McKinley, 1999; Muehlenkamp & Saris-Baglama, 2002; Noll & Fredrickson, 1998), sexual dysfunction (Wiederman, 2000), and low psychological well-being (McKinley, 1999).

TOWARD A MODEL OF OBC IN EARLY ADOLESCENCE

OBC is thought to develop during adolescence in conjunction with pubertal maturation, but this assumption has never been tested explicitly. However, related research supports the theorized relations between OBC and factors that are thought to contribute to its development. Thus, these studies provide some insight into the processes by which OBC might develop and suggest process variables that might cause adolescents to monitor their bodies and develop body shame. In particular, research consistently has linked pubertal maturation to body image concerns and described pubertal status and pubertal timing as potential risk factors for

the development of psychological distress (Weichold, Silbereisen, & Schmitt-Rodermund, 2003). Previous studies suggest several mechanisms through which pubertal maturation could lead to body shame.

First, pubertal growth and weight gain move girls away from their ultrathin body ideal. The increase in body fat associated with puberty (i.e., increased body mass index, or BMI) is associated with adolescents' body image concerns (e.g., Graber et al., 1994; Stice & Whitenton, 2002). Thus, we expected BMI to partially mediate the relation between pubertal development and body shame.

Second, the physical changes of puberty might enhance adolescents' self-focus by increasing the salience of physical appearance. Research in adults has shown that situations that make physical appearance salient increase self-surveillance and body shame. For example, undergraduate women and men report greater body shame when wearing a form-fitting swimsuit than when wearing a sweater (Fredrickson et al., 1998; Hebl, King, & Lin, 2004). Similarly, exercising in front of a mirrored wall makes people feel worse about themselves after exercising, whereas those who exercise without mirrors feel better (Ginis, Jung, & Gauvin, 2003). Insofar as the physical changes of puberty increase adolescents' awareness of their bodies, we expected that self-surveillance would mediate the relation between pubertal development and body shame.

A final reason why pubertal maturation would be linked to body shame is that visible manifestations of puberty (e.g., breast development, growth spurts) draw increased peer attention and harassment. Peer sexual harassment is a salient form of sexual objectification, in which adolescents first experience evaluative comments about their value as potential sexual partners or experience other actions that call attention to their developing bodies. Peer sexual harassment is a normative part of adolescence (American Association of University Women Educational Foundation, 2001), and the amount of harassment received during sixth–eighth grades increases in relation to increasing pubertal status, for both boys and girls (McMaster, Connolly, Pepler, & Craig, 2002). Research is just beginning to examine the long-term effects of sexual harassment in adolescence, but among adults there is evidence that women who experience sexual harassment are at greater risk for developing poor body esteem (Harned, 2000). In fact, merely anticipating a male gaze increases body shame in undergraduate women (Calogero, 2004). Therefore, we expect that the experience of being chronically objectified by other people as the victim of peer sexual harassment would lead adolescents to internalize the others' perspective, increasing self-surveillance and, ultimately, body shame. Thus, we expected peer sexual harassment to partially mediate the relation between pubertal development and body shame, by increasing self-surveillance.

The theories of OBC and self-objectification have argued that OBC is an issue primarily for women, because women are more often the targets of sexual objectification than men (Fredrickson & Roberts, 1997; McKinley & Hyde, 1996). So far, research with undergraduates and adults has supported this assumption (e.g., McKinley, 1998). Although some men do experience OBC, women typically report greater self-surveillance and body shame than men. Thus, we expected gender differences in some aspects of early adolescents' experiences with OBC. Specifically, research suggests that the effects of puberty differ for boys and girls. In both sexes, we expected pubertal development to increase BMI, peer sexual harassment, and self-surveillance, for the reasons outlined above. However, in contrast to girls' negative affective experiences with puberty, boys pubertal growth and weight gain aid their attainment of the hypermasculine, hypermuscular male body ideal (Labre, 2002) and therefore boys tend to be more satisfied with their development than girls (e.g., Richards, Boxer, Petersen, & Albrecht, 1990). Therefore, we did not expect boys' pubertal development to be linked to body shame, as we expected for girls.

THE CURRENT STUDY

In the current study, our primary goal was to better understand the relations between OBC and factors hypothesized to influence its development. As outlined above, theory posits that OBC is a product of body awareness provoked by the physical changes of puberty and the social consequences (e.g., sexual objectification) that come with sexual maturation. Our hypothesized model (see Figure 1) reflected these assumptions. Specifically, we expected that pubertal development would lead to more self-surveillance, both directly and by increasing peer sexual harassment. In addition, we hypothesized that the increase in body fat

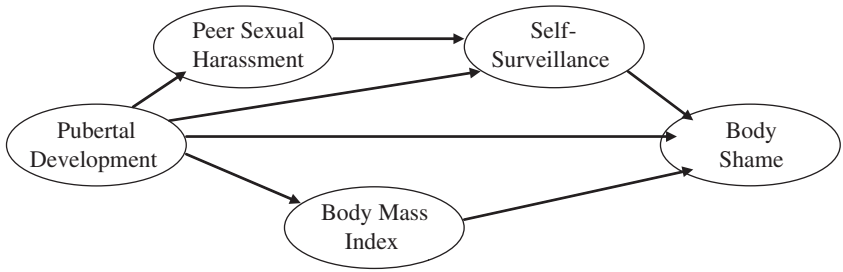

FIGURE 1 Hypothesized model.

associated with puberty would predict body shame. Finally, as has been shown in previous research (e.g., Noll & Fredrickson, 1998), we predicted that self-surveillance would lead to body shame. Because puberty has different effects on girls and boys, as discussed above, we expected the hypothesized model to fit better for girls than for boys, with some pathways not significant for boys. In particular, we expected that boys would not show a direct link between pubertal development and body shame.

A second goal of the study was to examine process variables related to OBC in early adolescence. Consistent with the rationale described above, we expected self-surveillance and BMI to mediate the relation between pubertal development and body shame. We also expected peer sexual harassment to partially mediate the relation between pubertal development and self-surveillance.

METHOD

Participants

Participants were 316 early adolescents (166 girls, 150 boys) who are part of the ongoing, longitudinal Wisconsin Study of Families and Work (originally called the Wisconsin Maternity Leave and Health Project; Hyde, Klein, Essex, & Clark, 1995). All families in the study originally were from either the Milwaukee or Madison areas of Wisconsin. The majority of participants were White (90%), with 4% African American, 2% Hispanic, 2% American Indian, and 1% Asian American. Participants received $25 for participating. Data for the present study were collected when children had just completed fifth grade. Participants' mean age at time of assessment was 11.2 years (range 10–12). This age was chosen because disordered eating and body image problems begin to emerge during early adolescence (e.g., Woodside & Garfinkel, 1992), and participants therefore should display a baseline level of OBC, which would be expected to increase as they enter and progress through adolescence. Moreover, at age 11, many girls are well along in pubertal development and some have begun to menstruate. Individual differences in pubertal maturation at this age make it ideal for studying correlates of pubertal development in girls.

Procedure

During an in-home visit, which lasted approximately 1 hour, participants completed numerous measures on a laptop computer. Computer administration of sensitive measures has been demonstrated to yield more

extensive and accurate reporting by children and adolescents than traditionally administered questionnaires (e.g., Turner et al., 1998). Measures included pubertal maturation, peer sexual harassment, self-surveillance, and body shame. Participants also completed numerous questionnaires unrelated to the present study.

Measures

Pubertal maturation. To assess pubertal development, participants rated their pubertal development using schematic drawings of Tanner stages (Morris & Udry, 1980), which show moderate to high correlations with Tanner stages obtained from physical exams and are more feasible than physical exams for large-scale field studies (Dorn, Dahl, Woodward, & Biro, 2006). Each Tanner scale depicts five stages of development for some dimension of pubertal maturation, with stage 1 representing completely immature, childlike features and stage 5 representing completely mature, adultlike features (Marshall & Tanner, 1969, 1970). Participants select the picture that most closely resembles their bodies. Girls completed measures of breast growth and pubic hair growth. Boys completed measures of genital growth and pubic hair growth. A composite was created by computing the mean of these two scores. Girls' pubertal development was distributed as follows: 7% stage 1, 37% stage 1.5 or 2, 30% stage 2.5 or 3, 23% stage 3.5 or 4, 2% stage 4.5 or 5. For boys: 5% stage 1, 63% stage 1.5 or 2, 28% stage 2.5 or 3, 4% stage 3.5 or 4, 0% stage 4.5 or 5.

BMI. BMI is a ratio between weight and height, and it correlates with body fat (Pietrobelli et al., 1998). The height and weight of each participant were measured during an in-home assessment in the spring of their fifth-grade year. These measurements were used to calculate each participant's BMI. BMI = weight in kilograms/(height in meters)^2.

Peer sexual harassment. Participants' experiences with peer sexual harassment victimization were assessed using items from the AAUW Sexual Harassment Questionnaire (American Association of University Women Educational Foundation, 2001). The questionnaire lists 14 types of harassment that participants might have experienced, and asks, ''has anyone done this to you'' in the past year? We selected and administered 9 of the original 14 items that were age appropriate for our sample. Target events include others having ''made sexual comments, jokes, gestures, or looks'' and ''said you were gay or lesbian.'' Participants indicated whether the target event had happened *often*, *occasionally, rarely,* or *never*. A score was created by counting the number of items that the participant reported happening to him or her in the past year.

Self-surveillance. Participants' self-surveillance was assessed using the surveillance subscale of the OBC Scale for Youth (OBC-Y; Lindberg et al., 2006). The four-item subscale contains items such as ''during the day, I think about how I look many times'' and ''I often worry about whether the clothes I am wearing make me look good.'' Participants rated their agreement with each item on a 7-point scale from 1 (*strongly disagree*) to 7 (*strongly agree*) or indicated that the item did not apply to them. A composite was created by computing the mean of the items. Higher scores indicated greater self-surveillance. The surveillance subscale of the OBC-Y has demonstrated strong test–retest reliability (.81) and validity (Lindberg et al., 2006). In the current study, internal consistency was .88.

Body shame. Participants' body shame was assessed using the body shame subscale of the OBC Scale for Youth (OBC-Y; Lindberg et al., 2006). The five-item subscale contains items such as ''I would be ashamed for people to know what I really weigh'' and ''I feel ashamed of myself when I have not made an effort to look my best.'' Participants rated their agreement with each item on a 7-point scale from 1 (*strongly disagree*) to 7 (*strongly agree*) or indicated that the item did not apply to them. A composite was created by computing the mean of the items. Higher scores indicated greater body shame. The body shame subscale of the OBC-Y has demonstrated adequate test–retest reliability (.62) and high validity (Lindberg et al., 2006). In the current study, internal consistency was .79.

RESULTS

Preliminary Analyses

Table 1 contains descriptive data for all variables included in the estimated models. Girls reported significantly more self-surveillance and were farther along in their pubertal development than boys. However, there was no gender difference in the rate of peer sexual harassment experienced by girls and boys. Nor were there gender differences in BMI or body shame. As can be seen from the table, the pattern of correlations between pubertal development and the proposed outcome variables was notably different for girls and boys. Therefore, separate models were estimated for girls and boys using multigroup structural equation modeling (SEM).

SEM

All models were estimated using EQS (Bentler, 1995) with variance–covariance matrices serving as input. Missing data were handled with

TABLE 1
Descriptive Statistics for Variables Included in the Models

	OBC Self-Surveillance	*OBC Body Shame*	*Pubertal Development*	*Body Mass Index*	*Peer Sexual Harassment*
OBC self-surveillance		.56**	.47**	.16	.26**
OBC body shame	.52**		.37**	.55**	.28**
Pubertal development	− .10	.09		.34**	.19*
Body mass index	− .04	.16	.02		.11
Peer sexual harassment	.39**	.33**	.06	.01	
Mean for girls	3.78 ± 1.60	2.64 ± 1.32	2.59 ± .93	19.08 ± 3.73	1.11 ± 1.62
Mean for boys	3.06 ± 1.54**	2.49 ± 1.22	2.16 ± .62**	19.38 ± 3.66	1.51 ± 1.78
d	.49	.12	.55	− .08	− .24

Note. Values above the diagonal are zero-order correlations for girls; values below are zero-order correlations for boys. Asterisks by means signify mean gender differences. d = effect size. A positive d indicates that girls scored higher on the variable. OBC, objectified body consciousness.

*$p < .05$; **$p < .01$.

expectation-maximization (EM) imputation (Jamshidian & Bentler, 1999) to preserve sample integrity (Acock, 2005; Schafer & Graham, 2002). Multiple fit indices were used as guides to evaluate goodness-of-model fit: the Normed Fit Index, the Non-Normed Fit Index (NFI and NNFI, respectively; Bentler & Bonett, 1980), the Comparative Fit Index (CFI), and the root mean squared error of approximation (RMSEA). χ^2 goodness-of-fit statistics and the χ^2 : degrees of freedom ratio are also reported. A satisfactory fit is indicated by a nonsignificant χ^2 or a χ^2 lower than double the degrees of freedom (significant χ^2 are acceptable when the sample size is large; Carmines & McIver, 1981), a CFI value $>.95$, and RMSEA values $<.06$ (Hu & Bentler, 1999).

In the measurement portion of our model, we specified two latent variables (i.e., self-surveillance and body shame), each identified by three indicators. Because using more than three indicators per latent variable tends to yield poor fitting measurement models (Chorpita, 2002), item parcels were created. Several procedures for collapsing items have been suggested (e.g., Kishton & Widamen, 1994). In the present study, item parcels (in this case, a simple composite of two items) were created for the self-surveillance and body shame scales in order to arrive at three parcels. Item parcels tend to be more normally distributed than individual items, and therefore are recommended for SEM models (West, Finch, & Curran, 1995). Because sexual harassment experiences better fit the measurement

assumptions associated with causal indicators (and hence were not suitable for modeling as a latent variable; Bollen & Lennox, 1991; Loehlin, 1998), we used a count of the number of items that the adolescent endorsed as a manifest indicator of peer sexual harassment. BMI and pubertal development were specified as one-item manifest indicators. Questions regarding the measurement model were not of substantive interest, so those aspects of the model are omitted from the figures for the sake of simplicity.

Processes Linking Pubertal Development to Body Shame in Early Adolescence

Our hypothesized model suggests that, during early adolescence, pubertal development is linked to body shame, and that relation is mediated by several process variables. In one pathway, BMI partially mediates the relation between pubertal development and body shame. In a second pathway, peer sexual harassment partially mediates the relation between pubertal development and self-surveillance, and self-surveillance partially mediates the relation between pubertal development and body shame. To test each of these predictions, we conducted a series of mediation analyses, with separate models estimated for girls and boys using multigroup SEM.

Monte Carlo research suggests that the Baron and Kenny (1986) approach to testing mediation has low statistical power to detect effects relative to product of coefficients tests (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). However, given the wide acceptance of the Baron and Kenny method for testing mediation, both the Baron and Kenny criteria and a product of coefficients test (Sobel, 1990) were used in this study.

To test whether BMI mediates the relation between pubertal development and body shame, we first estimated models (one each for girls and boys) of the direct effect of pubertal development on body shame. The multigroup model indicated a significant difference between the groups. Results showed that pubertal development predicts body shame among girls ($\beta = .37$, $p < .05$) but not boys ($\beta = .13$, $p > .05$). Given that this direct relation was only significant among girls, boys were dropped from subsequent steps of the mediation analyses, because a mediated effect cannot be demonstrated if there is no relation between the independent and dependent variables. Next, a model was estimated in which girls' pubertal development simultaneously predicted BMI and body shame, and BMI predicted body shame. Results of this model showed that pubertal development predicts BMI, and BMI predicts body shame.

Finally, to test whether the effects of pubertal development on body shame were reduced or no longer significant after controlling for BMI, we compared the magnitude of the effect of pubertal development on body shame between the first ($\beta = .37$, $p < .05$) and second ($\beta = .25$, $p < .05$.) models. Results of the mediation tests indicate that BMI partially mediates the relation between girls' pubertal development and body shame ($t = 3.17$, $p < .01$).

Next, we tested whether peer sexual harassment mediates the relation between pubertal development and self-surveillance. We first estimated the direct effect of pubertal development on self-surveillance for girls ($\beta = .45$, $p < .05$). Then, a model was estimated in which girls' pubertal development simultaneously predicted peer sexual harassment and self-surveillance, and peer sexual harassment predicted self-surveillance. Results of this model showed that pubertal development predicts peer sexual harassment, and peer sexual harassment predicts self-surveillance. Finally, to test whether the effects of pubertal development on self-surveillance were reduced or no longer significant after controlling for peer sexual harassment, we compared the magnitude of the effect of pubertal development on self-surveillance between the first ($\beta = .45$, $p < .05$) and second ($\beta = .41$, $p < .05$.) models. Results indicate that the mediating effect of peer sexual harassment on self-surveillance is marginally significant ($t = 1.79$, $p = .07$).

Finally, we tested whether self-surveillance mediates the relation between pubertal development and body shame. A model was estimated in which girls' pubertal development simultaneously predicted self-surveillance and body shame, and self-surveillance predicted body shame. Results of this model showed that pubertal development significantly predicts self-surveillance, and self-surveillance predicts body shame. Finally, to test whether the effects of pubertal development on body shame were reduced or no longer significant after controlling for self-surveillance, we compared the magnitude of the effect of pubertal development on body shame between the first ($\beta = .37$, $p < .05$) and second ($\beta = .11$, $p > .05$.) models. Results indicate that self-surveillance mediates the relation between pubertal development and body shame ($t = 4.04$, $p < .001$).

An Overall Model of OBC in Early Adolescence

Next, to examine the overall structural relations among OBC and its hypothesized causes, a series of structural equation models were estimated to test our hypothesized model of OBC in early adolescence (see Figure 1). In the hypothesized model, pubertal development and peer sexual

harassment were hypothesized to predict self-surveillance, and pubertal development was also hypothesized to predict BMI. In addition, pubertal development, BMI, and self-surveillance were hypothesized to predict body shame (see Figure 1).

As discussed in the previous section, boys' pubertal development did not directly predict body shame. Nevertheless, we retained boys in this analysis. Given that there was no mean difference in boys' and girls' body shame, a multigroup comparison of the overall model allowed us to test whether factors besides pubertal development were predicting boys' body shame.

To do this, we compared two simultaneous between-group models: one in which the parameter estimates for the model's structural pathways were unconstrained and could vary across gender groups (model 1) and one in which they were constrained to be equal across groups (model 2). In both models, measurement parameters were constrained to be equal across groups. Fit indices are reported in Table 2. Results showed that constraining the structural pathways significantly decreased model fit, $\Delta\chi^2(6) = 31.06$, $p < .001$, indicating that the structural parameters should be allowed to vary (i.e., the pathways differed for girls and boys).

Examining the parameter estimates led us to test one possible change in model structure. Specifically, because pubertal development did not directly predict body shame for girls when the mediators were in the model (and it never did for boys), we tested a model that removed the nonsignificant path between pubertal development and body shame (model 3). Compared with model 1, removing that pathway did not significantly change model fit, $\Delta\chi^2(2) = 5.69$, $p > .05$ (see Table 2). Therefore, we selected the more parsimonious, trimmed model shown in Figure 2.

Comparison of the parameter estimates for girls and boys reveals that girls generally demonstrate the predicted pattern of OBC in early

TABLE 2
Goodness-of-Fit Statistics for the Hypothesized Models

Model Specified	χ^2	*df*	χ^2/df	*NFI*	*NNFI*	*CFI*	*RMSEA*
1. Unconstrained model	71.76	61	1.17	.94	.99	.99	.03
2. Constrained model	102.82**	67	1.53	.91	.96	.97	.06
3. (Final) trimmed model	77.45	63	1.23	.94	.98	.99	.04

Note. Constrained model means that structural parameters were constrained to be equal for boys and girls. NFI, Normed Fit Index; NNFI, Non-Normed Fit Index; CFI, Comparative Fit Index; RMSEA, root mean squared error of approximation.

**$p < .01$.

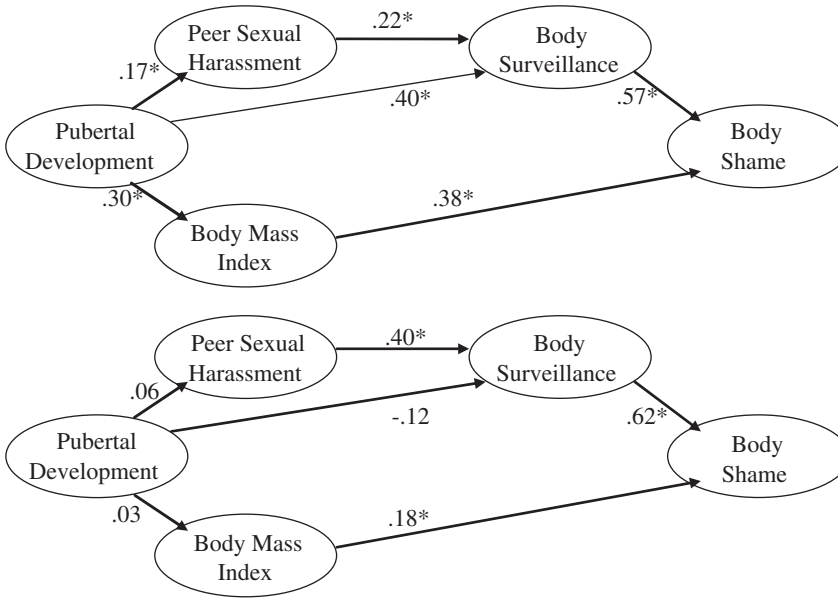

FIGURE 2 Final model of objectified body consciousness in early adolescent girls (top) and boys (bottom).

adolescence whereas boys experience a somewhat different pattern. According to the overall model, girls' pubertal development positively predicts peer sexual harassment, BMI, and self-surveillance. In turn, peer sexual harassment and BMI predict body shame; BMI does so directly, and harassment does so indirectly by increasing self-surveillance. In contrast, boys' pubertal development does not predict self-surveillance or body shame, and it is unrelated to peer sexual harassment and BMI. As with girls, BMI and peer harassment positively predict boys' body shame: BMI does so directly, and harassment does so indirectly by increasing self-surveillance.

DISCUSSION

OBC—the tendency to view one's body as an object to be looked at and evaluated—is theorized to emerge during pubertal maturation as adolescents, especially adolescent girls, experience sexual objectification and then begin to objectify themselves. This study represents the first explicit test of this theory. As such, it aims to help elucidate the process by which adolescents, particularly girls, become vulnerable to negative body image

and disordered eating. Our goal was to examine OBC in the early stages of its development and, specifically, to develop a model of how OBC relates to the physical and social changes of early adolescence. Our findings provide insight into early adolescents' experiences with OBC.

Previous studies of OBC in adults identified significant gender differences, with women reporting more self-surveillance and body shame than men (e.g., McKinley, 1998). Our data indicate that these differences emerge at an alarmingly young age. By age 11, girls report significantly more self-surveillance than boys. However, there was no significant gender difference in body shame at this age. We offer two potential explanations for this finding. First, because body shame is higher in adult women than men, it may be that this difference simply has not emerged yet. A number of studies have suggested that body shame mediates the relation between surveillance and negative outcomes like disordered eating (e.g., Fredrickson et al., 1998). If gender differences in body shame emerge later in adolescence, then that would provide strong support for a causal model whereby self-surveillance leads to body shame, which in turn leads to negative outcomes. Alternatively, the increasingly prevalent objectification of men's bodies in Western media may be creating a generation of boys who are as ashamed of their bodies as previous generations of women have been.

With regard to process variables involved with OBC in early adolescence, structural equation models revealed an overall structure linking pubertal development, peer sexual harassment, and BMI to self-surveillance and body shame in girls, with only some of the links supported for boys. However, the best fitting model suggested gender differences in the strength of relationships among those variables. Girls demonstrated the pattern predicted by OBC theory. That is, girls' pubertal development predicts a higher BMI, more peer sexual harassment, and greater self-surveillance, despite the fact that these girls had only just finished fifth grade. Greater BMI leads to body shame, and peer harassment also increases body shame indirectly by increasing self-surveillance. Boys experience a different pattern. Their pubertal development is not associated with self-surveillance or body shame, at least at this early stage of adolescence. However, as with girls, BMI and peer sexual harassment positively predict boys' body shame. BMI predicts boys' body shame directly, whereas peer sexual harassment predicts boys' body shame indirectly through increased self-surveillance.

Mediation analyses demonstrated processes associated with OBC in early adolescence. Consistent with the overall structural equation model, BMI and self-surveillance mediated the relation between girls' pubertal development and body shame. Peer sexual harassment, although related

to both pubertal harassment and self-surveillance, was only a marginally significant mediator of that relation. Given that boy's pubertal development is not linked to self-surveillance or body shame, these mediating processes do not operate for boys.

These findings support several tenets of OBC theory. As the theory posits, sexual objectification, in the form of peer sexual harassment, is linked to adolescents' experiences of self-surveillance and body shame. Participants of both genders reported frequent experiences of sexual objectification. For both girls and boys, peer sexual harassment was a strong predictor of self-surveillance, which in turn was linked to body shame. This is consistent with previous research showing that peer sexual harassment is experienced by adolescents of both genders and negatively impacts boys and girls alike (McMaster et al., 2002). However, it contradicts some theorizing on OBC, which has postulated that sexual objectification is more prevalent and thus has greater negative impact on women than on men. Peer sexual harassment, of course, is not the only form of objectification that girls experience. The media are another major factor (Ward & Harrison, 2005).

As in previous studies, BMI was linked to body shame. Even at this young age, adolescent boys and girls seem aware of the cultural ideal for thinness, and are ashamed of their bodies when they do not match that ideal.

One important gender difference highlighted by our study challenges the notion that OBC develops as a product of sexual objectification experienced by adolescents as their bodies develop during puberty. Although our study supports the idea that adolescents' experiences with sexual objectification (i.e., harassment) predict self-surveillance and body shame, those experiences of harassment are linked to pubertal development only in girls. As OBC theory predicts, girls' pubertal development is linked to greater sexual objectification, self-surveillance, and body shame. However, for boys, pubertal development did not predict experiences of peer sexual harassment, self-surveillance, and body shame. Thus, the model of OBC development appears to work well for girls. However, it appears that puberty does not play a role in boys' OBC, at least at this stage of early adolescence.

Nevertheless, it would be premature to conclude that puberty is unrelated to boys' OBC. One possibility is that boys and girls develop OBC in similar ways, but we do not see links to boys' pubertal development in this sample because 11-year-old boys are not sufficiently advanced in their development to produce strong, visual manifestations of puberty. Boys' pubertal development typically lags behind girls' by about 2 years (Sun et al., 2002) so it is possible that pubertal development will be positively related to OBC as boys grow older and develop more fully. For example,

studies with older adolescents have found pubertal development to be related to peer sexual harassment in both genders (McMaster et al., 2002), so perhaps this relation is absent for boys because of the younger age of our sample and will emerge later in adolescence.

Even if peer sexual harassment is related to boys' pubertal development later in adolescence, the cognitive and affective consequences of pubertal development may be different for boys and girls. In some respects, puberty may have the opposite effect on boys as it does on girl, because boys' development is often perceived positively whereas girls' development is not (e.g., Richards et al., 1990). Therefore, boys whose pubertal development is delayed may be the ones who will experience the greatest OBC. Because the height and muscle mass attained at puberty move boys closer to the culturally ideal masculine body, it seems plausible that early maturing boys would experience the least body shame and boys whose growth is delayed would experience the most. Further research is needed to explore these possibilities.

Limitations

The primary limitation of the current study is that the data are correlational and cross-sectional. As such, they do not allow a direct test of the causal hypotheses posited by OBC theory, and inferences about the causes and consequences of OBC are necessarily tentative. Nonetheless, naturally occurring variations in pubertal development at this age strengthen the case that developmental processes are being observed.

A second limitation is that, compared with girls, the boys in this study are earlier in pubertal development and show less variation in pubertal stage. It is possible that in 1 or 2 years they will display effects similar to those observed in girls.

A third limitation of this study is the ethnic homogeneity of its participants. Meta-analytic research shows that ethnic differences in women's body dissatisfaction generally are small, but they peak during adolescence (Grabe & Hyde, 2006). Among adults, African Americans report less trait-level OBC than Caucasians, Asian Americans, and Hispanics (Hebl et al., 2004). Thus, the mean levels of OBC reported in this study may not generalize to all adolescents, perhaps overestimating the levels of OBC experienced by some ethnic groups. On the other hand, state-level OBC can be induced by experiences that force attention on appearance, and that effect is robust regardless of race or gender (Hebl et al., 2004). Further complicating the issue is the fact that pubertal timing varies across ethnic groups (Sun et al., 2002). Thus, whether the relation of

OBC to pubertal development and peer sexual harassment is similar across ethnic groups is a question for further research. Further research also should examine what processes provide African American women with some protection against body dissatisfaction, and whether these effects occur in adolescence.

CONCLUSION

This study tested and supported several tenets of OBC theory. The cross-sectional results are consistent with a model in which girls who are more advanced in pubertal development are more often victims of peer sexual harassment, which we believe is a highly salient form of sexual objectification. In turn, and as predicted, greater peer sexual harassment victimization is associated with higher levels of self-surveillance, which is linked to body shame. In a separate path, more advanced pubertal development for girls is linked to greater BMI, which also is associated with elevated body shame. Girls report more self-surveillance than boys, even at age 11.

For boys, stage of pubertal development is not associated with greater peer sexual harassment victimization or greater BMI. However, for boys as for girls, greater exposure to peer sexual harassment is associated with higher levels of self-surveillance, which is linked to greater body shame.

The important next step will be to study these processes longitudinally and with adolescents who are a year or two older.

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