

Body Satisfaction and Attitudes toward Cosmetic Surgical vs. Nonsurgical Procedures

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Abstract

Body satisfaction can play an important role when an individual considers having cosmetic procedures. Even though a total cosmetic procedure performed have significantly increased around the world, cosmetic surgical and nonsurgical procedures have shown noticeable opposite volume trends over the last decades. This study aimed to examine differences in young consumers' attitudes toward cosmetic surgical and nonsurgical procedures and identify the relationships between body satisfaction and attitudes toward both cosmetic procedures by gender and ethnicity, based on socio cultural theory. Significantly more favorable attitudes toward cosmetic nonsurgical than surgical procedures were found for all groups. Regarding the gender effect on attitudes toward cosmetic procedures, no significant difference was found for both cosmetic procedures. Regardless of gender and ethnicity, young consumers' body image perceptions were closely associated with their attitudes; yet, meaningful ethnic differences in the relationship between body satisfaction and cosmetic procedure attitudes were found.

Keywords: Body satisfaction, cosmetic procedures, socio cultural theory

1. Introduction

The popularity of cosmetic surgical and nonsurgical procedures has remarkably increased around the world. In 2014, about 15.6 million cosmetic procedures were performed solely in the U.S., and consumers spent nearly \$12.9 billion on cosmetic procedures, showing the huge jump of procedures performed and money spent over the last decade (American Society of Plastic Surgeons [ASPS], 2014). In 2005, ASPS reported about 10.2 million cosmetic procedures performed and more than \$9.4 billion spent on the total cosmetic procedures in the U.S. Similarly, a considerable increasing trend has been noticed in Asia. According to The International Society of Aesthetic Plastic Surgery (ISAPS, 2014), during the last five years from 2010 to 2014, the total number of cosmetic procedures performed in South Korea has showed remarkable upward trend of 84.5%. In China, the number of cosmetic procedures had increased by 20.1% from 2010 to 2011 (ISAPS, 2010, 2011). At the same time, the total number of cosmetic surgeons has also dramatically increased. The ISAPS reported that the numbers of board-certified cosmetic surgeons have increased by 5.5% in U.S. ($n = 6,300$ in 2014), by 64.3% in South Korea ($n = 2,054$ in 2014), and by 40% in China ($n = 2,800$ in 2014), from 2010 through 2014. The popularity of cosmetic procedures is expected to continue with technological advancements that allow most cosmetic procedures to be less expensive, less traumatic, and with shorter recovery periods (Sarwer & Crerand, 2004).

Cosmetic procedures can be divided into two types—cosmetic surgical and nonsurgical procedures. Cosmetic surgical procedures include techniques intended for appearance enhancement through surgical techniques (e.g., breast augmentation, nose reshaping, liposuction, eyelid surgery, and facelift), while cosmetic nonsurgical procedures involve minimally-invasive techniques, such as botulinum toxin (Botox or dysport), soft tissue fillers, chemical peel, laser hair removal, and micro dermabrasion. With its remarkable increasing popularity as a whole, cosmetic surgical and nonsurgical procedures have shown an opposite growing trend over the last decade. According to the 2014 Cosmetic Procedure Trends report by the ASPS, the number of cosmetic surgical procedures has decreased by 12%, from 1.90 million in 2000 to 1.68 million in 2014 (ASPS, 2014). On the other hand, the number of cosmetic nonsurgical procedures has increased from 5.5 million in 2000 to 13.9 million in 2014, showing an upward trend of 154%.

It is not surprising that physical attractiveness is of overwhelming importance to people. As the society is getting notorious for its beauty-obsessed culture, people are under much greater social pressure to be more beautiful than ever. People considered as beautiful in their society can benefit in several ways. Attractive person can be judged in positive ways in terms of their personality, abilities, and sociability, and these biased perceptions often lead to positive social, psychological and economical consequences. (Zebrowitz & Montepare, 2008). As a method of appearance management or enhancement, many young consumers consider having a cosmetic procedure to reduce their dissatisfaction with appearance (Calogero, Pina, Park, & Rahemtulla, 2010).

Previous studies have confirmed the significant and negative associations between the levels of body satisfaction and the willingness to undergo cosmetic procedures (Slevec & Tiggemann, 2010). To date, most current studies have focused on people's attitudes toward cosmetic surgical procedure.

There has been no study examining the differences between consumers' perception toward cosmetic surgical and nonsurgical procedures. While many studies have investigated the relationship between body satisfaction and the willingness to undergo cosmetic surgical procedure, no study has examined the effects of body satisfaction on attitudes toward cosmetic nonsurgical procedures. This study aimed (1) to compare young consumers' acceptance toward cosmetic surgical procedures to nonsurgical procedures, (2) to examine the effects of body satisfaction on consumers' attitudes toward cosmetic surgical and nonsurgical procedures, and (3) to identify differences in the relationships between body satisfaction and cosmetic procedure attitudes by gender and ethnicity.

1.1 Socio cultural Theory

Socio cultural theory emphasizes that people learn the standards of beauty within social and cultural context (Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999). Each society has its own standards of beauty and people judge their own appearance based on the beauty standards defined by the society in which they are involved. To explain how one's body image develops, sociocultural theory has been frequently adopted in previous studies (e.g., Buote, Wilson, Strahan, Gazzola, & Papps, 2011; Fingeret & Gleaves, 2004; Forbes & Jung, 2008). Socio cultural approach also can provide theoretical framework to understand how an individual's body image formed within social and cultural context affects his/her attitudes toward cosmetic procedures. According to socio cultural theory, socio cultural factors, such as gender, ethnicity, and social pressure, can play significant roles in people's body image. A broad body of literature has identified the gender and ethnic differences in body satisfaction and its concomitant results (e.g., Grabe & Hyde, 2006; Cheng, 2014). Swami, Campana, and Coles (2012) found that Caucasian female college students showed lower levels of body satisfaction and had more positive attitudes toward cosmetic surgery, compared to Asian female students. Similarly, Mintz and Kashubeck (1999) reported that Caucasian women were more likely to engage in risky appearance management behaviors, such as dieting and binge eating, than Asian women.

Physical features considered as attractive are significantly different between female and male. For example, fuller lips and big eyes are preferred in women while a big jaw and broad chin are key elements for men's attractive face. These differences in the standards of ideal body are reflected in consumer decisions to undergo cosmetic procedures. ASAPS (2014) reported that breast augmentation and liposuction were two top-ranked cosmetic surgical procedures for female patients, while nose reshaping and eyelid surgery were popular among male patients in 2014. One of the interesting trends in cosmetic surgical procedure for male patients is the increasing popularity of male breast-reduction surgery. As women have been judged by their physical appearance more harshly than are men in many cultures (Buote et al., 2011), female and male consumers may show different perceptions and interests in cosmetic procedures.

1.2 Body Satisfaction and Attitudes toward Cosmetic Procedures

Most previous studies of body image and cosmetic surgery have been conducted by plastic surgeons and clinical psychologists with actual cosmetic surgery patients (e.g., Pertschuk, Sarwer, Wadden, & Whitaker, 1998, Sarwer, Wadden, Pertschuk, & Whitaker, 1998). Since the turn of the 21st century, some psychologists have expanded this area of research by identifying several factors that influence attitudes toward cosmetic procedures among the general public (e.g., Clarke, Repta, & Griffin, 2007; Henderson-King & Brooks, 2009; Jeon & Lee, 2002; Swami, 2009; Slevic & Tiggemann, 2010; Voelker & Pentina, 2011). Due to its growing importance, examining how one's body satisfaction motivates the pursuit of cosmetic procedures among non-patients has become a viable research area. Body satisfaction can be defined as the extent to which an individual is happy or unhappy with his/her physical appearance (Martin, 2010). Researchers have linked the levels of body satisfaction to cosmetic surgery attitudes (Slevic & Tiggemann, 2010). Particularly among female college students, it has been found that the lower levels of body satisfaction are strongly associated with more favorable attitudes toward cosmetic procedures (Markey & Markey, 2009; Menzel et al., 2011). Thus, perceived levels of body satisfaction can be a major motivating factor to have more favorable attitudes toward cosmetic procedures (Lee, 2009; Sarwer & Didie, 2002).

In order to explore the attitudes toward cosmetic surgical and nonsurgical procedures and examine the role of body satisfaction in consumer attitudes toward cosmetic procedures, the following research questions were addressed in this study. In addition, gender and ethnic differences in attitudes and its associations with body satisfaction were explored.

RQ1: Are there any differences in consumer attitudes toward cosmetic surgical and nonsurgical procedures?

RQ2: Do body satisfaction negatively affect consumer attitudes toward cosmetic surgical and nonsurgical procedures?

RQ3: Are there any gender and ethnic differences in body satisfaction and consumer attitudes toward cosmetic procedures?

2. Method

2.1 Sample and Data Collection

A web-based survey was used for data collection with a convenience sample of college students. Participants were recruited from introductory level courses at a university in the Midwestern United States during 2012 Spring and Fall. Within the face-to-face classroom, the students were informed about the opportunity to participate in a web-based research survey, focusing on their attitudes toward cosmetic surgical and nonsurgical procedures, and their body satisfaction. Only Caucasian and Asian students from China and South Korea were included in this study. To reduce the effect of acculturation on body image, Asian students those who have lived in U.S. less than one year were invited. The link to the questionnaire was provided on the class website.

2.2 Measurement

A questionnaire contained five-sections was used to measure face satisfaction, body-parts satisfaction, attitude towards cosmetic surgical/nonsurgical procedures, and demographics. To assess face and body-parts satisfaction a total of 16 items were used. 11 items-7 items for face parts and 4 items for body parts-were adopted from the Body Parts Satisfaction Scale (BPSS; Berschied, Walster, & Bohrnstedt, 1973). They are chin, eyelids, ears, hair, lips, nose, and skin tone for face parts, and arms, buttocks, thighs, and tummy for body parts. The remaining 5 items (3 items for face and 2 items for body parts) were developed for this study, based on the top-ranked cosmetic procedures. These include cheeks, forehead, and neck for face parts, and breast and calves for body parts. The measure for each item included a 7-point Likert-type scale (1: *strongly dissatisfied* and 7: *strongly satisfied*). Ten items from Ajzen and Driver (1992), and Schifter and Ajzen (1985) assessed attitudes toward cosmetic surgical and nonsurgical procedures using a 7-point Likert-type scale of the semantic differential type (e.g., foolish/wise, harmful/beneficial, and useless/useful). Demographic information included age, ethnicity, major, height, and weight. The latter two items were used to calculate participants' Body Mass Index (BMI).

2.3 Data Analysis

Using SPSS 23.0, data analysis included descriptive statistics, correlations, reliabilities, exploratory factor analysis, t-tests, ANOVA, and regression. A series of paired samples tests was performed to compare differences in participants' attitudes toward cosmetic surgical and nonsurgical procedures. ANOVAs were used to test gender and ethnicity differences (4 groups) in height, weight, BMI, and attitudes toward cosmetic procedures. Using multiple regression analysis, the effects of face and body-parts satisfaction on attitudes toward cosmetic procedures were examined.

3. Results and Discussion

3.1 Sample Descriptions

From a total of 493 usable respondents, Caucasian female represented the largest group (Group 1: $n = 218$, 44.2%), followed by Asian male (Group 4: $n = 113$, 22.9%), Caucasian male (Group 2: $n = 87$, 17.7%), and Asian female students (Group 3: $n = 75$, 15.2%; see Table 1). The mean age of all sample was 20.4 years ($SD = 1.6$), ranging from 18 to 28. BMI scores were calculated by dividing weight in pounds (lbs) by height in inches (in) squared and multiplying by a conversion factor of 703. In general, the prevalence of overweight and obesity was more common among Caucasians than Asians, as well as among male than female students. Among Caucasian female, 161 respondents (73.3%) were classified as normal weight, 27 respondents (12.4%) as overweight, 19 respondents (8.7%) as underweight, and 9 respondents (4.1%) as obese. On the other hand, the majority ($n = 73$, 94.2%) of Asian female were categorized as underweight or normal weight. No Asian female student was classified as obese and only two participants were in the "overweight" category.

A one-way ANOVA was used to examine the differences in height, weight, and BMI among four groups (Table 2). The *Levene's F* test revealed that the homogeneity of variance assumption was not met. As such, the *Welch's F* test was used. Post hoc comparisons, using the Games-Howell procedure, showed that all four groups had statistically and significantly different heights. Similarly, the results of one-way ANOVA on weight by four groups revealed significant group differences. For both height and weight, Caucasian male students were the tallest and heaviest, followed by Asian male, Caucasian female, and Asian female students. Within the same ethnicity, the BMI scores of male students were significantly higher than their female counterparts. However, the mean BMIs of all four groups were in the "normal" range.

Table 1: Demographic Characteristics: Age and BMIs

	Group 1	Group 2	Group 3	Group 4	ALL
<i>N</i> (%)	218 (44.2%)	87 (17.7%)	75 (15.2%)	113 (22.9%)	493
Age [μ (SD)]	19.33 (1.3)	21.07 (1.1)	20.95 (1.5)	21.41 (1.5)	20.36 (1.6)
Height (inch)	65.85 (2.8)	64.09 (2.5)	72.28 (2.6)	70.33 (4.0)	67.55 (4.2)
Weight (lb)	136.27 (23.5)	114.05 (17.6)	184.92 (24.8)	160.57 (28.8)	145.31 (32.9)
BMI <i>N</i> (%)					
Under- weight	19 (8.7%)	20 (33.3%)	0 (0%)	13 (11.5%)	61 (12.4%)
Normal	161 (73.9%)	53 (60.9%)	44 (58.7%)	71 (62.8%)	329 (66.7%)
Over weight	27 (12.4%)	2 (2.3%)	24 (32%)	17 (15%)	70 (14.2%)
Obese	9 (4.1%)	0 (0%)	7 (9.3%)	8 (7.1%)	24 (4.9%)

Notes: Group 1: Caucasian female, Group 2: Asian female, Group 3: Caucasian male; Group 4: Asian male

Table 2: Gender and Ethnicity Differences in Height, Weight, and BMI

μ (SD)	Group 1	Group 2	Group 3	Group 4	ALL
Height (inch)	65.85 (2.8)	64.09 (2.5)	72.28 (2.6)	70.33 (4.0)	67.55 (4.2)
Welch'sF	$F(3,203.54) = 181.07, p < .001$				
Games-Howell	Group 2 < Group 1 < Group 4 < Group 3				
Weight (lb)	136.27 (23.5)	114.05 (17.6)	184.92 (24.8)	160.57 (28.8)	145.31 (32.9)
Welch'sF	$F(3,208.19) = 164.81, p < .001$				
Games-Howell	Group 2 < Group 1 < Group 4 < Group 3				
BMI	22.08 (3.4)	19.58 (2.5)	24.89 (3.3)	22.89 (4.2)	22.27 (3.8)
Welch'sF	$F(3,206.91) = 46.52, p < .001$				
Games-Howell	Group 2 < Group 1, 4 < Group 3				

Notes: Group 1: Caucasian female, Group 2: Asian female, Group 3: Caucasian male; Group 4: Asian male

3.2 Measurement Reliability and Validity

To determine the underlying dimensions of face satisfaction, body-parts satisfaction, and attitudes toward both cosmetic procedures, exploratory factor analyses (EFAs) were conducted. Following Petrie et al.'s (2002) study, this study used the two-factor solution for the BPSS. As five additional items (3 items for face and 2 items for body parts) were added, two separate EFAs were conducted on face satisfaction and body-parts satisfaction. Face satisfaction measured with 10 face-part items resulted in one factor representing 59.0% of the variance with the eigen value of 5.9. The Cronbach's alpha reliability was .92. Body satisfaction including 6 body-part items also revealed one factor explaining 64.0% of the variance with the eigen value of 3.8. Cronbach's alpha was .89.

The exploratory factor analysis of attitude variable resulted in one underlying factor for both cosmetic procedures. For attitudes toward cosmetic surgical procedure, one factor represented 74.5% of the variance with the eigen value of 7.5. For attitudes toward cosmetic nonsurgical procedure, with the eigen value of 8.0, one factor explained 80.1% of the variance. Cronbach's alphas for attitudes toward cosmetic surgical and nonsurgical procedures were .96 and .97, respectively.

3.3 Differences in Attitudes toward Cosmetic Surgical and Nonsurgical Procedures

Table 3 shows the results from the paired samples tests and ANOVAs. For all four groups, participants had significantly more favorable attitudes toward cosmetic nonsurgical than surgical procedures, consistent with the opposite volume trends of cosmetic surgical and nonsurgical procedures. In general, most cosmetic surgical procedures require considerable expenditure and may cause side effects as well as pain, resulting in less accessible. On the other hand, cosmetic nonsurgical procedures are more accessible due to their relatively low price and risks. Cosmetic nonsurgical procedures have also provided several alternatives to traditional surgical procedures. For example, skin laser and Botox as anti-aging treatments have been popular alternatives to surgical procedures such as face-lift.

Since cosmetic nonsurgical procedures cause lower risk and provide easier access compared to surgical procedures, Liu and Miller (2008) also expected that cosmetic nonsurgical procedures will be the primary driver of the total growth in cosmetic procedures. However, no significant gender and ethnicity difference was found in attitudes toward each of cosmetic surgical and nonsurgical procedures.

Table 3: Group Differences in Attitudes toward Cosmetic Procedures

	Group 1	Group 2	Group 3	Group 4	Diff. groups	bw/
Attitudes towards	μ (SD)					
Surgical Procedures	3.18 (1.5)	3.33 (1.5)	3.28 (1.6)	3.35 (1.5)	n.s.	
Non-surgical Procedures	3.81 (1.6)	3.98 (1.4)	3.86 (1.6)	3.84 (1.6)	n.s.	
Differences between Surgical vs. Non-surgical procedures	$t(217)$ = 6.72***	$t(86)$ = 4.81***	$t(74)$ = 3.07**	$t(112)$ = 4.10***		

Notes: * $p < .05$, * $p < .01$, *** $p < .001$.

3.4 The Relationships between Body Satisfaction and Cosmetic Procedure Attitudes

Overall, the levels of body satisfaction predicted their attitudes toward cosmetic procedures. Table 4 shows the regression results for the effects of face and body-parts satisfaction on attitudes toward both cosmetic procedures. For Group 1, both face and body satisfaction significantly and negatively affected their attitudes toward cosmetic surgical procedure [$R^2 = .13$, $F(2,215) = 17.04$, $p < .001$; $\beta_{\text{face}} = -.20$, $p < .05$; $\beta_{\text{body}} = -.20$, $p < .05$]; yet, only body satisfaction significantly influenced their attitudes toward nonsurgical procedure [$R^2 = .09$, $F(2,215) = 11.43$, $p < .001$; $\beta_{\text{body}} = -.22$, $p < .05$]. For Group 2, only face satisfaction revealed significantly negative effect on the attitudes toward both surgical and nonsurgical procedures [surgical procedure: $R^2 = .15$, $F(2,84) = 8.36$, $p < .001$; $\beta_{\text{face}} = -.44$, $p < .01$.; nonsurgical procedure: $R^2 = .17$, $F(2,84) = 9.89$, $p < .001$; $\beta_{\text{face}} = -.45$, $p < .01$].

Among male participants, only body satisfaction negatively predicted their attitudes toward surgical procedure [Group3: $R^2 = .14$, $F(2,72) = 6.87$, $p < .01$; $\beta_{\text{body}} = -.45$, $p < .01$; Group4: $R^2 = .08$, $F(2,110) = 5.65$, $p < .01$; $\beta_{\text{body}} = -.30$, $p < .05$]. No significant association between male students' body image perceptions and attitudes toward cosmetic nonsurgical procedure was found.

The findings of this study indicated the considerable gender and ethnic differences in why people seek cosmetic procedures. For Caucasian female students, body-parts satisfaction was the important factor significantly associated with their attitudes toward both cosmetic procedures, while face satisfaction was the only significant factor to predict attitudes among Asian female students. Young Americans' concern over weight may shape focus of body change intentions and attitudes, while Asian women who are thinner on average may focus more on face, especially eyes and nose, as a target of appearance concerns. No Asian female student in this study was categorized as "obese". Moreover, in practice, eye surgeries to achieve eyes that are more Western are common in some Asian countries (Holiday & Elfving-Hwang, 2012). The results have important implications for practitioners in cosmetic industry. When dealing with consumers from diverse ethnic origins, it might be promising to develop marketing strategies that address different face and body concerns.

Table 4: Regression Analysis for Attitudes toward Cosmetic Procedures

Surgical Procedure	Group 1		Group 2			Group 3				Group 4		
	B	SE B	β	B	SE B	β	B	SE B	β	B	SE B	β
Face satisfaction	-.25	.11	-.20*	-.57	.20	-.44**	.09	.21	.07	.00	.16	.00
Body satisfaction	-.24	.10	-.20*	.05	.07	.04	-.55	.21	-.45**	-.32	.14	-.30*
R^2	.13		.15			.14				.08		
F	$F(2,215) = 17.04***$		$F(2,84) = 8.36***$			$F(2,72) = 6.87**$				$F(2,110) = 5.65**$		
Non-surgical Procedure	Group 1		Group 2			Group 3				Group 4		
	B	SE B	β	B	SE B	β	B	SE B	β	B	SE B	β
Face satisfaction	-.15	.12	-.12	-.58	.19	-.45**	-.14	.22	-.11	.03	.17	.03
Body satisfaction	-.28	.11	-.22*	.02	.17	.02	-.24	.22	-.20	-.24	.15	-.25
R^2	.09		.17			.06				.03		
F	$F(2,215) = 11.43***$		$F(2,84) = 9.89***$			$F(2,72) = 3.28*$				$F(2,110) = 2.43$		

Notes: * $p < .05$, ** $p < .01$, *** $p < .001$.

5. Limitations and Future Research

The results might not generalize to other samples. The conclusions drawn from this study were limited to a convenience sample of college students. Even though this study only recruited Asian students who have lived in U.S. less than one year to minimize the body image acculturation effects, Asian participants who study in the U.S. cannot represent their counterparts in their country of origin. Moreover, even in Asia, each country has different beauty standards. To further confirm the findings of this study, future research needs to continue with a random sample from more specific ethnicity and various age groups. The results of this study highlighted the need for cross-cultural comparison in studies of face and body-parts satisfaction and its association with young consumers' perception of cosmetic procedures.

As major predictors of consumer attitudes toward cosmetic procedures, this study focused on face and body-parts satisfaction. However, making the decision to have a cosmetic procedure (especially for surgical procedure) includes a very personal and complex process. Future studies to identify other factors affecting consumer's attitudes toward cosmetic procedures are warranted. For example, Henderson-King and Brooks (2009) found that undergraduates' attitude toward cosmetic surgery was affected by close others' (e.g. parents and friends) appreciation of physical appearance, suggesting attitude may not be independent from social norm. Sarwer et al. (2005) also pointed out social pressure (e.g. media) is an important factor explaining college students' attitude toward cosmetic surgery. Moreover, gender and ethnic differences in body satisfaction are closely related to the social and cultural standards of beauty ideals (Grabe & Hyde, 2006). Further studies addressing the effects of different beauty standards in various cultures on consumer attitudes toward cosmetic procedures will expand our understandings.

The cosmetic procedures industry will likely continue to rise in popularity and its continuing growth draws attention to the need for future studies to understand why and when people seek cosmetic surgical and/or nonsurgical procedures. As factors influencing the popularity of cosmetic procedure are rapidly changing, such as technological advances and the reduction of cost for treatments, both in cosmetic surgical and nonsurgical procedures, people's perceptions of having a cosmetic procedure may also continue to significantly change. Clearly, further research on this area needs to be continued.

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