RedFame

Studies in Media and Communication
Vol. 13, No. 4; December 2025
ISSN: 2325-8071 E-ISSN: 2325-808X
Published by Redfame Publishing
URL: http://smc.redfame.com

Communicating Health Through Images: How Social Media Visuals Shape Body Comparison in Chinese Young Women

Siyi Song[1], Hamedi Mohd Adnan[1], Muhamad Shamsul Ibrahim[1]

[1]Department of Media and Communication Studies, Faculty of Arts and Social Sciences, Universiti Malaya, Kuala Lumpur, Malaysia

Correspondence: Hamedi Mohd Adnan, Department of Media and Communication Studies, Faculty of Arts and Social Sciences, Universiti Malaya, 50603 Kuala Lumpur, Malaysia.

Received: May 8, 2025 Accepted: June 14, 2025 Online Published: June 18, 2025

doi:10.11114/smc.v13i4.7690 URL: https://doi.org/10.11114/smc.v13i4.7690

Abstract

Social media has intensified appearance-related pressures among young women, especially in cultures that idealize thinness. In China, the widespread circulation of idealized body imagery online poses challenges to women's body satisfaction and self-perception. This study explores how different types of social media images influence appearance-based social comparison from a media and health communication perspective. A between-subjects experimental design was employed with 369 female Chinese university students randomly assigned to view one of five image types: thin-ideal posed, thin-ideal functional, full-figured posed, full-figured functional, or neutral scenery. After exposure, participants completed a measure of appearance comparison. ANOVA and post-hoc analyses showed that participants exposed to images of human models—regardless of body type or pose—reported significantly higher appearance comparison levels than those who viewed neutral scenery. No significant differences were found between the four model image groups. Findings suggest that the presence of human figures alone may trigger appearance comparison, highlighting the powerful visual influence of media content. This study offers practical insights into digital image design and supports the inclusion of neutral, non-human visuals in media strategies aimed at promoting healthier self-image among young women.

Keywords: social media images, health communication, body image, social comparison, Chinese young women

1. Introduction

1.1 Media Exposure and Body Anxieties among Chinese Young Women

Body image concerns have emerged as a prominent public health issue globally, particularly among young women navigating the social media landscape. Numerous studies have demonstrated that social media use intensifies appearance pressures and negatively influences women's body satisfaction, self-esteem, and mental health (Brown & Tiggemann, 2020; Vandenbosch et al., 2022).

While body image concerns among women are a global phenomenon, the Chinese media landscape presents unique cultural and social factors that may intensify these issues. In the context of China, body image issues have become increasingly visible in recent years, paralleling the rapid growth of digital media platforms such as Xiaohongshu (Little Red Book), Douyin (Chinese TikTok), and Weibo (Jackson et al., 2021). These platforms have fostered a visual-centric culture in which body presentation and idealized appearance are highly valued, especially among young female users (Liu & Li, 2024). As a result, the constant exposure to idealized body images on these platforms has heightened body dissatisfaction among young Chinese women, contributing to widespread concerns about body image and the emergence of appearance-related anxiety.

In the Chinese context, both mainstream media and social media users frequently propagate narrow beauty standards that prioritize thinness, youthfulness, and delicate femininity (Jung et al., 2022). These ideals are deeply intertwined with traditional Chinese aesthetic values, which are historically shaped by Confucian patriarchal ideology that idealizes a petite, frail, and gentle female appearance (Wang et al., 2020). Such beauty norms are further amplified by popular social media trends like the "A4 waist," "paper-thin legs," and the "collarbone challenge," (see Figure 1) in which women pose to emphasize bodily thinness (Jackson et al., 2021). Consequently, body dissatisfaction and appearance-related anxiety have become increasingly common among Chinese women, particularly among university

students who are active users of social media (Wu et al., 2021). Given the high levels of social media engagement and body image pressures among university-aged women, the present study focused on Chinese female university students as a representative population.

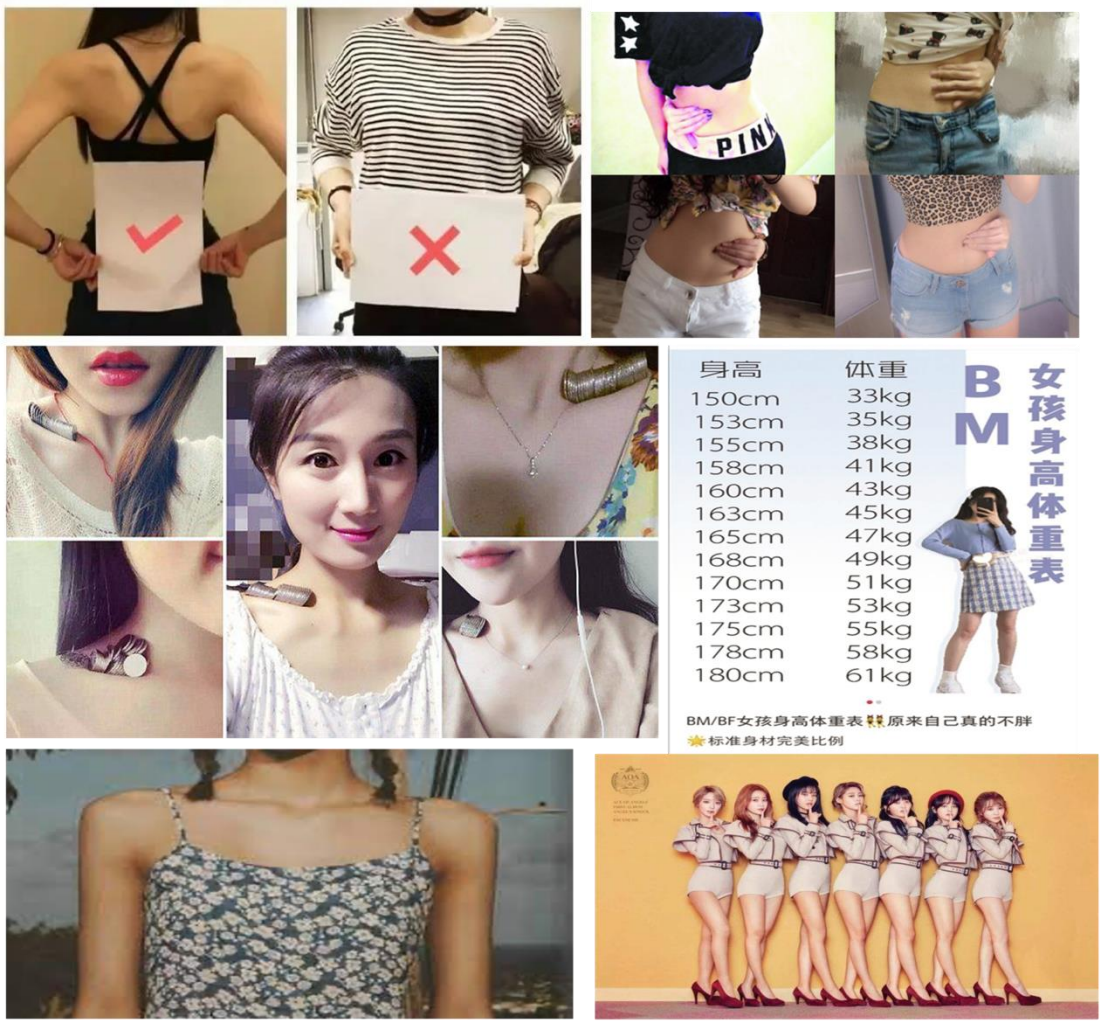

Figure 1. Body Challenges in Chinese Social Media Platforms

Description: The image showcases several body challenges that have gained popularity on social media platforms in recent years, including the "A4 waist," "collarbone coin challenge," "BM girls," "right-angle shoulders," and "K-pop idol legs."

1.2 Research Questions

The Previous research has shown that the widespread circulation of thin-ideal images on social media increases upward appearance-based social comparisons among young women, leading to body dissatisfaction and lower self-esteem (Jung et al., 2022). As a response, recent media strategies promoting body positivity have tried to introduce more diverse body shapes (e.g., full-figured bodies) and functional representations (e.g., images involving physical activities) to reduce these negative effects (Brooks et al., 2023; Lang et al., 2023). However, it remains unclear whether these alternative image types can effectively reduce appearance-based social comparison. Additionally, there is a lack of re-search from an Asian perspective, especially using a Chinese sample.

This study aims to address two main research questions:

- RQ1: Do different types of model images on social media (in terms of body type and presentation style) affect appearance-based social comparisons among young Chinese women?
- RQ2: Can functional or full-figured images on social media significantly reduce the tendency to engage in appearance-based social comparison?

To explore these questions, the following hypotheses are proposed:

- H1: Exposure to non-model images (i.e., neutral scenery images) will significantly reduce appearance-based social comparison levels compared to model image conditions.
- H2: Exposure to thin-ideal model images will result in significantly higher appearance-based social comparison levels compared to exposure to full-figured model images.
- H3: Exposure to functional images will significantly reduce appearance-based social comparison levels compared to posed images.

This study compared participants' reactions to five different image types (thin-ideal posed, thin-ideal functional, full-figured posed, full-figured functional, and scenery) to see whether model images cause higher appearance-based social comparison levels than non-model images, and whether the model's presentation style—whether posed or functional, thin-ideal or full-figured—affects this comparison. These questions are important for understanding the potential of appearance-based interventions in digital media design.

1.3 Objectives

This study aims to investigate how different types of social media images (independent variable) affected appearance-based social comparison levels (dependent variable) among young Chinese women. Specifically, the study examined the effects of various model images—thin-ideal posed, thin-ideal functional, full-figured posed, full-figured functional, and neutral scenery—on social comparison levels. It also compared the impact of body type (thin-ideal vs. full-figured) and presentation style (posed vs. functional) on social comparison tendencies. Additionally, the study explored whether non-model im-ages, such as neutral scenery, reduced social comparison levels compared to model im-ages.

Achieving these objectives will provide valuable insights into how different types of social media content influence appearance-based social comparisons. Understanding these effects can inform the design of digital media strategies aimed at promoting positive body image and reducing the harmful impact of social comparison, particularly in the context of Chinese youth.

2. Literature Review

2.1 Appearance-based Social Comparison

Appearance-based social comparison refers to the psychological process by which individuals evaluate their own appearance in relation to others (Carter & Vartanian, 2022). Through comparison, individuals may conclude that they are superior (upward comparison), inferior (downward comparison), or similar (lateral comparison) to the comparison target (Tylka et al., 2023). Research shows that social comparison, as a mediating mechanism, directly affects individuals' self-body perception (Jarman et al., 2021). Specifically, upward comparisons are closely linked to body dissatisfaction and low self-esteem, and social media plays a reinforcing role in this process (Tylka et al., 2023). Studies have shown that frequent use of social media is associated with increased appearance comparison, often resulting in decreased self-esteem (Ding & Xu, 2021; Yao et al., 2021).

Social media platforms offer abundant opportunities for appearance-based comparisons. Users often upload selfies, fashion shots, and fitness photos—most of which are carefully edited and filtered to showcase idealized versions of themselves (Rodgers et al., 2021). As users scroll through these polished images, they inevitably compare their own appearance to these unattainable standards. Additionally, these comparisons are inherently biased and unfair. Social media content typically highlights only the most flattering aspects of a person's life and appearance, concealing flaws and imperfections (Rodgers et al., 2021). This curated portrayal creates a distorted standard, making it easy for users especially adolescents and young adults, whose self-identities are still forming—to feel inadequate. Exposure to these idealized images can foster feelings of insecurity, dissatisfaction, and anxiety (Rodgers et al., 2021).

Moreover, the algorithmic structure of social media further amplifies this issue. Platforms rely on recommendation systems that prioritize content based on user preferences (Harriger et al., 2022). When a user frequently interacts with appearance-related posts, the algorithm responds by showing even more similar content. This feedback loop traps users in a cycle of continuous exposure to idealized beauty standards, reinforcing appearance-focused comparisons and exacerbating their negative effects.

In summary, social media significantly intensifies appearance-based social comparison by flooding users with idealized images, promoting unrealistic standards, and leveraging algorithmic mechanisms that sustain these behaviors. Together, these factors contribute to heightened self-dissatisfaction and psychological distress. Therefore, evaluating the level of appearance-based social comparison can help assess how different social media images impact body perceptions.

2.2 Different Types of Social Media Images

Today's social media platforms are flooded with a wide range of body-related visual content, each promoting different

aesthetic standards and lifestyle ideals. As concerns grow over the psychological impact of such content, researchers have increasingly begun to differentiate between various subtypes of images when examining their effects on body image and appearance-related behaviors (Harriger et al., 2023). This study focuses on five types of images that frequently appear in digital media environments, each representing different combinations of body shape, presentation style, and social comparison cues.

The first two types—thin-ideal posed images and thin-ideal functional images—reflect the dominant beauty standards in many cultures, especially in East Asia, where thinness continues to symbolize discipline, attractiveness, and social value (Lang et al., 2023). Thin-ideal posed images typically present static, highly stylized displays of the body, often used in commercial fashion and beauty advertising (Ferdousi et al., 2025; Tiggemann & McGill, 2004). A large body of research has shown that exposure to thin-ideal posed im-ages is significantly associated with lower body appreciation, higher body dissatisfaction, and lower self-esteem among women.

In contrast, thin-ideal functional images depict thin models engaging in activities such as exercising or moving, aligning with the rising trend of fitspiration content (Mulgrew & Courtney, 2022). While functional content is often promoted as "healthier" or more empowering due to its focus on strength, capability, and bodily functionality (Alleva & Tylka, 2021), previous studies in Western contexts have found that these images still promote idealized thin body standards and thus produce similar negative effects as posed images (Dignard & Jarry, 2021). Therefore, viewing thin-ideal media images is likely positively associated with higher levels of appearance-based negative social comparison.

The third and fourth types—full-figured posed images and full-figured functional images—were included to assess whether exposure to more body-diverse images can reduce harmful appearance-based comparisons (Hendrickse et al., 2021). The body positivity movement advocates for the inclusion of larger body types in mainstream media to promote acceptance and challenge the dominance of the thin ideal (Stein et al., 2023). Thus, incorporating full-figured images allows this study to test whether such exposure can lead to more positive body perceptions. Furthermore, by including both posed and functional presentations of full-figured models, the study can investigate whether functionality-focused framing has an additional positive impact within a larger body type context.

Previous research has generally found that exposure to full-figured images is associated with higher body appreciation and body satisfaction (Hendrickse et al., 2021). How-ever, when functionality-focused presentation is introduced, findings have been mixed. For example, Williamson and Karazsia (2018) found no significant difference in body appreciation between appearance-focused and functionality-focused images, whereas Mulgrew et al. (2020) suggested that functionality-focused images led to poorer appearance satisfaction and more upward functionality-based comparisons. Therefore, the potential positive impact of functionality-focused interventions in the context of full-figured images still needs further examination.

Finally, neutral scenery images are used as a control condition, providing emotionally neutral, non-body-related visual stimuli. Using these images as a baseline allows the study to determine whether any observed effects in the model image groups are specifically linked to the presence and type of body depictions rather than general media exposure. According to previous research, exposure to scenery or non-human images significantly enhances positive body perception indicators—such as body appreciation and appearance satisfaction—while reducing negative indicators like body dissatisfaction and anxiety (Rodgers et al., 2021). Therefore, it is reasonable to expect that compared to model images, exposure to scenery images would significantly lower appearance-based social comparison levels, helping to disrupt or reduce the mediating effect that leads to negative body perceptions.

By incorporating these five types of images, this study aims to simulate real-world social media exposure and systematically test how variations in body type and presentation style influence appearance-based social comparison among young Chinese women. Ultimately, the findings aim to provide practical theoretical guidance for strategies promoting body positivity.

3. Method

This study employed a controlled experimental design to investigate the effects of different types of social media images on appearance-based social comparison levels among young Chinese women. Participants were randomly assigned to one of five image conditions, and their appearance comparison levels were measured following exposure. The study's method is outlined in the following sections: Participants, Materials, Procedure, and Data Analysis.

3.1 Participants

Participants were recruited from three universities in mainland China—a public university, a private university, and a vocational college—to ensure diversity in demo-graphic and educational backgrounds. Eligible participants were those who self-identified as female, were aged between 18 and 26 years, held Chinese nationality (Asian ethnicity), and reported no history of severe psychological disorders.

A total of 369 female undergraduate students participated in the study (M=20.01 years, SD=2.03). Participants' Body Mass Index (BMI) ranged from underweight to over-weight, with an average BMI of 20.56 (SD=4.00), reflecting the typical body composition of young Chinese women. Table 1 shows the sample characteristics.

To determine the minimum required sample size, a priori power analysis was conducted using G*Power 3.1. Assuming a medium effect size (f = 0.25), an alpha level of 0.05, and a statistical power of 0.90 for a one-way ANCOVA with five groups and one covariate, the estimated minimum sample size was 338 participants. The final sample of 369 participants exceeded this requirement, providing sufficient power to detect meaningful between-group differences.

Table 1. Sample characteristics

		Age	BMI
Case number	Valid	369	369
	Missing	0	0
Mean		20.01	20.56
Standard deviation		2.03	4.00
Variance		4.136	15.99
Range		24	27.54
Minimum		18	12.00
Maximum		26	39.54

Discription: A total of 369 participants provided valid data for both age and body mass index (BMI), with no missing values. The average age was 20.01 years (SD = 2.03), and the average BMI was 20.56 (SD = 4.00). Participants' ages ranged from 18 to 26, while BMI ranged from 12.00 to 39.54.

3.2 Materials

3.2.1 Imagery Stimulus

The imagery stimulus in this study were categorized into five groups: (a) Thin-ideal posed—images featuring thin models in posed, highly stylized body displays; (b) Thin-ideal functional—images of thin models in functional, active scenarios, such as exercising; (c) Full-figured posed—images featuring full-figured models in posed body displays; (d) Full-figured functional—images of full-figured models in active scenarios; and (e) Neutral scenery—non-body-related images, such as nature or urban landscapes, used as a control condition. All images were sourced from Xiaohongshu, a leading appearance-focused social media platform in China, where young women comprise the majority of users.

Image selection followed Farquhar and Wasylkiw's (2007) criteria for functional imagery, identifying high-activity, naturally captured scenes (e.g., lifting or stretching) as functional. To ensure ecological validity, images were drawn from popular accounts with large followings, reflecting typical online content. Consistency was maintained by obscuring model faces, minimizing the influence of facial recognition or gaze direction (Williamson & Karazsia, 2018), and standardizing attire: models in functional images wore form-fitting yoga outfits exposing the midsection, while those in posed images wore clothing with modest skin exposure. The examples of visual stimulus for models are showed in Figure 2.

Body size classification divided models into thin-ideal and full-figured groups. Thin-ideal models conformed to prevailing beauty standards (e.g., "A4 waist," "right angle shoulders"), while full-figured models, with BMIs over 25, were classified as overweight according to standard BMI guidelines (Khanna et al., 2022).

A poll was conducted with ten Chinese female students (not involved in the main study) to assess the suitability of the images. Using a Visual Analogue Scale (VAS) ranging from 0 (not suitable) to 100 (highly suitable), participants rated the extent to which images matched the categories of Thin-ideal posed, Thin-ideal functional, Full-figured posed, Full-figured functional. The highest-rated images were selected, resulting in a final set of 20 images (five per group).

Figure 2. Examples of Model Visual Stimulus

Description: The above images are examples of model images from the experiment, from left to right, thin-ideal posed, thin-ideal functional, full-figured posed, full-figured functional

3.2.2 Appearance Comparison Scale (ACS)

Appearance-based social comparison serves as an important mediator influencing body image, making it essential to measure which image stimuli contributes more to appearance-based social comparisons. To assess this, three items developed by Tiggemann and McGill (2004) were employed (see Appendix A), focusing on appearance, body fat, and body shape. A seven-point Likert scale (from 1 = not at all to 7 = very much) was used for participants to record their feelings, with higher scores indicating greater levels of appearance comparison.

In the current study, for reliability test, the ACS, which consists of three items, has a high Cronbach's Alpha of 0.953. The Corrected Item-Total Correlations range from 0.885 (Q2) to 0.923 (Q3), showing substantial correlation between each item and the total score. The Cronbach's Alpha if Item Deleted values vary from 0.913 to 0.942, indicating that each item contributes well to the overall reliability.

For the Validity test, the ACS exhibited a unidimensional structure, with a single factor accounting for 100% of the variance and high factor loadings across all items (Q1: 0.923, Q2: 0.912, Q3: 0.964). This confirms that the scale effectively measures a single, coherent construct.

3.2.3 Demographic Information

Participants provided personal information, including nationality, gender identification and age to ensure eligibility for the study.

3.2.4 Attention Check Item

To ensure data validity and participants' engagement, an attention check question was embedded in the questionnaire. Participants were instructed to select "Strongly Disagree" for a particular item. Failure to comply led to data exclusion.

3.3 Procedure

This study was conducted online using the Wenjuanxing platform and adopted a between-subjects experimental design. A total of 369 female university students voluntarily participated. The research procedure was structured into four key stages: obtaining consent and demographic information, random assignment and stimulus exposure, post-exposure measurement, and final data handling and management.

Participants accessed the survey link distributed through university networks and student platforms. On the landing page, they encountered an informed consent statement outlining the purpose of the study, assurances of confidentiality, and the voluntary nature of participation. Only those who gave their consent were allowed to continue. Ethical approval for the study was obtained from the Universiti Malaya Research Ethics Committee (UMREC), ensuring all procedures aligned with ethical standards for research involving human participants.

After completing demographic information, participants were automatically and randomly assigned to one of five experimental groups through Wenjuanxing's built-in logic system. Each group was exposed to five images, presented one per page, with a required minimum viewing time of 30 seconds per image before proceeding. The images were standardized in terms of size, resolution, and background, and facial features were cropped to minimize the influence of facial attractiveness. All images were pre-tested and selected to reflect common content found on Chinese social media platforms.

Following image exposure, participants completed the Appearance Comparison Scale (ACS) to assess their level of appearance-based social comparison. The scale items, presented in a Likert format, instructed participants to reflect specifically on their experiences during the image viewing. This section took about five minutes to complete. All questions were compulsory, and one attention-check item was embedded to ensure data reliability.

Upon completion of the questionnaire, participants were shown a thank-you message and reminded not to share any survey details with others to protect the integrity of the study. All responses remained anonymous and were securely stored within the Wenjuanxing platform. The survey was designed to allow only one submission per participant. The entire process—from informed consent to survey submission—typically took between six to eight minutes to complete.

4. Results

4.1 Data Management and Analysis

The data management procedures for this study included several quality control measures. First, the Wenjuanxing platform automatically excluded incomplete responses by requiring all items to be completed before submission, ensuring no missing data. Second, participants who failed the embedded attention check were removed from the dataset. Third, responses were screened for demographic consistency, including checks on age, gender, and nationality, to ensure

alignment with the target population. After these steps, the final valid sample consisted of 369 participants. All data were exported in SPSS-compatible format for subsequent statistical analysis.

ANOVA (Analysis of Variance) was selected as the primary statistical method for this study because it is well-suited for comparing mean differences across multiple independent groups (Chatzi & Doody, 2024). In this experiment, participants were randomly assigned to one of five image conditions, making one-way ANOVA an appropriate choice to determine whether exposure to different types of images led to significant variations in appearance-based social comparison levels. ANOVA effectively tests for overall group differences while controlling for Type I error, which is especially important when dealing with more than two groups (Chatzi & Doody, 2024). This method allowed for a systematic evaluation of the experimental hypotheses and was followed by post-hoc comparisons to identify specific group differences where applicable. Post-hoc comparisons were conducted using LSD test to determine which specific groups differed significantly from one another. The specific procedures and results are presented as follows.

4.1.1 Assumption Tests Prior to ANOVA

To ensure the validity of the one-way ANOVA conducted on appearance-based social comparison levels, three key statistical assumptions were tested: normality, homogeneity of variances, and independence of observations. Table 2 shows the assumption test results of ANOVA on ACS.

Normality was assessed by examining skewness and kurtosis values for the Appearance Comparison Scale (ACS) scores across all five image groups. According to (Demir, 2022), skewness values within ±2 and kurtosis values within ±7 indicate acceptable normality. Descriptive statistics confirmed that the ACS scores in each group met these criteria, suggesting that the data were approximately normally distributed and suitable for parametric analysis.

The assumption of homogeneity of variances was tested using Levene's Test. Results showed that the variance in ACS scores did not significantly differ across groups ($F = 1.367$, $p = 0.248$), confirming that the assumption was met.

Independence of observations was ensured through the study design: participants were randomly assigned to only one image condition and completed the survey individually online via Wenjuanxing, a method that not only allowed randomized exposure but also mimicked a naturalistic social media experience—an important detail given the cultural relevance of digital media in shaping comparison behaviours among young Chinese women.

With all key assumptions satisfied, the dataset was deemed appropriate for proceeding with ANOVA to test group differences in appearance-based social comparison levels.

Table 2. Assumption tests for ANOVA on ACS

Test	Statistic	Value	Threshold	Result
Normality (Skewness)	Skewness	0.416	±2 (Demir, 2022)	Acceptable
	Std. Error of Skewness	0.127	–	–
Normality (Kurtosis)	Kurtosis	-0.351	±7 (Kim, 2013)	Acceptable
	Std. Error of Kurtosis	0.253	–	–
Homogeneity of Variance	Levene's Test (F)	1.359	$p > 0.05$	Homogeneity confirmed
	p-value	0.248		
Sample Size	N	369	–	–

Description: Table 2 shows the results of assumption tests conducted prior to ANOVA. Normality was confirmed based on skewness (0.416, SE = 0.127) and kurtosis (–0.351, SE = 0.253), falling within acceptable thresholds (Demir, 2022; Kim, 2013). Levene's test indicated that the assumption of homogeneity of variance was met, $F(4, 364) = 1.359$, $p = .248$. The total sample size for analysis was 369.

4.1.2 Results of ANOVA

The ANOVA results (see Table 3) revealed a significant effect of group on the dependent variable, $F(4, 364) = 4.144$, $p = 0.003$, with a partial eta squared of 0.044, indicating a small to moderate effect size. Specifically, the between-group sum of squares was 425.147, with a mean square of 106.287, while the within-group sum of squares was 9336.062, with a mean square of 25.649. These results suggest that there are significant differences among the groups in the dependent variable. The partial eta squared value indicates that approximately 4.4% of the variance in the dependent variable is explained by group differences. Therefore, the post-hoc test was conducted as follows.

Table 3. ANOVA results of ACS

Source	Sum of Squares	df	Mean Square	F	Significance (p)	Partial Eta Squared
Between Groups	425.147	4	106.287	4.144	0.003	0.044
Within Groups	9336.062	364	25.649			
Total	9761.209	368				

Description: A one-way ANOVA was conducted to examine differences in ACS scores across the five image conditions. The results revealed a statistically significant effect of image type on ACS scores, $F(4, 364) = 4.14$, $p = .003$, with a small to medium effect size (partial $\eta^2 = 0.044$). This indicates that the type of image viewed had a significant impact on participants' ACS scores.

4.1.3 Post-hoc Comparisons and Effect Interpretation

The post-hoc pairwise comparison results for appearance-based comparison levels, conducted using the LSD test, revealed several key findings (see Table 4).

First, no significant differences were observed among the four model-based image groups. Specifically, the thin-ideal posed group did not differ significantly from the thin-ideal function group ($p = 0.539$), the full-figured function group ($p = 0.517$), or the full-figured posed group ($p = 0.384$). Similarly, the thin-ideal function group showed no significant differences from the thin-ideal posed ($p = 0.539$), full-figured function ($p = 0.985$), or full-figured posed groups ($p = 0.138$). The full-figured function group also did not differ significantly from the thin-ideal posed ($p = 0.517$), thin-ideal function ($p = 0.985$), or full-figured posed group ($p = 0.124$). Likewise, no significant differences emerged between the full-figured posed group and the other model-based groups.

In contrast, all model-based groups showed statistically significant differences when compared to the scenery group. The thin-ideal posed group ($p = 0.003$), thin-ideal function group ($p = 0.021$), full-figured function group ($p = 0.019$), and full-figured posed group ($p < 0.001$) all reported significantly higher levels of appearance-based comparison than the scenery group.

These results indicate that while the type or presentation of human models did not significantly impact comparison levels, the presence of any human figure—regardless of body type or pose—elicited more comparison than neutral, non-model images. The scenery condition thus stands out as the only exposure that significantly reduced appearance-based social comparison.

Table 4. Post-hoc results of ACS

(I) Type	(J) Type	Mean Difference (I-J)	Standard Error	Significance (p)	95% Confidence Interval
1	2	-1.26333	0.81889	0.124	-2.8737
	3	1.93702	0.82429	0.019	0.3160
	4	-0.01545	0.84214	0.985	-1.6715
	5	-0.54020	0.83289	0.517	-2.1781
2	1	1.26333	0.81889	0.124	-0.3470
	3	3.20035	0.82163	< 0.001	1.5846
	4	1.24788	0.83953	0.138	-0.4031
	5	0.72312	0.83026	0.384	-0.9096
3	1	-1.93702	0.82429	0.019	-3.5580
	2	-3.20035	0.82163	< 0.001	-4.8161
	4	-1.95246	0.84481	0.021	-3.6138
	5	-2.47722	0.83559	0.003	-4.1204
4	1	0.01545	0.84214	0.985	-1.6406
	2	-1.24788	0.83953	0.138	-2.8988
	3	1.95246	0.84481	0.021	0.2911
	5	-0.52476	0.85320	0.539	-2.2026
5	1	0.54020	0.83289	0.517	-1.0977
	2	-0.72312	0.83026	0.384	-2.3558
	3	2.47722	0.83559	0.003	0.8340
	4	0.52476	0.85320	0.539	-1.1531

Note: 1 = Full-figured function, 2 = Full-figured posed, 3 = Scenery, 4 = Thin-ideal function, 5 = Thin-ideal posed.

4.1.4 Means and Standard Deviation

The inclusion of descriptive statistics, specifically the mean and standard deviation (SD), serves as an essential step in summarizing participants' responses and facilitating the interpretation of group-level differences. While inferential statistics such as ANOVA are crucial for establishing statistical significance, descriptive statistics offer foundational insight into the central tendency and variability of the data across experimental conditions.

Reporting mean values allows researchers to observe the general direction and relative magnitude of ACS within each group, providing a practical understanding of how different image types influenced participants' self-perception. Meanwhile, the standard deviation contextualizes these mean scores by indicating the degree of individual variation

around the group average. This is particularly important in body image research, where personal differences in social comparison sensitivity, internalization of ideals, and prior exposure to media may produce variable responses.

Moreover, the combined use of means and standard deviations enables comparison across both statistically significant and non-significant group contrasts, helping to evaluate whether observed patterns are theoretically or practically meaningful, even in cases where p-values are marginal. It also enhances transparency and replicability, allowing future researchers to compare their findings or conduct meta-analyses. Table 5 provides detailed mean scores and standard deviations for ACS across five groups.

For the Appearance Comparison Scale (ACS), participants in the scenery (control) group reported the lowest levels of appearance-based social comparison ($M = 8.79$, $SD = 4.72$). Post-hoc analyses revealed that this group's comparison scores were significantly lower than those of all four model-based conditions: thin-ideal posed ($p = 0.003$), thin-ideal functional ($p = 0.021$), full-figured posed ($p < 0.001$), and full-figured functional ($p < 0.001$). In contrast, no significant differences were observed between the four model image groups themselves, indicating that neither body type (thin vs. full-figured) nor presentation style (posed vs. functional) meaningfully altered participants' levels of appearance-based social comparison.

These findings suggest that the mere presence of a human model, regardless of form or presentation, is sufficient to elicit elevated appearance-based comparisons among viewers. Conversely, neutral, non-human content such as scenery may serve as a more effective alternative in reducing these tendencies. This pattern underscores a critical insight: efforts to mitigate appearance comparison through model diversity or functionality emphasis may be limited in impact, whereas limiting exposure to model-centric content altogether may offer a more robust strategy for promoting healthier body-related perceptions.

Table 5. Mean and Standard Deviation of ACS

Group	N	ACS Mean (SD)
Thin-ideal Posed	69	11.26 (4.93)
Thin-ideal Functional	72	10.74 (4.63)
Full-figured Posed	77	11.99 (5.41)
Full-figured Functional	76	10.72 (5.51)
Scenery (Control)	75	8.79 (4.72)

Description: The average ACS scores varied across the five experimental conditions. The full-figured posed group reported the highest body appreciation ($M = 11.99$, $SD = 5.41$), followed by the thin-ideal posed group ($M = 11.26$, $SD = 4.93$). The scenery control group had the lowest mean score ($M = 8.79$, $SD = 4.72$), suggesting a potentially protective effect of viewing natural images. Standard deviations across groups ranged from 4.63 to 5.51, indicating moderate within-group variability.

4.1.5 Testing Results of Hypotheses

This study tested three hypotheses regarding appearance comparison levels. The results (see Table 6) showed that only the first hypothesis (H1) was supported, meaning that compared to model images, neutral, non-human images such as scenery significantly reduced participants' appearance comparison levels. The second hypothesis (H2) and third hypothesis (H3) were not supported, indicating that neither body type (thin vs. full-figured) nor presentation style (posed vs. functional) significantly affected participants' levels of appearance-based social comparison. This finding underscores that the presence of a human model is the key factor influencing appearance comparison, rather than the model's body type or presentation style.

Table 6. Testing Results of Hypotheses

Item	H1	H2	H3
Description	Exposure to non-model conditions (i.e., scenery images) will significantly decrease appearance-based social comparison levels compared to any model image conditions.	Exposure to thin-ideal models will elicit higher levels of appearance-based social comparisons than exposure to full-figured models.	Exposure to functional images will decrease appearance-based social comparison levels compared to posed images, regardless of body type.
Result	Significant differences found between scenery group and all four model image groups (p-values from <.001 to .021).	No significant differences between thin-ideal and full-figured groups (p-values > .1).	No significant differences between functional and posed image groups (p-values > .1).
Supported or not	Supported	Not Supported	Not Supported
Evidence	Scenery group had significantly lower ACS scores than all model groups.	ACS scores did not significantly differ between thin and full-figured groups.	Presentation style (posed vs. functional) had no significant effect on ACS scores.

5. Discussion and Conclusion

This study explored the impact of different types of media images on women's appearance comparison behaviors. The findings revealed that participants in the scenery image group exhibited significantly lower appearance comparison levels, suggesting that exposure to non-human images could effectively reduce appearance-based social comparison behaviors. Meanwhile, there were no significant differences in appearance comparison levels across different types of model images, a result that contrasts with the general conclusions in existing literature. The following content discusses the reasons and implications behind these two findings.

In this study, participants in the scenery image group showed significantly lower appearance comparison levels. This finding indicates that, compared to images featuring human figures, exposure to non-human images (such as natural landscapes or urban scenes) may effectively reduce appearance-based social comparison behaviors. The scenery images, as the control group, provided emotionally neutral and non-body-related visual stimuli, which did not seem to trigger appearance evaluation responses. This result provides preliminary evidence for reducing appearance comparison behaviors, suggesting that decreasing exposure to visual content involving human figures may help reduce women's appearance-related anxiety on social media. The result aligns with the most studies as concluded by Rodgers et al. (2021).

Interestingly, this study also found no significant differences in appearance comparison levels across different types of model images. This finding contrasts with much of the existing literature, which generally suggests that exposure to idealized thin body images elicits stronger social comparisons compared to exposure to average or diverse body types (Carter & Vartanian, 2022). Several explanations may account for this discrepancy.

First, deep-rooted cultural influences may play a key role. In the Chinese sociocultural context, young women are exposed to significant social comparison pressures from an early age, not only regarding appearance but also academic performance and behavioral norms (Ding & Xu, 2021). These comparison tendencies are often reinforced by parents, relatives, and educators (Tylka et al., 2023). For example, influenced by Confucian values, many Chinese parents commonly use social comparisons as a motivational strategy to encourage their children to improve, a practice deeply embedded in traditional parenting norms (Zhang & Yan, 2024). Similarly, the emphasis on academic rankings and performance in the educational environment further normalizes comparison as part of daily life. As a result, participants may have become accustomed to engaging in comparison behaviors regardless of the type of body image presented. This may weaken the effect of different model types on social comparison levels, leading participants to automatically engage in comparison when presented with any image featuring a human figure.

Second, the relatively short duration of image exposure might also be a contributing factor. Previous studies have indicated that longer exposure times help enhance recognition and memory encoding of visual details, such as body shape and posture (Masarwa et al., 2025). In this study, due to the short image viewing time, participants may not have had enough time to fully process and discern the subtle differences between model types, which may explain the similar responses across conditions. Future research could extend image exposure time to assess whether longer viewing leads to greater differentiation in social comparison responses based on model types.

Additionally, the results of this study further support the notion that appearance comparison behaviors are often automatic and difficult to suppress. When exposed to any image featuring human figures, individuals may unconsciously engage in appearance evaluation. Mulgrew and Courtney (2022) found that social comparison can occur almost instantaneously, even before conscious processing. Jung et al. (2022) also argues that visual stimuli containing human faces or bodies easily trigger involuntary comparison responses. Therefore, when media images involve human figures, mere appearance comparison may not directly impact body perception.

Overall, the study suggests that non-human images, especially scenic images, could effectively reduce appearance comparison levels, providing a potential intervention for reducing women's appearance anxiety on social media. Furthermore, since there were no significant differences in appearance comparison levels between different types of model images, interventions aimed at promoting body positivity should not overly focus on reducing comparison levels but rather on addressing the direction of comparisons (e.g., reducing upward comparisons). However, it is worth noting that although no significant differences were observed among different model types in this study, cultural factors and image exposure time may have influenced these results. Future research could further explore these factors to gain a more comprehensive understanding of the long-term impact of different image types on appearance comparison behaviors. To enhance the practical relevance of these findings, this study highlights several implications for health communication strategies. Content creators are encouraged to incorporate more diverse and non-comparative imagery such as scenic visuals, which may help reduce appearance-based social comparisons. Social media platforms could consider adjusting content recommendation algorithms to increase the visibility of such imagery and promote a more body-positive environment. Additionally, evidence-based communication interventions should focus on cultivating media literacy and encouraging self-acceptance, rather than solely aiming to suppress comparison behaviors.

6. Limitations and Future Research Suggestions

This study presents several limitations that should be addressed in future research to build upon the current findings.

Limited exposure time: The brief exposure time of 30 seconds per image may have restricted participants' ability to fully engage with and reflect on the images. Previous studies suggest that longer exposure durations allow for better image recognition and deeper processing, which could lead to more thoughtful and nuanced social comparison responses. Future research should consider extending the exposure time to provide participants with more opportunities to absorb the stimuli, potentially yielding more robust results regarding social comparison behaviors.

Lack of qualitative data: While the quantitative approach provided valuable statistical insights, it did not capture the participants' subjective interpretations and experiences. Social comparison behaviors are influenced by personal perceptions, which can vary widely between individuals. Incorporating qualitative methods, such as open-ended questions or interviews, would offer deeper insights into how participants interpret the images and engage in appearance-based comparisons. This could help enrich our understanding of the underlying psychological processes involved.

Homogeneity of sample: The sample in this study was limited to university students, primarily from a specific region in China. This homogeneity restricts the generalizability of the findings to other populations, such as older individuals or those from different cultural backgrounds. While this focus allows for a more controlled examination within a defined demographic, it also limits the external validity of the results. Future studies should aim for a more diverse sample to improve the applicability of the findings across a broader range of demographics and cultural contexts, thereby enhancing the overall generalizability of the research.

Focus on appearance comparison alone: The study primarily focused on appearance comparison using the ACS scale, neglecting other important aspects of body image, such as emotional well-being or self-esteem. Exposure to different types of images could also influence these factors, which were not captured in the current research. Future studies should adopt a more comprehensive approach to measuring body image, considering a broader range of psychological outcomes, to provide a more holistic view of the impact of media exposure.

Limited theoretical integration: The study mainly applied social comparison theory while underutilizing other mass communication theories such as Media Effects Theory, Cultivation Theory, and Social Cognitive Theory. This narrow theoretical focus may have limited the depth of explanation for media influence. Future research should integrate broader media frameworks to enrich the understanding of media exposure effects.

By addressing these limitations, future research can build a more comprehensive understanding of the relationship between image exposure and social comparison behaviors, with greater applicability to diverse populations and a broader range of psychological outcomes.

Acknowledgments

Not applicable.

Authors contributions

Dr. Siyi Song was responsible for conceptualization, investigation, methodology, data curation, formal analysis, writing – original draft, writing – review & editing, visualization, project Administration. Prof. Dr. Hamedi Mohd Adnan was responsible for supervision, writing – review & editing. Dr. Muhamad Shamsul Ibrahim was responsible for supervision, methodology, writing – review & editing. All authors read and approved the final manuscript.

Funding

Not applicable.

Competing interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Informed consent

Obtained.

Ethics approval

The Publication Ethics Committee of the Redfame Publishing.

The journal’s policies adhere to the Core Practices established by the Committee on Publication Ethics (COPE).

Provenance and peer review

Not commissioned; externally double-blind peer reviewed.

Data availability statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Data sharing statement

No additional data are available.

References

Alleva, J. M., & Tylka, T. L. (2021). Body functionality: A review of the literature. *Body Image*, *36*, 149-171. https://doi.org/10.1016/j.bodyim.2020.11.006

Brooks, J., Walker, D. C., & Murray, K. (2023). What can my body do for me? Guided body-functionality mirror gazing task improved college women's body appreciation and body functionality orientation. *Journal of American College Health*, 1-10. https://doi.org/https://doi.org/10.1080/07448481.2023.2209195

Brown, Z., & Tiggemann, M. (2020). A picture is worth a thousand words: The effect of viewing celebrity Instagram images with disclaimer and body positive captions on women's body image. *Body Image*, *33*, 190-198.

Carter, J. J., & Vartanian, L. R. (2022). Self-concept clarity and appearance-based social comparison to idealized bodies. *Body Image*, *40*, 124-130. https://doi.org/https://doi.org/10.1016/j.bodyim.2021.12.001

Chatzi, A., & Doody, O. (2024). The one-way ANOVA test explained. *Nurse researcher*, *32*(4).

Demir, S. (2022). Comparison of normality tests in terms of sample sizes under different skewness and Kurtosis coefficients. *International Journal of Assessment Tools in Education*, *9*(2), 397-409.

Dignard, N. A., & Jarry, J. L. (2021). The "Little Red Riding Hood effect:" Fitspiration is just as bad as thinspiration for women's body satisfaction. *Body Image*, *36*, 201-213. https://doi.org/https://doi.org/10.1016/j.bodyim.2020.11.012

Ding, N., & Xu, Z. (2021). China Adolescents Comparisons on Social Media and Emotional Eating: A Moderated Analysis. *Child and Adolescent Social Work Journal*. https://doi.org/10.1007/s10560-021-00750-3

Farquhar, J. C., & Wasylkiw, L. (2007). Media images of men: Trends and consequences of body conceptualization. *Psychology of Men & Masculinity*, *8*(3), 145. https://doi.org/https://doi.org/10.1037/1524-9220.8.3.145

Ferdousi, J. S., Bradley, G. L., Carlini, J., & Seekis, V. (2025). Navigating ideals: effects of curvy and thin models in Instagram fashion advertising on body type preferences and clothing purchase intentions. *Young Consumers*, *26*(1), 136-149.

Harriger, J. A., Evans, J. A., Thompson, J. K., & Tylka, T. L. (2022). The dangers of the rabbit hole: Reflections on social media as a portal into a distorted world of edited bodies and eating disorder risk and the role of algorithms. *Body Image*, *41*, 292-297.

Harriger, J. A., Thompson, J. K., & Tiggemann, M. (2023). TikTok, TikTok, the time is now: Future directions in social media and body image. *Body Image*, *44*, 222-226. https://doi.org/10.1016/j.bodyim.2023.01.005

Hendrickse, J., Clayton, R. B., Ray, E. C., Ridgway, J. L., & Secharan, R. (2021). Experimental effects of viewing thin and plus-size models in objectifying and empowering contexts on Instagram. *Health communication*, *36*(11), 1417-1425. https://doi.org/https://doi.org/10.1080/10410236.2020.1761077

Jackson, T., Ye, X., Hall, B. J., & Chen, H. (2021). "Have You Taken the A4 Challenge?" Correlates and Impact of a Thin Ideal Expression From Chinese Social Media. *Frontiers in Psychology*, *12*, 669014. https://doi.org/10.3389/fpsyg.2021.669014

Jarman, H. K., Marques, M. D., McLean, S. A., Slater, A., & Paxton, S. J. (2021). Social media, body satisfaction and well-being among adolescents: A mediation model of appearance-ideal internalization and comparison. *Body Image*, *36*, 139-148.

Jung, J., Barron, D., Lee, Y.-A., & Swami, V. (2022). Social media usage and body image: Examining the mediating roles of internalization of appearance ideals and social comparisons in young women. *Computers in Human Behavior*, *135*. https://doi.org/10.1016/j.chb.2022.107357

Khanna, D., Peltzer, C., Kahar, P., & Parmar, M. S. (2022). Body mass index (BMI): a screening tool analysis. *Cureus*, *14*(2). https://doi.org/10.7759/cureus.22119

Lang, M., Chen, P., Li, X., & Ye, Y. (2023). "Refusing appearance anxiety": A content analysis of body positive posts on Chinese social media. *Body Image*, *45*, 414-419. https://doi.org/10.1016/j.bodyim.2023.04.002

Liu, Y., & Li, X. (2024). “Pale, Young, and Slim” girls on red: a study of young femininities on social media in post-socialist China. *Feminist Media Studies*, *24*(4), 744-759. https://doi.org/https://doi.org/10.1080/14680777.2023.2226830

Masarwa, S., Kreichman, O., Brook, L., & Gilaie-Dotan, S. (2025). Memory takes time: Images viewed for longer time are better remembered during naturalistic encoding.

Mulgrew, K. E., & Courtney, S. (2022). Women's response to, awareness of, and interest in body functionality content on Instagram. *Body Image*, *43*, 54-62. https://doi.org/10.1016/j.bodyim.2022.08.008

Mulgrew, K. E., Schulz, K., Norton, O., & Tiggemann, M. (2020). The effect of thin and average-sized models on women's appearance and functionality satisfaction: Does pose matter? *Body Image*, *32*, 128-135. https://doi.org/10.1016/j.bodyim.2019.12.004

Rodgers, R. F., Paxton, S. J., & Wertheim, E. H. (2021). #Take idealized bodies out of the picture: A scoping review of social media content aiming to protect and promote positive body image. *Body Image*, *38*, 10-36. https://doi.org/10.1016/j.bodyim.2021.03.009

Stein, J.-P., Scheufen, S., & Appel, M. (2023). Recognizing the beauty in diversity: Exposure to body-positive content on social media broadens women’s concept of ideal body weight. *Journal of Experimental Psychology: General*.

Tiggemann, M., & McGill, B. (2004). The role of social comparison in the effect of magazine advertisements on women's mood and body dissatisfaction. *Journal of social and clinical psychology*, *23*(1), 23-44.

Tylka, T. L., Rodgers, R. F., Calogero, R. M., Thompson, J. K., & Harriger, J. A. (2023). Integrating social media variables as predictors, mediators, and moderators within body image frameworks: Potential mechanisms of action to consider in future research. *Body Image*, *44*, 197-221. https://doi.org/10.1016/j.bodyim.2023.01.004

Vandenbosch, L., Fardouly, J., & Tiggemann, M. (2022). Social media and body image: Recent trends and future directions. *Current Opinion in Psychology*, *45*, 101289. https://doi.org/10.1016/j.copsyc.2021.12.002

Wang, K., Liang, R., Yu, X., Shum, D. H., Roalf, D., & Chan, R. C. (2020). The thinner the better: Evidence on the internalization of the slimness ideal in Chinese college students. *PsyCh Journal*, *9*(4), 544-552. https://doi.org/https://doi.org/10.1002/pchj.346

Williamson, G., & Karazsia, B. T. (2018). The effect of functionality-focused and appearance-focused images of models of mixed body sizes on women's state-oriented body appreciation. *Body Image*, *24*, 95-101. https://doi.org/10.1016/j.bodyim.2017.12.008

Wu, H. X., Ching, B. H.-H., He, C. C., & Li, Y. (2021). “Thinness is beauty”: Predictors of anti-fat attitudes among young Chinese women. *Current Psychology*, 1-12. https://doi.org/https://doi.org/10.1007/s12144-021-02021-x

Yao, L., Niu, G., & Sun, X. (2021). Body image comparisons on social networking sites and Chinese female college students’ restrained eating: The roles of body shame, body appreciation, and body mass index. *Sex roles*, *84*, 465-476.

Zhang, Y., & Yan, N. (2024). Comparing upward: How parental social comparisons shape children’s self-concept and mastery motivation in China. *Journal of Experimental Child Psychology*, *247*, 106048.

Appendix A: Appearance Comparison Scale (CN/EN)

采用李克特七分量表（从 1=完全没有到 7=非常多）来测量外貌比较的程度，参与者需要选择最合适的描述来记录自己的感受。得分越高，表明与图片中的模特进行基于外貌的社会比较的程度越高。/A seven-point Likert Scale (from 1 = not at all to 7 = very much) is used for measuring the extent of appearance comparison, and participants are required to record their feelings by choosing the most appropriate description. The Higher score indicates a higher level of appearance-based social comparison with the model in the images.

1. 在观看模特时，您在多大程度上想到了自己的外貌？/How much did you think about your appearance while viewing the models?

2. 在观看模特时，您在多大程度上与之比较了您的体脂和体重？/ How much did you compare your body fat and weight while viewing the models?

3. 在观看模特时，您在多大程度上想到了您的体型身材？/How much did you think about your body shape while viewing the models?