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The impact of cosmetic surgery advertising on Swiss women's body image and attitudes  
towards cosmetic surgery.

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### Abstract

Concerns have been expressed internationally about cosmetic surgery advertising (British Association of Aesthetic Plastic Surgeons; BAAPS, 2005; 2008) and a recent study showed that exposure to such advertising led to more negative body image and attitudes towards surgery in women living in the UK (Ashikali, Dittmar, & Ayers, 2015). This study investigates the impact of cosmetic surgery advertising on women living in Switzerland, a country with relatively little cosmetic surgery advertising. One-hundred and forty-five women (mean age = 23.07) were exposed to cosmetic surgery advertising containing either discount incentives, risk information, no additional information, or to the control condition. Exposure to cosmetic surgery advertising led to increased dissatisfaction with both weight and appearance.

Highly materialistic women perceived surgery as less beneficial to image when exposed to cosmetic surgery advertising, as well as when exposed to risk information rather than discount incentives. Moreover, appearance-dissatisfied women considered surgery to a lesser extent when exposed to risk information than discount incentives. Our findings highlight the need for research examining the impact of cosmetic surgery media to consider the content of advertising for cosmetic surgery, as well as cultural variability.

**Keywords:** cosmetic surgery advertising, body image, attitudes towards surgery

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The number of people undergoing cosmetic surgery has substantially increased in recent years (American Society of Plastic Surgeons; ASPS 2012; BAAPS, 2011) and a report of the top 25 countries in number of procedures carried out in 2010 showed worldwide interest in cosmetic surgery (International Society of Aesthetic Plastic Surgeons; ISAPS, 2011). The report included countries of a variety of socioeconomic statuses and cultural backgrounds, such as the UK, Brazil, China, India, Germany, and Saudi Arabia. This suggests that interest in cosmetic surgery is not limited to the Western world, but is more widespread and multinational. A number of reasons could be behind this trend. Firstly, medical and technological advances have allowed for less complicated and less risky procedures, while also cutting down recovery time. Secondly, undergoing a cosmetic procedure has become more affordable for the average person, especially given that many clinics around the world now offer financial plans, loans, and promotions. The third factor, and the focus of this research, relates to the potential role played by the media in normalizing and promoting cosmetic surgery.

The present study examines the impact of cosmetic surgery advertising, and of different types of information provided in such advertising, on women's body image and attitudes towards cosmetic surgery in Switzerland. It is a replication of research carried out in the UK, where cosmetic surgery advertising is more common and rates of cosmetic surgery uptake higher (ISAPS, 2011).

*Cosmetic surgery in the media*

In some countries, the media have embraced the cosmetic surgery industry, making it a feature in reality TV shows and documentaries, magazine and internet articles, and as part of radio programs. Another major and widespread promotion of cosmetic surgery is advertising, which is also present in all types of media, as well as on billboards in highly crowded public spaces.

Advertising for cosmetic surgery typically features images of beautiful women who have allegedly undergone procedures and emphasizes the benefits of surgery. A common feature in such advertising, and the cause for debate among cosmetic surgery associations, is discount incentives appearing in a range of formats. In the UK for example, such incentives include time-limited direct monetary discounts, promotions like “two areas for one” liposuction, or loyalty cards which encourage multiple procedures (BAAPS, 2005; 2011a; 2015). Moreover, the use of such discount incentives is increasing. An analysis of cosmetic surgery advertisements placed in popular US magazines between 1985 and 2004 found an increase in promotional sales and offers, whereas information on risks associated with surgery was present in less than 10% of advertisements and did not differ over time (Hennink-Kaminski, Reid, & King, 2010).

Both British and American associations for cosmetic surgery have expressed concern about the standard and style of cosmetic surgery advertising and marketing strategies, saying that it trivializes surgery and does not adequately represent either the severity of procedures, or the risks associated with it (American Society of Plastic Surgeons; ASPS, 2004; BAAPS, 2005; 2008).

Advertising guidelines in the UK are similar to those in Switzerland, such that clinics and surgeons are able to advertise their practices as long as they present a truthful image of their expertise and of cosmetic surgery itself, without attempting to encourage clients to undergo surgery (Swiss Medical Association, 2006). However, there appears to be a different media environment involving cosmetic surgery in these two countries. Cosmetic surgery reality television for example, was quite successful in the UK, with American shows having been aired, whilst UK versions or new programs were also created. In Switzerland, to our knowledge, such programs did not air, nor were Swiss versions of existing shows created (M. Sorbera, RTS, personal communication, September 27, 2010). Overall, it appears that cosmetic surgery is present to a lesser extent in Swiss media than in the UK and USA. Examining responses of Swiss women may therefore provide interesting insights into the impact of such media on women's body image and on attitudes toward cosmetic surgery when they have not been overly exposed to such media.

Two questions relating to the media arise: First, what is the actual impact of cosmetic surgery advertising on women and can different portrayals of surgery have a distinct impact? Second, are there differences in how women who live in different media environments respond to cosmetic surgery advertising? This study examines these research questions in relation to Swiss women's attitudes towards cosmetic surgery and also in terms of their body image.

#### *Psychological research on cosmetic surgery media*

Correlational research has found a positive relationship between cosmetic surgery media consumption and body dissatisfaction (Henderson-King & Henderson-King, 2005;

Markey & Markey, 2009; Sarwer et al., 2005; Sperry, Thompson, Sarwer, & Cash, 2009), as well as more favorable attitudes towards surgery and an increased willingness to undergo cosmetic procedures (Crockett, Pruzinsky, & Persing, 2007; Delinsky, 2005; Nabi, 2009; Sperry et al., 2009). Little experimental research on cosmetic surgery has been carried out. However, three studies which used reality TV as their experimental material showed that exposure to the cosmetic surgery show led to an increase in body dissatisfaction and desire for cosmetic surgery (Markey & Markey, 2010; 2012), greater perceived pressure from the media to be thin, as well as increased endorsement of their ability to control their appearance (Mazzeo, Trace, Mitchell, & Gow, 2007).

A recent UK study on cosmetic surgery advertising compared the impact of discount incentives and risk information in such advertising, while also taking into consideration potential moderation variables to these effects (Ashikali, Dittmar, Ayers, 2015). It showed a negative effect on weight and appearance satisfaction following exposure to advertising for surgery, irrespective of the type of information provided. Moreover, weight satisfaction was moderated by women's materialistic values. In terms of attitudes towards surgery, exposure to cosmetic surgery advertising led to less perceived benefits of surgery, whereas exposure to risk information in comparison to discount incentives increased consideration of surgery. These findings suggest that cosmetic surgery advertising has a negative impact on young women's body image, and that the impact of such advertising on attitudes towards surgery can vary depending on the type of information provided. Therefore, the content of cosmetic surgery media and the way in which they portray surgery may play a role to how surgery is perceived by the public and the extent to which individuals would consider undergoing a procedure.

The UK is representative of the majority of research on cosmetic surgery, which has generally been carried out in the US, the UK, and Australia. However, to our knowledge, no research has been carried out in a country which is relatively low on cosmetic procedures and where cosmetic surgery is not a commonplace feature in the media. Examining these effects among a sample of women who are likely to have had less daily exposure to cosmetic surgery media is important in gaining an understanding of how such women respond to this type of media. Moreover, the investigation of potential moderating roles will give an insight as to which women are most affected by cosmetic surgery media. Finally, discussing findings from the UK and Swiss samples in conjunction can shed an initial light into the impact of different media environments on women's attitudes towards surgery.

#### *The present research*

This study aims to investigate the effects of cosmetic surgery advertising in Switzerland, a country which is low on cosmetic surgery advertisements in the media. Specifically, we investigate whether advertising with discount incentives has a different effect on body image and attitudes towards surgery compared to advertising with risk information. We also examine a number of potential moderators, most relating to body image, but also materialistic values, which may make some women more vulnerable than others in terms of negative responses to cosmetic surgery advertising (Ashikali & Dittmar, 2012). Our specific hypotheses were:

- (1) Exposure to cosmetic surgery advertising will lead to greater body dissatisfaction.
- (2) Discount incentives are predicted to elicit more positive attitudes towards surgery than risk information, on the premise that such discounts make surgery more

- affordable for the general public. Risk information on the other hand, highlights the dangers of undergoing surgery, which may discourage women to consider it.
- (3) The impact of exposure to cosmetic surgery advertising on body image and/or cosmetic surgery attitudes will be moderated by one or more of the proposed variables: thin-ideal internalization, restrained eating, trait body dissatisfaction, or materialistic values.

## Method

### *Design*

This experimental study contained four conditions where women were exposed to advertisements of cosmetic surgery containing: no additional information (condition 1); discount incentives (condition 2); risk information (condition 3); or to the control condition, advertisements for flower delivery providers. The effect of exposure to these on women's body image and attitudes towards cosmetic surgery was examined. Potential moderators of thin-ideal internalization, restrained eating, trait body dissatisfaction, and materialistic values were measured at a follow-up one week later.

### *Participants*

Participants were recruited from the Université de Neuchâtel, Switzerland. One-hundred and forty-five women took part in the study, with 36 exposed to cosmetic surgery advertisements containing no additional information, 39 to advertisements containing discount incentives, 37 to advertisements containing risk information, and 33 to the control condition. Sixty-seven per cent of respondents (total N = 97; condition 1 N = 23; condition 2 N = 30; condition 3 N = 20; control condition N = 24) also participated in the second part of the experiment. Participation was on a voluntary basis and participants were entered into a prize draw for two gift vouchers of €25. The overall

mean age was 23.07 years ( $SD = 4.66$ , range = 18-44) and 79.3% were White. The overall mean BMI was 21.00 ( $SD = 2.59$ , range = 14.7 – 33.31), with 9% of participants being classified as underweight, 85.5% normal weight, and 5.5% as overweight according to population-relevant guidelines (Zaninotto et al., 2006).

### *Materials*

*Advertisements.* Each of the four conditions in this study contained two sets of two advertisements presented side-by-side. Participants in each condition therefore saw a total of four advertisements. The cosmetic surgery advertisements were identical in all conditions, containing images of idealized media models. The text in each condition differed however, such that condition 1 had no additional information; condition 2 included discounts in the form of direct monetary reductions (e.g. *700 CHF off your first procedure*); and condition 3 contained information on risks associated with cosmetic surgery (e.g. *Cosmetic surgery involves risks such as procedural and anaesthetic complications, bleeding, scarring, and infection. Our surgeons will give you further information during your first consultation*). We made every effort to ensure that the advertisements created resembled real-life cosmetic surgery advertising in terms of the slogans and information provided, and that they were as professional-looking as possible. All advertisements were for all types of procedures- facial and body. They also included some information referring to doctors/clinics, whether mentioning expertise and years of experience or in slogans aimed at inspiring trust in prospective clients. Moreover, they placed emphasis on the benefits of undergoing surgery, with mentions of fulfilling a dream, and the joys of a “new self”. All of the above are elements which characterize the style of real-life cosmetic surgery advertising today. The control condition was

advertising for flower delivery services. We wanted the control condition to be a form of advertising which did not reflect any appearance-related matters. The advertisements therefore did not contain any images of models and the slogans used were unrelated to appearance. All advertisements were in French.

*Questionnaire Measures.* Given that the study took place in French-speaking Switzerland, all scales were translated and presented in French.

*Body-related self-discrepancies.* The Self-Discrepancy Index (SDI; Halliwell & Dittmar, 2006) was used to assess the activation of women's self-discrepancies. Participants complete three sentences of the format "I...but I would like..." allowing them to freely describe in their own words aspects of their life that they would like to change. After each sentence, they rate how different they are from their ideal (magnitude) and how concerned they are about this difference (salience) from (1) a *little* to (6) *extremely*. Statements are then coded into three categories: appearance-related (e.g. "*I have a big nose, but I would like a smaller one*"); weight-related (e.g. "*I am overweight, but I would like to be thinner*"); and unrelated to appearance or weight. Normally, magnitude and salience scores in the appearance and weight categories are multiplied and then added together (Dittmar, 2009; Halliwell & Dittmar, 2006) to produce a unique index for each category. However, given that we wanted to conduct parametric analyses and these indices do not have a normal distribution, we turned weight and appearance-related self-discrepancies into binary variables (presence or absence of discrepancies) and analyzed them using binary logistic regression. Weight-related self-discrepancies were reported by 38.6% of women, whereas 57.9% reported appearance-related self-discrepancies. The SDI was also administered in Part 2 of the study to measure women's

trait body dissatisfaction. Given that normal distribution issues in regression only apply to outcome variables, we used the normal procedure for this scale, multiplying and then adding together magnitude and salience scores. Weight-related self-discrepancies ranged from 0-36 ( $M = 4.31$ ,  $SD = 6.85$ ), and appearance-related self-discrepancies from 0-72 ( $M = 7.11$ ,  $SD = 10.78$ ).

*Cosmetic surgery attitudes.* Women's attitudes towards cosmetic surgery were assessed using the Acceptance of Cosmetic Surgery Scale (ACSS; Henderson-King & Henderson-King, 2005). Two of three 5-item subscales were included in this study: intrapersonal, measuring the extent to which one believes that cosmetic surgery can be beneficial to one's image (e.g. *Cosmetic surgery is a good thing because it can help people feel better about themselves*); and consider, measuring the extent to which one would consider undergoing surgery (e.g. *I have sometimes thought about having cosmetic surgery*). Reliabilities were good for all subscales: intrapersonal  $\alpha = .88$ ; consider  $\alpha = .91$ . The ACSS was also administered in Part 2 of the study as a control variable to ensure that any significant findings from the exposure experiment were in fact due to the exposure itself rather than pre-existing group differences (intrapersonal  $\alpha = .92$ ;  $\alpha = .92$ ).

*Moderator variables*<sup>1</sup>. *Thin-ideal internalization* was measured using a scale developed by Dittmar (unpublished) comprised of 9 items measuring the desire to look like female models/actresses and meet the thin ideal (e.g. *I want to look like media models; I would like to have a thin body*), and 4 items measuring identification with media models (e.g. *I identify with media models*). Reliability was good  $\alpha = .87$ .

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<sup>1</sup> We also asked participants about personal and vicarious experience with cosmetic surgery. The number of participants who had already undergone surgery themselves was insufficient for analysis (3.1%). A larger proportion of participants knew someone who had undergone a procedure (45.4%). However, this did not influence post-exposure consideration of surgery ( $p = .54$ )

*Restrained eating behavior* was measured using the relevant subscale from the Dutch Eating Behavior Questionnaire (Van Strien, Frijters, Bergers, & Defares, 1986), with items like “*Do you deliberately eat less in order not become heavier?*” from (1) *never* to (5) *very often*. Reliability for this scale was high  $\alpha = .91$ .

*Materialistic values* were measured using the using the Aspirations Index (Kasser & Ryan, 1996). This is a measure of the importance of extrinsic goals in relation to intrinsic, taking into account not only a focus on financial success, but also image and popularity as part of its conceptualization of materialism. Six subscales were included: three extrinsic (money, image, popularity) and three intrinsic (affiliation, community, self-acceptance). The degree of importance placed on extrinsic values in relation to intrinsic values was calculated by subtracting the mean of all subscales from the mean of the three extrinsic subscales combined (Sheldon & Kasser, 2008). Cronbach’s alphas for the extrinsic goals was  $\alpha = .89$ .

*Manipulation Check.* At the end of the study participants in the experimental conditions were asked whether the advertisements they saw contained (1) no additional information, (2) discount incentives, (3) risk information. A high percentage of participants in conditions 1 (75.7%) and 2 (88.9%) noted seeing no additional information and discount incentives respectively. The risk information in condition 3 however, was consciously noted by a significantly lower percentage of women (45.2%). This was, to a certain extent, expected as the risk information was included in a more discreet and subtle manner than the discount incentives. Any findings relating to this condition may therefore imply that risk information can have an impact on women’s responses even if it is not consciously recognized.

*Procedure and Ethical Issues*

The study was approved by the research ethics committee at the University of Sussex, UK. Participants were emailed by their professor with an invitation to complete the study. The study website randomly allocated participants to one of the four conditions. The first page introduced the study, and participants were informed of their right to withdraw, and assured confidentiality and anonymity. They were then asked to provide some personal information to create a unique identifier code for each of them so that their answers to Part 1 could be matched up to Part 2 of the study without compromising anonymity.

The first part of the study was presented as a consumer decision-making task, where participants were presented with and asked to rate in terms of preference two sets of advertisements allegedly from UK companies wanting to expand their business in Switzerland. After viewing the advertisements, participants' self-discrepancies were assessed. Participants then completed the Acceptance of Cosmetic Surgery Scale, in which filler items about flower delivery were embedded in order to maintain the cover story. The study ended with a section on demographic information and a manipulation check.

Part 2 of the study was emailed to participants a week after completion of the first part, in order to minimize the likelihood that responses would be influenced by the experimental manipulation. In the introductory page, participants were asked to use a 6-month time-frame in their responses, as this section was focused on their more general and enduring attitudes. Following the consent form and unique identifier code, participants completed the Self-Discrepancy Index. They then completed the Aspirations

Index and thin-ideal internalization, followed by the Dutch Eating Behavior Questionnaire, and the Acceptance of Cosmetic Surgery Scale. Participants then completed the manipulation check, were fully debriefed about the true purposes of the study and were given the opportunity to withdraw or submit their responses.

## Results

### *Group differences on trait measures, BMI, and age*

Analyses to check whether groups exposed to different conditions differed on trait measures found no differences in BMI, thin-ideal internalization, restrained eating, trait body dissatisfaction, materialistic values, perceived intrapersonal benefits of surgery to image. However, groups did differ on whether they would consider surgery ( $F(3, 93) = 2.74, p = .05$ ) and small differences in age were observed, although this was not significant ( $F(3, 141) = 2.43, p = .07$ ). These variables were therefore controlled for in subsequent regression analyses. Age was controlled for in all analyses and whether women would consider surgery was controlled for when looking at consideration of surgery as an outcome measure. Thus, regressions were structured as follows: age (step 1); three exposure contrasts: control versus experimental (coded control:  $-.99$ ; experimental:  $.33$ ), no information versus information, and discounts versus risks (coded discounts:  $.33$ ; risks:  $-.33$ ) (step 2); and significant moderators (step 3).

### *Effects of exposure to cosmetic surgery advertising on body image*

Concerning body image (Tables 1 and ), two significant main effects emerged between the control and experimental groups, such that women exposed to cosmetic surgery advertising reported more weight (43.8%) and appearance-related self-

discrepancies (67.9%) than those in the control condition (weight = 21.2% ; appearance = 24.2%).

*Effects of cosmetic surgery advertising on women's attitudes toward surgery*

Exposure to cosmetic surgery advertising did not impact women's perceived benefits of surgery or the extent to which they would consider undergoing it (all  $p > .43$ ). However, several moderating variables emerged as significant for both measures of attitude. Perceived intrapersonal benefits of surgery were moderated by both trait weight and appearance self-discrepancies, as well as by materialistic values. Consideration of surgery was also moderated by weight and appearance self-discrepancies, and by restrained eating. In order to gain an understanding as to which of these variables played a stronger moderating role, they were all entered together in at step 3 in two separate multiple regressions- one for each measure of attitude. This showed that materialistic values were the strongest moderator of intrapersonal benefits, whereas appearance-related self-discrepancies were strongest for consideration of surgery. We therefore report these findings in more detail.

In terms of intrapersonal benefits, two interactions with materialistic values emerged as significant: the control versus experimental ( $\beta = -1.90, p = .007$ ) and the discount versus risks ( $\beta = 3.48, p = .002$ ) exposure contrasts. Simple slopes analyses were carried out for both interactions. Figure 1 shows the interaction between materialistic values and the control versus experimental exposure contrast. When women are exposed to cosmetic surgery advertising, there is very little difference between women low and high on materialistic values (.34 scale points). When exposed to neutral adverts however, highly materialistic women perceive surgery to be more beneficial to their image by 1.32

scale points than women not focused on materialistic values. In terms of the discounts versus risks interaction, there is virtually no difference between women low and high on materialistic values when exposed to risk information (Figure 2). Differences in the perception of how beneficial surgery is to image occur in the discounts condition, whereby materialistic perceive surgery to be more beneficial by 1.21 scale points than those low on materialistic values.

For consideration of surgery, the significant interaction term with trait appearance-related self-discrepancies was in the discounts versus risks exposure contrast. As shown in Figure 3, there is little difference between women exposed to discount incentives (.26 scale points), and a larger difference in women exposed to risk information. Here it was women who are low on appearance-related self-discrepancies who reported considering surgery to a larger extent, scoring .61 scale points higher than women who are high on appearance-related self-discrepancies.

In sum, and contrary to our expectations, exposure to cosmetic surgery advertising did not have an impact on the extent to which Swiss women report considering undergoing surgery nor to the extent to which they believe surgery to be beneficial to image. However, some interesting interactions with materialistic values suggest that materialistic women perceive surgery as more beneficial to image when they are not exposed to cosmetic surgery advertising and, in line with our predictions, when they are exposed to discount incentives rather than risk information. Furthermore, consideration of surgery varied according to women's pre-existing dissatisfaction with their appearance, suggesting that women low on this trait consider surgery more when they are informed of the risks associated with surgery.

## Discussion

The present study addressed concerns expressed about the nature and style of cosmetic surgery advertising through investigating its impact on Swiss women, a population with relatively little exposure to such advertising compared to other Western countries, such as the UK or US. The main findings for body image were an increased dissatisfaction with both weight and appearance more generally following exposure to cosmetic surgery advertising. These findings are consistent with previous correlational research which showed a link between cosmetic surgery media and body dissatisfaction (e.g. Markey & Markey, 2009), and provide experimental evidence of this relationship. They furthermore replicate findings with a UK sample (Ashikali, Dittmar, Ayers, 2015), which showed a deleterious effect of cosmetic surgery advertising on weight and appearance satisfaction. The consistency of these findings across two samples of women who are part of different cosmetic surgery media environments, provides more robust evidence of the negative effect of cosmetic surgery advertising on women's body image.

The main findings for attitudes towards cosmetic surgery were that perceived intrapersonal benefits of surgery was moderated by materialism; and that considering undergoing a procedure was moderated by trait self-discrepancies in appearance. This suggests that in this sample of women, only women who possess these trait variables are affected in their responses to cosmetic surgery advertising. This is contrary to the UK sample, where main effects were observed, such that exposure to cosmetic surgery advertising led to decreased perception of intrapersonal benefits, and exposure to risk information to an increased consideration of surgery. However some of the findings are

comparable. Swiss materialistic women and British women who were exposed to cosmetic surgery advertising reported surgery as less beneficial to image, than those exposed to the control advertisements. This suggests a negative response to cosmetic surgery advertising and a rejection of the benefits of surgery in both samples of women. A further interaction emerged in the Swiss sample, with materialistic women exposed to discount incentives perceiving surgery as more beneficial to image than those exposed to risk information. This could relate to materialistic women's sensitivity to financial information, and the offer of a discount making surgery more appealing.

Consideration of surgery was impacted by women's pre-existing appearance self-discrepancies, which is consistent with the proposal that individuals with a low appearance evaluation are likely to consider surgery to a larger extent than those who are relatively satisfied with their looks (Sarwer, Wadden, Pertschuk, & Whitaker, 1998). Interestingly, when exposed to risks, women high on appearance self-discrepancies reported considering surgery to a lesser extent than those low on such discrepancies. When exposed to discount incentives however, the opposite pattern emerged. It therefore appears that for women already dissatisfied with their appearance, the provision of risk information had a deterring effect from cosmetic surgery, perhaps by posing a "threat" to these women's appearance through reminding them that surgery will leave them scarred and can involve other complications. These findings suggest that the content of cosmetic surgery advertising does have an impact on some women's attitudes towards it, and future research should take the content of cosmetic surgery media into account.

One possible reason for different attitudes towards cosmetic surgery in the UK and Swiss samples is the media environment in each country. For example, UK women

are exposed much more frequently to cosmetic surgery advertising so may be more responsive to the way in which it is advertised. Alternatively, these differences may be due to methodological issues such as reporting biases in self-reports of attitudes to cosmetic surgery. It may be that lower exposure to cosmetic surgery in Switzerland results in more stigma attached to it, and Swiss women therefore being less likely to report positive attitudes. These issues need to be examined by future research and the variability between different cultures illustrates the value of a comparative research in cosmetic surgery. Overall, advertising for cosmetic surgery seems to have an impact on both body image and, to a certain extent, on attitudes towards cosmetic surgery. The deleterious effect of cosmetic surgery advertising on body image is important to take into account when formulating advertising guidelines, irrespective of whether the heightened body dissatisfaction following exposure to such advertising translates to the desire for a procedure. This is because a number of unhealthy behaviors and psychological issues can arise in response to such dissatisfaction (e.g. Stice & Shaw, 2002). The impact on attitudes towards surgery is more difficult to disentangle, and consequently, suggestions for advertising guidelines are also more difficult to make. However, findings from the present study suggest that women who possess certain individual characteristics are more likely to be affected by advertising for cosmetic surgery. Although further research is needed to determine which traits may act as vulnerability factors for negative responses to such advertising as well as the potential impact of different content included within such advertising, our findings suggest that this type of advertising does indeed affect the public. Considering that this type of advertising is for a medical service which carries risks to health, the fact that it may have any influence in encouraging people to undergo

procedures presents an ethical dilemma for cosmetic surgery doctors and providers more generally. Some countries have responded to this by banning advertising for cosmetic surgery all together (e.g. France and Italy), whereas others are still working on regulating the industry.

Despite the novel aspects of the present research, there are limitations which must be noted. First, the sample was homogenous in terms of age, ethnicity, and educational background. It could be that people with different backgrounds or of different ages respond differently to this type of advertising. Particularly interesting would be to investigate responses of older women, who also account for the greatest proportion of procedures carried out yearly (ASPS, 2013). Second, although experimental research is of great value in allowing for cause and effect inferences, this research cannot inform us as to whether the effects found are transient or long-lasting. Longitudinal research would therefore be particularly useful in increasing our understanding of the impact of cosmetic surgery advertising. Third, all experimental materials in this study contained images of idealized media models. This makes it difficult to determine whether the adverse effects on body image following exposure to cosmetic surgery advertising were due to the images of models or to the service being advertised. It would be interesting therefore to replicate and extend the present research with cosmetic surgery advertising which uses a range of different images (for a UK study which looks at this, see Ashikali, Dittmar, Ayers, 2015). Finally, there are a number of individual-difference variables which could play a role to how women respond to cosmetic surgery advertising and how they perceive surgery more generally. These include psychopathological symptoms, such as depression and anxiety (e.g. Meningaud, Benadiba, Servant, Herve, Bertrand, & Pelicier,

2011), or body dysmorphic disorder (e.g. Glaser & Kaminer, 2005). It is important that research take such variables into account, particularly with regards to determining appropriate patient selection.

Overall, this study provides further evidence that cosmetic surgery advertising has a negative impact on women's body image. However, the content of such advertising has different and complex effects in different cultures. In Switzerland cosmetic surgery attitudes were only impacted in women who were highly materialistic and appearance-dissatisfied. Therefore, women's attitudes toward surgery may be influenced by the media environment and the frequency with which they are exposed to cosmetic surgery advertising. Further research should consider the content of cosmetic surgery media to gain an understanding about which types of portrayals have a negative impact on women. Moreover, focus should be placed on women's individual trait differences, which may impact how they respond to this type of media.

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Table

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Table 1. Binary logistic regression for weight-related self-discrepancies.

Predictor	B	S.E.	95% C.I. for Odds Ratio		
			Lower	OR	Upper
Age	-.07	.04	.86	.93	1.01
Control vs Experimental	.84*	.36	1.15	2.31	4.65
No Information vs Information	.10	.42	.48	1.10	2.52
Discounts vs Risks	-1.15	.73	.08	.32	1.33
Constant	1.12	.97		3.05	

Note: \*  $p < .05$ . Model  $\chi^2(4) = 10.86$ ,  $p = .03$ . Hosmer&Lemeshow  $\chi^2(7) = 5.18$ ,  $p = .64$ . Cox and Snell  $R^2 = .07$ . Nagelkerke  $R^2 = .10$ .

Table 2. Binary logistic regression for appearance-related self-discrepancies.

	B	S.E.	95% C.I. for Odds Ratio		
			Lower	OR	Upper
Age	-.03	.04	.90	.97	1.05
Control vs Experimental	1.45***	.35	2.16	4.25	8.37
No Information vs Information	-.04	.45	.40	.96	2.31
Discounts vs Risks	.22	.75	.29	1.24	5.40
Constant	1.01	.91		2.74	

Note: \*  $p < .05$ . Model  $\chi^2(4) = 21.03$ ,  $p < .001$ . Hosmer&Lemeshow  $\chi^2(7) = 6.76$ ,  $p = .45$ . Cox and Snell  $R^2 = .14$ . Nagelkerke  $R^2 = .18$ .

Figure 1. Perceived intrapersonal benefits of surgery at different levels of materialism for women exposed to cosmetic surgery advertising or not.

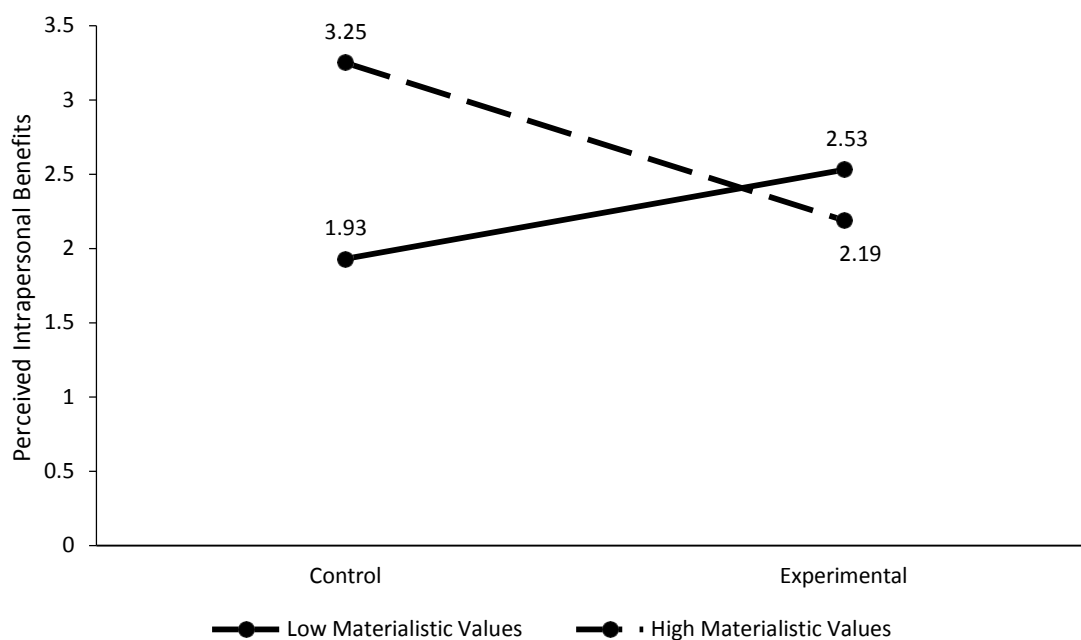
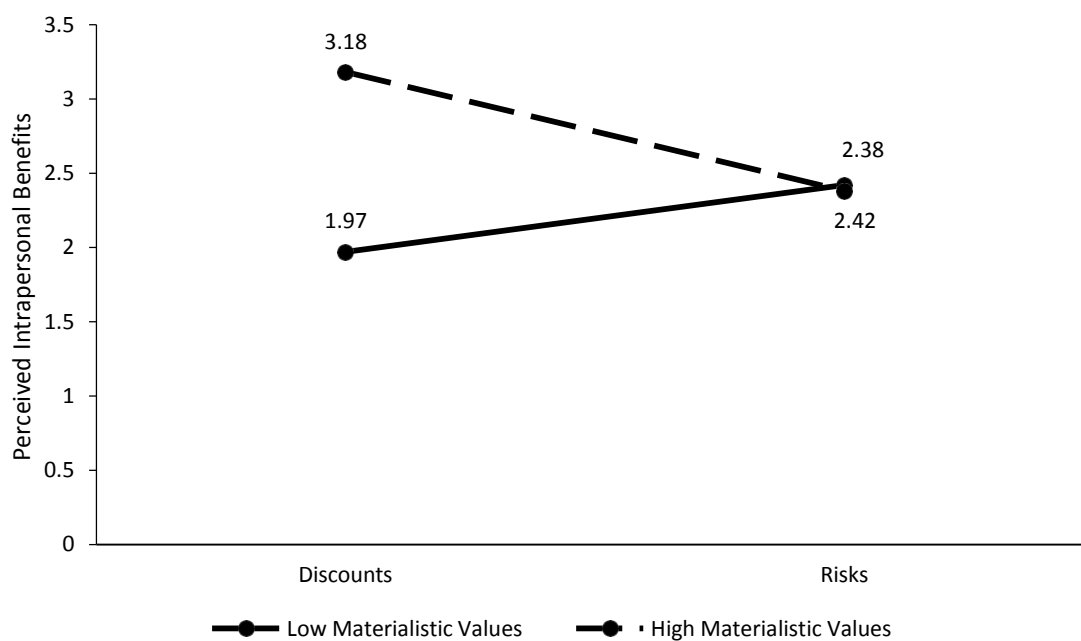


Figure 2. Perceived intrapersonal benefits of surgery at different levels of materialism for women exposed to cosmetic surgery advertising containing discount incentives or risk information.



## Appendix 6

Figure 3. Consideration of surgery at different levels of appearance-related self-discrepancies for women exposed to cosmetic surgery advertising containing discount incentives or risk information.

