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Media Exposure, Extracurricular Activities, and Appearance-related Comments as Predictors of Female Adolescents’ Self-objectification

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Abstract

Our study examined three potential predictors of self-objectification in female adolescents, namely media exposure, extracurricular activities, and appearance-related comments (both positive and negative). Participants were 1087 female adolescents ranging in age from 12–16 years-old who completed questionnaire measures of media exposure (television, magazines, Internet, and social networking), time spent on extracurricular activities, positive and negative appearance-related comments, self-objectification, self-surveillance, body shame, and disordered eating. Tests of the hypothesized path model revealed that self-reported exposure to magazines and social networking sites each independently was associated positively with self-objectification. In addition, positive appearance-related comments were shown to be associated positively with self-objectification. On the other hand, time spent on extracurricular activities was not related to self-objectification. The results offer support for the role of media exposure and appearance-related comments in the development of self-objectification in female adolescents. In particular the results suggest that positive appearance-related comments (compliments) may be just as, or even more, likely to give rise to self-objectification as negative appearance-related comments. The findings suggest practical strategies for the potential protection of the development of self-objectification and its deleterious consequences.

*Keywords:* objectification, body image, eating disorders, media exposure, adolescent development, interpersonal influences
Media Exposure, Extracurricular Activities, and Appearance-related Comments as Predictors of Female Adolescents’ Self-objectification

Although the links between self-objectification and proposed consequences such as body shame and disordered eating have now been widely supported, less attention has been paid to factors that may predict or precede self-objectification. The current study aims to extend existing knowledge by examining three potential predictors of self-objectification that form part of the socio-cultural environment of female adolescents: media exposure, extracurricular activities, and appearance-related comments. Attempting to understand situations in which self-objectification may occur, and specifically highlighting factors that may contribute to or protect against self-objectification, is essential in order to identify mechanisms for disrupting the development of this particular and harmful view of self.

Objectification Theory

Objectification theory, as formalised by Fredrickson and Roberts (1997), provides a theoretical framework for investigating the consequences of living in a society that sexually objectifies women and girls. According to the theory, the repeated experience of sexual objectification gradually socializes women and girls to begin to view themselves as objects to be evaluated on the basis of their appearance. Over time, this can lead women and girls to adopt an observer’s perspective of their own bodies, a construct referred to as self-objectification. Self-objectification is described as a form of self-consciousness characterised by frequent and habitual self-monitoring of one’s outward appearance (or self-surveillance). Far from being harmless, self-objectification and its behavioural manifestation of self-surveillance are proposed to promote a number of negative psychological consequences, namely increased body shame and appearance anxiety as well as decreased
awareness of internal bodily states and “flow” experiences. These, in turn, are suggested to contribute to depression, sexual dysfunction, and eating disorders—three mental health outcomes that occur at a disproportionately higher rate among women and girls.

Over 15 years of research has now provided considerable evidence for many of the propositions outlined in objectification theory. The majority of the work has examined the role of self-objectification (and/or its corollary self-surveillance) in disordered eating and has utilized samples of undergraduate women (for reviews see Moradi, 2010; Moradi & Huang, 2008; Tiggemann, 2011). However, an increasing amount of research has now explored these concepts in more diverse samples, including older women (e.g., Augustus-Horvath & Tylka, 2009; Gripp & Hill, 2008; Tiggemann & Lynch, 2001) and clinical samples of women with eating disorders (Calogero, Davis, & Thompson, 2005; Fitzsimmons-Craft, Bardone-Cone, & Kelly, 2011). From this body of research there is now sufficient evidence to conclude that body shame and appearance anxiety at least partially mediate the relationship of self-objectification or self-surveillance with disordered eating (Tiggemann, 2013).

Objectification in Adolescence

One particular group that is important to our understanding of self-objectification is female adolescents. Indeed, Fredrickson and Roberts (1997) originally argued that the onset of puberty, when bodies begin to mature, is the time when girls’ bodies become increasingly looked at, commented on, and evaluated by others. Given the physical changes that occur during this period, as well as adolescents’ increase in self-awareness and preoccupation with image (Harter, 1999), it is likely that adolescence is a critical period for the development of self-
objectification. The American Psychological Association’s (2007) report on the sexualisation of girls noted the dearth of research on the effects of self-objectification in girls, although there is now a small but increasing body of work with this population.

In one of the first studies to examine the concept of self-objectification in an adolescent sample, Slater and Tiggemann (2002) found levels of self-objectification in a small sample of Australian female adolescents (averaging 14.3 years-old) comparable to those for adult women. Further, as in adult samples, the relationship between self-objectification (and self-surveillance) and disordered eating was at least partially mediated by body shame and appearance anxiety. Since this study, links between self-surveillance and body shame have been demonstrated in younger American girls (mean age = 11.2 years; Grabe, Hyde, & Lindberg, 2007; Lindberg, Grabe, & Hyde, 2007; Strauss, Sullivan, Sullivan, Sullivan, & Wittenberg, in press), and self-objectification has been shown to be higher in older female adolescents than in younger female adolescents (Harrison & Fredrickson, 2003). More recently, in a larger sample of Australian female adolescents, Slater and Tiggemann (2010) confirmed aspects of the original model, with self-surveillance shown to relate to both body shame and appearance anxiety, which in turn related to disordered eating.

Predictors of Self-objectification

Although a great deal of work has now supported the links between self-objectification and its proposed psychological consequences, a much smaller body of work has focused on factors that may predict self-objectification. The identification of predictors of self-objectification is crucial to determine ways in which girls might halt its development and thus its harmful consequences. Indeed, after calling for more research on self-objectification in children, the American Psychological Association’s (2007) second recommendation was that research attempt to
understand the circumstances under which self-objectification occurs and specifically to identify factors that either contribute to or protect against self-objectification in girls. It is this critical need that the present study aims to address.

One potential precursor of self-objectification that has received some research attention is what may be loosely termed “experiences of sexual objectification.” Experimental studies have examined the effect of situations that heighten sexual objectification by, for example, trying on a swimsuit in front of a mirror (Fredrickson, Roberts, Noll, Quinn, & Twenge, 1998), exposure to a sexualised gaze (Calogero, 2004; Gervais, Vescio, & Allen, 2011), or overhearing appearance-related comments (Gapinski, Brownell, & LaFrance, 2003). Further, reading beauty magazines (Harper & Tiggemann, 2008; Morry & Staska, 2001), watching music videos or other sexually objectifying television (Aubrey, 2006a; Grabe & Hyde, 2009), exercising at a gym or fitness centre (Prichard & Tiggemann, 2005; Slater & Tiggemann, 2006), and being a member of a sorority (Basow, Foran, & Bookwala, 2007) have all shown some links with either self-objectification or self-surveillance. Sexual objectification experiences have been examined further by Kozee and colleagues including the development of the Interpersonal Sexual Objectification Scale (Kozee & Tylka, 2006; Kozee, Tylka, Augustus-Horvath, & Denchik, 2007) and the investigation of unwanted sexual advances or peer sexual harassment or teasing (Hill & Fischer, 2008; Lindberg et al., 2007; Petersen & Hyde, 2013). Importantly however, the majority of this work on the experiences of sexual objectification has been conducted using adult college-aged women (for a more thorough review see Moradi & Huang, 2008).

The current study sought to build upon this body of work by examining three potential predictors of self-objectification in female adolescents: the media to which they are exposed (including television, magazines, and the Internet), the extracurricular activities in which they
participate (e.g., sports, dancing, church groups), and the frequency of appearance comments (both positive and negative) that they receive (from other girls, boys, and parents). As reviewed next, these three factors contribute to the socio-cultural environment in which contemporary female adolescents live. As such, they can be construed as common everyday experiences of sexual objectification that should be examined together in an adolescent sample. The following sections will briefly review each of the potential predictors in turn, with a particular emphasis on findings with adolescent samples.

**Media Exposure**

Fredrickson and Roberts (1997) suggested that one of the most common means of perpetuating sexual objectification is through the visual media. Indeed, they argued that the media’s constant focus on female bodies and body parts seamlessly aligns viewers with an implicit sexualising gaze. If so, it would follow that viewing images of the sexualised female body can acculturate girls and women to self-objectify. A surprisingly small number of studies have investigated the role of media images in self-objectification, with most focusing on the potential influence of magazine or television images.

In studies with adult women, exposure to objectifying magazine content has been associated with self-objectification cross-sectionally (Morry & Staska, 2001), longitudinally (Aubrey, 2006a), and experimentally (Harper & Tiggemann, 2008). Exposure to objectifying television has also shown a relationship to self-objectification in two separate studies by Aubrey (Aubrey, 2006a, 2006b). In the one study with female adolescents, Harrison and Fredrickson (2003) demonstrated increases in state self-objectification after brief experimental exposure to a video featuring lean female athletes, implicating sports media in particular.
Importantly, however, adolescents are increasingly turning to other forms of media than magazines and television, most notably the Internet. Both Australian (Australian Communications and Media Authority, 2009; Rideout, 2010) and American (Australian Communications and Media Authority, 2009; Rideout, 2010) adolescents spend an estimated average of 1.5 hours per day outside school on the Internet with online social networking, particularly Facebook (a globally popular online social networking service with over 1 billion active users), being an extremely popular activity for this age group (Rideout, 2010). Thus, the current study will add to the limited existing evidence on the role of media exposure on female adolescents’ self-objectification as well as expand the concept of media exposure to include television, magazines, the Internet, and social networking.

**Extracurricular Activities**

In their original articulation of objectification theory, Fredrickson and Roberts (1997, p.198) suggested that one way to inhibit the development of girls’ self-objectification would be to encourage sports participation and “related forms of physical risk taking, starting when girls are in early childhood and continuing through their adolescent years.” A recent prospective study by Slater and Tiggemann (2012) sought to empirically test this assertion by exploring the role of organised sport in the development of female adolescents’ self-objectification. Indeed, time spent playing organised sports (such as soccer, netball, and athletics [track and field]) was predictive of lower subsequent levels of self-objectification one year later in a sample of Australian female mid-adolescents, providing the first known empirical evidence of a protective mechanism against the development of self-objectification during adolescence.
Of course, girls and women participate in a wide variety of other physical activities which may differ considerably in their influence on self-objectification. For example, some studies with adult women have suggested that those who regularly participate in yoga exhibit lower levels of self-objectification (Daubenmier, 2005; Impett, Daubenmier, & Hirschman, 2006; Prichard & Tiggemann, 2008), whereas adult former ballet dancers (Tiggemann & Slater, 2001) and women who exercise at a fitness centre (Prichard & Tiggemann, 2005) have been shown to have higher levels of self-objectification.

The concept of embodiment may be helpful in elucidating some of the findings regarding different types of physical activities and self-objectification. Embodiment is defined as “an integrated set of connections in which a person experiences her or his body as comfortable, trustworthy, and deserving of respect and care because the person experiences her or his body as a key aspect of competence, interpersonal relatedness, power, self-expression, and well-being” (Menzel & Levine, 2011, p. 170). Menzel and Levine (2011) suggested that participating in embodying environments may protect girls and women from self-objectification. Athletics is noted as one example of an embodying activity, although sports and activities that are weight-focused or “lean” (including gymnastics, figure skating, and long-distance running) are highlighted as possibly enhancing the potential for self-objectification.

With the current study we aimed to extend the extant literature by examining the influence of a wide variety of extracurricular activities on self-objectification and its consequences. Here we included a range of physical activities such as organised sport and general fitness activities (i.e., “embodying” physical activities), as well as physical activities which have a strong emphasis on appearance and leanness such as classical
ballet, gymnastics, and exercising at a gym or fitness centre (i.e., “appearance-focused” physical activities), as well as other (non-body related) activities such as learning a musical instrument, singing or belonging to a church group.

**Appearance-related Comments**

The third potential antecedent factor we examined was appearance-related comments. Much research suggests that negative appearance commentary or “teasing” is strongly associated with body dissatisfaction, disordered eating, and poor psychological functioning in both adults (Thompson, Herbozo, Himes, & Yamamiya, 2005) and adolescents (M. E. Eisenberg, D. Neumark-Sztainer, J. Haines, & M. Wall, 2006). Although the research on positive comments is much more limited, somewhat paradoxically the evidence indicates that these too may have a negative impact on some women. That is, despite their complimentary nature, positive appearance comments serve as a reminder that others are evaluating our appearance and therefore may lead to a greater focus on appearance.

Two studies that have specifically investigated the impact of positive appearance-related comments on self-objectification have done so using samples of young adult women. Calogero, Herbozo, and Thompson (2009) found that both appearance criticisms and compliments were associated with higher self-surveillance and body dissatisfaction in American undergraduate women. In an experimental study, Tiggemann and Boundy (2008) found that for Australian undergraduate women who were high in self-objectification, an appearance compliment resulted in an increase in body shame. Thus it appears that positive comments (compliments) about appearance can have negative consequences, in accord with objectification theory’s proposition that anything that draws attention to external appearance can influence women and girls to self-objectify.
In one study of adolescents’ self-objectification, Slater and Tiggemann (2011) investigated male and female adolescents’ experiences of teasing specific to the sporting environment. Whereas female adolescents reported more teasing experiences than male adolescents, consistent with previous literature (Neumark-Sztainer et al., 2002), for both female and male adolescents these teasing experiences were related to self-objectification, surveillance, body shame, appearance anxiety, and disordered eating. It has yet to be shown whether general appearance-related teasing relates similarly to female adolescents’ self-objectification. The current study sought to extend upon these initial findings by examining the impact of both positive and negative appearance-related comments from a variety of different sources on female adolescents’ self-objectification.

The Current Study

In sum, we investigate the role of three potential predictors of self-objectification in female adolescents: media exposure, extracurricular activities, and appearance-related comments. A secondary aim of our study was to test components of the model of objectification theory proposed by Fredrickson and Roberts (1997) in a large sample of female adolescents. To achieve these two aims, we developed an integrative model whereby media exposure, extracurricular activities, and appearance-related comments were proposed to precede and predict self-objectification. More specifically, we predicted that all forms of media exposure (television, magazines, Internet, and online social networking), appearance-focused physical activities, and both positive and negative appearance-related comments would be positively associated with self-objectification. On the other hand, we predicted that embodying physical activities would be negatively associated with self-objectification. In addition, we proposed that appearance-related comments would relate positively with self-surveillance in accord with previous findings.
Finally, in accord with objectification theory, we expected self-objectification to relate positively with self-surveillance, and both self-objectification and self-surveillance were hypothesised to relate positively with body shame, which would in turn relate positively with disordered eating. Specifically, body shame was predicted to mediate the positive relationships of self-objectification and self-surveillance with disordered eating. The resulting integrative model is depicted in Figure 1.

Method

Participants

Participants were 1,087 female adolescents between 12 and 16 years-old (\(M = 13.68, SD = .70\)) who were in Year 8 (\(n = 514\)) and Year 9 (\(n = 573\)), which are the first two years of secondary schooling in South Australia. The female adolescents were recruited from 18 secondary schools across South Australia, covering metropolitan and rural as well as private and public schools. Socioeconomic status was estimated from their postcodes using the Socio-Economic Indexes for Areas (SEIFA) Index of Relative Socio-Economic Disadvantage (IRSD) calculated from Australian Census data (Australian Bureau of Statistics, 2008). This analysis resulted in a mean decile score of 5.61, equivalent to “middle class”, and a distribution (\(SD = 2.90\), range = 1–10) representing a spread of socioeconomic status across the Australian population. Although the participants were not explicitly asked to report their ethnicity, the overwhelming majority of students attending these schools were Caucasian. A language other than English was regularly spoken in 14.6% of homes (\(n = 159\)), with the most common languages being Greek (18.2%, \(n = 29\)), followed by Vietnamese (13.8%, \(n = 22\)). The adolescents had a mean height of 1.63m (\(SD = .08\)) and a mean weight of 54.24kg (\(SD = 10.29\)), resulting in a mean Body Mass Index (BMI; calculated as weight/height\(^2\)) of 20.34 (\(SD = 3.50\), range = 12.64–40.27). The majority were
classified as “normal weight” (79.2%, \( n = 730 \)), with 15.2% classified as overweight (\( n = 140 \)) and 3.1% as obese, (\( n = 29 \)) according to international cut-off points for BMI (Cole, Bellizzi, Flegal, & Dietz, 2000).

**Procedure**

The study protocol was approved by the Institutional Social and Behavioural Research Ethics Committee, the South Australian Department of Education and Children’ Services Research Unit and the Catholic Education Office. Permission for each school to participate was granted by the principal. Female adolescents in Years 8 and 9 (\( n = 2459 \)) were invited to participate in the study via a letter of introduction and consent form sent to their parents. Parental consent was obtained for 44.2% of all female adolescents. Student assent was also obtained immediately prior to questionnaire completion. The adolescents completed the questionnaire at school during class time in groups in the presence of the first author. The majority of schools (16 of the 18) chose for participants to complete a paper version of the questionnaire whereas participants from two schools completed the questionnaire online. The questionnaires took approximately 45 minutes to complete. At all schools, scales and stadiometers were provided to improve the accuracy of the self-reporting of height and weight. Participants were assured of the confidentiality and anonymity of their responses and received a debriefing sheet as well as some small tokens of appreciation for their participation (a pen and a lip balm).

**Measures**

The questionnaire asked about exposure to a variety of media, participation in extracurricular activities, and receipt of appearance-related comments, and included measures of self-objectification, self-surveillance, body shame, and disordered eating. The measures of proposed
predictors of self-objectification (media exposure, extracurricular activities, and appearance-related comments) were designed for our study whereas the remaining were tools with established psychometric qualities. The measures are presented here in the order in which they appeared in the questionnaire. See Table 1 for descriptive statistics for all study variables.

**Media exposure.** Participants were asked to report their exposure to television programs, magazines, the Internet, and social networking sites. For television exposure the participants were presented with a list of 20 popular television programs which encompassed a range of television genres (e.g., situation comedies, soap operas, reality programs, and music videos). Participants were asked to report the frequency with which they watched these programs on a scale from 0 (*never*) through 1 (*sometimes*) to 2 (*almost every time it is on*). These programs were generated using Australian ratings figures for females 13–17 years-old supplied by OzTam (2011), the official source of Australian television audience measurement. These 20 programs were rated for their focus on appearance (“high,” “medium,” “low”) by two independent raters (female psychology post-graduate students) who achieved complete agreement (*κ* = 1.0). Self-reported exposure to the ten programs that were rated as high in appearance-focus (e.g., *Two and a Half Men, Desperate Housewives, Home and Away, The Biggest Loser, and Video Hits*) were summed to create a television consumption score.

For magazine exposure, participants were presented with a list of 17 popular teen and women’s magazines (based on Australian readership figures, Roy Morgan Research, 2009) and asked to report the frequency with which they read these magazines on a scale from 0 (*never*) through 1 (*sometimes*) to 2 (*almost every time it is out*). As with the television measure, these magazines were rated for their focus on
The 11 magazines that were rated as “high” in appearance focus (e.g., Dolly, Cosmopolitan, Famous, Vogue) were included in our magazine consumption score.

Generic Internet use was measured by asking participants “How long on average do you spend on the Internet each day (NOT for homework) during the week (Monday–Friday)” and then again for “…on the weekend (Saturday and Sunday).” The response options for both questions were: none, 30 minutes or less, about 1 hour, about 2 hours, about 3 hours, about 4 hours, about 5 hours, 6 hours or more. These were recoded to represent hours, and weighted average daily internet exposure was calculated by summing weekday use (multiplied by 5) and weekend use (multiplied by 2) and then dividing this sum by 7.

Finally, the participants were asked whether or not they had a Facebook profile (no/yes), and if yes, “How much time do you spend on Facebook per day” (in minutes). Those with a profile were also asked whether their profile was public (i.e., anyone can see) or private (i.e., only “friends” can see). These three questions were repeated for MySpace (another popular online social networking site at the time of data collection). Daily time spent on social networking sites was calculated by summing the times spent on MySpace and Facebook, with those not having either site (n = 229, 21.1%) coded as zero.

**Extracurricular activities.** Participants were asked about their involvement in 11 different extracurricular activities which were classified by the authors as (a) embodying physical activities (organised sport; other fitness activities, e.g., running, walking, bike riding), (b) appearance-focused physical activities (classical ballet, gymnastics, exercising at a gym/fitness centre), or (c) other outside-school activities (learning a musical instrument, drama, singing, art/craft, church group, and membership of other groups such as Scouts and Rotary). The
adolescents were asked to indicate if they currently participated in each activity and, if so, to indicate, “Hours per week spent on this activity.” Total amount of time spent on each category (embodying physical activities, appearance-focused physical activities, other activities) was calculated by summing the times spent per week on individual activities within each category.

**Appearance-related comments.** Participants were asked a single question about the frequency with which they received negative appearance-related comments: “How often do people say negative comments about how you look? e.g., ‘You have bad skin,’ ‘You have a big bottom.’” This question was repeated across three different sources: “other girls,” “boys,” and “parents,” and its response options included 0 (never), 1 (sometimes), and 2 (a lot). Responses were summed across the three potential sources to give a range of negative appearance-related comments of 0 to 6.

Similarly, participants were asked a single question about the frequency with which they received positive appearance-related comments: “How often do people say positive comments about how you look? e.g., ‘You look hot,’ ‘I love your hair.’” Again, participants were asked to consider such comments from “other girls,” “boys,” and “parents.” Response options paralleled those for negative appearance-related comments with possible scores ranging from 0 to 6.

**Self-objectification.** Self-objectification was measured using Noll and Fredrickson’s (1998) Self-Objectification Questionnaire. This questionnaire measures individual differences in self-objectification by assessing the extent to which individuals view their bodies in objectified terms. Respondents are required to rank ten body attributes in terms of how important each is to their physical self-concept. Five of the attributes are appearance-based (weight, sex appeal, physical attractiveness, firm/sculptured muscles, and measurements), whereas the other five attributes
are competency-based (physical coordination, health, strength, energy level, and physical fitness level). An individual’s score is determined by calculating the difference between the sum of the appearance and competence rankings. Potential scores range from -25 to +25, with positive scores indicating a greater emphasis on appearance which is interpreted as greater self-objectification (Noll & Fredrickson, 1998). As an ipsative measure, it is not possible to calculate an internal consistency reliability for the Self-Objectification Questionnaire. However, construct validity has previously been demonstrated by moderate positive correlations with scores on the Appearance Anxiety Questionnaire and the Body Image Assessment (Noll & Fredrickson, 1998).

**Self-surveillance.** The Surveillance subscale of the Objectified Body Consciousness Scale-Youth (OBC-Y; Lindberg, Hyde, & McKinley, 2006) was used to measure self-surveillance. This scale consists of four items (e.g., “During the day, I think about how I look many times”) to which participants respond using a 7-point scale ranging from 1 (strongly disagree) to 7 (strongly agree). A “not applicable” option was also provided (scored as missing). Scores are averaged with high scores representing people who more frequently monitor their bodies. Lindberg et al. (2006) demonstrated evidence of internal consistency (α = .88), 2-week test-retest reliability (r = .81) and convergent validity (r = .64 with public self-consciousness) in their sample of young girls (aged 10-12 years). In the present sample, the coefficient alpha was .90.

**Body shame.** Body shame was measured by the Body Shame subscale of the OBC-Y (Lindberg et al., 2006). This scale consists of five items (e.g., “I feel like I must be a bad person when I don’t look as good as I could”) to which respondents rate their agreement on a 7-point scale ranging from 1 (strongly disagree) to 7 (strongly agree) (with a “not applicable” option scored as missing). Scoring was as for the Surveillance subscale with higher scores representing someone who feels that she is a bad person if she does not conform to the ideal body
standard. Lindberg et al. (2006) demonstrated evidence of internal consistency ($\alpha = .79$), 2-week test-retest reliability ($r = .62$) and convergent validity ($r = .51$ with public self-consciousness) in their sample of young girls (aged 10-12 years). In the present sample, coefficient alpha was .87.

**Disordered eating.** Disordered eating symptomatology was assessed via the Drive for Thinness subscale of the Eating Disorder Inventory (EDI; Garner, Olmstead, & Polivy, 1983). This subscale consists of 7 items (e.g., “I am terrified of gaining weight”) to which participants respond using a 6-point scale which ranges from 1 (never) to 6 (always). We used the entire range of possible scores rather than the original truncated scoring system (of 0–3) as recommended for non-clinical samples by Schoemaker, van Strien, and van der Staak (1994). This scoring resulted in a range of total possible scores from 7 to 42, with higher scores indicating greater drive for thinness. Garner et al. (1983) cited adequate internal consistency ($\alpha = .85$) in a sample of female undergraduate students (mean age 19.9 years), and demonstrated convergent validity with total scores on the Eating Attitudes Test ($r = .88$). The coefficient alpha in our study was .91.

**Results**

Data were examined for normality of distribution. Kline (2005) recommended transforming variables that contain absolute skewness values of >3 and kurtosis values of >10. Two variables (time spent on embodying physical activities and time spent on appearance-focused physical activities) had skewness and kurtosis values that fell outside the recommended range and were therefore transformed using a logarithmic transformation. Skewness and kurtosis values for all other variables were within the range recommended by Kline (2005) and were
therefore not transformed (skewness range = -.17 to 2.12; kurtosis range = -.61 to 6.80). Missing data ranged from a low of 0.09% for age to a high of 15.1% for Body Mass Index. Missing data were imputed using a fully conditional specification model in SPSS v. 20.

**Media Exposure and Self-Objectification**

Of the longer list of television programs presented to the participants, the most watched program was *Neighbours* (with 39.6% reporting they watched this show “almost every time it is on”), followed by *The Simpsons* (31.4%) and *So You Think You Can Dance* (26.3%). Of these, both *Neighbours* and *So You Think You Can Dance* were rated as “high” in appearance focus. Of the magazines listed, by far the two most widely read were *Girlfriend* (31.8% reported reading this “almost every time it comes out”) and *Dolly* (24.1%), both of which were rated “high” in appearance focus.

The adolescents typically used the Internet for recreation between 2 and 3 hours per day ($M = 2.30$, $SD = 1.63$). Average time spent on the Internet was greater on weekend days ($M = 2.47$, $SD = 1.82$) than on week days ($M = 2.23$, $SD = 1.76$), $t(1077) = 5.17, p < .001$. Three-quarters of the participants (75.1%, $n = 812$) reported having a Facebook profile, with 19.8% ($n = 159$) of these having a public Facebook profile. They spent an average of 92.29 minutes per day ($SD = 89.56$, range = 0-600) using Facebook. Just under half the participants (46.3%, $n = 498$) had a MySpace profile, with 17.2% ($n = 83$) of these having a public profile. These adolescents spent an average of 34.3 mins ($SD = 57.80$, range = 0-360) there per day. For the entire sample, average daily time spent on social networking sites (MySpace and Facebook combined) was 81.31 minutes ($SD = 99.20$, range = 0-840).
Table 1 presents the zero-order correlations between media exposure and self-objectification and related variables. Due to the large number of correlations, a Bonferroni correction was applied to decrease the probability of Type 1 error. Thus, a significance level of .001 was adopted. With the large sample size, this equates to a critical $r$-value of approximately .10. As can be seen in Table 1, all the media exposure variables were significantly positively related to self-objectification, self-surveillance, body shame, and disordered eating.

**Extracurricular Activities and Self-objectification**

More than half the participants (60.7%, $n = 660$) participated in some form of embodying physical activity (57.3% organised sports, 60.5% other fitness activities), 12.8% ($n = 139$) participated in appearance-focused physical activity (9.1% belong to a gym/fitness centre, 4.0% classical ballet, 3.5% gymnastics), and 52.3% ($n = 569$) participated in other activities (e.g., playing a musical instrument 29.5%, church group 12.8%). Overall, the adolescents spent an average of 3.40 hours a week ($SD = 5.54$) on embodying physical activities, 0.61 hours per week ($SD = 2.39$) on appearance-focused physical activities, and 0.80 hours per week ($SD = 0.94$) on other activities.

Table 1 also displays the correlations between extracurricular activities and self-objectification and its related variables. In contrast to the relationships with media exposure, it can be seen that no form of extracurricular activity showed a significant relationship with self-objectification, self-surveillance, body shame, or disordered eating.

**Appearance-related Comments and Self-objectification**

The adolescents reported receiving negative comments about appearance (teasing) similarly from other girls (3.9%, $n = 42$, “a lot”; 29.7%, $n = 320$, “sometimes”), boys (4.3%, $n = 46$, “a lot”; 27.7%, $n = 295$, “sometimes”) and parents (4.3%, $n = 46$, “a lot”; 25.2%, $n = 270$, “sometimes”).
“sometimes”), \( \chi^2 (2) = 1.34, p = 0.51 \). Positive comments about appearance (compliments) were not received similarly from all sources: other girls (28.1%, \( n = 302 \), “a lot”; 62.4%, \( n = 671 \), “sometimes”), boys (15.5%, \( n = 165 \), “a lot”; 49.9%, \( n = 532 \), “sometimes”), and parents (24.1%, \( n = 257 \), “a lot”; 56.5%, \( n = 603 \), “sometimes”), \( \chi^2 (2) = 11.81, p = .003 \). The significant chi-square result appears to be due to female adolescents being more likely to receive positive appearance comments from other girls and parents more than from boys. Regardless of the source, positive appearance comments (\( M = 3.04, SD = 1.35 \)) were received significantly more than negative ones (\( M = 1.08, SD = 1.28 \)), \( t(1086) = 34.63, p < .001 \). Furthermore, Table 1 reveals that both positive and negative appearance comments were positively related to both self-objectification and self-surveillance, with negative comments also showing positive relationships with body shame and disordered eating.

**Objectification Theory Variables**

Table 1 also displays the means and standard deviations for self-objectification, self-surveillance, body shame, and disordered eating, as well as the correlations among these variables. Here it can be seen that self-objectification was moderately correlated with self-surveillance, body shame, and disordered eating, which were themselves inter-correlated.

**Integrated Model**

To examine the predictive utility of media exposure, extracurricular activities, and appearance-related comments, and to test the model of objectification theory in a large sample of female adolescents, our proposed integrated model (outlined in Figure 1) was tested. Media exposure, extracurricular activities, and appearance comments were set to precede self-objectification, and appearance comments were also set to precede
self-surveillance. In accordance with objectification theory, self-objectification led to self-surveillance, and both self-objectification and self-surveillance led to body shame, which in turn led to disordered eating.

AMOS v.20 with maximum likelihood estimation was used to test the hypothesized model. All variables were treated as measured (or observed) variables and the posited predictors (media exposure, extracurricular activities, and appearance-related comments) were allowed to correlate. A variety of indicators were used to evaluate the adequacy of model fit following recommendations by Hu and Bentler (1999): the comparative fit index (CFI), the Tucker-Lewis index (TLI), the standardised root-mean square residual (SRMR), and the root-mean square error of approximation (RMSEA). Hu and Bentler (1999) suggested that values of .95 or higher for CFI and TLI, .08 or lower for SRMR, and .06 or lower for RMSEA indicate a relatively good fit and that values of .90-.94 for CFI and TLI, .09-.10 for SRMR and .07-.10 for RMSEA indicate an acceptable fit.

The fit indices for our integrated model suggest that the proposed model provided a less than acceptable fit for the data overall: $\chi^2 = 221.9, p < .001$, CFI = .93, TLI = .79, SRMR = .05 RMSEA = .08, 90% CI [.07, .09]. Examination of standardised residual coefficients and modification indices indicated the addition of a pathway from negative comments $\rightarrow$ body shame, which fits with previous findings of relationships between teasing and body dissatisfaction in adolescents (M. Eisenberg, D. Neumark-Sztainer, J. Haines, & M. Wall, 2006). With the inclusion of this pathway, the fit of the model was improved, although the TLI value was still less than acceptable: $\chi^2 = 143.7.1, p < .001$, CFI = .96, TLI = .87, SRMR = .04 RMSEA = .07, 90% CI [.05, .08].
Further examination of standardised residual coefficients and modification indices next indicated the addition of a pathway from magazines → self-surveillance. The addition of this pathway appeared justified given a previously observed relationship between sexually objectifying magazine content and self-surveillance in undergraduates (Aubrey, 2006a). The inclusion of this pathway again improved the fit of the model, although the TLI value was still slightly less than acceptable: \(\chi^2 = 116.7, p < .001, CFI = .97, TLI = .89, SRMR = .03 \text{ RMSEA} = .06, 90\% CI [.05, .07]\). Finally, the residual coefficients and modifications indices indicated the addition of a pathway from magazines → disordered eating, theoretically justified given previous findings in adult women and female adolescents (Shaw, 1995; Tiggemann, Verri, & Scaravaggi, 2005). With the addition of this pathway the model now indicated an overall good fit to the data: \(\chi^2 = 103.1, p < .001, CFI = .97, TLI = .90, SRMR = .03 \text{ RMSEA} = .06, 90\% CI [.04, .07]\).

The standardised path coefficients for this final model are presented in Figure 2. Here it can be seen that magazines and social networking sites were both positively associated with self-objectification. Time spent on embodying physical activities, appearance-focused physical activities, and other extracurricular activities was not associated with self-objectification. Positive appearance comments were related to self-objectification, and both positive and negative comments were associated with self-surveillance. Magazine consumption showed a direct relationship to both self-surveillance and disordered eating, and negative appearance comments showed a direct relationship to body shame. In addition, in accordance with objectification theory, self-objectification related to self-surveillance and both of these measures were associated with body shame, which in turn was associated with disordered eating. In this final model, the proposed predictor variables accounted for 12% of the variance in self-objectification, the predictors and self-objectification accounted for 28% of the variance in self-surveillance, self-
objectification and self-surveillance accounted for 38% of the variance in body shame, and body shame and appearance magazines accounted for 45% of the variance in disordered eating.

To test the indirect effects of both self-objectification and self-surveillance on disordered eating through the proposed mediator of body shame, a bootstrapping procedure with 10,000 bootstrap samples was used to compute 95% bias-corrected confidence intervals. In this protocol, mediation is considered significant if the 95% CI of the indirect path does not contain zero (Mallinckrodt, Abraham, Wei, & Russell, 2006). Here, consistent with prediction, there was a significant indirect association between self-objectification and disordered eating through body shame, \( \beta = .205, b = .172, 95\% \text{ CI [.180, .230]} \). Similarly, there was a significant indirect association between self-surveillance and disordered eating through body shame, \( \beta = .301, b = .195, 95\% \text{ CI [.262, .342]} \). Thus the mediating role of body shame in the associations of self-objectification and self-surveillance with disordered eating was supported.

Discussion

The negative consequences of self-objectification for women and girls are now well established so that it is imperative for research to shift focus to the predictors of self-objectification. In so doing, we may identify mechanisms for disrupting the development of this particular and harmful way of viewing the self. In the current study we aimed to investigate the influence of three very different potential sources of influence on self-objectification in female adolescents: self-reported media exposure, extracurricular activities, and appearance-related comments.
With regards to media exposure, we found that exposure to magazines and social networking sites (such as Facebook) were each independently associated with self-objectification in female adolescents. Although television exposure and time spent on the Internet in general were both shown to correlate with self-objectification, these did not offer significant independent prediction in our integrated path model. The current findings add to the small body of research that has shown relationships between objectifying magazines and self-objectification in undergraduate women (Aubrey, 2006b; Harper & Tiggemann, 2008) and the one known study that has suggested that magazine and television exposure may be related to self-objectification in female adolescents (Harrison & Fredrickson, 2003). Importantly, our study expanded the conceptualisation of media exposure to include general Internet use as well as use of social networking sites, and our findings suggest that these modalities should be included in future investigations of media effects on self-objectification.

None of embodying physical activities, appearance-focused physical activities or other extracurricular activities showed any relationship with self-objectification, neither in the simple correlations nor in the path model. Thus our prediction that embodying physical activities may serve as a protective mechanism against self-objectification and that appearance-focused physical activities may heighten self-objectification were not supported. A possible explanation for these findings is that participating in extracurricular activities may not have an immediate effect on self-objectification; rather the impact (be it positive or negative) may take time to develop. This proposition is supported by Slater and Tiggemann’s (2012) finding that time spent playing sports was predictive (longitudinally) of lower self-objectification in female adolescents one year later, whereas this relationship was not apparent cross-sectionally. These authors have also found adult women who formerly participated in classical ballet to be higher in self-objectification than women who had never participated in classical ballet (Tiggemann & Slater, 2001). Thus,
it seems plausible that the impact of extracurricular activities such as embodying and appearance-focused physical pursuits may be cumulative and only impact self-objectification over time. Adding to the complexity is the fact that adolescents are likely to participate in a wide variety of extracurricular activities, some of which may be protective in terms of self-objectification whereas others may be potentially harmful. Carefully designed longitudinal studies appear necessary to disentangle and understand these relationships.

The current study is the first known to examine the impact of both negative and positive appearance-related comments on female adolescents’ self-objectification. Correlations revealed that both types of appearance-related comments were positively related to self-objectification and self-surveillance. In the path model, positive (but not negative) appearance comments were shown to relate positively to self-objectification, and both types of comments were related to self-surveillance. Negative appearance comments (teasing) were also shown to correlate with body shame and disordered eating, similar to relationships observed in American pre-adolescent girls (Lindberg et al., 2006). Although the deleterious impact of negative appearance-related comments has been well established in the literature (e.g., Jones, Vigfusdottir, & Lee, 2004), the present study adds to the small, but growing body of evidence that highlights the potential negative impact of appearance-focused compliments. Although others (Calogero et al., 2009; Tiggemann & Boundy, 2008) have previously tied appearance compliments to self-objectification in undergraduate women, the present study is the first known to confirm this relationship in female adolescents. Whereas positive appearance-based comments (e.g. “You look hot”; “I love your hair”) might appear to be nice ways to compliment someone (and indeed do appear to result in improved mood for the recipient; Tiggemann & Boundy, 2008), such comments may also serve to increase awareness of appearance and thus encourage girls and women to adopt an objectifying perspective of themselves. Given the known deleterious consequences
of self-objectification and self-surveillance, future research should seek to delineate further the role of complimentary appearance-based comments.

The secondary aim of the present study was to confirm the links proposed by objectification theory among self-objectification, self-surveillance, body shame, and disordered eating in a large and socio-economically diverse sample of female adolescents. With regard to this aim, results from testing the hypothesized path model were consistent with the theoretical relationships whereby self-objectification leads to self-surveillance, which in turn leads to body shame, which then leads to disordered eating. The present large sample of female adolescents adds substantial support to previous similar findings in smaller samples (Slater & Tiggemann, 2002, 2010). Thus, we can conclude that the model of objectification proposed by Fredrickson and Roberts (1997) applies similarly to female adolescents and to adult women.

Practice Implications

Although the size of the correlations and betas were modest and thus must be approached with some caution, a number of practical implications for parents and educators are suggested by the current findings. First, prevention programs, which have shown some success in targeting body image concerns (Levine & Murnen, 2009), might usefully include explicit consideration of self-objectification. In addition, media literacy approaches might be expanded to include components that consider the Internet and particularly social network sites. Female adolescents could be taught to become aware of the appearance and social pressures involved in participating in social networking sites as well as to become critical consumers of the idealised images that are presented to them in an online environment. Parents of female adolescents could also be
educated about the appearance pressures and objectifying nature of the online world and could limit the time that their daughters spend in this environment.

Second, the present findings suggest that prevention programs that educate about the impact of teasing should be expanded to include components on the impact of positive appearance-related comments (compliments). A useful start may be to coach female adolescents to compliment their friends in non-appearance related ways (e.g. “You are a great friend”; “You are really good at soccer”). Parents may also be advised to avoid making appearance-related comments and be provided with alternative suggestions. Many parents would likely assume that appearance compliments may be a positive way to build their daughters’ feelings of worth. However, the current findings suggest that advising parents to avoid all forms of appearance-related comments would be prudent.

Limitations

As with all research, the limitations of the present study need to be acknowledged.

First, although the current study proposed and tested an integrated path model, the contemporaneous and correlational nature of the design still limits any claims of causation between the potential risk or protective factors and the development of self-objectification. Although it is likely that media consumption and appearance comments contribute to female adolescents’ self-objectification in line with the model, it is also plausible that the reverse relationships hold. For example, female adolescents who are high in the tendency to self-objectify may choose to use social networking services in an attempt to secure some form of external validation. Longitudinal studies that span the important development period of adolescence are necessary to truly understand the directionality of these relationships. Second, although a large and
diverse sample in terms of socio-economic status, the present sample was limited to Australian female adolescents aged between 12–16 years-old who were predominately Caucasian. As such, the findings should be generalised to adolescents of other ethnicities and cultures with caution. Finally, given that the assessment instrument needed to be relatively brief, the measures of the proposed predictors of self-objectification were purposely constructed for the current study. Future research should ideally utilise psychometrically validated measures.

Conclusion

Despite these limitations, the present study has taken important steps in identifying possible predictors of self-objectification in female adolescents, as well as confirming the model of objectification theory in a large sample. It demonstrated that exposure to magazines and social networking sites each independently relate to increased self-objectification. It has also extended our understanding of the role of appearance-related comments, suggesting that positive comments (compliments) may be just as, or even more, likely to give rise to self-objectification as negative appearance-related comments. Future research will need to examine additional potential predictive factors of self-objectification (both risk and protective factors) in an attempt to identify other suitable targets for preventative interventions.
References


Australian Communications and Media Authority. (2009). Use of electronic media and communications: Early childhood to teenage years. *Findings from Growing Up in Australia: The Longitudinal Study of Australian Children (3 to 4 and 7 to 8-year olds), and Media and Communications in Australian Families (8 to 17-year olds), 2007.*


**Table 1**

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*p < .001.
Figure 2.
Final model of media exposure, extracurricular activities and appearance-related comments and self-objectification (standardised path coefficients)
*p<0.01
Figure 2. Final model of media exposure, extracurricular activities, and appearance-related comments and self-objectification with standardized path coefficients.
Notes: Dashed lines indicate non-hypothesized pathways. Significant pathways in bold. *$p < .01$. 