

The Associations of Appearance Comparisons with Peers and Chinese and Korean Media Figures with Thin-Ideal Internalization, Body Dissatisfaction, and the Drive for Thinness Among Female Korean-Chinese College Students in China

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Appearance-related social comparisons can lead to negative health consequences. This study investigated possible associations of the flow of transnational media originating from Korea in a non-Western context. We compared frequencies of appearance comparisons with peers, Chinese media figures, and Korean media figures, and associations of these comparisons with thin-ideal internalization, body dissatisfaction, and the drive for thinness among 332 female Korean-Chinese college students in China who were recruited in 2017. We observed a significantly higher behavioral frequency of comparison with Korean media figures than with Chinese media figures. Comparison with Korean media figures had the most extensive associations in our path model; the other two types of appearance comparisons showed limited associations. Thus, comparison with Korean media figures showed the strongest associations with thin-ideal internalization, body dissatisfaction, and unhealthy eating-related attitudes among female Korean-Chinese students.

Keywords: appearance comparison, body dissatisfaction, thin-ideal internalization, Korean-Chinese, Korean media figures

Social comparison theory suggests that people tend to evaluate their relative status by comparing themselves with others (Festinger, 1954). Of the various types of social comparisons, appearance comparisons among young females have received a great deal of scholarly attention because of the possible negative consequences for women's body image and weight-related concerns (Bessenoff, 2006; Halliwell & Harvey, 2006; Tiggemann & McGill, 2004). In today's media-saturated environment, social comparisons focusing on body weight and physical attractiveness can occur not only with same-sex peers but also with media figures (i.e., models and celebrities), who tend to be unrealistically thin (Fardouly, Pinkus, & Vartanian, 2017; Jones, 2001). Given the persuasiveness of thin-ideal media in Western societies, a number of studies have found that upward comparisons of oneself with ideal body images in the media can lead to thin-ideal internalization and

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body dissatisfaction, resulting in eating disorder symptoms among young women (Keery, van den Berg, & Thompson, 2004; Slevec & Tiggemann, 2011; Vartanian & Dey, 2013).

To date, most prior research on the adverse effects of female media images has highlighted the relationship between the mainstream media and their domestic female audience in advanced countries. However, frequent exposure to thin-ideal media images may also occur in a seemingly very different and non-Western context. With the development of communication technology, various types of global and regional cross-border media flows have expanded worldwide, triggered changes, and added complexities to the media environment in many local communities (Christensen, 2013; Straubhaar, 2007). Today, some transnational media flows originate from non-Western countries, such as the increased circulation of Turkish television programming in the Pan-Arab region and the popularization of entertainment media from South Korea (hereafter referred to as Korea) in East Asian countries (Kraidy & Al-Ghazzi, 2013; Ryoo, 2009). Concerning the latter example, Korea's media products arguably reflect cultural values and tastes that differentiate them from Western media products (S. J. Kim, 2012). However, in terms of the media portrayal of women, the content of the so-called Korean Wave seems to resemble thin-ideal media from the Western world.

The Korean Wave in Korean-Chinese Society

The Korean Wave, or Hallyu, refers to Korean-originated global popular culture, including Korea's television dramas and music shows, and has spread to other Asian countries since the late 1990s (Ramadhani & Linadi, 2012). Recently, Korean pop music, or K-pop, has targeted young consumers, especially teenagers and young adults (Yoon, 2013). According to some critics, Korea's exported media content is full of images of young, thin female bodies (Myers, Ridolfi, Crowther, & Ciesla, 2012). Such criticism includes the claim that images of young women, most noticeably those of K-pop girl groups, are strategically designed and deliberately manufactured to sexually objectify women. Critics state that these images send an implicit message to the young female audience that they should attain a slim body figure like those of their Korean female idols (Jang & Kim, 2006).

The transnational media flow originating from Korea may be even more influential for a particular audience called Joseonjok, which consists of Korean-Chinese residents living in China, because of their ethnic roots and bilingual capabilities. The Korean-Chinese society in the Yanbian Korean Autonomous Prefecture in the Jilin Province of China has enjoyed horizontal bilingualism, with the Korean language used in everyday life in both private and public settings (Beckett & Postiglione, 2013). Most Korean-Chinese individuals are bilingual in both Chinese and Korean because they grew up in a bilingual education system as the result of a minority protection policy in China (H. P. Choi, Won, & Lee, 2004). Thus, the Korean-Chinese residents of Yanbian have developed a dual identity and consider themselves "Chinese citizens with Korean ethnicity" (W. G. Choi, 2001).

The evolving nature of communication technology has paved the way for the popularization of Korean entertainment media in Korean-Chinese society. Since the beginning of Korean satellite broadcasting in 1996, the number of Korean-Chinese people watching Korean television has increased in Yanbian (Han, 2002). More recently, online access to Korean entertainment television and other types of visual content has been facilitated by the growth of broadband Internet and mobile devices in China, especially for young

ethnic Koreans. Although Chinese authorities recently instituted regulations on the airing of Korean programs on Chinese television, online video-on-demand services catering to Korean-Chinese individuals living in China provide Korean television and other types of video content; online community news services delivering Korean entertainment news and celebrity gossip also exist. These developments have created a unique dual media environment in which Korean-Chinese residents can access both the Chinese socialist media and content from transnational Korean entertainment media.

Korean Thin-Ideal Media

Although there exists ample literature examining the negative outcomes of media-based appearance comparisons against the background of domestic media in Western or other advanced societies, few studies have explored similar topics in the context of a transnational media flow that does not originate from Western media but reflects a commercialized global culture. Previous studies of the Korean Wave have generally aimed to explain the “success factors” of Korean cultural products in overseas markets (Lim, 2013; Shin, 2014), but the thin-ideal media issue has rarely received academic attention. In contrast to prior studies, the current study critically examines possible negative consequences of the transnational Korean media flow for a particular audience of young Korean-Chinese women, who are likely to be the individuals who are most susceptible to Korean thin-ideal media (Figures 1 and 2) among the foreign audiences of Korean media because of their linguistic capabilities and ethnic commonality.



Figure 1. Thin body figures of the famous Korean girl group AOA (used with permission from Yonhap News, South Korea).



Figure 2. Thin body shapes of the famous Korean girl group Girl Friends (used with permission from Yonhap News, South Korea).

Social Comparison Theory

Returning to our theoretical topic, appearance-focused social comparisons can provide a strong explanation for how thin-ideal internalization, along with its negative consequences—including body dissatisfaction and eating disturbances—can develop at the individual level in the context of media consumption. Notably, several pioneering studies have developed a sociocultural model of body dissatisfaction and eating disturbances in which the media are treated as a major carrier of sociocultural messages promoting the thin body ideal for young women (Stice, Ziemba, Margolis, & Flick, 1996; Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999; van den Berg, Thompson, Obrowski-Brandon, & Coovert, 2002). The basic sociocultural model posits that frequent exposure to cultural messages concerning physical appearance, especially from thin-ideal media, eventually leads to eating disorder symptoms through thin-ideal internalization and body dissatisfaction. However, according to an experimental study (Morrison, Kalin, & Morrison, 2004), the effects of thin-ideal media on body image and its associated psychological concerns were mainly attributable to the frequency of self-comparison to idealized media models and celebrities, not the frequency of exposure to thin-ideal media. This finding suggests that appearance comparisons made through the media, rather than media exposure itself, are directly related to these psychological outcomes, including thin-ideal internalization and body dissatisfaction.

In the theoretical context of appearance-related social comparisons, same-sex peers and media figures are the two primary comparison targets for young adolescent girls (Jones, 2001). Appearance comparisons with same-sex peers are related directly or through thin-ideal internalization to a high level of body dissatisfaction among young adult women and even preadolescent girls (Halliwell & Harvey, 2006; Stormer & Thompson, 1996; Vander Wal & Thelen, 2000); appearance comparisons with female media figures are also significantly associated with body dissatisfaction and other negative psychological outcomes (Bessenoff, 2006; van den Berg, Paxton, et al., 2007). However, most appearance-related social comparison research has dealt with only one type of comparison (i.e., comparison with either peers or media figures but not both).

Although a few studies have incorporated social comparisons into sociocultural models (Blowers, Loxton, Grady-Flesser, Occhipinti, & Dawe, 2003; Vander Wal & Thelen, 2000), they have usually limited the scope of social comparisons to peer comparisons and have not extended it to appearance comparisons with media figures. Limited research has treated peer comparisons and media-based comparisons separately and investigated each of their behavioral frequencies and possible psychological consequences (Jones, 2001). Studies (Fardouly et al., 2017) considering multiple types of appearance comparisons, that is, comparisons made through different categories of the media (for this study, the domestic media and the transnational media) and in person, and comparatively examining the frequencies and outcomes of different types of appearance comparisons, are even more rare.

Appearance Comparisons With Peers and Chinese and Korean Media Figures

In this study, to realistically assess the tendency of young Korean-Chinese female residents in China to compare their appearances with Korean media figures and the possible consequences of this tendency, we conceptually distinguish between three types of appearance comparisons: comparisons with (1) peers, (2) Chinese media figures (hereafter CMFs), and (3) Korean media figures (hereafter KMFs). Using a sample of undergraduate students attending a Korean-Chinese university in Yanbian, we developed the following research questions:

RQ1: What are the differences in the frequencies of comparisons with peers, CMFs, and KMFs among female Korean-Chinese college students?

RQ2: What is the level of association between appearance comparisons with KMFs and thin-ideal internalization, body dissatisfaction, and the drive for thinness relative to that for the other two types of comparisons within the theoretical path diagram presented in Figure 3?

This path model, drawn from our literature review, contains two potential mediators of thin-ideal internalization and body dissatisfaction in series and the outcome variable of drive for thinness. The drive for thinness is one symptom of eating disorders, specifically anorexia nervosa (Garner, Olmstead, & Polivy, 1983). For the path analysis, we also used self-esteem and body mass index (BMI) as control variables because in previous studies, these measures reportedly affected thin-ideal internalization and related outcomes (Conneely, 2004; Kostanski & Gullone, 1998).

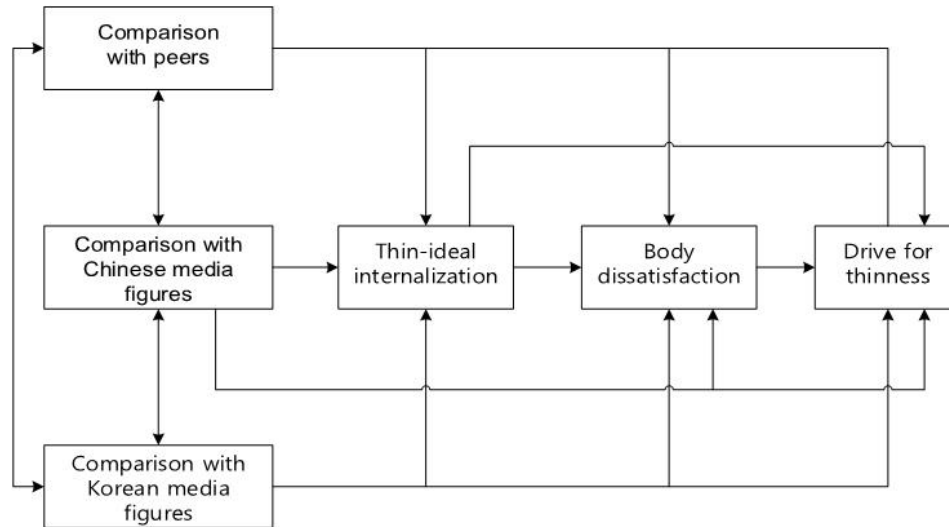


Figure 3. The path model for analyzing possible associations of the three types of comparisons. For the sake of simplicity, none of the possible paths from self-esteem and BMI to the three endogenous variables are displayed.

Our conceptual model begins from different types of appearance comparisons rather than from media exposure. From the perspective of media effects, our model may be viewed as having a weakness since it does not account for the entire process that presumably begins from media exposure. Despite this limitation, our model has the merit of allowing us to compare the implications of multiple types of appearance comparisons, including peer- and media-based comparisons, on an equal basis. From the audience perspective, multiple types of appearance comparisons must be considered, certain of which are made through the media and others of which are made in person to determine which type of comparison is most closely related to body-image concerns and their consequences. If we had included different types of media exposure as independent variables in our model, then the possible associations of media-based comparisons and peer comparisons would have been difficult to compare in a straightforward manner.

Notably, our model assumes the process of serial mediation, where thin-ideal internalization is treated as the first-stage mediator between appearance comparisons and body dissatisfaction. As for the role of thin-ideal internalization, we followed the line of research that conceptualizes it as a mediator between social comparisons and body dissatisfaction or a similar variable (Vartanian & Dey, 2013; see also the discussion above). However, other empirical studies have found that thin-ideal internalization moderates certain relationships, such as the relationship between appearance comparisons and body-image disturbance (Myers et al., 2012). For comparative purposes, we established an alternative hypothetical model assuming moderated mediation and statistically tested the moderating roles of thin-ideal internalization based on the pathways from the three types of appearance comparisons to body dissatisfaction (in this case, the single mediator) and then to the drive for thinness.

Method

Participants

We included female Korean-Chinese students recruited at Yanbian University of Science and Technology (YUST) as the study sample. This university is located in the Yanbian Korean Autonomous Prefecture in Jilin Province of China. In addition, most ($\geq 70\%$) college students at YUST are Korean-Chinese (Park & Lim, 2015). Therefore, the classmates of the study participants would be mostly Korean-Chinese. We employed a purposeful sampling method to recruit female Korean-Chinese students at YUST in China. After excluding those who did not answer all relevant questions ($n = 18$), we obtained a final sample size of 332 female Korean-Chinese college students. The Institutional Review Board at Kyonggi University, South Korea, approved the study.

Procedure

We posted advertisements to the bulletin boards in the school cafeteria and the main lecture hall to recruit potential research participants at YUST. For those interested in participating in the study, a research team member explained the study aims, risks, benefits, and process to potential participants in a private room. We included participants who signed a written informed consent form as our study subjects. Trained personnel measured the weights and heights of the participants. The subjects were requested to wear light clothes without shoes for anthropometric measurements. Moreover, we collected self-reported data from the study participants using a survey questionnaire. Although Korean and Korean-Chinese individuals share the same language, Korean vocabulary differs between the two groups. Therefore, we first developed the survey questionnaire in the standard language of South Korea; one of our research team members, a Korean-Chinese individual, then edited and finalized the questionnaire.

Measures

Behavioral Frequencies of the Three Types of Appearance Comparisons

We assessed the behavioral frequencies with which the participants compared their own physical appearances with the physical appearances of each of the following: (1) peers, (2) CMFs, and (3) KMFs. The instructions for female media figures used examples of television actresses, movie stars, singers, and models. We used the Comparison to the Models Index by referencing previous studies: Kozar and Damhorst (2009) employed the same index to measure the frequency with which a sample of adult women compared themselves with fashion models in the media, and their study found a significant inverse relationship between social comparison behavior and body satisfaction; an earlier study (Jones, 2001) used a similar index to assess the tendency of teenagers to compare themselves with peers and fashion models. For each type of appearance comparison, we used seven question items to measure the behavioral frequencies of comparisons of specific physical attributes (height, weight, shape, face, hair, style, and attractiveness; Kozar & Damhorst, 2009). We assessed each item on a 7-point Likert scale from 1 (never) to 7 (always).

We assumed that the behavioral frequency of engaging in one type of appearance comparison could be measured distinctly from the frequency of the other two types. To validate this assumption, we performed a series of exploratory factor analyses for the three sets of 21 items. The logic underlying this analysis was that if we treated the three sets of measures as constituting three subdimensions under one multidimensional concept of appearance comparison, the factor analysis results should (1) yield three-dimensional factors and (2) show that all items within each set had high loadings and were exclusive for each of the three factors, suggesting discriminant validity among the three sets of measures.

The results of the initial factor analysis (Promax oblique rotation and three-factor solution) indicated that most items were correctly classified into the three factors that conceptually matched the three types of appearance comparisons that we assumed. However, one item (height) from the comparison with peers set indicated high cross-loading, and one item (attractiveness) from the comparison with KMFs set showed low loading on the relevant factor. After exclusion of these two items, the results of the reperformed factor analysis (Eigen value > 1 criterion solution) showed only three factors extracted and confirmed the correct classification of the remaining 19 items into the relevant factors. The factor-loading values explained 73% of the total variance. Using the remaining items, we calculated the behavioral frequency scores for each type of appearance comparison by averaging all responses within the relevant set ($\alpha = 0.92$ for comparison with peers, $\alpha = 0.94$ for comparison with CMFs, and $\alpha = 0.91$ for comparison with KMFs).

Thin-Ideal Internalization

To measure the level of thin-ideal internalization, we used a translated version of the Ideal Body Stereotype Scale Revised, also known as IBSS-R (Stice et al., 1996), a 10-item index using a 7-point scale ranging from 1 (completely disagree) to 7 (completely agree). Participants rated their levels of agreement with a series of statements, such as "Thin women are more attractive" and "Tall women are more attractive" ($\alpha = 0.89$).

Body Dissatisfaction

To measure the level of body dissatisfaction, we used a modified Korean version of the Body Dissatisfaction subindex from the multidimensional Eating Disorder Inventory (Garner et al., 1983). The original index consisted of nine statements, such as, "I think that my stomach is too big" and "I think that my buttocks are too large." In the translated version, "stomach" and "buttocks" in the original statements were replaced with "waist" and "belly" as physical attributes of concern to ethnic female Koreans based on prior research (E. J. Kim, 2001). Participants reported their levels of agreement with each statement using a 7-point scale. The internal consistency assessment indicated that one item was inappropriate ("I think that my hips are too big"). After this item was omitted, we constructed an index consisting of the remaining eight items ($\alpha = 0.77$).

Drive for Thinness

We employed a translated version of the Drive for Thinness subscale of the Eating Disorder Inventory (Garner et al., 1983). The seven items included statements such as, "I feel extremely guilty after

overeating" and "I am preoccupied with the desire to be thinner." Participants rated their agreement with each statement using a 7-point scale ($\alpha = 0.85$).

Self-Esteem

To measure self-esteem, we employed a translated version of the Rosenberg Self-Esteem Scale (Rosenberg, 1965). This measure is widely used in the field of psychology, and previous studies have confirmed its reliability in adolescent samples (Wylie, 1989). An example of the 10 statement items is, "On the whole, I am satisfied with myself." Participants rated their agreement with each item on a 7-point scale ($\alpha = 0.83$).

Body Mass Index

We calculated the BMI by dividing weight in kilograms by height in meters squared. In addition, we assessed the level of obesity using the following BMI cut-off point values according to the WHO criteria for Asian adults: (1) $< 18.5 \text{ kg/m}^2$ for underweight, (2) 18.5 to $< 23.0 \text{ kg/m}^2$ for normal weight, (3) 23.0 to $< 25.0 \text{ kg/m}^2$ for overweight, and (4) $\geq 25.0 \text{ kg/m}^2$ for obese (WHO, 2011).

Statistical Analysis

Our first research objective linked to RQ1 ("What are the differences in the frequencies of comparisons with peers, CMFs, and KMFs?") was to determine which type of appearance comparison tended to occur most frequently within the same sample of participants. For this task, we performed one-way within-subjects ANOVA, followed by post hoc pairwise multiple comparisons (Field, 2013).

With respect to RQ2 ("What is the level of association between appearance comparisons with KMFs and thin-ideal internalization, body dissatisfaction, and the drive for thinness relative to that for the other two types of comparisons within the theoretical path diagram presented in Figure 3?"), our second objective was to determine which type of appearance comparison among those within our conceptual path model was most strongly related to the endogenous variables (see Figure 3 for the theoretically assumed relationships among the key variables). We combined the traditional method of regression analysis with an advanced statistical approach using Statistical Package for the Social Sciences (SPSS) and the PROCESS macro for SPSS. Our entire analysis consisted of multiple steps as follows.

In the first step, we performed a set of three multiple regression analyses in a path analytic form in which the dependent variables were the first-stage potential mediator (i.e., thin-ideal internalization), the second-stage potential mediator (i.e., body dissatisfaction), and the outcome variable (i.e., drive for thinness). This SPSS regression analysis allowed us to check for the presence of multicollinearity based on the values of the variance inflation factors (VIFs). We checked for multicollinearity because we expected a substantial level of intercorrelations between the three appearance comparison measures.

In the second step, we performed the analysis with bootstrap resampling using the PROCESS macro, which calculates a 95% confidence interval (CI) for a hypothesized indirect effect, which is deemed

statistically significant when the CI does not include the value of zero (Hayes, 2013). As a test for mediation, bootstrap methods are considered superior to traditional approaches, such as Baron and Kenny's (1986) causal steps method (Hayes, 2013). Since our path model included two potential mediators in series, each independent variable had multiple (specifically, three) individual indirect effects on the outcome variable. For each type of appearance comparison, we used the PROCESS macro to assess the significance of its individual indirect effects as well as the sum of these effects while treating all remaining exogenous variables as covariates.

Additionally, we assessed the alternative scenario in which thin-ideal internalization was hypothesized to be a moderator. Moderated regression analyses were conducted to determine whether any significant moderation by thin-ideal internalization occurred in the partial mediation process involving the single mediator of drive for thinness. Details about these analyses are provided in the Results section.

Results

Participant Characteristics

This study included 332 female Korean-Chinese undergraduate students in China. The mean age of the participants was 21.01 years ($SD = 1.48$). The predominant BMI category of the participants was normal weight (67.8%, $n = 225$). In terms of the subjective household economic status, two-thirds of the participants answered that they had a middle-class economic status (66.3%, $n = 220$). More than half of the participants lived in the university dormitory (52.7%, $n = 175$), and 34% of the participants commuted from their houses to the university. The participants' undergraduate status were as follows: 33% were freshmen, 31% were juniors, 18% were sophomores, and 18% were seniors.

Test of Differences Employing Within-Subjects ANOVA

The zero-order correlations among all variables employed for this study with their means and standard deviations appear in Table 1. The mean frequency scores of the three types of appearance comparison behaviors all ranged from 3 (occasionally) to 4 (sometimes). However, the mean score for comparison with KMFs ($M = 3.68$) and that for comparison with peers ($M = 3.65$) were somewhat higher than the mean score for comparison with CMFs ($M = 3.29$).

To answer RQ1, we conducted one-way within-subjects ANOVA to determine whether behavioral frequencies differed significantly among the three types of appearance comparisons. The assumption of sphericity was met based on Mauchly's test of sphericity ($\chi^2(2) = 3.34, p = 0.19$). The test results indicated that the three mean scores of the comparison frequencies were not equal within the same group of participants ($F(2, 662) = 32.03, p < 0.001, \eta_p^2 = 0.09$). Post hoc tests using Bonferroni correction revealed that the mean score for comparison with CMFs was significantly lower than the other two mean scores for comparison with peers and comparison with KMFs (both $p < 0.001$). By contrast, the results indicated no significant difference between comparison with peers and comparison with KMFs. Therefore, the participants tended to compare themselves with peers and with KMFs at similar frequencies, whereas appearance comparisons with CMFs tended to occur less frequently.

Path Analysis Using Multiple Regressions

Focusing on the three types of appearance comparisons, we identified relatively high correlations among their behavioral frequencies (0.64, 0.66, and 0.69; see Table 1). However, these correlations did not cause the problem of multicollinearity in our regression-based path analysis that was intended to answer RQ2. Throughout three sessions of multiple regression, the VIFs of all predictor variables had a maximum value of 2.39, which is lower than even the strictest VIF threshold of 2.5 suggested by some authors (Allison, 2012).

Table 1. Correlations, Means, and Standard Deviations Among the Variables.

	Peers	CMFs	KMFs	TII	BD	DT	SE	BMI
Peers	1.00	.66***	.69***	.36***	.06	.33***	-.19***	.01
CMFs		1.00	.64***	.22***	.04	.24***	-.30***	-.04
KMFs			1.00	.35***	.11*	.37***	-.15**	-.05
TII				1.00	.21***	.34***	.15**	.17**
BD					1.00	.31***	-.08	.39***
DT						1.00	-.10	.20**
SE							1.00	.14**
BMI								1.00
<i>M</i>	3.65	3.29	3.68	4.52	4.24	4.13	4.51	21.11
<i>SD</i>	1.22	1.22	1.20	0.96	0.87	1.09	0.80	2.61

Note. Peers = comparison with peers; CMFs = comparison with Chinese media figures; KMFs = comparison with Korean media figures; TII = thin-ideal internalization; BD = body dissatisfaction; DT = drive for thinness; SE = self-esteem; BMI = body mass index. Except for the BMI score, the scales for all variables range from 1 to 7. The observed BMI scores range from 15.4 to 33.0.

Table 2 shows the results of three ordinary least squares (OLS) regression analyses, with the first predicting thin-ideal internalization, the second predicting body dissatisfaction, and the third predicting the drive for thinness. In our path model, the three dependent variables correspond to the two possible mediators and the outcome variable. The estimated values of the final-entry unstandardized and standardized regression coefficients are reported in Table 2.

Table 2. OLS Regression Results Predicting Thin-Ideal Internalization, Body Dissatisfaction, and the Drive for Thinness.

	<i>B</i>	<i>SE</i>	β
<i>Thin-ideal internalization</i>			
Constant	.96	.49	
Self-esteem	.25***	.06	
BMI	.05**	.02	
Comparison with peers	.21***	.06	.26
Comparison with CMFs	-.02	.06	-.03
Comparison with KMFs	.18**	.06	.22
<i>R</i> ²	.22***		
<i>Body dissatisfaction</i>			
Constant	1.62***	.46	
Self-esteem	-.19**	.06	
BMI	.13***	.02	
Comparison with peers	-.07	.05	-.10
Comparison with CMFs	-.05	.05	-.07
Comparison with KMFs	.11*	.05	.16
Thin-ideal internalization	.15**	.05	.16
<i>R</i> ²	.21***		
<i>Drive for thinness</i>			
Constant	.68***	.56	
Self-esteem	-.11	.07	
BMI	.05*	.02	
Comparison with peers	.10	.07	.11
Comparison with CMFs	-.03	.06	-.04
Comparison with KMFs	.21**	.07	.22
Thin-ideal internalization	.21***	.06	.18
Body dissatisfaction	.25***	.15 (.005)**	.220(.06)***
<i>R</i> ²	.26***		

Note. CMFs = Chinese media figures; KMFs = Korean media figures. *N* = 332.

p* < 0.05; *p* < 0.01; ****p* < 0.001

We first look at the effects of the predictor variables on thin-ideal internalization, that is, the first-stage potential mediator in our path model (see the upper rows of Table 2). Of the three types of appearance comparisons, both comparison with peers ($B = .21, \beta = .26, p < 0.001$) and comparison with KMFs ($B = .18, \beta = .22, p < 0.001$) were significantly related to thin-ideal internalization; comparison with CMFs, however, was not significantly related.

We turn next to the effects of the predictor variables on body dissatisfaction, the second-stage mediator (see the middle rows of Table 2). Of the three types of appearance comparisons, only comparison with KMFs ($B = .11, \beta = .16, p < 0.05$) was significantly and directly related to the second-stage potential mediator. Thin-ideal internalization, or the first-stage potential mediator ($B = .15, \beta = .16, p < 0.01$), was also significantly related to body dissatisfaction.

Then, we move to the effects of the predictor variables on the drive for thinness, the outcome variable (see the lower rows in Table 2). Of the three types of appearance comparisons, only comparison with KMFs ($B = .21, \beta = .22, p < 0.01$) was significantly and directly related to the outcome variable. Concerning the two mediator variables, both thin-ideal internalization ($B = .21, \beta = .18, p < 0.001$) and body dissatisfaction ($B = .25, \beta = .20, p < 0.001$) were significantly related to the drive for thinness.

The results of our regression-based path analysis are summarized as follows (Figure 4). Of the three types of appearance comparisons, comparison with KMFs was directly and significantly related to all three endogenous variables; comparison with peers was directly and significantly related only to thin-ideal internalization; and comparison with CMFs had no significant path originating from it. Concerning the two potential mediators and the outcome variable, all paths from the former to the latter variables were significant. This result implies that some types of appearance comparisons may be indirectly and significantly related to the outcome variable via either thin-ideal internalization or body dissatisfaction or both.

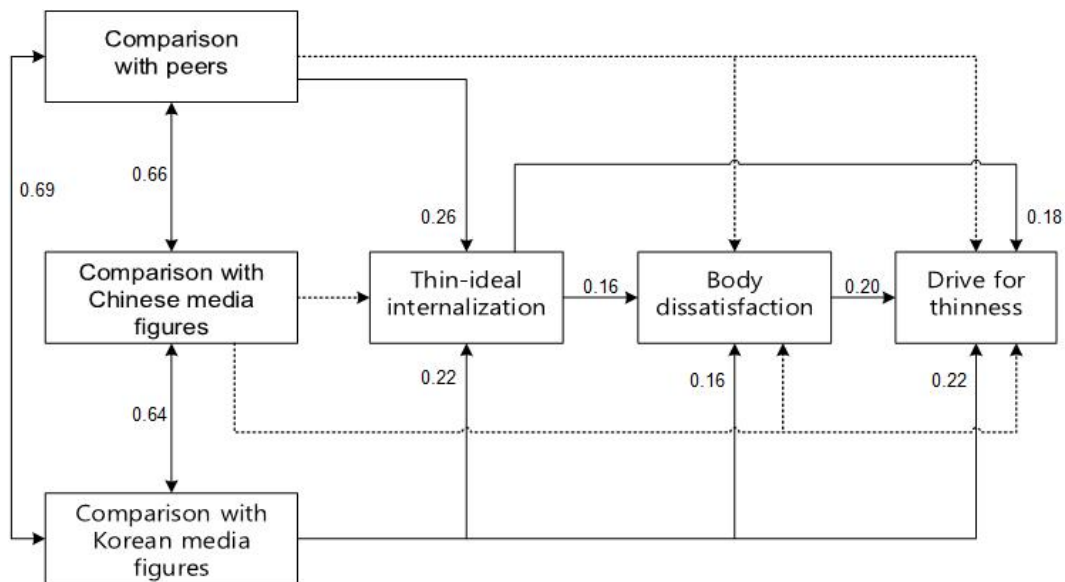


Figure 4. The summarized results of the path analysis with a focus on key variables. For the sake of simplicity, only the pathways originating from the three types of social comparisons and the correlations between them are displayed. The numerical values of coefficients are presented only for the significant paths.

Significance Tests of Indirect and Total Effects

In our conceptual path model, we assumed that each independent variable had multiple (specifically, three) individual indirect effects on the outcome variable through at least one of the two potential mediators. For each type of appearance comparison, we tested the significance of its individual indirect effects as well as the entire indirect effect using the PROCESS macro (model number = 6; 10,000 iterations; bias-corrected estimates). We report the test results in Table 3 and highlight the statistically significant indirect effects in bold.

We can compare the test results for individual indirect effects as well as for the sum of individual indirect effects between the three types of appearance comparisons (see Table 3). When comparing the test results for individual indirect effects between the three independent variables, we found that both comparison with peers and comparison with KMFs had two significant indirect effects on the drive for thinness (i.e., the boot 95% CI did not include zero). In other words, for both variables, two types of mediation effects were significant: the mediation effect of thin-ideal internalization and the serial mediation effect of thin-ideal internalization, and then body dissatisfaction. However, when comparing the test results for the sum of the individual indirect effects among the three independent variables, we found that only comparison with KMFs had a significant effect (.07) on the outcome variable (boot 95% CI = [.02, .16]).

Table 3. Indirect Effects of the Three Types of Comparisons on the Drive for Thinness.

Type of comparison	Indirect effect	Boot SE	95% CI	Standardized indirect effect
Comparison with peers				
X → M1 → Y	.04	.02	.01 to .09	.04
X → M1 → M2 → Y	.01	.005	.002 to .02	.01
X → M2 → Y	-.02	.02	-.06 to .01	-.01
Sum of the indirect effects	.03	.03	-.02 to .09	.03
Comparison with CMFs				
X → M1 → Y	-.005	.02	-.04 to .02	-.004
X → M1 → M2 → Y	-.001	.003	-.01 to .004	-.001
X → M2 → Y	-.01	.02	-.06 to .02	-.01
Sum of the indirect effects	-.02	.02	-.07 to .02	-.02
Comparison with KMFs				
X → M1 → Y	.04	.02	.002 to .10	.03
X → M1 → M2 → Y	.01	.01	.001 to .02	.01
X → M2 → Y	.03	.02	-.004 to .09	.02
Sum of the indirect effects	.07	.04	.02 to .16	.06

Note. CMFs = Chinese media figures; KMFs = Korean media figures; X = one of the three types of comparisons; M1 = thin-ideal internalization; M2 = body dissatisfaction; Y = drive for thinness. Bootstrapped standard errors and confidence intervals were computed using 10,000 bootstrap samples. Bold text is used to denote significant effects.

Next, our analysis using the PROCESS macro also estimated the total effect (i.e., the sum of the direct and indirect effects) for each independent variable and tested its statistical significance (see Table 4). Of the three types of appearance comparisons, comparison with KMFs had the largest and most statistically significant total effect (.28) on the drive for thinness ($t = 4.14, p < .001$); comparison with peers had the second largest total effect (.13) and was significant at the .10 level ($t = 1.95$); and comparison with CMFs had a negative and nonsignificant total effect (-.05).

Table 4. Total Effects of the Three Types of Comparisons on the Drive for Thinness.

Type of comparison	Total effect	SE	t	Standardized total effect
Comparison with peers	.13	.07	1.95 [#]	.15
Comparison with CMFs	-.05	.06	-.82	-.06
Comparison with KMFs	.28	.07	4.14***	.30

Note. CMFs = Chinese media figures; KMFs = Korean media figures.

[#] $p < 0.1$; *** $p < 0.001$

Assessment of the Alternative Model

Finally, we set up and tested the aforementioned alternative moderated mediation model to determine whether thin-ideal internalization served as a moderator in the partial mediation process from the three types of appearance comparisons to body dissatisfaction and then to the drive for thinness. Notably, in this alternative model, seven individual moderation effects are possible: three effects on the relationships between the three types of appearance comparisons and body dissatisfaction; three effects on the relationships between the three types of comparisons and the drive for thinness; and one effect on the relationship between body dissatisfaction and the drive for thinness.

First, the effects of thin-ideal internalization on the relationship between the three types of appearance comparisons and body dissatisfaction were tested. Self-esteem and BMI (as covariates) were entered as step 1, followed by the three types of appearance comparisons and thin-ideal internalization, and then three interactions (comparison with peers, CMFs, and KMFs, respectively \times thin-ideal internalization interactions). All variables were mean centered before computing the interaction terms, which is recommended for moderation analysis (Aiken, West, & Reno, 1991). The results indicated that two main effects of comparison with KMFs ($p < .05$) and the proposed moderator ($p < .01$) were significant. However, none of the three interactions were significant ($ps > .05$).

Second, the roles of thin-ideal internalization in the effects of the three types of comparisons and body dissatisfaction on the drive for thinness were examined. In the second regression, the effects of the three types of appearance comparisons, body dissatisfaction, thin-ideal internalization, and four interactions (comparison with peers, CMFs, and KMFs, respectively \times thin-ideal internalization and body dissatisfaction \times thin-ideal internalization interactions) were tested. None of the four interactions were significant ($ps > .05$).

Therefore, no moderation effect was found for thin-ideal internalization. Additionally, we divided the alternative model into three submodels, each of which included only one independent variable (comparison with peers, comparison with CMFs, or comparison with KMFs) and treated all of the remaining exogenous variables as covariates. Using the PROCESS macro (model number 59), we tested moderation effects for each submodel. None of the interactions in the three submodels were found to be significant.

Discussion

Several empirical research studies have indicated that exposure to thin-ideal media is significantly related to increased body dissatisfaction and eating disorders among preadolescents, adolescents, and adults (Anschutz, Spruijt-Metz, van Strien, & Engels, 2011; Bell, Lawton, & Dittmar, 2007; Hargreaves & Tiggemann, 2002; Lim, 2013; Want, Vickers, & Amos, 2009). However, prior studies have mainly targeted Caucasians in the context of domestic media (George, 2010; Prieler & Choi, 2014), and relatively few studies have examined the relationship between media use and body appearance issues among Asians (Sun & Guo, 2014). Additionally, a few meta-analyses have reported a small to moderate effect size when considering the relationship between exposure to the thin-ideal media and body dissatisfaction for women (Grabe, Ward, & Hyde, 2008; Groesz, Levine, & Murnen, 2002). Notably, however, the tendency to engage in appearance comparisons with media figures has been reported to be a better predictor of body image disturbances than media exposure (Morrison et al., 2004). Taken together, these findings indicate the need for further research to investigate the relationship between media use and body-related attitudes among women in non-Western societies from a social comparison perspective.

Furthermore, given the growing complexities of the new media environment, it is increasingly critical to know which type of media-based social comparisons is most related to thin-ideal internalization, body dissatisfaction, and unhealthy eating-related attitudes among young women. The present study was motivated by a concern about the possible associations of thin-ideal images with the transnational Korean media flow (i.e., Hallyu) among a particular audience of young female Korean-Chinese residents (i.e., Joseonjok) living in China. Specifically, we investigated how the process of appearance-related social comparisons among female Korean-Chinese students was affected by the unique dual media environment, consisting of both domestic and transnational media content. As a case study, the results of our empirical research provide an example in which appearance comparisons occurring in the context of a transnational media flow from a non-Western country can be related directly or indirectly to body dissatisfaction and eating disorder symptoms among young women living in another non-Western community.

In this study, we conceptually distinguished three categories of comparison targets (i.e., peers, CMFs, and KMFs) available to female Korean-Chinese individuals in their everyday lives. To determine answers to RQ1 and RQ2, we compared the behavioral frequencies of the three types of appearance comparisons and possible associations of these comparisons with thin-ideal internalization and related variables. Based on the results of our entire analysis, it is possible to discuss the unique qualities of KMFs as a comparison target that neither CMFs nor peers appear to fully possess. We consider the following two points.

First, when we compared the frequencies of comparisons with peers and with KMFs, the former comparisons occurred slightly more frequently than the latter comparisons among the Korean-Chinese participants. However, in terms of strength of relationship, comparisons with peers had relatively limited effects in our regression-based path analysis; one possible reason for this finding is the media tendency to present idealized images of women. A recent study conducted in Australia reported that female college students had significantly lower satisfaction and a less positive mood when engaging in comparisons to social media figures relative to in-person comparisons (Fardouly et al., 2017). The authors contended that although individuals are likely to make both in-person comparisons and social media comparisons to "known others," including peers

and acquaintances, the idealized presentation of women on social media may induce more extreme upward comparisons, typically resulting in more psychologically negative outcomes. This interpretation can also apply to our case: The relatively stronger associations of comparison with KMFs may be due to a greater gap between one's own appearance and the appearance of idealized females in the Korean media rather than between one's own appearance and the appearance of female peers who one has observed in person.

Second, when we compared the estimated effects of the two types of media-based comparisons (comparisons with CMFs and comparisons with KMFs), comparisons with CMFs showed the weakest and nonsignificant associations with subsequent variables, whereas comparisons with KMFs had the strongest associations. One possible explanation is that the ethnic identity factor played a critical role in determining the level of perceived similarity relevant to appearance comparisons between self-image and images of women in the media. A few studies have indicated that ethnicity can moderate body-image concerns after media exposure to thin-ideal body images (DeBraganza & Hausenblas, 2010; Frisby, 2004; Schooler, Monique Ward, Merriwether, & Caruthers, 2004). For example, the body image of Caucasian-American females tends to change after watching thin Caucasian models in the media, whereas African Americans exposed to the same media content reported that such media images did not affect them (DeBraganza & Hausenblas, 2010).

We add one caveat. Considering that we collected data in a nonexperimental survey setting, the findings from the tests of statistical significance in our path analysis are essentially tentative. In other words, although the significance test results are useful for determining relationship strengths on a comparative basis, differences between significant and insignificant paths may not be absolute. Future research is required to observe the outcomes of different types of appearance comparisons in a controlled setting and test their specific effects in a rigorous manner.

Other limitations of this study must be addressed. First, we could not distinguish between upward comparisons and downward comparisons when we investigated the behavioral frequencies of appearance comparisons. Although we assumed that people tend to engage in upward comparisons with KMFs and participate in both upward and downward comparisons with peers, we cannot verify this assumption based on the measures used in this study. Second, for parsimony, we did not consider possible effects of interactions between different types of appearance comparisons in our analysis. However, it is possible that multiple types of comparisons work interactively, for example, to produce outcomes that are even more negative than the sum of the individual outcomes; this possibility was not assessed in the present study. Third, since we could not collect personal information from the participants, such as data about prior experiences of visiting Korea, certain personal factors might have affected the behavioral frequencies of appearance comparisons with KMFs. These personal factors could be extraneous variables that affect endogenous variables, and thus, we could not control for those factors. Finally, this research included only Korean-Chinese participants in the study sample; thus, we could not determine the pure effects of ethnic identification on the three types of appearance comparisons without other ethnic groups within the same country. It will be valuable for future studies to investigate the potential mediating or moderating roles of ethnic factors on the appearance comparison process that occurs during the consumption of Korean media products within a single multiethnic country (e.g., among Han-Chinese or Korean-Chinese individuals).

Conclusions

Using a student sample of female Korean-Chinese residents in China, we comparatively assessed the behavioral frequencies of three types of appearance comparisons (i.e., comparisons with peers, CMFs, and KMFs) as well as the strengths of their relationships with thin-ideal internalization, body dissatisfaction, and the drive for thinness in the context of a serial mediation model in path analytic form. First, the results of our one-way within-subjects ANOVA and post hoc tests showed that the participants tended to make appearance-related comparisons more frequently with KMFs than with CMFs, which reached a level similar to the behavioral frequencies of peer comparison. Second, the results of our path analysis revealed that comparison with KMFs was directly related to all subsequent variables in our path model and therefore had the most extensive associations among the three types of appearance comparisons in terms of both direct and indirect effects. Peer comparison was directly related only to thin-ideal internalization and did not show a statistically significant total effect on the outcome variable (drive for thinness) at the .05 level, and comparison with CMFs was not significantly related to any of the three endogenous variables.

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