

The effect of selfie editing degree on appearance anxiety among Chinese adolescent girls: exploring the roles of implicit self-objectification as a mediator and self-compassion as a moderator

Xueyou Yang

International Department, The Affiliated High School of South China Normal University (HFI), Guangzhou, China

avena666@163.com

Abstract. This study investigates how the degree of selfie editing among 15-20-year-old girls affects appearance anxiety. Building on previous research on the driving forces of selfie editing and its psychological mechanisms, it tests whether implicit self-objectification mediates the link, and whether state self-compassion moderates these effects. Data from young social media users were collected via self-report appearance anxiety and self-compassion scale, and an Implicit Association Test (IAT), analyzed with mediation, moderation, and moderated mediation models in SPSSAU. Heavy selfie editing but not light selfie editing was found to significantly increase appearance anxiety, with this effect being fully driven by implicit self-objectification. Results also revealed a masking mediation effect: the indirect effect through implicit self-objectification was positive and significant, while the direct effect was negative but non-significant, suggesting that the anxiety-increasing effect operates through automatic cognitive processes rather than immediate emotional responses. State self-compassion only buffered the effects of heavy editing, and weakened both the path to implicit self-objectification and the direct path to anxiety. Future research should use longitudinal designs and diverse samples to explore long-term dynamics and generalizability.

Keywords: selfie editing, appearance anxiety, self-objectification, self-compassion, digital body image, social media psychology

1. Introduction

In the digital age, social media plays a crucial role in adolescents' daily lives. Selfie posting and editing become common behaviours among them because they are highly engaged with these visual platforms like Instagram and TikTok [1, 2]. User-friendly photo-editing apps like MeituXiuxiu have normalized editing and let users easily smooth skin, adjust features, or apply filters [1]. While selfie editing is often seen as a normal or even creative activity, researchers have raised concerns about it, particularly about the relations between body image and appearance-related anxiety [3]. Appearance anxiety refers to the extent to which individuals

feel concerned, worried, or distressed about how their physical appearance is evaluated by others [4]. It is common among young people due to puberty and sensitivity to peers [5]. In China, posting unedited selfies, particularly for those who do not conform to conventional beauty standards, is sometimes seen as impolite. This pushes many teen girls to spend an hour to edit a single selfie to avoid criticism and meet beauty standards [1]. Among editors, female adolescents edit selfies longer and more often to present a physically and socially desirable body image, and report higher body dissatisfaction than boys [6]. Excessive editing can lead to fixations on perceived "flaws," body dysmorphic concerns, and social avoidance [7, 8]. Self-objectification, viewing oneself as an appearance-based object, also stems from editing, bringing shame, anxiety, and unclear self-concept [9, 10]. Self-compassion has emerged as a potential protective factor [11]. Defined as kindness to oneself during suffering, it includes self-kindness, common humanity, and mindfulness [12]. Studies show it reduces body dissatisfaction (especially for women) and buffers the link between appearance and social anxiety [13]. Short interventions like writing tasks can lower anxiety after viewing appearance-based social media content [14, 15].

2. Literature review

2.1. Drivers of selfie editing

Several factors will result in selfie editing behaviours. On an individual psychological level, low self-esteem promotes editing since adolescents use it to compensate for flaws and gain approval [16]. Self-objectification, viewing oneself as an appearance-based object, or prioritizing appearance over internal traits, also stems from editing, bringing shame, anxiety, and unclear self-concept [9, 10], and predicts more objectifying selfies [17]. Besides, appearance rejection sensitivity, the fear of rejection for looks, leads teen girls to edit excessively [8]. Unhealthy narcissism and perfectionism also increase frequent editing [18]. From a social learning perspective, upward social comparison with peers, which is even stronger than with celebrities, leads to more editing. This is because teenagers feel inadequate next to peers' edited photos and want to narrow the gap [16]. Chinese cultural norms also add pressure as traditional ideas link poor appearance to laziness [19]. There is a popular saying that there're no ugly women, only lazy ones. Worse, the job market, universally led by male in management positions, implicitly considers fine looks as a competitive but necessary factor for females [1], and social media's monetization of beauty incentivizes editing [19]. Parental criticism and cybervictimization could also lead to editing [16, 19]. Social media feedback plays a role too—"likes" reinforce objectifying selfies, with more likes leading to more similar posts [17], while fear of negative feedback or few likes increases anxiety and extensive editing [20].

2.2. Psychological consequences of selfie editing

Importantly, the relationship between editing and self-objectification is not unidirectional. While pre-existing self-objectification tendencies may predispose individuals to edit more frequently [17], the editing process itself can also amplify self-objectification by reinforcing an appearance-focused evaluative stance. The present study focuses on the latter direction: how the act of editing, regardless of prior tendencies, affects implicit self-objectification and subsequent appearance anxiety. Selfie editing brings significant psychological consequences. For body image, more editing correlates with higher body dissatisfaction [6], especially for girls with large actual-ideal body gaps [16]. According to objectification theory [21], even editing without posting increases body surveillance [2], and body shame creates a cycle that ashamed teens edit more [8]. Editing can also trigger body dysmorphic concerns and social avoidance [7]. Anxiety and other mental health

issues are also tied to excessive editing. It correlates with higher appearance anxiety [22] and social anxiety and is associated with higher eating disorder risk in adolescents [23].

2.3. The protective role of self-compassion

Self-compassion acts as a protective factor against these negative outcomes. It reduces body dissatisfaction for women and buffers the link between appearance and social anxiety [13]. It also improves stress responses that high self-compassion correlates with lower heart rate, calm physiological traits and less anxiety [15, 24]. Examples show that self-compassion interventions are effective too. Short practices like 3-minute writing tasks prevent body dissatisfaction after viewing idealized images [14], and the 8-week Mindful Self-Compassion program reduces shame and anxiety long-term [12].

2.4. Theoretical frameworks

Three key theoretical frameworks are summarized: they complement each other and explain the dynamics of selfie editing and its effects. Impression Management Theory provides the motivation for selfie editing: teens edit their selfies to create a favourable image and avoid negative social feedback, but over-reliance on this behaviour raises appearance preoccupation [20]. Social Learning Theory [25] describes the mechanism that shapes this behaviour: teens learn narrow beauty standards from influencers and peers on social media, then imitate curated content and edit their selfies to match these standards [26], which increases social comparison [27]. Objectification Theory [21] outlines the psychological outcome of this process: the repeated appearance focus from editing leads girls to internalize an "observer's perspective". This frames their bodies as objects for others' judgment, increasing body monitoring and the gap between ideal and actual appearance, ultimately causing shame and appearance anxiety [2, 18]. The present study integrates these three perspectives by testing a model in which implicit self-objectification mediates the link between editing and appearance anxiety, and state self-compassion moderates this mediation pathway.

2.5. Research gaps

Despite growing research, key gaps remain. Most studies are correlational, so they fail to prove whether editing causes harm or pre-existing mental health issues drive editing. While some experimental research exists, few test if different editing degrees (no/light/heavy) cause changes in appearance anxiety [17, 18, 20]. Few studies focus on Chinese adolescents, especially 15-20-year-olds, which is a vulnerable group in critical self-development stage [9, 12]. Existing Chinese-focused research mostly targets college students. While studies grounded in objectification theory have shown that self-objectification and body surveillance may mediate editing's link to appearance anxiety [2, 18], few test these in an integrated model, and self-compassion's comprehensive moderating role is unclear. Some studies find it protective [11, 14], while others have not directly tested its moderating role in the context of selfie editing, leaving the boundary conditions of this protective effect unclear [6]. Additionally, most studies rely on self-report measurements, and this may lead to social desirability bias [13].

2.6. Research questions

To address these gaps, this study aims to answer the following research questions: (1) Do different selfie editing degrees (no/light/heavy) affect appearance anxiety among 15-20-year-old Chinese girls? (2) Does implicit self-objectification mediate the relationship between editing and appearance anxiety? (3) Does state self-compassion moderate this mediation? In terms of specific objectives, it investigates how self-

objectification acts as a mediator between selfie editing and higher anxiety, and whether self-compassion acts as a moderator that weakens the link between editing and self-objectification.

3. Methodology

This study used a randomized controlled experimental design. It explored how different levels of selfie editing affect appearance anxiety. It also tested two effects: the mediating effect of self-objectification and the moderating effect of state self-compassion. The independent variable was the level of selfie editing, with three levels: no editing, light editing, and heavy editing. The mediating variable was implicit self-objectification, measured by the Implicit Association Test (IAT) D-score. The moderating variable was state self-compassion, measured by the State Self-Compassion Scale (SCS) score. The dependent variable was the change in appearance anxiety after editing, calculated as the difference between pre-test and post-test scores of the Appearance Rejection Sensitivity Scale (ARS).

3.1. Participant recruitment and stratification

Participants were recruited online with a pre-screening questionnaire. The pre-screening exclusively used the ARS to identify individuals with moderate to high appearance anxiety. All eligible participants were aged 15–20 years. Participants were stratified by age and household income to ensure a representative sample. Age was divided into 3-year brackets (15-17, 18-20). Household income distribution was set to approximate urban Chinese demographics: low income (bottom 20%), lower-middle income (next 40%), middle income (next 30%), and upper-middle income (top 10%). This classification was based on the national household income percentiles from the National Bureau of Statistics of China. A total of 81 eligible participants were selected. All participants had similar initial ARS scores, ensuring a consistent baseline across groups (see Results section for statistical confirmation). Participants with severe mental illness, visual impairments, or inability to use a computer and mobile editing apps were excluded from the study. Participants were randomly assigned to one of the three experimental conditions. Each group contained approximately equal numbers of participants. All participants completed the full procedure, including the pre-test, editing task, and post-test.

3.2. Materials

3.2.1. *Measuring tools*

Appearance Rejection Sensitivity Scale (ARS-scale, 10-item short form) [28] measured participants' anxiety about being rejected because of their appearance. Each item had two parts: anxiety level and expectation level. Participants rated both parts on a 6-point scale (1 = not at all, 6 = extremely). Following the standard scoring procedure for the ARS, each item score was calculated by multiplying the anxiety rating by the expectation rating (product range: 1 to 36). The total ARS score was then computed as the average across all 10 items, yielding a possible range of 1 to 36. Higher scores indicated greater appearance-based rejection sensitivity (i.e., stronger appearance anxiety).

State Self-Compassion Scale (SCS, Short Form) measured participants' self-compassion level after selfie editing. It had 6 items rated on a 5-point scale (1 = not at all true for me, 5 = very true for me). Following the scoring instructions, items 2, 4, and 6 were reverse-scored, and a grand mean was then calculated across the six items, yielding a possible range of 1 to 5. Higher scores indicated greater state self-compassion [12].

Implicit Association Test (IAT) was administered on the Psychexp platform to measure implicit self-objectification. The IAT's core index is the D-score, which measures the strength of the implicit mental association between two concepts (here, the self and appearance features).

The D-score is calculated from reaction time differences in the IAT: slower responses when sorting "self" words with non-appearance (personality) words (incompatible task) and faster responses when sorting "self" words with appearance words (compatible task) result in a higher D-score [29]. A higher positive D-score means a stronger automatic link between the self and appearance in a participant's mind, reflecting higher implicit self-objectification. D-scores can range from negative to positive values; negative values indicate weak or reversed implicit associations (i.e., participants responding faster on the incompatible task than on the compatible task). In practice, IAT D-scores typically fall between -1.5 and +1.5 [29].

3.2.2. Stimulus materials for the IAT

All stimulus words were selected based on prior IAT research on self-objectification and appearance anxiety [9, 29], and adapted to the Chinese teen female sample in this study. All words are simple and easily understood by 15-20-year-olds, and they directly reflect the core construct each category aims to measure.

Target 1 includes self-related words that describe physical symptoms of anxiety that teens experience when their appearance is evaluated, and reflect self-referential appearance anxiety [5]. Target 2, other-related neutral behaviour words, serve as a contrast to the self-related anxiety words, reducing measurement bias in the IAT [29]. Attribute 1 includes both ideal and negative appearance features widely emphasized in Chinese social media beauty standards [19, 26]. Attribute 2, meanwhile, includes positive and negative personality traits.

Note: All scales and the stimulus words for IAT mentioned in text are provided in the Appendix at the very end of paper.

3.2.3. Selfie and editing tools

All participants used the same model of mobile phone to take selfies. The shooting angle, distance, light, and background were unified for all. Editing was done with the XINGTU app. The light-editing and heavy-editing groups used pre-set templates with the same editing functions. Only the degree of editing was different between the two groups. The no-editing group kept the original selfie without any changes.

3.3. Experimental procedure and data analysis

First, participants completed the pre-test measure of appearance anxiety. This step established a baseline level for each participant. Second, participants were randomly assigned to one of the three editing conditions. Participants then completed the selfie editing task based on the assigned instructions. Third, participants completed the Implicit Association Test (IAT). This step measured implicit self-objectification after the editing task. Fourth, participants completed the post-test appearance anxiety scale. This step measured changes in emotional response after editing. Finally, participants completed the Self-Compassion Scale (SCS). This step assessed their current level of self-compassion. All tasks were completed in a controlled setting to ensure consistency across participants. Descriptive Statistics were calculated by the mean and range of ARS scores, SCS scores, and IAT D-scores for each group. Mediation Analysis was done by Process Model 4 in SPSSAU, an online tool for fast, intelligent statistical analysis and visualization [30], to test the mediating effect of self-objectification (IAT D-score). Moderation Analysis was done by using Process Model 1 to test the moderating effect of state Self-Compassion (SCS score). Moderated Mediation Analysis, Model 9, was conducted to examine whether state self-compassion influenced the indirect effect of editing condition on change of ARS through implicit self-objectification.

3.4. Ethical considerations

All participants participated voluntarily. Adult participants signed on the informed consent, and the minors under 18 signed with parental approval. They could withdraw from the experiment at any time without any negative consequences. All personal data and test results were anonymized. The data was only used for

academic research and kept strictly confidential. After the experiment, all participants received suggestions for adjusting appearance anxiety and improving self-compassion. Participants who needed further psychological support were referred to professional counselling services.

4. Results

This section presents the key findings of the study in descriptive statistics for all core study variables, group difference by selfie editing level (0 = no edit, 1 = light edit, 2 = heavy edit), and correlations among the variables.

4.1. Descriptive statistics of key variables

The pre-test ARS scores for all three groups fall within the same narrow range, with nearly identical mean scores across groups, presented in Table 1. This confirms a consistent baseline of appearance anxiety for participants before the experimental manipulation of selfie editing. It rules out pre-existing differences in appearance anxiety as a confounding variable, so any subsequent differences in outcomes can be attributed to the different levels of selfie editing rather than initial anxiety levels.

Table 1. Descriptive statistics: pre-test ARS scores by group

Group	Number of Participants	Mean Pre-Test ARS Score	SD	Score Range
0	27	13.04	0.72	11.7–14.4
1	27	12.99	0.68	11.5–14.2
2	27	13.02	0.71	11.6–14.3

One-way ANOVA on the change scores (post-test scores minus pre-test scores, see Table 1 and Table 2) presented a significant main effect of editing condition, $F(2, 78) = 6.43$, $p = 0.003$, $\eta^2 = 0.141$. Post-hoc comparisons using Tukey's HSD indicated that the heavy-editing group showed significantly greater increases in appearance anxiety than both the no-edit group ($p = 0.002$) and the light-editing group ($p = 0.046$). The light-editing group did not differ significantly from the no-edit group ($p = 0.516$). Figure 1 presents the mean change scores across the three groups.

Table 2. Descriptive statistics: post-test ARS scores by group

Group	Number of Participants	Mean Post-Test ARS Score	SD	Score Range
0	27	13.11	0.75	11.6–14.6
1	27	13.24	0.73	11.8–14.7
2	27	13.66	0.82	12.2–15.3

One-way ANOVA on state self-compassion scores, summarized in Table 3, showed a significant main effect of editing condition, $F(2, 78) = 13.30$, $p < 0.001$, $\eta^2 = 0.254$. Tukey HSD comparisons indicated that the heavy-editing group scored significantly lower than both the no-edit group ($p < 0.001$) and the light-editing group ($p = 0.008$). No significant difference emerged between the light-edit and no-edit groups ($p = 0.102$).

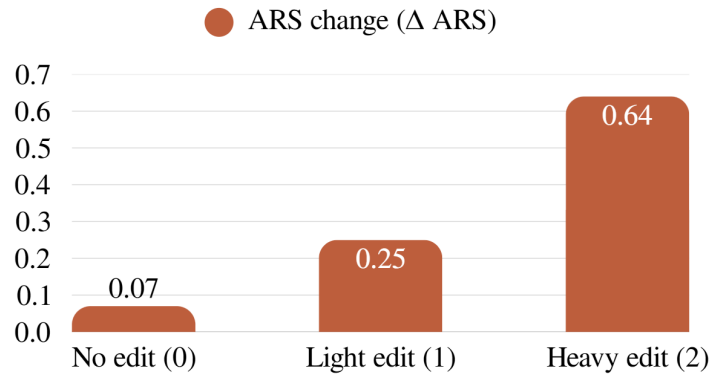


Figure 1. Mean of change of ARS score for three groups

Table 3. Descriptive statistics: SCS scores by group

Group	Number of Participants	Mean SCS Score	SD	Score Range
0	27	3.85	0.58	2.8–4.6
1	27	3.54	0.41	2.5–4.4
2	27	3.08	0.64	2.1–4.0

As shown in Table 4, the IAT D-scores increased gradually and significantly with the rise of selfie editing level as one-way ANOVA on IAT D-scores revealed a significant main effect of editing condition, $F(2, 78) = 11.47$, $p = 0.001$, $\eta^2 = 0.227$. Tukey HSD comparisons showed that the heavy-editing group had a significantly higher D-score than both the no-edit group ($p < 0.001$) and the light-editing group ($p = 0.021$); the light-editing group also scored significantly higher than the no-edit group ($p = 0.028$).

Table 4. Descriptive statistics: IAT test D-scores

Group	Number of Participants	Mean D-Score	SD	Score Range
0	27	0.12	0.33	-0.24–0.50
1	27	0.37	0.36	-0.10–0.74
2	27	0.62	0.39	0.03–1.10

Note: In this study, the D-score is calculated from reaction time differences in the IAT: slower responses when sorting "self" with non-appearance words (incompatible task) vs. faster responses when sorting "self" with appearance words (compatible task) result in a higher D-score. Scores range from negative values (weak/opposite association) to positive values (strong association); positive D-scores here confirm the implicit link between self and appearance, with higher values indicating more severe self-objectification.

4.2. Correlations among key variables

According to Table 5, IAT D-score was positively correlated with ARS change, indicating that individuals who developed stronger implicit appearance-self associations after editing also experienced greater increases in appearance anxiety. Both IAT D-score and ARS change were negatively correlated with SCS score, suggesting that higher self-compassion was associated with both lower implicit self-objectification and smaller anxiety increases. These correlations provide preliminary support for the hypothesized mediation and moderation models.

Table 5. Correlations among key variables

Variable	IAT D-Score	ARS Change (Post-Pre)	SCS Score
IAT D-Score	1		
ARS Change (Post-Pre)	0.52	1	
SCS Score	-0.41	-0.40	1

Note: Pearson correlation matrix is a table that shows how strongly pairs of variables are related to each other. The rows and columns both list the same three variables. The diagonal numbers "1" mean a variable is perfectly correlated with itself. All other coefficients are in the interval from -1 to +1. A positive number means a positive relationship. A negative number means a negative relationship.

5. Discussion

5.1. Interpretation of results

5.1.1. Implicit self-objectification: significant masking mediation effect

Implicit self-objectification was found to have a significant masking effect as a mediator between selfie editing level and appearance anxiety change. The total effect of editing on anxiety change was positive and significant. Editing also positively predicted implicit self-objectification, which in turn predicted greater anxiety increases. The indirect pathway was significant. However, the direct effect became negative and non-significant. Because the indirect and direct effects point in opposite directions, a masking effect occurs: the overall anxiety-increasing effect of editing is fully driven by heightened implicit self-objectification, whereas the editing act itself may have a negligible, direct soothing quality. This aligns with the view that editing simultaneously activates two opposing processes—appearance-focused cognition and immediate self-presentation improvement—which cancel each other out at the direct level but leave a net positive effect through the cognitive pathway. The important quantitative results for this model are shown in Table 6.

Table 6. Mediation results of self-objectification (SPSSAU model 4)

Effect Type	Coefficient	Standard Error	95% Confidence Interval	p-value
Total Effect (Selfie editing → Appearance anxiety change)	0.295	0.090	[0.115, 0.475]	0.002
Path 1 (Selfie editing → Implicit self-objectification)	0.250	0.047	[0.160, 0.340]	0.009
Path 2 (Implicit self-objectification → Appearance anxiety change)	1.260	0.174	[0.915, 1.606]	< 0.001
Mediation Effect (Indirect effect)	0.315	0.055	[0.210, 0.426] (Bootstrap)	—
Direct Effect (Selfie editing → Appearance anxiety change, with mediator included)	-0.020	0.115	[-0.248, 0.208]	0.863

Note: Bootstrap CIs based on 5,000 samples. The opposite signs of the indirect (positive) and direct (negative) effects indicate a masking effect.

A simplified visual representation of mediation effect and its mechanism was shown in Figure 2.

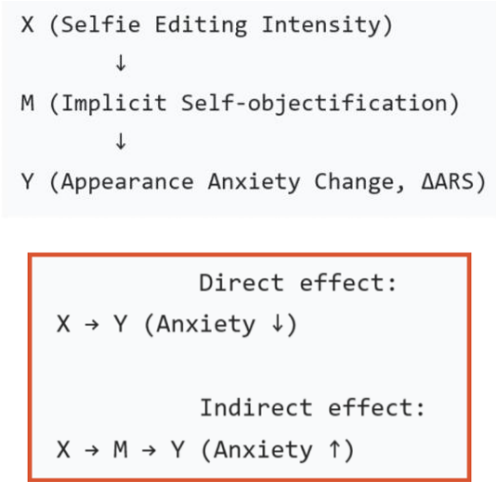


Figure 2. Mechanism and mediation results of self-objectification

5.1.2. State self-compassion: moderation effect specific to heavy editing

The representation of mechanism for moderation analysis was shown in Figure 3.

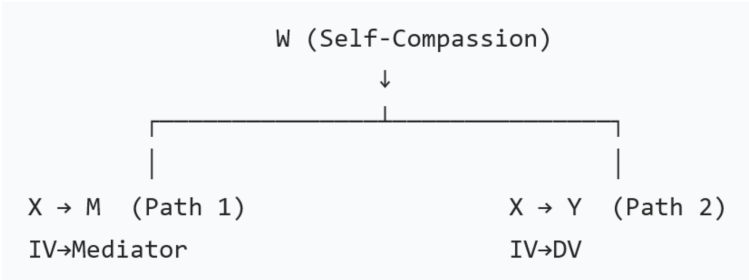


Figure 3. Mechanism of moderation results of self-compassion

State self-compassion showed a significant moderating effect in the model, but this effect appeared only in the heavy editing condition. No meaningful moderation effect was found for the light editing condition. The interaction between self-compassion and heavy editing significantly predicted both implicit self-objectification and appearance anxiety change. Simple slope analysis further clarified this pattern. Among participants who engaged in heavy editing, higher self-compassion scores were associated with lower levels of implicit self-objectification. Higher self-compassion was also associated with smaller increases in appearance anxiety. Participants with lower self-compassion showed stronger negative outcomes when engaging in heavy editing. These findings indicate that self-compassion functions as a protective psychological factor in this context. The key quantitative results for the moderation analysis are presented in Table 7.

Table 7. Moderation results of state self-compassion (SPSSAU model 1)

Moderated Path	Selfie Editing Level	Interaction Term Coefficient	Standard Error	95% Confidence Interval	p-value
Selfie editing → Implicit self-objectification	Light (1)	-0.001	0.045	[-0.099, 0.088]	0.938
	Heavy (2)	-0.084	0.038	[-0.159, -0.009]	0.028
Selfie editing → Appearance anxiety change	Light (1)	-0.005	0.043	[-0.090, 0.080]	0.907
	Heavy (2)	-0.095	0.040	[-0.174, -0.016]	0.019

Note: The no-edit group (0) was used as the reference group for all moderation analyses. State self-compassion scores were centered (adjusted to the average score of all participants) before analysis. This is a standard step to avoid statistical bias in moderation testing. A p-value < 0.05 means the moderating effect is significant for that specific editing level; a p-value > 0.05 means no meaningful moderating effect was found. Significant negative interactions indicate that higher self-compassion weakened the effect of editing on the respective outcome.

5.1.3. Moderated mediation: self-compassion weakens the indirect mediation path

The moderated mediation analysis produced significant results. State self-compassion weakened the indirect effect of selfie editing level on appearance anxiety change through implicit self-objectification. The moderated mediation index was statistically significant. The conditional indirect effect decreased as self-compassion increased from low to high levels. However, all conditional indirect effects remained statistically significant. This pattern indicates that self-compassion does not eliminate the mediating role of implicit self-objectification but reduces the strength of the mediation pathway. All quantitative results for the moderated mediation model are shown in Table 8.

Table 8. Key Results of the moderated mediation effect

Index/Effect	Value	Standard Error	95% Bootstrap Confidence Interval	p-value
Moderated Mediation Index	-0.106	0.026	[-0.158, -0.057]	< 0.001
Conditional Indirect Effect (Low self-compassion)	0.422	0.070	[0.262, 0.290]	—
Conditional Indirect Effect (Mean self-compassion)	0.315	0.055	[0.210, 0.426]	—
Conditional Indirect Effect (High self-compassion)	0.208	0.062	[0.092, 0.336]	—

Here, low self-compassion is defined as one standard deviation below the average SCS score (3.072), mean self-compassion is the overall average SCS score of all participants (3.451), and high self-compassion is one standard deviation above the average SCS score (3.829). A negative moderated mediation index means higher self-compassion scores reduce the strength of the indirect effect of selfie editing on appearance anxiety change through implicit self-objectification. A 95% confidence interval that does not include zero means the effect is significant. All conditional indirect effects remain significant, meaning implicit self-objectification still acts as a mediator at all self-compassion levels, but its mediating strength becomes weaker as self-compassion increases. A simplified visual presentation of moderated mediation effect and its mechanism was shown in Figure 4.

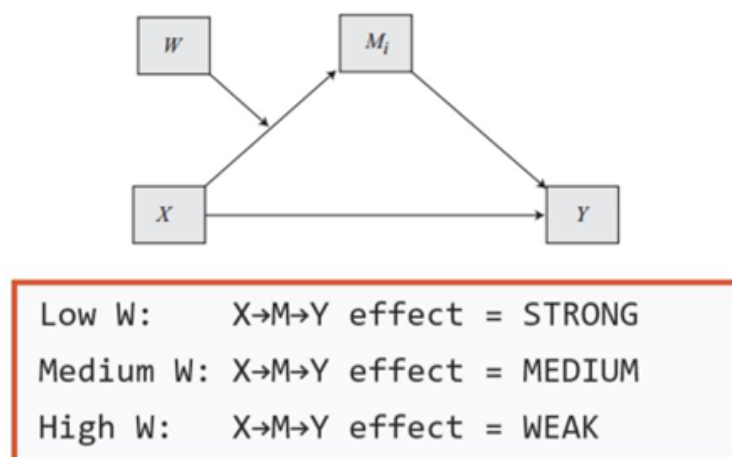


Figure 4. Mechanism and moderated mediation results

5.2. Further explanations of mechanism

5.2.1. Understanding the two-side effects of selfie editing

The findings suggest that selfie editing activates two different processes that operate at the same time but in opposite directions. One pathway involves changes in internal attention. During editing, individuals repeatedly examine and adjust specific features of their appearance. This repeated focus may increase the salience of appearance-related information in self-representation. Over time, appearance becomes a more central reference point when evaluating the self. This process is reflected in the increase in implicit self-objectification observed in the results, which indicates stronger automatic links between the self and appearance [31]. The second pathway relates to immediate self-evaluation. Edited images often present a version of the self that is closer to socially desirable standards. Viewing this improved representation may temporarily reduce perceived flaws and increase confidence in how one is seen by others. As a result, short-term emotional responses may become more positive, even when underlying cognitive patterns shift in a different direction. Similar patterns have been observed in research on curated self-presentation in digital contexts [32]. The coexistence of these two processes explains the masking mediation pattern. The increase in appearance-focused cognition contributes to higher vulnerability to anxiety, while the improved self-presentation reduces immediate negative feelings. These effects occur at different levels of processing and therefore do not cancel each other out. Instead, they create a mixed outcome that depends on which process is more dominant at a given moment.

5.2.2. Why heavy editing produces stronger effects

Heavy editing involves substantial changes to facial or bodily features, which increases the distance between the original and edited images. This distance may alter how individuals interpret their own appearance. When the edited version becomes a reference point, the unedited self may be evaluated more critically. This comparison does not rely on external targets but is internally generated, which may make it more personally relevant and emotionally impactful. In addition, larger discrepancies may require greater cognitive effort during editing. Individuals must make more detailed adjustments and decisions, which increases engagement with appearance-related features. This extended interaction may reinforce appearance-based processing patterns. As a result, both the cognitive and emotional consequences of editing become more pronounced. Social context may further strengthen these effects. In online environments where appearance is closely tied to feedback and evaluation, presenting an enhanced image may carry higher perceived benefits. At the same time, the risk of negative judgment for an unedited appearance may also increase. This dual pressure can amplify

both the motivation to edit and the psychological impact of doing so, which helps explain why significant effects emerge mainly under heavy editing. The question of why light editing did not produce significant effects, despite also involving some degree of discrepancy, is addressed in the following section, where we examine how self-compassion alters the evaluative process.

5.2.3. How self-compassion alters the process

This pattern emerges because, when discrepancies between real and edited images are small, individuals may not experience strong self-evaluative pressure. Under these conditions, differences in self-compassion do not lead to noticeable changes in outcomes. However, when discrepancies become larger, individuals are more likely to engage in evaluative processing that involves comparison and judgment. Self-compassion appears to influence this stage of processing. Individuals with lower self-compassion may interpret discrepancies as evidence of personal inadequacy, which strengthens negative evaluation patterns. In contrast, individuals with higher self-compassion are more likely to adopt a less judgmental stance toward these differences. This response reduces the extent to which discrepancies translate into negative emotional outcomes [33]. Importantly, the results suggest that self-compassion does not prevent the initial cognitive shift toward appearance-focused processing. Instead, it changes how this shift affects emotional responses. This distinction helps explain why the indirect effect remains significant but becomes weaker at higher levels of self-compassion.

5.2.4. Why the moderated mediation effect is significant

The moderated mediation results further demonstrate that the strength of these pathways is not fixed; it depends on both editing intensity and individual differences in self-compassion. Greater modification leads to stronger cognitive engagement and larger discrepancies, which amplify both effects. Self-compassion interacts with this system by influencing how discrepancies are interpreted, rather than by eliminating them. This integrated perspective helps explain why the effects of selfie editing appear inconsistent across studies. Differences in editing intensity, individual characteristics, and situational factors may shift the balance between competing processes. As a result, the same behaviour can lead to different outcomes under different conditions.

6. Evaluation

6.1. Theoretical implications

Rather than focusing only on general associations between social media use and body image, this study demonstrates that selfie editing is linked to both cognitive and emotional processes. The findings show that editing behaviour is associated with stronger automatic appearance-related associations, suggesting that repeated engagement with self-images may shape underlying cognitive patterns. This extends prior work on self-objectification [2] by providing evidence that these processes can operate at an implicit level, beyond conscious awareness [27, 31].

In addition, the study offers a new explanation for inconsistent findings in previous research. Earlier studies have reported both negative and neutral effects of appearance-related social media behaviours [3, 32]. By statistically separating the indirect pathway (through self-objectification) from the direct pathway, the study demonstrates that what appears to be a simple negative effect of editing on anxiety actually conceals a more complex pattern: a positive indirect effect that increases anxiety and a negligible direct effect. Methodologically, the three-level manipulation (no/light/heavy editing) revealed a non-linear pattern: the anxiety-increasing effect became pronounced only under heavy editing, whereas light editing did not differ

significantly from no editing. This suggests that future research should treat editing intensity as a graded variable rather than a binary one, as the psychological costs of editing may only emerge beyond a certain intensity threshold.

The results also contribute to the understanding of self-compassion. Existing research has shown that self-compassion is associated with reduced negative self-evaluation [33]. The present study refines this perspective by showing that its protective role depends on situational intensity. Self-compassion appears to be more relevant when individuals experience stronger discrepancies between their actual and idealized appearance. This suggests that protective psychological factors should be examined in relation to specific contexts rather than treated as universally stable effects. This conditional pattern may also help reconcile inconsistent findings in the literature. For instance, Lonergan et al. [6] found no moderating effect of self-compassion on the relationship between selfie editing and body dissatisfaction. Our results suggest that this null effect may be attributable to their binary treatment of editing (edit vs. no edit), which would collapse light and heavy editing into a single category. If the protective function of self-compassion is only activated when editing reaches a certain intensity threshold, studies that do not distinguish editing intensity would likely fail to detect it.

Finally, beyond these psychological mechanisms, the findings resonate with broader sociological theories of modernity. Thorstein Veblen's concept of conspicuous consumption [34] described how individuals consume not merely to satisfy needs but to signal social status that, in the digital age, extends to the consumption of appearance itself. Selfie editing, we argue, functions as a form of conspicuous self-presentation: young women invest time and effort in editing their photos to display a version of themselves that signals social worth in an increasingly visual and competitive social media landscape. Similarly, Georg Simmel's analysis of modern social life [35], characterized by fleeting encounters, superficial interactions, and the need for rapid identity recognition, provides a macro-level explanation for why appearance becomes such a salient marker of social standing. In Simmel's terms, the modern individual is often a "stranger" to others, interacting briefly and without deep knowledge of one another. Under such conditions, external appearance becomes an efficient and readily available signal of who one is and where one belongs. This modernity lens situates the psychological mechanisms we identified, self-objectification and self-compassion, within a larger socio-historical context. It suggests that appearance anxiety among young women is not merely a personal or peer-driven phenomenon but is structurally embedded in the conditions of modern social life that have brief encounters, rapid judgments, and reliance on external markers of identity.

6.2. Practical implications

In mental health contexts, selfie editing behaviour may serve as a useful indicator of appearance-related vulnerability. Instead of focusing only on self-reported attitudes, practitioners may consider observable behaviours that reflect underlying cognitive tendencies. The association between editing and implicit self-objectification suggests that interventions may benefit from addressing both conscious beliefs and automatic thought patterns. Strategies that encourage self-compassion may also help individuals respond more adaptively to appearance-related challenges [33]. In educational settings, the findings highlight the importance of helping students critically evaluate digital images. Social media often presents highly curated content, which can influence self-perception through comparison processes [3]. Increasing awareness of how images are edited may reduce the internalization of unrealistic standards and support healthier body image development. In digital environments, the results suggest that platform design may influence user well-being. While image editing tools are widely available, excessive modification may contribute to negative psychological outcomes. Instead of limiting user behaviour, platforms could promote more balanced forms of self-presentation. For

example, design features that reduce emphasis on appearance-based comparison may help mitigate negative effects, consistent with findings on curated content and self-evaluation [32].

6.3. Limitations and future research direction

Several limitations should be considered when interpreting the findings of this study. First, the sample size was relatively small. The study included 81 participants, which may limit the generalizability of the results. The participants may also share similar backgrounds, which can reduce population diversity. Previous research suggests that appearance-related concerns vary across populations [4]. Future research should include larger samples and more diverse participant groups. A broader sample could help test whether the same psychological patterns appear across different age groups or cultural contexts. Second, the study focused on short-term psychological responses in a controlled experimental setting. The research measured immediate changes in appearance anxiety after the selfie editing task. However, real social media behaviour usually occurs repeatedly over long periods of time. Long-term exposure to selfie editing may produce stronger psychological effects [3]. Future studies could use longitudinal designs to examine how repeated editing behaviour influences self-objectification and appearance anxiety over time. Third, the experimental task simplified the real social media environment. Participants edited selfies in a controlled context, and they did not receive feedback from other users. In real social media settings, users often receive likes, comments, and social comparisons. These social interactions may strengthen appearance-related pressure and influence emotional responses [36]. Future research could examine selfie editing behaviour in more realistic online environments. Fourth, the study examined a limited number of psychological variables. Other factors may also influence how individuals respond to selfie editing. For example, body image satisfaction, social comparison tendency, and media literacy may affect appearance-related perceptions. Future research could explore how these factors interact with self-objectification and self-compassion. These improvements may provide a more comprehensive understanding of how selfie editing influences appearance-related psychological outcomes. Finally, state self-compassion was measured after the editing task, so it may have been partly shaped by the manipulation. This means self-compassion could reflect a response to editing rather than a purely pre-existing moderator. Nevertheless, the key finding remains an interaction: the level of self-compassion participants reported after editing still moderated their subsequent emotional reactions. This is consistent with the idea that self-compassion functions as a protective resource that can be mobilized even after a stressful experience. If self-compassion were merely a post-hoc emotional response, it would still function as a coping resource that moderates subsequent anxiety—which is itself a meaningful psychological process, rather than a methodological artifact. Future research could strengthen causal interpretations by measuring trait self-compassion at baseline or by experimentally inducing self-compassion before editing.

7. Conclusion

This study explored how the degree of selfie editing affects appearance anxiety, with a focus on the role of implicit self-objectification and state self-compassion. The findings demonstrate that implicit self-objectification serves as a masking mediator: the positive total effect of editing on anxiety was fully carried by the indirect pathway through implicit self-objectification, while the direct effect was negative but non-significant, meaning that the psychological impact of selfie editing operates primarily through automatic cognitive processes rather than conscious emotional responses. In addition, state self-compassion was found to only buffer the negative effects of heavy editing, not light editing, which means it works best when people make extreme changes to their selfies. These findings help resolve conflicting ideas in previous research by

showing that selfie editing is not simply good or bad; instead, it depends on how much people edit their photos. The study also adds new knowledge to the field by measuring implicit self-objectification, which captures unconscious thoughts that self-report surveys cannot. Practically, the results suggest that interventions should target heavy editing and teach self-compassion to reduce appearance anxiety in young social media users. Although the study has limitations, such as a small sample size and cross-sectional design, it provides a clear framework for understanding how digital appearance behaviors shape mental health. Future research can build on these results by using longitudinal designs, more diverse samples, and qualitative methods to further explore these relationships.

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