

The Effect of Cosmetic Surgery Reality TV Shows on Adolescent Girls' Body Image

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Cosmetic surgery media coverage has become common in recent years, with surgery featuring in advertising and reality TV. Concerns have been expressed by the American and British Associations for Plastic Surgery about the nature of this coverage, particularly with respect to the impact on adolescents (ASPS, 2004; BAAPS, 2004). This study was the first to investigate adolescent girls' responses to a cosmetic surgery TV show using an experimental design. Girls ($N = 99$) aged 15 to 18 ($M = 16.6$) years were randomly allocated to one of three conditions: a cosmetic surgery TV show, which (1) mentioned risks associated with surgery, (2) did not mention risks, or (3) to the control condition, a home makeover show. Results showed that exposure to cosmetic surgery shows resulted in girls reporting more dissatisfaction with their weight and appearance, but no changes were observed in attitudes toward cosmetic surgery. Girls' responses to cosmetic surgery shows varied according to their materialistic values and the extent that they derived self-worth from their appearance. Results suggest that cosmetic surgery reality TV can be damaging to adolescent girls' body image and that there is a need for research to consider factors that may affect how girls respond to such shows.

Keywords: cosmetic surgery, body image, reality TV, adolescents

The media are an important source of information about culturally idealized beauty and attractiveness (Groesz, Levine, & Murnen, 2002). Sociocultural models (cf. Dittmar, 2008; Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999) propose that the media are central in the development of body dissatisfaction among girls and young women, and a significant body of literature investigating different types of media has provided empirical support for this pro-

posal (Grabe, Ward, & Hyde, 2008; Levine & Murnen, 2009). The current study extends past research by examining a type of program that specifically relates to improving appearance: cosmetic surgery TV shows. Moreover, it examines whether the content of such shows has a distinct impact on body image and attitudes toward surgery in adolescent girls.

Media Influence on Adolescent Girls' Body Image

Adolescent girls are continuously exposed to images of idealized female models through the media and advertising (Fouts & Burggraf, 2000; Sypeck, Gray, & Ahrens, 2004). Within Western societies, the media present a uniform idealized body type, which is extremely thin, yet curvaceous and toned with flawless skin (Grabe & Hyde, 2009; Want, 2009). This body type is a beauty ideal that is so unrealistic it is difficult for women to achieve naturally. While it still remains unclear exactly how this media ideal becomes internalized in some women, there is empirical support for a number of theoretical

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explanations of this process. Social comparison theory, for example, proposes that the idealized images within the media provide an abundance of references for upward social comparison. This makes it difficult for women to refrain from evaluating themselves against this socio-cultural ideal (e.g., Engeln-Maddox, 2005; Milkie, 1999). Cultivation theory argues that the repeated exposure to idealized images makes this unrealistic media ideal appear as the norm rather than the exception, leading people to endorse this ideal as part of their personal belief system. Striving to achieve this nearly impossible beauty ideal unsurprisingly leads to the experience of body dissatisfaction, which is now so widespread that it has been referred to as “normative” (Striegel-Moore & Franko, 2002, p. 183.).

A wealth of evidence demonstrates the deleterious impact of idealized media images on women’s body image. In adolescent samples, correlational studies have shown that higher media consumption is related to higher levels of body dissatisfaction (e.g., Harrison & Cantor, 1997) and eating disorder symptomatology (e.g., Stice & Shaw, 2002). Experimental studies have also consistently shown that acute exposure to thin-ideal images leads to a more negative body image, at least in the short term. Hargreaves and Tiggemann (2004), for example, found that adolescent girls exposed to idealized beauty images in advertisements reported increased levels of body dissatisfaction, negative mood, and more appearance comparisons than girls who saw advertisements not containing idealized models. Moreover, this deleterious effect has been observed across a range of media forms, such as music videos and magazines (Tiggemann, 2003; Tiggemann & Slater, 2004), and confirmed by two meta-analyses of correlational and experimental research (Grabe et al., 2008; Groesz et al., 2002). The concern about these adverse media effects is not just that women feel bad about their appearance, but also the consequences of the accompanying negative affect. Body dissatisfaction has been linked with negative mental health outcomes (e.g., van den Berg, Mond, Eisenberg, Ackard, & Neumark-Sztainer, 2010), as well as unhealthy behaviors, such as dieting and disordered eating (Stice & Shaw, 2002; Tiggemann, 2005). Another such behavior is cosmetic surgery, and research has begun investigating the impact of

cosmetic surgery media, which highlight image “flaws” that are “improved” through surgery.

Cosmetic Surgery: Media and Adolescents

The presence of cosmetic surgery within the media has increased over the past decade, with cosmetic surgery featuring in magazines, widespread advertising, documentaries, and reality TV shows. Cosmetic surgery reality shows began in 2002 when *Extreme Makeover*, the first of such shows, was televised in the United States. Following the success of this show, other programs were created, for example, *The Swan*, *Dr. 90210*, *I Want A Famous Face*, and *Bridalplasty*. Each of these shows has its own twist, but they are all based around the same theme: an individual unhappy with a number of areas of life due to her/his appearance undergoing multiple procedures and being transformed into a different looking person. These shows tend to present surgery as low in risk by seldom acknowledging the risks and complications associated with it (Lee, 2009; Nabi, 2009). Moreover, they generally omit the postoperative recovery phases, depicting the patient fully recovered and happy instead.

It is with regard to this portrayal of surgery that cosmetic surgery associations have expressed concern. Both the American Society for Plastic Surgeons (ASPS, 2004) and the British Association for Aesthetic Plastic Surgeons (BAAPS, 2004) have stated that these types of programs send the wrong message to viewers saying that they may raise unrealistic expectations and that “the public is being lulled into a sense that there are no real risks or complications in cosmetic plastic surgery” (Rod Rohrich, ASPS president, 2004). Moreover, specific concern has been expressed about “the young impressionable audience watching these shows who are already self-conscious about their body image” (ASPS, 2004). Such concerns raise the questions of what the actual impact of these types of shows is on both adults and adolescents, not only in terms of attitudes toward cosmetic surgery, but also body image. In the current study, we focus on adolescent girls for a number of reasons. First, they are being brought up in an environment where cosmetic surgery is relatively commonplace and accepted as a form of appearance enhancement. Second, they are the future population, which may en-

gage in cosmetic surgery. Third, adolescence is a sensitive period during which body image and self-concept are still developing. The pressure to conform to the media-prescribed ideal may make adolescent girls particularly susceptible to appearance enhancing methods, and consequently more likely to consider cosmetic surgery.

Cosmetic Surgery Research and the Importance of Assessing Potential Moderators

Correlational research has shown cosmetic surgery media exposure is associated with the desire for cosmetic procedures (Crockett, Pruzinsky, & Persing, 2007; Delinsky, 2005; Markey & Markey, 2009, 2010; Nabi, 2009; Sperry, Thompson, Sarwer, & Cash, 2009). With regard to body image, correlational findings suggest a positive relationship between cosmetic surgery media consumption and body dissatisfaction (Henderson-King & Henderson-King, 2005; Sarwer et al., 2005; von Soest, Kvaem, Skoleborg, & Roald, 2006). A qualitative exploration of adolescent girls' attitudes toward cosmetic surgery suggested that girls perceive a strong influence from the media on their peers through the promotion of cosmetic surgery and underrepresentation of the risks associated with it (Author A, Author B, & Author C, under review). In an interesting study of emerging adults' responses to a cosmetic surgery reality show, Markey and Markey (2012) found that there was greater interest in obtaining cosmetic surgery among young women who responded positively to the show than those who were relatively negative toward it.

A few experimental studies have been carried out in this field, all of which used young adults as their sample. Exposure to the reality show *Extreme Makeover* led to a greater desire for cosmetic surgery as a means of altering appearance (Markey & Markey, 2010), whereas exposure to *The Swan* led to greater perceived media pressures to be thin, as well as an increased endorsement of the ability to control appearance (Mazzeo, Trace, Mitchell, & Gow Walker, 2007). It therefore appears that exposure to cosmetic surgery reality shows has a direct impact on body image and attitudes toward surgery, but more research is needed to better understand the impact of such shows on the public.

Another important element for research to investigate is individual factors, which may make people respond differently to cosmetic surgery media. Body image research has identified a number of traits that make some women more susceptible to responding negatively to idealized imagery than others. Although cosmetic surgery reality shows do not generally feature or focus on idealized media models, their essence is about "fixing" or improving body parts that deviate from the societal ideal. Based on this, we might expect a particularly negative body image following exposure to such a show among women who possess these vulnerability factors. Cosmetic surgery research has recently begun investigating such factors, finding links between favorable attitudes toward surgery and appearance-based teasing (Markey & Markey, 2009), self-objectification (Calogero, Pina, Park, & Rahemtulla, 2010), and celebrity worship (Maltby & Day, 2010; Swami, Taylor, & Carvalho, 2009).

In the current study, we investigate three potential moderating variables, all of which have been linked to both body image and cosmetic surgery attitudes. The first is internalization of the thin-ideal, that is, the endorsement of the media-prescribed ideal as part of one's own personal belief system. This is considered to be the key vulnerability factor for adverse body image responses to idealized imagery (e.g., Thompson & Stice, 2001) and correlational evidence has linked it to favorable attitudes toward cosmetic surgery (Henderson-King & Brooks, 2009; Markey & Markey, 2009; Sarwer, Cash, et al., 2005; Swami, 2009). Moreover, the only experimental study to examine moderating factors found a lower self-esteem following exposure to a cosmetic surgery show among women high on internalization (Mazzeo et al., 2007).

The second factor we examine is also drawn from the body image literature and refers to the importance of appearance in an individual and her sense of self-worth. Women who derive self-worth from their appearance have been shown to be more concerned about their weight and appearance (Grossbard, Lee, Neighbors, & Larimer, 2009; Overstreet & Quinn, 2012), and engage in more upward social comparisons (Bailey & Ricciardelli, 2010; Patrick, Neighbors, & Knee, 2004). Appearance as a source of self-worth has also been linked to cosmetic sur-

gery. For instance, this variable was significantly higher in women who sought breast augmentation than those who did not (Sarwer et al., 2003).

The third variable we explore is one that has recently been shown to be a vulnerability factor for negative body image responses to idealized imagery: materialistic values (Ashikali & Dittmar, 2012). Materialistic values were also found to be predictors of positive attitudes toward cosmetic surgery (Henderson-King & Brooks, 2009).

The Present Research

The present study aimed to examine the impact of a cosmetic surgery reality TV show on adolescent girls' body image and attitudes toward surgery. It extends previous research in four ways. First, it is the first experimental study on this topic to focus on an adolescent population. Second, whereas previous research tended to focus on *either* attitudes toward surgery or body image, this study investigates the impact of the cosmetic surgery show on both of these variables. Third, it examines whether different portrayals of surgery have a distinct impact on these outcomes. Specifically, it compares whether the inclusion of risk information has a different impact on body image and attitudes toward cosmetic surgery than a show that does not contain any risk information. Finally, it examines a number of potential moderator variables of girls' responses to the show. Our specific hypotheses were as follows:

(1) Based on previous correlational (e.g., Sperry et al., 2009) and experimental (e.g., Mazzeo et al., 2007) evidence, we expected that girls exposed to a cosmetic surgery reality show would report more body dissatisfaction than those exposed to the control condition.

(2) Based on previous research showing that exposure to cosmetic surgery reality TV leads to a greater desire for surgery, we expected that girls exposed to such a show would report more favorable attitudes toward cosmetic surgery.

(3) The investigation of the impact of different types of information provided is based on literature on other health behaviors, such as vaccination uptake, which suggests risk perception is an important determinant of health behavior (Brewer et al., 2007). We could argue that the provision of risk information may deter

girls from cosmetic surgery through reminding them that it is a risky behavior to engage in. Thus, we could expect that girls exposed to the show with risk information would report less favorable attitudes toward cosmetic surgery.

(4) All of the above effects may be moderated by one or more potential moderator variables.

Method

Design

Female adolescents were exposed to one of three conditions: A cosmetic surgery reality TV show that mentioned risks associated with surgery and depicted some postanesthesia problems as well as recovery pain (Risk condition); a cosmetic surgery reality TV show that did not include any risk information or postoperative recovery (No risk condition); and the control condition, a home makeover reality show. The impact of these shows on adolescent girls' body image and attitudes toward cosmetic surgery was recorded. Potential moderator variables, such as materialistic values and appearance as a source of self-worth were also measured.

Participants

Participants were all female students recruited through a girls' school for students aged 11–18 years. In the first wave of recruitment, girls were recruited through a Psychology Conference organized for six schools located in the South East of England (School 1: $n = 67$; School 2: $n = 4$; School 3: $n = 16$; School 4: $n = 3$; School 5: $n = 7$; School 6: $n = 2$). Before the conference, the schools gave out information about the study and obtained parental consent. Girls took part in the experiment on the day of the conference. In the second wave of recruitment 3 months later, all students aged 15–18 years attending the girls' school were sent information by the school and parental consent obtained. Girls took part in the experiment during a school day. Girls from the six schools did not differ in age, $F(5, 92) = 1.02$, $p = .41$, but did differ in BMI, $F(5, 92) = 2.44$, $p = .04$.

In total, 99 girls took part in the study, with 35 exposed to the risk condition, 31 to the no risk condition, and 33 to the control condition. The mean age was 16.56 years ($SD = .67$, range

15–18), and 66.7% were White, 22.3% were Asian, 4.9% “other,” and 4.9% preferred not to answer. The mean BMI was 21.13 ($SD = 4.15$, range = 13.96–49.63), with 13.1% classified as underweight and 5.1% as overweight. Participants’ personal monthly spending money ranged from £0 to £450, with an average of £92.79 ($SD = 106.32$).

Materials

Reality TV show. The cosmetic surgery reality TV show was *Dr. 90210*. The risk condition was a composite of clips from several episodes of this show in which the surgeon discussed, albeit briefly, the risks associated with surgery, and which depicted minor complications with anesthesia and pain. The no risk condition was a composite of clips from the same show, which did not mention any risks or show any complications or postsurgical pain. The resulting clips in both conditions were focused on the patients, all of whom were women, and were approximately 15 min long. It must also be noted that patients in these episodes only underwent one procedure each, rather than multiple: the risk condition featured a rhinoplasty, and the no risks condition featured a breast augmentation and tummy tuck. Therefore, their postoperative appearance was not radically different to their preoperative appearance. Any information or depictions of the surgeons’ lives, as well as transitional scenes of luxurious shops and young beautiful women were cut out to maintain closely controlled experimental conditions. The control condition was a clip of *Extreme Makeover Home Edition*. All stimuli were matched for length.

Scales Body image¹. The Self-Discrepancy Index (SDI; Dittmar, 2009; Halliwell & Dittmar, 2006) is a participant-generated scale, allowing participants to describe in their own words aspects of themselves that they would ideally like to change. Participants completed up to three sentences of the format “I . . . , but I would like . . . ,” and then rated on a 6-point Likert scale how different they are from their ideal (magnitude), and how concerned they are about this difference (salience). Self-discrepancy statements were coded into three categories: weight loss and a desire for a thinner body (e.g., *I am overweight, but I would like to be skinny and lose weight*); appearance more gen-

erally (e.g., *I have acne, but I would like clear skin*); and statements unrelated to weight or appearance. Two indices were created, one for weight and another for appearance, by multiplying magnitude and salience ratings for each relevant statement, and these products added together. Self-discrepancies were, however, substantially positively skewed so were transformed into binary variables and analyzed using binary logistic regressions. Just over half of the participants (50.5%) generated weight-related self-discrepancies, and 65.7% appearance-related self-discrepancies.

Cosmetic surgery attitudes. The 5-item Intrapersonal and Consider subscales of the Acceptance of Cosmetic Surgery Scale (Henderson-King & Henderson-King, 2005) were used to respectively measure the perceived benefits of cosmetic surgery to image and the extent to which participants would consider surgery. Participants state their agreement on a 6-point Likert scale from (1) *strongly disagree* to (6) *strongly agree* to items such as “*Cosmetic surgery can be a big benefit to people’s self image*” and “*In the future I could end up having some kind of cosmetic surgery.*” Reliabilities were good for both subscales: intrapersonal $\alpha = .91$ ($M = 3.87$; $SD = 1.40$) and consider $\alpha = .93$ ($M = 3.38$; $SD = 1.08$).

Proposed moderators. Girls’ materialistic values were measured using the abridged 9-item Materialistic Values Scale (Richins, 2004), which conceptualizes materialism as a value system composed of three constructs relating to material acquisition: centrality, happiness, and success. Example items include “*I like a lot of luxury in my life*” ($\alpha = .83$; $M = 3.76$; $SD = .83$).

The Body-Perfect Internalization Scale (Bell & Dittmar, unpublished) was used to measure the extent to which girls endorse and value the female beauty ideal as portrayed in the media, as well as the perceived benefits of attaining this ideal. It contains three subscales measuring identification with media models, centrality of the body perfect to the self, and investment in the body perfect. Example items include “*Hav-*

¹ The 10-item Appearance subscale from the Body Esteem Scale (Mendelson, Mendelson, & White, 2001) was also used ($\alpha = .93$). However, this scale did not yield significant results (all $p > .07$), so we do not discuss it further.

ing the perfect body is important to me” and “I would be more popular if I had the perfect body” ($\alpha = .95$; $M = 9.94$; $SD = 10.74$).

The Appearance subscale from the Contingencies of Self-Worth Scale (Crocker, Luhtanen, Cooper, & Bouvrette, 2003) is a 5-item scale measuring the extent to which a sense of self-worth is derived from appearance. Items include “When I think I look attractive, I feel good about myself” ($\alpha = .77$; $M = 4.32$; $SD = .95$).

Procedure and Ethical Issues

Ethical approval was obtained from the University research ethics committee, as well as from the School where the study was carried out. Due to the sensitive topic of the study, parental consent was also obtained; parents were sent out a letter from the school explaining the nature of the study, and gave signed consent for their daughters to take part. Participants were given an information sheet introducing the study as an investigation of TV makeover shows and explaining that some of the videos may contain graphic scenes. The consent form informed of their right to withdraw from the study and that their responses would remain anonymous and confidential.

Participants watched the 15-min video then completed the questionnaire in two sections. The first section included the Self-Discrepancy Index, the Body Esteem Scale, and then the Acceptance of Cosmetic Surgery Scale. To maintain the cover story, participants were told that people’s personal ideals, feelings about different aspects of their life, and their opinions on the industries of the makeover shows can have an effect on how they respond to them. Also, filler items were embedded within the latter two scales. The second part of the questionnaire was introduced as a section on more general attitudes and life values, and asked participants to respond using a 6-month frame. Moderator measures were recorded in this section, beginning with the Materialistic Values Scale, the Appearance as a Source of Self-Worth, and the Body Perfect Internalization Scale. Again, filler items were embedded within all of the above scales. The questionnaire ended with a demographic section, asking age, ethnic background, height, and weight. Participants were then de-

briefed and asked whether they wanted to submit or withdraw their responses.

Results

A series of one-way ANOVA was carried out to check whether there were any group differences in age, BMI, or in the proposed moderators. There were no group differences on any of the variables (all $F < 1.95$, $p > .15$), so these did not need to be controlled for in subsequent analyses. To determine which of the proposed variables played a moderating role, multiple regressions were carried out for each outcome variable with these variables as predictors. Body-perfect internalization did not significantly moderate any of the outcome variables, so it is not reported further. Binary logistic regressions were used to analyze self-discrepancies, whereas stepwise hierarchical multiple regressions were used for all other variables. Regression models were structured as follows: two exposure contrasts: control versus experimental (coded control = $-.99$ and experimental = $.33$) and no risk versus risk (coded no risk = $-.33$ and risk = $.33$) (step 1), and appearance as a source of self-worth or materialistic values (mean-centered) (step 2) for outcome variables for which they were shown to be significant moderators.

Exposure Effects on Body Image

Consistent with our first hypothesis, group differences were observed in girls’ weight and appearance-related self-discrepancies, such that girls who were exposed to cosmetic surgery videos felt more dissatisfied about their weight ($M = .59$) and appearance ($M = .76$) than those in the control condition (weight $M = .33$; appearance $M = .45$; see Tables 1 and 2 for regression coefficients). Moreover, a significant main effect emerged for weight-related self-discrepancies between the two cosmetic surgery conditions, with girls exposed to the video containing risk information reporting more dissatisfaction with their weight ($M = .77$) than those exposed to the video not containing any risks ($M = .44$).

Weight-related self-discrepancies were moderated by appearance as a source of self-worth. The final model had significant predictive power ($\chi^2 = 24.50$, $p < .001$) and goodness of

Table 1
Binary Logistic Regression for Weight-Related Self-Discrepancies

Predictors	B	SE	Odds ratio with 95% CI		
			Lower	OR	Upper
Control vs. Experimental	.98**	.39	1.25	2.67	5.68
No risk vs. Risk	-3.24**	1.06	.00	.04	.32
Appearance self-worth (mean-centered)	.82**	.30	1.26	2.28	4.13
Appearance self-worth control vs. Experimental	.91*	.41	1.12	2.49	5.42
Appearance self-worth no risk vs. Risk	-.13	1.16	.88	.88	8.58
Constant	.28	.28		1.32	

Note. Cox and Snell $R^2 = .22$. Nagelkerke $R^2 = .29$.

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

fit ($\chi^2 = 6.24, p = .62$). The significant interaction term here was with the control versus experimental exposure contrast and a simple slopes analysis was carried out to explore the nature of this interaction. As shown in Figure 1, there is little difference between girls low on appearance as a source of self-worth who are exposed to cosmetic surgery and those who are not. For girls who derive self-worth from their appearance, however, exposure to cosmetic surgery shows has a stronger impact on their weight-related self-discrepancies, scoring .51 scale points higher than those for whom appearance is not so central to their self-concept.

Appearance-related self-discrepancies were moderated by materialistic values. The final model for this variable also had significant predictive power ($\chi^2 = 16.86, p = .005$) and goodness of fit ($\chi^2 = 7.20, p = .52$). The interaction term with the risks versus no risks exposure contrast emerged as significant and was explored with a simple slopes analysis. As

shown in Figure 2, girls low and high on materialistic values differ little in their appearance-related self-discrepancies when exposed to cosmetic surgery shows that mention/depict risks associated with surgery. When exposed to a show that did not mention risks linked to cosmetic surgery, it is girls who are highly materialistic who respond most negatively, scoring .44 scale points higher than nonmaterialistic girls.

Exposure Effects on Cosmetic Surgery Attitudes

Contrary to expectations, no main effects were observed for any of the cosmetic surgery attitudes variables (intrapersonal and consider all $F < 1.525, p > .223$), suggesting that attitudes toward cosmetic surgery were not influenced by a single exposure to cosmetic surgery reality TV. It must be noted, however, that a post hoc power analysis indicated that there was

Table 2
Binary Logistic Regression for Appearance-Related Self-Discrepancies

Predictors	B	SE	Odds ratio with 95% CI		
			Lower	OR	Upper
Control vs. Experimental	1.20**	.38	1.58	3.31	6.93
No risk vs. Risk	-.37	1.07	.09	.69	5.63
Materialistic values (mean-centered)	.53	.37	.83	1.70	3.49
Materialistic values control vs. Experimental	.82	.48	.89	2.56	5.73
Materialistic values no risk vs. Risk	-2.77*	1.42	.00	.06	1.01
Constant	.99***	.28		2.70	

Note. Cox and Snell $R^2 = .16$. Nagelkerke $R^2 = .22$.

* $p < .05$. ** $p < .01$. *** $p < .001$.

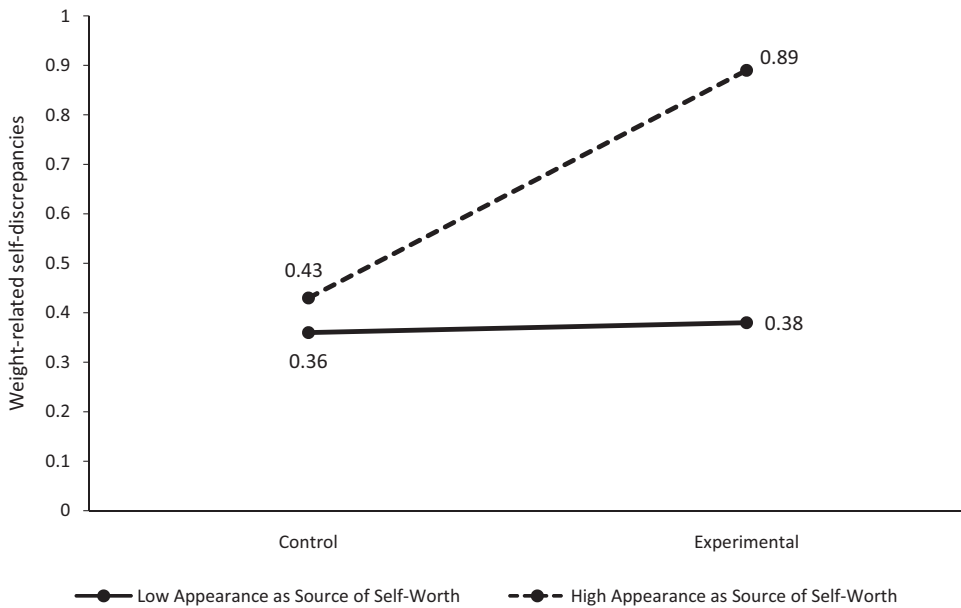


Figure 1. Weight-related self-discrepancies at different levels of appearance as a source of self-worth for girls exposed to the cosmetic surgery shows or not.

not enough statistical power in our sample for the considered subscale. This might suggest that potential differences on this scale are mild and that a larger sample is needed to detect these. Future experimental research should therefore use larger samples to clarify such possible effects. A significant interaction term for the intrapersonal subscale did emerge, however. This was between appearance as a source of self-worth and the experimental videos contrast ($\beta = -.22, p < .01$), suggesting that the extent to which girls derive self-worth from their appearance plays a role in how they respond to different portrayals of cosmetic surgery in reality shows. As illustrated in Figure 3, there is little difference between girls low and high on appearance as a source of self-worth when exposed to the risk cosmetic surgery video. When exposed to the no risk video, however, it is girls high on this variable who perceive surgery as more beneficial to image than those for whom appearance is not important to their self-worth.

Discussion

The current study was the first to investigate the effect of a cosmetic surgery TV show on

adolescent girls' body image and attitudes toward cosmetic surgery. Furthermore, it was novel in examining whether different portrayals of surgery from the same show had a distinct impact on these outcome measures. The main findings were that exposure to cosmetic surgery shows led to increased body dissatisfaction, whereas attitudes toward cosmetic surgery were not impacted by such exposure, except in girls for whom appearance is important to their self-worth.

Exposure to *Dr. 90210*, irrespective of its content, had an adverse effect on adolescent girls' body image, both in terms of weight satisfaction as well as appearance satisfaction more generally. Moreover, weight dissatisfaction was more pronounced in girls exposed to risk information than those who were not. This suggests that the provision of risk information may highlight the risks or barriers to achieving an idealized weight and thus make girls more dissatisfied with their current weight. This negative body image following exposure to cosmetic surgery shows is consistent with previous correlational (e.g., Markey & Markey, 2009) and experimental research (Mazzeo et al., 2007) that found a link between cosmetic surgery me-

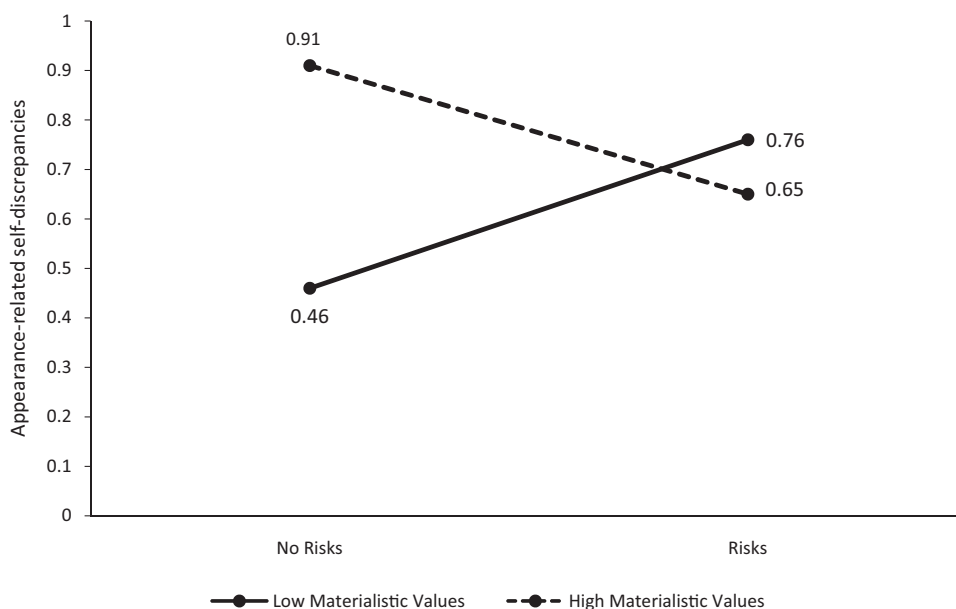


Figure 2. Appearance-related self-discrepancies at different levels of materialism for girls exposed to cosmetic surgery shows containing risk information or not.

dia and body image among adult women. Furthermore, since people undergoing surgery in the videos used in this study were average women rather than models, our findings extend the body image literature by showing that in the case of cosmetic surgery media, body dissatisfaction can arise irrespective of the presence of the prescribed media ideal. This could be due to the fact that these types of shows first present deviations from media ideals as flaws and then offer solutions to them. This might, in turn, act as a reminder of girls' own deviations from idealized media beauty, making them feel worse about their appearance. It is interesting to note here that unlike other shows, the reality show chosen for the current study does not generally feature extreme transformations through a multitude of procedures. It may be that shows that depict more extreme appearance changes may lead to more pronounced body dissatisfaction in viewers. On the other hand, such extreme changes may make it harder for the viewer to identify and empathize with the person featured in the show, which could lead to more subtle responses. Future research could therefore examine the impact of different types of shows that feature more or less extreme cosmetic alterations.

Attitudes toward cosmetic surgery were not affected by exposure to cosmetic surgery shows, except for girls high on appearance as a source of self-worth. This is contrary to previous research, which found that exposure to cosmetic surgery reality TV led to an increased desire for surgery (Markey & Markey, 2010), and suggests that attitudes toward surgery are stable in this population and not malleable by a single exposure to a cosmetic surgery show. This interpretation of our finding is consistent with a cultivation theory framework, which proposes that repeated media exposure leads the viewers to consider and accept what they are watching as being representative of reality (Gerbner, Gross, Morgan, Signorelli, & Shanahan, 2002). It therefore could be that the role of the media in terms of attitudes toward cosmetic surgery is one of normalizing surgery, making it appear as a common and accepted form of appearance change. More research is therefore needed to gain a better understanding of the impact of cosmetic surgery media on attitudes toward surgery so that better-informed proposals for policy change can be made.

The extent to which girls derive self-worth from their appearance was found to impact how they responded to the cosmetic surgery show,

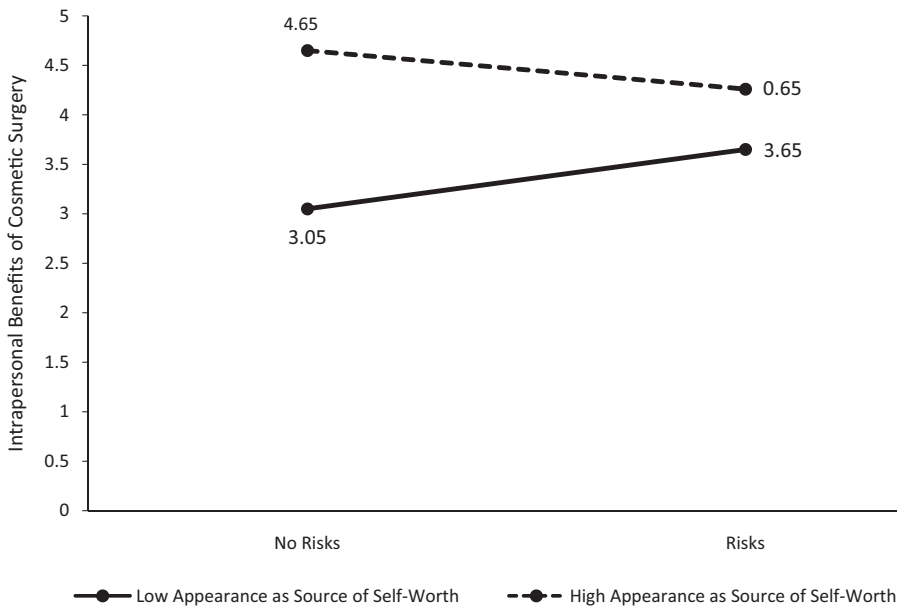


Figure 3. Intrapersonal benefits of surgery at different levels of appearance as a source of self-worth for girls exposed to cosmetic surgery reality TV shows containing risk information or not.

both in terms of their weight satisfaction and their attitudes toward surgery. Moreover, materialistic values impacted girls' appearance satisfaction. Exposure to cosmetic surgery shows led to an increased weight dissatisfaction in girls high on appearance as a source of self-worth than those who are low. This is consistent with our hypothesis, and previous research showing that a focus on appearance as a means of gaining self-worth is correlated with weight and appearance dissatisfaction and a vulnerability factor for negative responses to idealized media (e.g., Grossbard et al., 2009; Overstreet & Quinn, 2012). In terms of appearance satisfaction, it was highly materialistic girls exposed to the cosmetic surgery show that did not mention risks who responded most negatively. It could be that this "light" portrayal of cosmetic surgery makes the option for surgery appear more feasible to the viewer. Having not engaged in this behavior, therefore, made materialistic girls feel worse about their appearance than those who are low on materialistic values. Whatever the possible explanations for these moderation effects, it is clear that future research needs to consider such moderating factors. Moreover, it appears that the examination

of different contents of such cosmetic surgery shows was a warranted one in the current study, and highlights the importance of future research to do so as well.

Perceived benefits to image from cosmetic surgery were also affected by the importance of appearance to self-worth, such that girls who were high on this variable perceived surgery as more beneficial when exposed to the no risks cosmetic surgery video than girls for whom appearance is not important to their self-worth. A reason for this could be that the portrayal of surgery as without risk makes surgery more acceptable to girls for whom appearance is an important factor to their self-concept by presenting surgery as an easy behavior to engage in. These findings show that not all girls respond in the same way and highlight the importance of measuring factors, such as the importance of appearance to self-worth, which may make some girls respond more negatively to this type of media.

The findings of this study need to be considered in the context of potential methodological limitations. One limitation of the current study is that state and trait measures were recorded at the same time as exposure to the videos. Future research may wish to record trait measures of

potential moderator factors at a different time to ensure that responses were not impacted by the experimental manipulation. Moreover, it would be useful to replicate and extend this work among other sociodemographic groups, such as ethnic minorities, to see whether different views or issues arise. The second limitation relates to the study's ecological validity. The experimental materials were shortened and specifically selected for the purposes of this study. While this allows for a close manipulation and control of the research, in reality these TV shows are longer and include other types of information and imagery (e.g., the surgeons and their personal lives). The flow and focus of the show is therefore likely to be different to our material, with potentially different outcomes. Future studies may therefore choose to use full-length episodes of reality shows to see whether similar effects are found.

An important variable that future research should strive to explore is people's perception of risks following exposure to different types of cosmetic surgery media. Gaining an understanding of what type of information leads to more accurate and realistic perceptions of risks associated with surgery is critical to informing regulation proposals of cosmetic surgery media. Moreover, it is important for research to start taking into consideration the impact of such media on expectations from cosmetic surgery. This could be measured in actual patients, or as a hypothetical scenario among nonclinical samples. For both risk perception and expectations, it would be interesting to use similar experimental paradigms to the current study, such that the impact of different portrayals of surgery are examined to gain better understanding of what type of information and/or images has the most adverse effects.

Taken together, our findings suggest that cosmetic surgery reality shows have a negative impact on adolescent girls' body image. Moreover, the importance of appearance to self-worth as well as materialistic values may make some girls more susceptible to negative responses to such media. Further research should take into account the content of cosmetic surgery media, and examine individual differences in responses to such media to better identify who might be more vulnerable to them.

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