

# Body Talk on Social Networking Sites and Cosmetic Surgery Consideration Among Chinese Young Adults: A Serial Mediation Model Based on Objectification Theory

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## Abstract

People's interest in cosmetic surgery has increased in recent years. Drawing from objectification theory, in the present study, we examined the associations of body talk on social networking sites (SNS), body surveillance, and body shame with cosmetic surgery consideration. In particular, we examined the mediating roles of body surveillance and body shame in the relationship between SNS body talk and cosmetic surgery consideration. We also examined potential gender differences in the serial mediation model. Male and female college students in China ( $N = 309$ ) completed questionnaires regarding SNS body talk, body surveillance, body shame, and cosmetic surgery consideration. Results showed that SNS body talk, body surveillance, and body shame were positively associated with cosmetic surgery consideration. Body surveillance and body shame mediated the association between SNS body talk and cosmetic surgery consideration both separately and sequentially. Gender did not moderate any of the relations in the serial mediation model. Findings of this study provide new insight into the relationship between SNS use and cosmetic surgery and highlight facets of objectification as potential targets for prevention and intervention regarding appearance concerns. *Online slides for instructors who want to use this article for teaching are available on PWQ's website at <http://journals.sagepub.com/doi/suppl/10.1177/03616843211026273>*

## Keywords

social networking sites, body talk, body surveillance, body shame, cosmetic surgery

Cosmetic surgery is becoming increasingly popular, especially in North America, Europe, and Asia-Pacific. According to a recent report, the global cosmetic surgery and procedure market was valued at some \$26 billion in 2019 and is expected to increase to \$46 billion by 2026 (Statista, 2019b). Another report showed that the compound annual growth rate of the global cosmetic surgery and procedure market is anticipated at 5.62% between 2020 and 2028 (Inkwood Research, 2020b). Appearance dissatisfaction and body dysmorphic disorder are usually believed to serve as motivational catalysts for interest in cosmetic surgery (Haas et al., 2008; Sarwer, 2019). Although some people may report improvement in body image (Sarwer, 2019) and feel satisfied with the outcomes of cosmetic surgical procedures (Honigman et al., 2004), cosmetic surgery can also be potentially associated with many negative outcomes, such as persistent pain, complications, and postsurgical psychological disturbance (Honigman et al., 2004; Rohrich & Cho, 2018).

A wide range of studies in different cultures have examined potential predictors of people's interest in cosmetic surgery, including media exposure, peer influence, interpersonal sexual objectification, appearance dissatisfaction, and self-esteem

(e.g., Calogero et al., 2010; Jackson & Chen, 2015b; Kalantar-Hormozi et al., 2016; Markey & Markey, 2010; Matera et al., 2018; Miller, 2020; Sharp et al., 2014; Wen et al., 2017). Notably, one factor that has yet to be investigated is the role of body talk on social networking sites (hereinafter, SNS body talk). Considering the popularity of SNS use and cosmetic surgery in China (iiMedia Research, 2020; Inkwood Research, 2020a), in the present study, we examined the associations among SNS body talk, body surveillance, body shame, and

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consideration of cosmetic surgery based on objectification theory in a sample of Chinese young men and women.

### *Cosmetic Surgery in the Chinese Context*

China plays an important role in the global cosmetic surgery boom. In recent years, the growing obsession with physical beauty in China has increased the demand for cosmetic surgery and procedures (Inkwood Research, 2020a). According to a recent report, the Chinese cosmetic surgery market grew six times faster than the global average (Yue, 2017). China experienced the highest number of cosmetic surgeries and procedures in the Asia-Pacific market, which represents the fastest growing region for the global market (Inkwood Research, 2020a). An important feature of the Chinese cosmetic surgery market is that most of the cosmetic surgeries focus on facial appearance. Specifically, double-eyelid surgery, rhinoplasty, and face-slimming surgical procedures (e.g., trimming lower jawbone and flattening cheekbones) are the most popular cosmetic surgeries in China (DeGennaro, 2018; Gentleman Marketing Agency, 2018).

Notably, young people are key to the booming cosmetic surgery market in China (DeGennaro, 2018; Wen, 2009). According to research by SoYoung (*Xin Yang* in Chinese, a very popular medical beauty app), dubbed China's "Facebook of cosmetic surgery," 96% of people undergoing cosmetic procedures in China are under 35 years of age, which is opposite of the figures in the United States, where 75% of the cosmetic surgery patients are over 35 years old (Ang, 2019). In China, cosmetic surgery is often given to family members or friends as a present (DeGennaro, 2018; Gentleman Marketing Agency, 2018). For instance, many high school students are gifted cosmetic surgery by their parents as a reward for passing the national college entrance examination (Wen, 2009). Additionally, parents sometimes pay for cosmetic surgery as a birthday present for their children (Ang, 2019). Some Chinese students who cannot afford cosmetic surgery on their own even borrow money to undergo a procedure (Li, 2017). Thus, it is of particular importance to examine the potential predictors of cosmetic surgery among young people in China.

### *Objectification Theory and Cosmetic Surgery*

Objectification theory was originally developed to explicate the psychological and experiential consequences of sexual objectification for women (Fredrickson & Roberts, 1997). Women live in a culture in which their bodies are looked at, evaluated, and always potentially objectified. Sexual objectification occurs when a woman's body, body parts, or sexual functions are separated from her identity (Fredrickson & Roberts, 1997). According to objectification theory, exposure to sexual objectification via interpersonal encounters (e.g., objectifying gazes and appearance commentary) or media (e.g., images in a magazine that "spotlights" women's bodies) ultimately leads women to adopt an external

observer's view of their own bodies as objects to be evaluated, which is termed self-objectification. Individuals high in self-objectification evaluate themselves based on their observable body attributes rather than their non-observable body attributes (Fredrickson & Roberts, 1997), and chronically and habitually monitor their own bodies, which is termed "body surveillance" by McKinley and Hyde (1996). Body surveillance is a common behavioral manifestation of self-objectification and is often used as a measure of self-objectification (Moradi & Huang, 2008).

Self-objectification and manifest body surveillance can lead to some psychological consequences, such as body shame (i.e., the emotion one feels when one perceives oneself as falling short of cultural beauty standards), which subsequently contributes to mental health problems, including disordered eating, depression, and sexual dysfunction (Moradi et al., 2005; Szymanski et al., 2011). Previous studies have shown that sexually objectifying media exposure and interpersonal experience of sexual objectification are related to body surveillance and body shame (e.g., Calogero et al., 2010; Slater & Tiggemann, 2015; Vandenbosch & Eggermont, 2012) and that body surveillance and body shame are associated with body image concerns (Daniel & Bridges, 2010; Jackson et al., 2016), disordered eating (Jackson & Chen, 2015a; Moradi et al., 2005), depression (Grabe et al., 2007; Tiggemann & Kuring, 2004), low self-esteem (Choma et al., 2010; Mercurio & Landry, 2008), and low sexual assertiveness/satisfaction (Calogero & Thompson, 2009; Manago et al., 2015).

The processes proposed by objectification theory may also play a role in people's consideration of cosmetic surgery. People high in body surveillance and body shame may have positive attitudes toward and engage in appearance modification efforts (e.g., cosmetic surgery) in order to align their appearance with the prescribed appearance ideals and reduce shame about their appearance (Jackson & Chen, 2015b). The relationship between facets of objectification theory and cosmetic surgery consideration has been investigated in some research. For example, body surveillance and body shame were associated with consideration of cosmetic surgery among Chinese adolescent girls (Ching & Xu, 2019). Furthermore, the positive links from body surveillance and body shame to cosmetic surgery consideration have also been found among young women from different cultures (Calogero et al., 2010; Jackson & Chen, 2015b; Vaughan-Turnbull & Lewis, 2015), as well as Chinese young men (Jackson & Chen, 2015b). Moreover, an experimental study found that women who had their state self-objectification primed (by unscrambling sentences containing words associated with sexual objectification) reported greater intentions to undergo cosmetic surgery than did participants in non-self-objectifying conditions (Calogero et al., 2014).

Body shame, as a key proposed emotional consequence of self-objectification, commonly mediates the associations between body surveillance and psychological outcomes. For

example, previous research has demonstrated the mediating role of body shame in the links from body surveillance to disordered eating (Noll & Fredrickson, 1998; Tiggemann & Slater, 2001), low self-esteem (Choma et al., 2010; Mercurio & Landry, 2008), depression (Grabe et al., 2007; Tiggemann & Kuring, 2004), and decreased sexual assertiveness and sexual satisfaction (Calogero & Thompson, 2009; Manago et al., 2015). Considering the association between cosmetic surgery and these psychological problems (Honigman et al., 2004), body shame may also mediate the relationship between body surveillance and cosmetic surgery consideration. To our knowledge, only one study has examined the serial mediating effects of internalization, body surveillance, body shame, and facial appearance concerns in the link from interpersonal sexual objectification to cosmetic surgery consideration simultaneously in a sample of adolescent girls. This study, however, did not find the mediating role of body shame in the relationship between body surveillance and cosmetic surgery consideration (Ching & Xu, 2019). In the present study, we build on previous research by examining whether body surveillance and body shame are associated with cosmetic surgery consideration and whether body shame mediates the association between body surveillance and cosmetic surgery consideration among Chinese young men and women.

### *SNS Body Talk and Cosmetic Surgery*

Although objectification theory has been used as a framework to explain cosmetic surgery consideration or intentions (Calogero et al., 2010, 2014; Ching & Xu, 2019; Jackson & Chen, 2015b; Sun, 2018; Vaughan-Turnbull & Lewis, 2015), limited research has tested its applicability in understanding cosmetic surgery in the context of SNS body talk. Drawing on objectification theory, previous research has found a relationship between interpersonal sexually objectifying experiences (e.g., objectifying gazes and body evaluation) and cosmetic surgery consideration (Calogero et al., 2010; Ching & Xu, 2019). Body talk refers to interpersonal interactions that focus attention on bodies, emphasize the importance of physical appearance, and encourage the formation of appearance ideals (Wang et al., 2020). Body talk may be seen as an important form of interpersonal sexually objectifying experiences and thus may be related to cosmetic surgery consideration. Indeed, there is some evidence supporting the positive relationship between body talk and cosmetic surgery consideration (Matera et al., 2018; Nerini et al., 2014; Sharp et al., 2014).

Social networking sites have become an important platform for people to interact with each other. According to a report, the number of Chinese SNS users in 2019 was 862 million, and it is expected to exceed 900 million by 2020, with people aged 20–35 years old and students accounting for 43.8% and 26.5% of users, respectively (iiMedia Research, 2020). Among the numerous SNS platforms, as reported by CNNIC (2020), WeChat Moments has the highest usage rate (85%),

followed by QQ Zone (41.6%) and Sina Weibo (40.4%). SNS may provide a new forum for body talk (Walker et al., 2015). For example, viewing friends' fitness posts on SNS was positively related to the frequency of body talk (Arroyo & Brunner, 2016). Previous research suggests that the frequency of SNS use positively predicted adolescents' desire to have cosmetic surgery indirectly through increased appearance investment over an 18-month period (de Vries et al., 2014). Walker et al. (2019) found that viewing images of women who have undergone cosmetic enhancements increased young women's desire for cosmetic surgery. However, these two studies focused on general SNS use frequency or image-based SNS use among samples of adolescents or young women. Research specifically investigating the potential influence of appearance-related interactions on SNS (i.e., SNS body talk) on interest in cosmetic surgery is lacking, and the examination of gender effects in this relationship is scant. Thus, in the present study, we examined the association between SNS body talk and cosmetic surgery consideration among young men and women.

### *Body Surveillance and Body Shame as Mediators*

Objectification theory postulates that sexually objectifying experiences lead to self-objectification/body surveillance, which in turn contributes to body shame and further potentially negative outcomes (Fredrickson & Roberts, 1997; Moradi & Huang, 2008), such as interest in cosmetic surgery. In other words, body surveillance and body shame are predicted to function as mediators in the path from the sexual experiences of objectification to interest in cosmetic surgery. For example, in an experimental study, the link between experiences of self-objectification and intentions to undergo cosmetic surgery was mediated by body shame (Calogero et al., 2014). Following this rationale, SNS body talk, as a form of interpersonal objectifying experience, may also have an indirect influence on cosmetic surgery consideration via more body surveillance and greater body shame.

Previous research has shown that appearance-related commentary offline and online is positively associated with body surveillance and body shame (Seekis et al., 2020, 2021; Slater & Tiggemann, 2015). Similar to appearance-related commentary, SNS body talk is a kind of appearance-related interpersonal interaction (Wang et al., 2020) and thus encourages people to focus attention on their physical appearance and further monitor their own appearance. Research on offline body talk indicates that body talk has positive associations with body surveillance and body shame (see Mills & Fuller-Tyszkiewicz, 2017, for a review). Therefore, one might also expect that SNS body talk would be positively related to body surveillance and body shame. Furthermore, as mentioned above, body surveillance and body shame are associated with cosmetic surgery consideration (Calogero et al., 2010; Jackson & Chen, 2015b; Vaughan-Turnbull & Lewis, 2015). Based on objectification theory and previous research,

we hypothesized that body surveillance and body shame would mediate the relationship between SNS body talk and cosmetic surgery consideration.

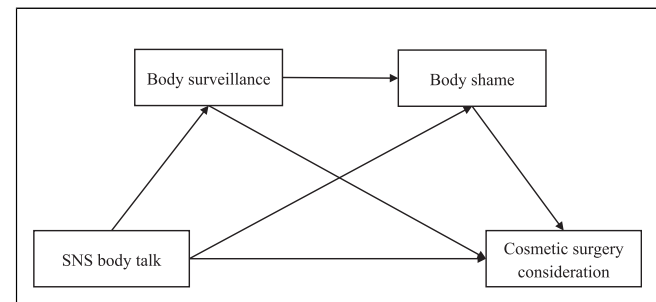
### The Role of Gender

According to objectification theory, women live in a society that sexually objectifies the female body (Fredrickson & Roberts, 1997). Therefore, women are more likely than men to self-objectify and consider cosmetic surgery to attain an idealized physical appearance (Markey & Markey, 2010; Menzel et al., 2011). However, with increasing depictions of men's physical appearance in the media in recent years, younger generations of men who have grown up with the Internet and social media are placing increasing importance on their appearance (TranslateMedia, 2018), which is similar to the influence of media exposure on women's self-objectification (Slater & Tiggemann, 2015; Vandenbosch & Eggermont, 2012). For example, in China, male consumers born in the 1990s are the driving force behind the country's beauty market, which might be understood by the phenomenon that young male pop stars/celebrities (e.g., singers, dancers, and actors) are often seen wearing makeup and advertising beauty products (Smith, 2018; TranslateMedia, 2018). As a result of the emphasis on appearance, men are becoming more self-objectified (Daniel et al., 2014), more open to cosmetic surgery (International Society of Aesthetic Plastic Surgery, 2018), and are choosing cosmetic procedures to improve their appearance (Abbas & Karadavut, 2017). A review of previous literature indicates gender similarities in relations of objectification theory constructs with negative outcomes, such as appearance concerns and lower self-esteem (Moradi & Huang, 2008). In terms of research investigating the antecedents of cosmetic surgery, the pathways seem to be the same for men and women (de Vries et al., 2014; Menzel et al., 2011), while some gender differences might emerge. For example, Wen et al. (2017) found that men were more susceptible to the influence of presumed media influence than women.

### The Present Study

In the present study, we investigated potential correlates of cosmetic surgery consideration among Chinese young men and women through the lens of objectification theory. Specifically, we first examined the associations of SNS body talk, body surveillance, and body shame with cosmetic surgery consideration and proposed that SNS body talk, body surveillance, and body shame would be positively correlated with cosmetic surgery consideration (Hypothesis 1). Second, we tested the indirect effects of body surveillance and body shame in the relationship between SNS body talk and cosmetic surgery consideration. Based on objectification theory, we hypothesized that the link from SNS body talk to cosmetic surgery consideration would be mediated by body surveillance

**Figure 1.** The Hypothesized Conceptual Model.



Note. SNS = social networking sites.

(Hypothesis 2) and body shame (Hypothesis 3), separately. Third, we also predicted that there would be an indirect path from SNS body talk to cosmetic surgery consideration through body surveillance and body shame sequentially (Hypothesis 4). The hypothesized conceptual model is shown in Figure 1. In addition, we also examined the potential moderating role of gender in the serial mediation model, largely for exploratory purposes.

## Method

### Participants

The initial sample was composed of 321 college students from a university in China. After removing incomplete surveys in which data (30–50%) were largely missing, the final sample ( $N = 309$ ) consisted of 193 (62.5%) women and 116 (37.5%) men. In the final sample, participants' ages ranged from 16 to 21, with an average age of 18.98 years ( $SD = 0.82$ ). There were 91 (29.4%) students coming from urban areas and 216 (69.9%) students coming from rural areas, with two students not reporting their area information. Body mass indices (BMI:  $\text{kg}/\text{m}^2$ ) were calculated based on participants' self-reported height and weight and ranged from 14.88 to 31.74 ( $M = 20.80$ ,  $SD = 3.18$ ). This research is part of a larger study examining Internet use and mental health, with the same sample used in another publication unrelated to cosmetic surgery (Wang, Wang, et al., 2019).

### Measures

**SNS body talk.** The Appearance Conversations with Friends Scale (Jones et al., 2004) was slightly modified to measure SNS body talk. Adaptations were made by adding a description "on SNS" to the original items. A representative item was: "On SNS, my friends and I talk about the size and shape of our bodies." Similar to Jones et al.'s (2004) study, participants responded to five items on 5-point response scale ranging from 1 (*never*) to 5 (*very frequently*). Items were averaged, with a higher score indicating more frequent body

talk on SNS. Structural validity of scores on the Appearance Conversations with Friends Scale was supported via factor analyses. Validity of scores for the Appearance Conversations with Friends Scale was supported by its positive correlations with peer appearance criticism, internalization, and body dissatisfaction. Cronbach's alphas for scores on the original scale were .85 for girls and .83 for boys. This scale has been validated and successfully used among a Chinese sample (Wang et al., 2020). In the present study, Cronbach's  $\alpha$  was .87.

**Body surveillance.** Body surveillance was measured using the Body Surveillance subscale of the Objectified Body Consciousness Scale (OBCS; McKinley & Hyde, 1996). Participants responded to eight items on a 7-point scale (1 = *strongly disagree* and 7 = *strongly agree*). An example item was: "During the day, I think about how I look many times." Average scores were computed, with higher scores representing greater body surveillance. Structural validity of scores on the Body Surveillance subscale was supported via both exploratory and confirmatory factor analyses. Validity of scores for the Body Surveillance subscale was supported by its positive correlations with self-reported weight and eating disturbances, perceived appearance pressure from media and interpersonal networks, appearance comparisons, and appearance investment. Reported Cronbach's alphas were .74 for men and .77 for women (Jackson & Chen, 2015a). The measure has been successfully used among Chinese samples in previous research (Jackson & Chen, 2015a, 2015b; Jackson et al., 2016). In the present study, the Cronbach's alpha was .78.

**Body shame.** Body shame was measured using the Body Shame subscale of the OBCS (McKinley & Hyde, 1996). Participants responded to six items on a 7-point scale (1 = *strongly disagree* and 7 = *strongly agree*). A representative item was: "I feel ashamed of myself when I haven't made the effort to look my best." Average scores were computed, with higher scores representing greater body shame. Structural validity of scores on the Body Shame subscale was supported via both exploratory and confirmatory factor analyses. Validity of scores on the Body Shame subscale was supported by its positive correlations with self-reported weight and eating disturbances, perceived appearance pressure from media and interpersonal networks, appearance comparisons, and appearance investment. Reported Cronbach's alphas were .75 for men and .72 for women (Jackson & Chen, 2015a). The measure has been successfully used among Chinese samples in previous research (Jackson & Chen, 2015a, 2015b; Jackson et al., 2016). In the present study, the Cronbach's alpha was .83.

**Cosmetic surgery consideration.** Cosmetic surgery consideration was measured by the Consider subscale of the Acceptance of Cosmetic Surgery Scale (Henderson-King & Henderson-King, 2005) following previous research (Jackson &

Chen, 2015b; Sun, 2018). The Consider subscale assesses a person's general intention to pursue cosmetic surgery using five items (e.g., "I have sometimes thought about having cosmetic surgery"). Participants responded on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Higher scores indicated greater intention of having cosmetic surgery. Structural validity of scores for the Consider subscale was supported via both exploratory and confirmatory factor analyses. Validity of scores on the Consider subscale was supported by its positive correlations with current unattractiveness, feared unattractiveness, and general negative index. Reported test-retest reliability scores for the Consider subscale was .82. The Cronbach's alphas ranged from .86 to .92 across four studies (Henderson-King & Henderson-King, 2005). Scores on the scale also evidenced satisfactory reliability and validity in Chinese samples (Jackson & Chen, 2015b; Sun, 2018). In this study, the Cronbach's alpha was .85.

**Covariate.** Considering SNS use is related to cosmetic surgery desire (de Vries et al., 2014), we controlled for SNS use intensity in the present study. To assess SNS use intensity, six items developed by Ellison et al. (2007) were used. In the present study, we replaced "Facebook" with "SNS." An example item was "SNS is part of my everyday activity." Participants used a 5-point scale with response options ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Items were averaged to form a scale score, with higher scores indicating higher SNS use intensity. In the present study, the Cronbach's alpha was .85.

## Procedure

Ethical approval was gained from the Ethics Committee of the Department of Psychology in the corresponding author's university, and informed consent was obtained from all participants before data collection. The study was advertised as research on Internet use and mental health. Privacy and anonymity of the study were emphasized to participants. The survey was administered in classrooms by trained research assistants. At the beginning of the questionnaire, we gave a definition of SNS that social networking sites, such as WeChat Moments, QQ Zone, and Sina Weibo, are Internet-based sites on which users can create personal profiles; "friend" others; share content with others; as well as view, comment, and "like" others' updates. Participants were asked to complete questionnaires regarding demographic items, SNS body talk, body surveillance, body shame, and cosmetic surgery consideration, and were free to withdraw from the study at any time.

## Data Analysis

Any data point that fell Three or more *SDs* from the mean was regarded as an outlier. Records like this were removed from

the dataset before data analysis. The results of missing value analysis showed that the patterns of missing data were missing at random, and the percentage of individual missing data points was small (< 3%). Missing data were handled via pairwise deletion. Descriptive statistics were calculated separately for men and women first, followed by bivariate associations among the variables of interest. Second, the mediation effects of body surveillance and body shame in the relation between SNS body talk and cosmetic surgery consideration were tested using Model 6 of the PROCESS macro (Hayes, 2013). This macro used the bootstrapping technique to test the significance of the direct and indirect effects by repeatedly sampling cases from the data and estimating the model in each resample. In the present study, we generated 95% bias-corrected confidence intervals (CIs) on the basis of 1000 bootstrap samples to estimate the mediation effects. Confidence intervals that do not include zero indicate effects are statistically significant. Then, moderated mediation analysis was performed using Hayes's (2013) PROCESS macro for SPSS (Model 92) to test the role of gender in the mediation model.

## Results

### Preliminary Analyses

Means, *SDs*, skewness, kurtosis, and zero-order correlations for all study variables are presented separately for men and women in Table 1. As shown in Table 1, the data were normally distributed. For men, SNS body talk, body surveillance, and body shame were significantly and positively correlated with cosmetic surgery consideration. For women, the positive associations of SNS body talk, body surveillance, and body shame with cosmetic surgery consideration were also significant. Thus, Hypothesis 1 was supported for both men and women. Considering the significant associations of

BMI and SNS use intensity with some variables of interest, BMI and SNS use intensity were entered as covariates in the subsequent analyses.

### Mediation Analyses

To test the mediating effects of body surveillance and body shame (Hypotheses 2–4), Model 6 of the PROCESS macro (Hayes, 2013) was adopted. As shown in Figure 2, SNS body talk was significantly and positively related to body surveillance ( $\beta = .22, p < .001$ ). Social networking sites body talk ( $\beta = .16, p < .01$ ) and body surveillance ( $\beta = .18, p < .01$ ) were significantly and positively associated with body shame. Furthermore, body surveillance ( $\beta = .26, p < .001$ ) and body shame ( $\beta = .24, p < .001$ ) were significantly and positively related to cosmetic surgery consideration.

For the indirect effect, the results showed that the total indirect effect was significant (coefficient = 0.11,  $SE = 0.03$ ,  $CI = [0.06, 0.16]$ ) and the ratio of indirect effect to total effect was 54.4%. Specifically, there was a significant indirect path from SNS body talk to cosmetic surgery consideration through body surveillance (coefficient = 0.06,  $SE = 0.02$ , 95%  $CI = [0.03, 0.10]$ ), as well as a significant indirect path through body shame (coefficient = 0.04,  $SE = 0.02$ , 95%  $CI = [0.01, 0.07]$ ). The results of Monte Carlo power analysis for indirect effects showed that there was adequate statistical power (96%) to detect the indirect effect of body surveillance and adequate power (80%) to detect the indirect effect of body shame. The serial indirect path from SNS body talk to cosmetic surgery consideration through body surveillance and body shame was also significant (coefficient = 0.01,  $SE = 0.01$ , 95%  $CI = [0.01, 0.02]$ ). The Monte Carlo power analysis showed that the statistical power to detect this serial indirect effect was 96%. Hypotheses 2, 3, and 4 were all supported.

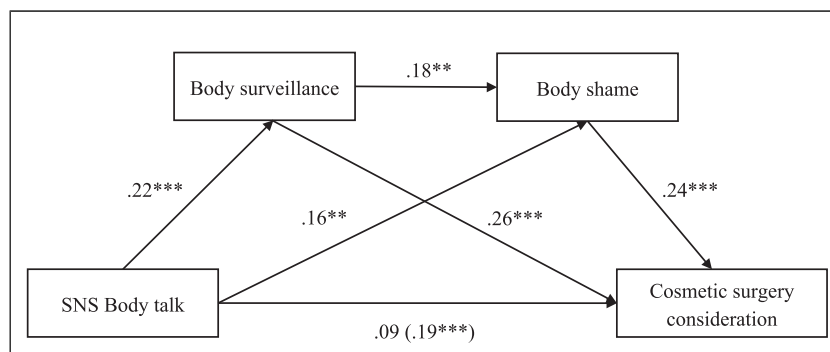
**Table 1.** Means, Standard Deviations, Skewness, Kurtosis, and Zero-order Correlations for Main Study Variables.

Variable	Men			Women			1	2	3	4	5	6
	M (SD)	Skewness	Kurtosis	M (SD)	Skewness	Kurtosis						
1. BMI	21.58 (3.55)	.98	.51	20.33 (2.85)	1.07	1.35	—	-.11	-.05	.22**	-.05	
2. SNS use intensity	3.42 (.90)	-.77	.72	3.67 (.79)	-.53	.14	.02	—	.15*	.16*	.09	.23**
3. SNS body talk	2.21 (.81)	.23	-.74	2.25 (.73)	.26	-.09	.10	.29**	—	.23**	.14*	.17*
4. Body surveillance	3.86 (1.03)	-.47	.76	4.13 (.76)	-.09	.61	-.11	.29**	.31**	—	.13	.27**
5. Body shame	3.26 (1.10)	-.18	-.20	3.43 (.98)	.35	0.60	.17	.18	.31**	.29**	—	.18*
6. Cosmetic surgery consideration	2.88 (1.36)	.52	.09	3.01 (1.25)	.07	-0.54	-.05	.15	.30**	.47**	.48**	—

Note. Correlations for women and men are displayed above and below the diagonal, respectively.

BMI = body mass index; SNS = social networking sites.

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

**Figure 2.** The The Mediation Effects of Body Surveillance and Body Shame in the Relation Between SNS Body Talk and Cosmetic Surgery Consideration.

Note. SNS = social networking sites. The number in the parenthesis is the regression coefficient for the total effect. \*\* $p < .01$ . \*\*\* $p < .001$ .

**Table 2.** Testing the Moderating Role of Gender in the Serial Mediation Model.

Predictor	Equation 1 (body surveillance)		Equation 2 (body shame)		Equation 3 (cosmetic surgery consideration)	
	$\beta$	$t$	$\beta$	$t$	$\beta$	$t$
BMI	-.08	-1.56	.19	3.77***	-.07	-1.44
SNS use intensity	.18	3.07**	.06	1.00	.09	1.58
SNS body talk	.17	2.37**	.13	1.77	.08	1.14
Gender	-.23	-1.99*	-.17	-1.42	.08	.71
SNS body talk $\times$ gender	.14	1.24	.07	.62	-.01	-.01
Body surveillance			.11	1.30	.24	3.06**
Body surveillance $\times$ gender			.11	.95	.04	.36
Body shame					.15	2.16*
Body shame $\times$ gender					.21	1.89
$F$	8.91***		6.61***		9.34***	
$R^2$	.13		.13		.22	

Note. Gender was dummy coded such that female = 0 and male = 1.

BMI = body mass index; SNS = social networking sites.

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

### Testing the Role of Gender

Results of independent samples  $t$ -test showed that there was no significant difference in cosmetic surgery consideration between men and women ( $t = 0.89, p = .38$ ). We also conducted moderated mediation analysis with gender included as a moderator using Model 92 of the PROCESS macro. As Table 2 illustrates, gender did not moderate any path in the mediation model ( $ps > .05$ ), suggesting that the pattern of indirect effects did not vary by gender. Note, however, that the post hoc power analysis found that the power to detect significant gender differences in the indirect effects was under 80%. Thus, the results of the moderated mediation analysis should be interpreted with caution.

### Discussion

Grounded in objectification theory, in the present study, we examined the associations of SNS body talk, body surveillance, and body shame with cosmetic surgery consideration as well as the mediating role of body surveillance and body shame in the relationship between SNS body talk and cosmetic surgery consideration in a sample of young men and women in China. Additionally, we examined potential gender differences in the serial mediation model. We found that SNS body talk, body surveillance, and body shame were all positively associated with cosmetic surgery consideration for both men and women. Body surveillance and body shame mediated the association between SNS body talk and cosmetic surgery consideration both separately and sequentially. Furthermore,

gender did not moderate any of the relations in the serial mediation model.

As predicted, facets of objectification theory were associated with cosmetic surgery consideration. In particular, body surveillance and body shame had positive associations with cosmetic surgery consideration, which is in accordance with previous research conducted on young men and women from different cultures (Calogero et al., 2010; Jackson & Chen, 2015b; Vaughan-Turnbull & Lewis, 2015). These results suggest the important role of body surveillance and body shame in people's body image-related concerns. Notably, our study innovatively considered SNS body talk as a form of interpersonal objectifying experiences to examine its association with cosmetic surgery consideration. Previous research has shown that offline body talk had a positive association with cosmetic surgery consideration (Jackson & Chen, 2015b; Nerini et al., 2014; Sharp et al., 2014). Social media provide a new platform for people to discuss their physical appearance and thus may have an influence on their consideration of cosmetic surgery. Our study was one of the first to examine the association between SNS body talk and cosmetic surgery consideration on the basis of objectification theory, which enriches the literature on the relationship between social media use and cosmetic surgery intentions.

Additionally, findings of this study showed that SNS body talk had an indirect association with cosmetic surgery consideration via the mediating role of body surveillance and body shame, which can be explained by objectification theory. Based on objectification theory, interpersonal objectifying experiences can increase individuals' self-objectification/body surveillance, which in turn may result in body shame and subsequent mental health problems (Fredrickson & Roberts, 1997). In a previous study, Calogero et al. (2010) examined the predicting role of interpersonal sexual objectification, body surveillance, and body shame in cosmetic surgery attitude, respectively. Our research built on this prior study by investigating the mediating role of body surveillance and body shame in the association between SNS body talk and cosmetic surgery consideration. Results of our study indicate that SNS body talk, as a form of interpersonal objectification, may promote body surveillance and body shame, which in turn may increase interest in cosmetic survey. This finding provides a new test of the application of objectification theory to understand young people's cosmetic surgery consideration and extends the applicability of this theoretical framework.

Our results showed that there was no gender difference in cosmetic surgery consideration, which is consistent with previous research (Jackson & Chen, 2015b). These findings indicate that Chinese men may be becoming more concerned with their physical appearance (Wang, Fardouly, et al., 2019) and may be opting for cosmetic surgery procedures to improve their appearance (DeGennaro, 2018; Statista, 2019a). This phenomenon may be influenced by pop stars/celebrities in modern China. Young male pop stars are often seen wearing and advertising makeup and beauty products in China today

(Ah-Line, 2019; Smith, 2018). Owing to the celebrity-led acceptance of male cosmetics, increasing numbers of Chinese young men are wearing makeup and engaging in skincare (TranslateMedia, 2018). In addition, these pop stars usually have flawless skin and some androgynous features, which might uphold an unattainable beauty standard for men (Ah-Line, 2019; Chen, 2018). It is also possible that male beauty ideals in China are influenced by Western media. A recent study focusing on Chinese young women found that Western media appearance preference significantly predicted body image concerns and interest in cosmetic surgery, although its predicting role was weaker than that of Asian media appearance preference (Jackson et al., 2020). Therefore, the influence of Western ideals on Chinese young men should also be further explored in future research.

We did not find gender differences in the serial mediation model in which SNS body talk had a direct and indirect relation with cosmetic surgery consideration in the present sample. This finding is consistent with previous research that tested objectification theory as a theoretical framework to explicate mental health problems, such as depression and low self-esteem (Chen & Russo, 2010; Choma et al., 2010) and that examined factors influencing interest in cosmetic surgery (de Vries et al., 2014; Markey & Markey, 2010; Menzel et al., 2011) for both genders. Our results indicate that objectification theory might be applied to understanding the link from SNS body talk to cosmetic surgery consideration for both men and women in the Chinese context. Note, however, that the power to detect significant gender differences in the mediation model was not large enough in the present sample and thus future research with larger sample size is needed to better understand this issue.

### *Limitations and Future Directions*

Several limitations of the current study should be addressed. First, the results of this study were based on cross-sectional data, which preclude making causal inferences. Experimental and longitudinal designs are needed in future research to examine the causal relationship between objectification theory variables and cosmetic surgery consideration. Second, in addition to the sample size issue noted earlier, the sample in the present study consisted solely of Chinese undergraduate students, which limits the generalization of the findings to other samples. The model should be tested using a large sample in populations from different cultures and age groups in future research. Third, attention check or filler items were not included in the questionnaire which might influence the screening of participants to some extent and further have some impact on the results. Fourth, SNS body talk was measured using self-report frequency. Other methods, such as content analysis, could be used to analyze SNS body talk in order to gain more insights in future research. Finally, we only assessed participants' consideration of cosmetic surgery in general without controlling for having already received surgery and distinguishing between different types of procedures.



Research focusing on actual cosmetic surgery behavior and different types of procedures should be carried out in the future to better understand the antecedents and consequences of this behavior. Furthermore, the specific types of cosmetic surgery that men and women favor might differ, which would be worth being explored in future research.

### Practice Implications

Despite limitations, the results of the present study may have some implications for practitioners. First, we provide a novel test of objectification theory to understand people's consideration of cosmetic surgery by investigating the role of SNS body talk. Our results indicate that SNS body talk may increase people's desire for cosmetic surgery because it could raise people's attention on their physical appearance while reducing their focus on other dimensions of themselves. Thus, educators, counselors, activists, and instructors should place more emphasis on expanding individuals' self-concept to provide more domains in which people could gain social rewards and self-esteem beyond physical appearance. Second, the present study suggests that facets of objectification theory, such as body surveillance and body shame, may be harmful to individuals' body image and contribute to people's consideration of cosmetic surgery. Practitioners should raise awareness of the harms of self-objectification more consistently, including the pressure to undergo risky cosmetic surgery. Intervention programs that reduce individuals' focus on physical appearance could be developed to decrease people's levels of self-objectification. For example, previous research on the "Expand Your Horizon" program has shown that training women to focus on body functionality, rather than physical appearance, significantly reduces self-objectification levels and improves body image (Alleva et al., 2015).

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