

RESEARCH ARTICLE

Stimulating appearance comparison dynamics and their effects on psychological dysfunctions: The moderating role of self-compassion

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Abstract

In recent decades, attitudes towards appearance comparison, and self-disapproval have rapidly increased, and these are attitudes strongly associated with psychological disorders. The present study aims to investigate the underlying patterns of depression, appearance-based stress, dietary constraints, and social and celebrity appearance comparison among young adults. It also examines the role of self-compassion in moderating the relationship between psychological dysfunctions and appearance comparison as well as the criteria and influences contributing to appearance comparison. Data on BMI, the measures of depression, appearance-based stress, eating restraints, appearance comparison, self-compassion, and predictors of peers and celebrity appearance comparison were collected from 434 college students (Age: Mean = 22; SD = 2.36; Male = Female = 217) in Sialkot, Pakistan. The data was analyzed by using the Hierarchical Regression Model. The results revealed that respondents who compared their appearances to peers and celebrities had increased depression and appearance-based stress while eating constraints didn't affect the appearance-based comparison, stress, and depression. Moreover, self-compassion significantly moderated the relationship between depression, appearance-based stress, and appearance comparison whereas an insignificant moderation effect is observed between eating restraints and self-compassion. Despite psychological distresses such as depression, appearance-based stress, and eating restraints, appearance comparisons are connected to appearance-based victimization, media appearance pressure, social-cultural appearance pressure, appearance conversation, and self-consciousness.

1. Introduction

Experiencing identity concerns about one's appearance and body is evaluated among adolescents due to alterations stirred in biological and social change, causing adolescents to critically

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question who they are and how they fit into the world, making it a crucial risk factor for the development of the mental disorder [1–3]. In everyday life, appearance-based stress and body shaming have been linked to adolescents' self-esteem, appearance-related comments, self-worth, and self-compassion [4]. Researchers have recently focused on examining the link between critical comments and comparisons about one's appearance and heightened characteristic body shaming [5–7]. It seems logical to assume that individuals who are more concerned about their appearance, self-consciousness, and social comparisons of their appearance are more likely to experience appearance dissatisfaction [4, 8–11]. The most common and easiest way to present themselves and to communicate with other online users in the current digital era is to upload a selfie on appearance-based social network sites (SNSs) like Instagram, Facebook, and others [12]. The positive association between photo-based social network site activities (positive or negative comments, liking or disliking posts) and body shaming has been particularly identified in adolescent girls [13–15]. Recent scientific findings have revealed that college students who view attractive profiles on SNSs, tend to report feeling lower levels of satisfaction with their appearance, this dissatisfaction in turn lead to appearance-based stress and rejection.

1.1 Body dissatisfaction impact on health

Body shaming is significantly increased by appearance comparison and negative comments about one's physical appearance. Moreover, it appears plausible to find strong evidence that individuals who are more self-conscious about their appearance and body shape may suffer more from depression, anxiety, eating disorders, and unhealthy exercise behaviors [3, 16–21]. According to extensive research, body dissatisfaction is substantially connected with body mass index (BMI) [22]. Several studies have demonstrated that appearance-contingent worth positively supports body shape and body surveillance, while negatively affecting appearance self-esteem. Beyond the direct association, appearance-contingent self-worth among adult women moderates the relationship between psychological distress and appearance perfection [23–26]. Cross-sectional studies consistently revealed a connection between body concerns, age, BMI, and psychological dysfunction, however slender body idealization was found to be more prevalent in the mind of young adult women [27–29]. Evidence has revealed that a superficial mismatch between actual and ideal looks and body shape is linked to a lower level of body esteem and increased attention to food constraints, as well as a higher risk of eating disorders among women [30, 31]. The effect of media appearance comparison on body dissatisfaction and eating limitations was justified in a meta-analysis comprising 156 studies [32].

1.2 Self-compassion and appearance comparison

Self-compassion involves treating one's flaws with a balanced viewpoint, kindness, and self-concern rather than self-judgment. Studies have shown that individuals who are able to accept their human experiences and embrace their self-perceptions with self-compassion tend to experience higher levels of life satisfaction, wisdom, happiness, emotional intelligence, and social concern while also experiencing a lower level of sadness and anxiety [20, 33, 34]. The extensive available literature confirms that self-compassion is the crucial form of self-acceptance that leads to fulfillment, whereas negative perceptions of self-compassion lead to severe mental health disorders [35, 36]. Positive attitudes towards one's appearance are strongly associated with self-esteem and self-compassion, which in turn are negatively associated with psychological distress and positively associated with happiness [33, 37, 38]. Researchers have discovered that dealing with oneself temperately, exaggeration and negative comparison increases the risk of dissatisfaction in individuals, such as self-criticism and unfit attitudes

toward self-appearance which lowers self-esteem and increases symptoms of psychological dysfunction [39, 40]. Self-compassion and self-improvement are also found to be inversely connected to shame and low self-esteem, based on cross-sectional data [41–43].

1.3 Social network sites and appearance comparison

In recent years, the most prevalent form of self-presentation has been the selfie on social media. The practice allows individuals to interact with communities and friends while also allowing them to assess their body shape and appearance from perspective of others [44–46]. According to self-presentation theory, individuals present themselves as compatible with their ideal self and to please their audience or for self-enhancement. Additionally, users aim to shape their online personas and elicit audience reactions by sharing and manipulating photographs on social media [47, 48]. According to recent studies, the average amount of time spent by individuals on social media each day has increased by 5.2 percent, while uploading selfies on social media is one of the most popular activities among adults [14, 44, 48–50]. Social media interaction with other people through positive and negative comments, likes, and dislikes has increased the risk of psychological negativity and self-dissatisfaction [13, 15, 51, 52]. According to psychological views, appearance comparison on social networks intensifies body shaming, and the existing literature widely supports the role of social media networks in appearance comparison motivation [10, 53, 54]. Many social media users tend to compare their real-life appearance to well-crafted attractive celebrity photographs, mostly they are unaware that these photographs have been finely manipulated, using them as a yardstick to evaluate how closely they match their ideal appearance.

1.4 The rationale and hypothesis of the present study

This study focuses on three key objectives. Firstly, it aims to examine whether there is a direct relationship between depression, appearance-based stress, and food restrictions with peer and celebrity appearance comparisons. Secondly, to examine if self-compassion might be used as a potential moderator. Thirdly, to determine whether appearance-based victimization, public self-consciousness, appearance conversation with friends, media appearance pressure, and social culture pressure play any part in the peer and celebrity appearance comparisons.

The study further extends the previous research in two ways: (a) To investigate the influence of appearance comparison on health outcomes such as depression and appearance-based stress in the presence of self-compassion as a moderator. (b) To examine whether there is any significant relationship between appearance comparison and health outcomes in the presence of a moderator; and if there is any, then it would be reasonable to infer that appearance comparison is predicted by social-cultural pressure, media appearance pressure, appearance-based victimization, appearance conversation with friends, and media appearance pressure. As a secondary objective of this study, we examined whether social-cultural pressure would serve as a key conjecturer of peer and celebrity appearance comparison. Additionally, we explored whether negative appearance conversations with friends would be associated with an increase in peer and celebrity appearance comparison and whether public self-consciousness would be linked to peer and celebrity appearance comparison.

2. Method

2.1. Study design, participants, and procedure

This is a cross-section survey using a stratified random sampling approach with gender as a stratification criterion to pick participants with equal allocation to each gender. A total of 500

BS (Bachelor of Science) students from Govt. Murray Graduate College Sialkot, Pakistan were included in this survey. Students were included in this study whether they had ever been criticized about their appearance in the last two years. The participants took about an hour to complete the questionnaire.

2.2. Data collection

The questionnaire was designed to collect data on socio-demographic variables on the following scales relevant to this research.

2.2.1. Appearance-based victimization. We used a modified version of Thompson's perception short-form scale (e.g., "people made fun of you because of your appearance") to assess perceived verbal victimization. On a 5-point rating scale, 1 = never to 5 = very often, the responses were assessed on six questions intended to assess appearance-related victimizations [55]. In addition, participants were asked whether they had been victimized, and responses (yes = 1)/(no = 0) were recorded.

2.2.2. Appearance-based stress. The perceived appearance-related stress was measured using a modified version of the perceptions of short-form scale in [55]. The responses were recorded on a 5-point rating scale from 1 to 5 on six items designed to assess appearance-related stress (e.g., "People made fun of you because you were heavy: How upset were you?", "People made fun of you because you were frightened to do something: How upset were you?"). The higher scores indicated more stress.

2.2.3. Depression. We used a modified version of the perceptions short-form scale published in [8] to assess depression. On a 4-point rating scale (1 = never, 4 = often), the participant's responses were recorded for six items of the depression scale (e.g., "I felt unhappy with life or that life was pointless"). The higher scores indicated a high level of depression.

2.2.4. Appearance conversation with friends. On a 5-point rating scale (1 = not at all to 5 = very often), five items of the appearance conversation scale published in [8] were used to measure respondent's attitudes toward appearance to peers (e.g., "My friend and I talk about how to look attractive, My friends and I talk about what we can do to look our best").

2.2.5. Media-based appearance pressure. On a 5-point scale (1 = strongly disagree to 5 = strongly agree), participant's media appearance pressure to peers was measured using six items from Thompson's [56] social-cultural demographic scale; an example item of this scale is "I have to feel pressure from TV and magazines to diet". This subscale was found to have acceptable reliability and validity [56].

2.2.6. Perceived social culture pressure. Eight items were adopted from Stice and Agras [57] to measure respondents' social-cultural pressure on peers; two items were eliminated due to their low dependability. Each item is rated on a 5-point scale (1 = not at all, 5 = extremely) and the reliability and validity of the scale have been published in [57], and the modified scale met convergent validity norms.

2.2.7. Eating-restraint. On a 5-point scale (1 = never, 5 = always), three items from the Rosen short-form scale [58] were used to assess respondent's eating constraint behavior (e.g., "I restrict the amount of food I eat").

2.2.8. Public self-consciousness. Seven items scale was adapted from the Fenigstein short-form scale [59] to assess respondent's public self-consciousness in front of peers (e.g., "My manner of doing things, I am self-conscious about the way I look"). On a 5-point scale (1 = not at all, 5 = extremely), one item was irrelevant to our culture, therefore it was removed, yet the study met the criterion of convergent validity.

2.2.9. Self-compassion. Self-compassion is the acceptance of one's flaws and defects, as well as the ability to cope with them with care and kindness [37]. Self-compassion entails

treating oneself with kindness, forgiveness, and compassion. On a 5-point scale (1 = almost never, 5 = almost frequently), the items adapted from Filip Roes's short-form scale [60] were modified to measure respondents' self-compassion toward their peers.

2.2.10. Celebrity appearance comparison. Six items were adopted from Thompson, Heinberg, and Tantleff-Dunn's physical comparison scale [61] and were modified to measure respondent's behavior of appearance comparisons with celebrities on a 5-point scale (1 = never, 5 = always) such as "when I get ready for parties or events, I compare my physical appearance to the physical appearance of celebrities".

2.2.11. Peer appearance comparison. Three items from Thompson, Heinberg, and Tantleff-Dunn's physical comparison scale [61] were adopted and reformed to measure respondents frequency of appearance comparisons to peers on a 5-point scale (1 = never, 5 = always): I compare my physical appearance with my peers.

2.3 Data analysis

Before conduction of the required statistical analysis to answer the research question, the data was evaluated for any missing observations and outliers. The multivariate Mahalanobis distance (D2) was utilized to find outliers in the data, and the estimated probability was compared at a 5% significance level. The data was then tested for model assumptions such as linearity, independence of observations, normality, and homoscedasticity.

To describe the sample of this study, summary statistics such as mean (standard deviation) for continuous variables, and frequency (percentage) for categorical variables were computed. To assess the correlation among the variables, the Pearson correlation coefficient was used. Moreover, to determine the internal consistency or reliability of various scales such as depression and appearance-based victimization as described in the data collection section, Cronbach's alpha was used. The effects of appearance comparison on depression, appearance-based stress, and eating constraints with self-compassion as a moderator were assessed in the presence of age and BMI using manual stepwise regression analysis in three separate models. In each of the regression models, the dependent variable was depression, appearance-based stress, or eating constraints. In step one, age and BMI were entered into each model. In steps 2 and 3, the appearance comparisons of peers and celebrities entered, respectively. The moderating influence of self-compassion was assessed in step 4 by adding its interaction with peer appearance comparison and celebrity appearance comparison. In the second set of analyses, we used two separate linear regression models with a manual stepwise approach to examine the relationship between peer and celebrity appearance comparison with social cultural pressure, appearance-based victimization, media appearance pressure, negative appearance conversation with friends, and public self-consciousness adjusted for age and BMI. In step 1, the respondent's age and BMI were input for each criterion variable. When someone was criticized about their looks, the appearance comparison increased, hence appearance-based victimizations were added to step 2. Step 3 was used to examine the significance of media-based and social-cultural appearance pressure. In step 4, appearance to talk to friends and public self-consciousness was inserted for each regressed variable which revealed how each potential predictor contributed differently to peer and celebrity appearance comparisons.

3. Results

Initially, 500 students gave consent to participate in the survey; but 10 (2%) did not return the survey's questionnaire, and 28(5.6%) returned incomplete questionnaires. Twenty-eight of the observations included were outliers and they were affecting the performance of regression models. As a result, these individuals were eliminated from the data set, leaving a final sample

size to 434 students, with an equal number of boys and girls (217 each) for the study as shown in Fig 1.

Table 1 shows mean (M), standard error (S.E), standard deviation (S.D), and reliability statistics (Cronbach alpha). The participant's ages ranged from 18 to 27 years old ($M = 22$, $S.D = 2.36$), and their average BMI was 21.02 with $S.D = 1.92$. Cronbach's alpha revealed that all the items consistently measure the characteristics, therefore suggesting reliability of the data in our study.

The Pearson correlation coefficients in Table 2 showed that depression was positively correlated with self-compassion, celebrity appearance-compassion, appearance-victimizations, and appearance-based stress. A similar trend appeared for appearance-based stress. In addition, it was strongly positively correlated with appearance comparison, public self-consciousness, self-compassion, and peer appearance compassion. The findings further revealed that eating constraints had no significant relationship with appearance comparison or appearance conversation, but it had a very weak negative significant relationship with public self-consciousness and media-based pressure ($r = -0.116$ and $r = -0.108$, $p < 0.05$) respectively. Moreover, there was no evidence of the relationship between self-compassion and appearance compassion, eating constraints, and celebrity appearance comparison. The appearance comparison based on media and peer influences had a substantial positive association with public self-consciousness, social-cultural pressure, and appearance-related victimization, but it had a strong negative relationship with eating constraints. Appearance-compassion and self-compassion were positively correlated ($r = 0.280$, $p < 0.01$). Finally, media-based pressure was correlated with appearance compassion, appearance victimization, and public self-consciousness.

Depression was significantly associated with peer appearance comparison and comparison of celebrity appearances, β (95% CI) = 0.89^a (0.61, 1.18) and 0.653^a (0.610, 0.696), respectively. The model fit was improved after the inclusion of these two variables ($R^2 = 0.70$, $p < 0.001$). For appearance-based stress, peer appearance comparison and celebrity appearance comparisons were found to be significant in the model, β (95% CI) = 1.13^a (0.78, 1.48) and 0.89^a (0.85, 0.93), and the addition of these two variables, improved the model fit, ($R^2 = 0.84$, $p < 0.001$). In the model of eating constraints, only body mass index was significantly adversely associated

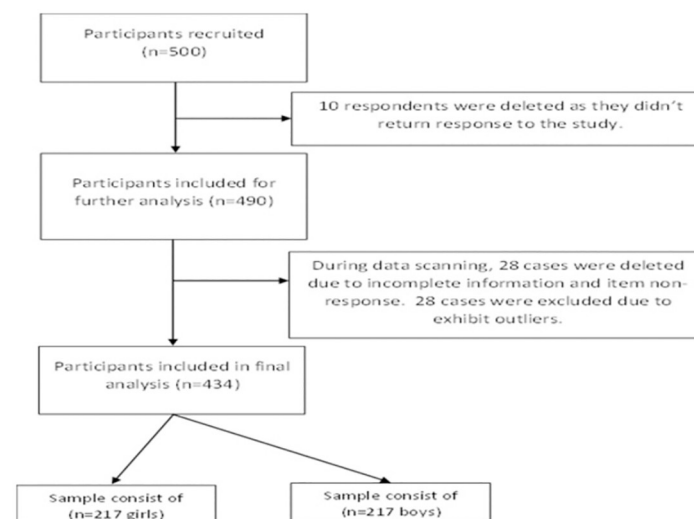


Fig 1. Participants flow diagram.

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Table 1. Characteristics and main outcome variables of the sample (N = 434).

	M ± S. E	S. D	Cronbach alpha
Body mass index	21.02 ± .09	1.92	—
Age	21.64 ± .11	2.36	—
Depression	18.79 ± .25	5.24	0.95
Appearance-based victimization	19.15 ± .28	5.94	0.93
Appearance-based stress	20.57 ± .31	6.47	0.93
Self-compassion	20.07 ± .32	6.64	0.92
Media appearance pressure	19.30 ± .36	7.60	0.98
Social-cultural pressure	23.68 ± .39	8.15	0.95
Eating constraints	10.73 ± .20	4.08	0.93
Public self-consciousness	16.96 ± .27	5.55	0.92
Appearance conversation with friends	17.41 ± .26	5.53	0.93
Peer appearance comparison	12.75 ± .08	1.70	0.87
Celebrity appearance comparison	20.19 ± .32	6.58	0.92

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with eating constraints, β (95% CI) = -0.32^c (-0.54, 0.11) and all the other variables including peer appearance comparison and celebrity appearance comparison were not significant. In the case of depression and appearance-based stress, the model fit was further improved by including the interaction of self-compassion with peer and celebrity appearance comparisons, ($R^2 = 0.77$ and $R^2 = 0.85$) respectively. Hence, self-compassion significantly moderated the above-mentioned associations. The results revealed that the impact on BMI and age were insignificant in the models for depression and appearance-based stress, but they were retained in the model to have adjusted effect estimates (Table 3).

The regression model for celebrity appearance comparison revealed that appearance victimization, social-cultural appearance pressure, and public self-consciousness were significantly positively associated with celebrity appearance comparison; while appearance conversation with friends appeared to be negatively associated with celebrity appearance comparison. The model for peer appearance comparison revealed that appearance victimization and social-cultural appearance pressure were positively associated with peer appearance comparison; while media appearance pressure negatively impacted peer appearance comparison (Table 4).

Table 2. Pearson correlation among main outcomes and other independent variables.

	1	2	3	4	5	6	7	8	9	10	11
1. Depression	1										
2. Celebrity-appearance compassion	.834**	1									
3. Appearance victimization	.765**	.722**	1								
4. Appearance-based stress	.837**	.913**	.749**	1							
5. Self-compassion	.783**	.740**	.718**	.744**	1						
6. Appearance Conversation	.834**	.907**	.748**	.990**	.727**	1					
7. Peer appearance compassion	.280**	.285**	.265**	.293**	.280**	.279**	1				
8. Public self-consciousness	.593**	.633**	.799**	.702**	.537**	.708**	.255**	1			
9. Eating constraints	-.013	-.017	-.070	-.033	-.054	-.027	-.078	-.116*	1		
10. Social cultural pressure	.551**	.580**	.489**	.598**	.515**	.590**	.506**	.444**	-.090	1	
11. Media Appearance pressure	.561**	.577**	.498**	.589**	.514**	.580**	.476**	.454**	-.108*	.976**	1

Note: Cases excluded pairwise, N = 434, $p < .05^*$, $p < .01^{**}$.

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Table 3. Results of three separate regression models each assessing the relationship of depression, appearance-based stress, and eating constraints with independent variables in the presence of self-compassion as a moderator.

	Depression*	Appearance-based [†] stress	Eating constraints [†]
Independent Variables:	β (95% CI)	β (95% CI)	β (95% CI)
Step 1			
Age	.000 (-0.227, 0.227)	.080 (-0.201, 0.361)	.059 (-0.117, 0.234)
BMI	-.131 (-0.409, 0.148)	-.062 (-0.405, 0.282)	-.323 ^c (-0.538, 0.109)
Step 2			
Peer appearance comparison	.894 ^a (0.612, 1.176)	1.132 ^a (0.784, 1.479)	-.156 (-0.383, 0.071)
Step 3			
Celebrity appearance comparison	.653 ^a (0.610, 0.696)	.887 ^a (0.848, 0.926)	.003 (-0.058, 0.063)
Step 4			
Self-compassion \times peer appearance comparison	.052 ^a (0.042, 0.062)	.021 ^a (0.011, 0.031)	.001 (-0.016, 0.017)
Self-compassion \times celebrity appearance comparison	-.023 ^a (-0.029, -0.017)	-.008 ^c (-0.014, -0.002)	-.004 (-0.014, 0.007)

Note: Sample size (N = 434), Depression, appearance-based stress, and eating restraints are dependent variables in the three separate models. β = Regression Coefficient, CI = 95% Confidence intervals upper and lower limit for β , obtained from bootstrapped analyses are represented, p-values for β significance. $p < 0.001^a$, $p < 0.01^b$, $p < 0.05^c$. *For the final model of **depression**, R^2 (Coefficient of determination) = 0.77, and p-value < 0.001 (for the overall model statistical significance).

[†]For the final model of **appearance-based stress**, $R^2 = 0.85$, and p-value < 0.001.

[†]For the final model of **eating constraints**, $R^2 = 0.03$, and p-value = 0.039

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4. Discussion

The study primarily focused on consolidated models with minimal effort made to demonstrate the impact of peer and celebrity appearance comparison modulated by self-compassion. The prime goal of the present study was to investigate the effect of peer and celebrity appearance

Table 4. Regression models for examining the relationship of peer and celebrity appearance comparison.

	Celebrity appearance comparison ^a	Peer appearance comparison ^b
Independent variables:	β (95% CI)	β (95% CI)
Step 1		
Age	.036 (-0.249, 0.322)	0.032 (-0.042, 0.105)
BMI	.055 (-0.295, 0.404)	0.084 (-0.006, 0.173)
Step 2		
appearance victimization	.805 ^c (0.733, 0.878)	0.075 ^c (0.049, 0.101)
Step 3		
Media appearance pressure	-.010 (-0.253, 0.232)	-0.089 ^e (-0.172, -0.006)
Social-cultural pressure	.248 ^d (0.022, 0.473)	0.183 ^c (0.105, 0.260)
Step 4		
Appearance conversation with friends	-.138 ^c (-0.218, 0.058)	.020 (-0.023, 0.063)
Public self-consciousness	1.00 ^c (0.921, 1.078)	-.028 (-0.070, 0.015)

Note: Sample size (N = 434), celebrity appearance comparison, and peer appearance comparison are dependent variables in the two separate models. β = Regression Coefficient, CI = 95% Confidence intervals upper and lower limit for β , obtained from bootstrapped analyses are represented, p-values for β significance. $p < 0.001^c$, $p < 0.01^d$, or $p < 0.05^e$.

^aFor the final model of **celebrity appearance comparison**, R^2 (Coefficient of determination) = 0.84, and p-value < 0.001 (for the overall model statistical significance).

^bFor the final model of **peer appearance comparison**, $R^2 = 0.28$, and p-value < 0.001

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comparison on depression, appearance-based stress, and eating restraints, as well as the role of self-compassion as a moderator. The research idea came from the study gap found in prior studies. The above results revealed that peer and celebrity appearance comparison significantly affect the level of depression whereas the role of body mass index and age of respondents do not appear to have a significant influence. Similarly, as the frequency of appearance comparison with celebrities rises, there appears a significant increase in appearance-based stress among respondents. Many studies discovered that young respondents are more conscious about their appearance as compared to elder because there exist a significant relationship between age, body mass index, and the importance given to one's appearance [41, 62, 63]. The findings suggested that age and body mass index have no influence on participants' degree of depression because of appearance comparison. Self-comparison with others on appearance or lifestyle leads to self-objectification, a greater proclivity to disapprove of one's appearance, and significant health issues among individuals. Self-objectification has a negative impact on participants' self-worth and body esteem, as well as fear of failure and anxiety [64–66]. The current findings are also consistent with previous research, which found that comparing peer looks to celebrity appearance was positively associated with depression [67]. As a result, viewing oneself through the eyes of others has an emotional influence on self-benevolence and it intensifies the amount of self-objectification, which has been identified as the primary cause of depression due to appearance comparison.

Peers, and celebrity appearance comparisons predicted stress owing to apparent appearance (colorism, and body shape). Self-disapproval because of comparing oneself to peers or celebrities causes increased stress, sexual dysfunctions, and is extremely destructive to respondents comfort [68, 69]. Our findings were consistent with the research findings, in which peer and celebrity appearance comparisons were shown to be the significant predictors of appearance-based stress events, while control variables were found to be insignificant in this study. Self-disapproval due to appearance comparisons had previously been established as a major intention for eating disorders or constraints among participants in previous investigations [68, 69]. Moreover, The BMI has a strong negative correlation with dietary limitations, Fig 2. Even though the above-mentioned findings on eating constraints and appearance comparisons were counter to previous studies.

Regarding self-compassion, it was hypothesized that accepting imperfections with kindness rather than reacting with aggression may be thought more secure psychologically in situations where one's appearance is threatened. Self-judgment or over-identification among individuals was assumed to result in low body esteem, increased restlessness, and a lower sense of well-

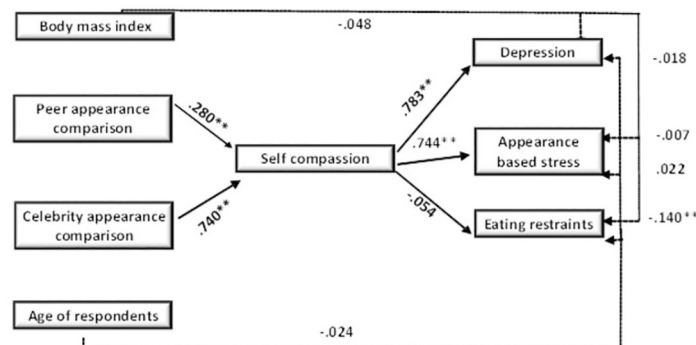


Fig 2. Moderation model illustrating indirect effect of self-compassion on the relationship between health issues and appearance comparison. The numerical values represent correlation coefficients.

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being about oneself. The analysis revealed that self-compassion positively relates to depression, appearance-based stress, and celebrity appearance comparison, it also moderates the association between depression, appearance-based stress, and appearance comparisons. The lack of moderation by self-compassion was witnessed for eating restraints. The findings aligns with previous research [70–73]. Self-compassion was regarded a more secure response in situations where one's appearance was threatened especially when faults were accepted with care rather than aggression. As a result, it primes with contentment and acceptance of their looks. According to the findings, positive qualities of self-compassion may maintain self-worth, especially when one's appearance acceptance is at risk or when individuals perceive their appearance to be below a certain threshold [74].

Although appearance comparison is positively associated with severe health issues, it is more widespread among people in the present era of media, prompting our investigation into potential factors driving the rise in appearance comparisons with peers and celebrities [75, 76].

The foregoing findings indicate that appearance-based negative comments or victimization are highly associated with appearance compassion. Self-presentation on social media also trigger pessimistic thoughts about one's appearance, amplifying the respondent's self-rejection and forcing them to compare themselves to others to change [77, 78]. In literature, young adults habitually compare their appearance with celebrities, and peers body concerns to appearance comparisons with celebrities and peers are boosted by uploading and seeing photographs on social media. The peer and celebrity appearance comparisons are both positively connected to media appearance pressure, Fig 3. The findings are in line with previous studies into the relationship between body shaming and appearance comparison on Facebook, Instagram, and other social media sites [79–84].

The next intriguing hypothesis concerns the link between social-cultural pressure and appearance comparison. In general, social-cultural pressure to change one's appearance or degree of attractiveness, like ultra-thinness, is conveyed through comments from parents, classmates, and even by seemingly innocuous talk regarding clothes, weight, and body shape. The findings show that comparing one's looks to that of peers and celebrities is linked to social-cultural standards of attractiveness and societal remarks, Fig 3. According to the findings of the studies, social-cultural pressure contributes to body shaming by giving more importance for unrealistic beauty criteria [8, 85–87]. It has been observed that girls have more appearance-related conversations, such as thinness, body shape, and skin complexion awareness, whereas males tend to be more conscious about muscle gain [88].

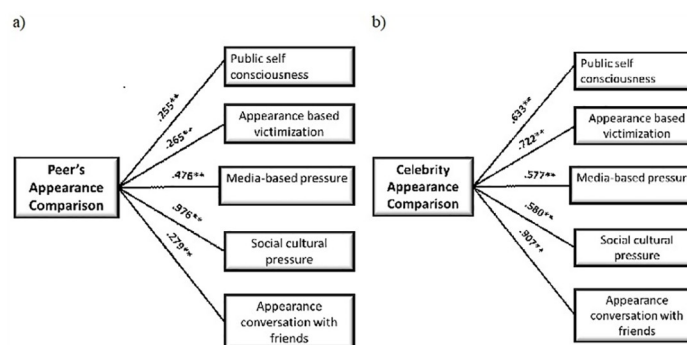


Fig 3. Theoretical framework of the second model: a) appearance comparison with peers and b) appearance comparison with celebrities. The numerical values are correlation coefficients.

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Furthermore, the data supported the prediction that appearance conversations with friends contribute to increased self-disapproval and appearance comparison, and that feedback from friends or peers has higher connection with self-judgment and body issues among young people [74, 89–92]. Self-consciousness about appearance happened to be the most important predictor for appearance comparison. Adolescents who were engaged in positive self-representation in front of others focused on photo browsing, photo editing, and fitness, and were more mindful of their looks. The findings corroborate the hypothesis, indicating that self-consciousness was by far the best predictor of celebrities appearances but contrary to peers appearances [93–95].

4.1. Limitations and recommendations

In this study several decision domains were considered. First and the foremost, was the frequency with which participants were assessed (state-based comparisons were limited to peers and celebrities) may have an impact on the study's relationship assessments. The impact of appearance comparisons, for example, may be influenced by an ideal personality in mind or individual appraisal criteria, among other factors. In order to properly capture the above models, future research should compare appearance to ideal personality or establish a baseline for ideal appearance. The study at hand followed the same procedures as the previous studies [4, 41, 96, 97]. Second, the study couldn't test a theoretical modal and causality due to the use of a cross-sectional design. The significance of the relationship was not recorded and evaluated over time in Pakistan due to cultural differences. Furthermore, future research should compare the cultural effects of different provinces or states on appearance adoption worldwide. Replicating the study in different designs, such as experimental, longitudinal, or comparative contexts, may aid to the discovery of additional potential elements which may contribute to the appearance comparison. Due to the Covid-19 pandemic, the non-response rate was not contacted again. It is also recommended to extend the study to explore the relationship between sexual orientation and body weight dissatisfaction.

4.2. Summary

Acceptability of appearance comparison has a high link with depression among participants. Although there was no significant association with eating constraints, the findings demonstrate that appearance comparison contributes to appearance-based stress. It can be concluded that comparing oneself to peers and celebrities can lead to an increase in psychological distress. Depression and appearance-based stress both are moderated by self-compassion while eating restraints, and appearance comparison is not. Furthermore, the study is unique in that it discovered that appearance-based victimization, media-based pressure, social-cultural pressure, appearance discourse with friends, and self-consciousness are potential factors associated with an increase in appearance comparison with peers and celebrities. Self-compassion can be utilized as a control variable for health difficulties, it reduces the threat of one's appearance approval and its impact on health. It is suggested that respondents do not perceive themselves through the eyes of others or by standards of attractiveness such as thinness, fitness, dieting plan, and so on, which may lead to a reduction in appearance comparison and an increase in self-acceptance happiness.

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