

## The Mediation Effect of Resilience and Self-Esteem in the Relationship between Social Appearance Anxiety and Psychological Adjustment

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Social appearance anxiety (SAA) affects eating disorders, social anxiety, psychological distress, and psychological well-being. A scarcity of literature has been observed on the association between SAA and psychological adjustment. To examine the mediational role of self-esteem and resilience on the association between social appearance anxiety and psychological adjustment among university students. This study employed a cross-sectional design. 196 participants in the age range 18 to 25 years ( $M_{\text{age}} = 23.2$ ,  $SD = 1.2$ ) were included through convenience sampling. The findings suggested that SAA was influenced by age, education, and birth order in the family. The bivariate analysis revealed that SAA negatively correlated with psychological adjustment, resilience, and self-esteem. The hierarchical regression analysis indicated that SAA negatively, and resilience and self-esteem positively predicted the psychological adjustment. In mediational analysis, we found that self-esteem significantly mediated the relationship between SAA and psychological adjustment.

**Keywords:** social appearance anxiety, psychological adjustment, resilience, self-esteem

Social appearance anxiety (SAA) affects body image, and mental health of adolescents and young adults, including eating and social anxiety (Levinson et al., 2013), and psychological well-being (Duyan et al., 2022; Aslan & Tolan, 2022). It is based on the negative evaluations of one's appearance in social settings (Hart et al., 2008). Adolescents and young adults who have higher engagement in upward social comparison via social media and other platforms influence their body image and have higher concern about their appearance which further leads to appearance-related anxiety (Papapanou et al., 2023). Individuals experiencing SAA may struggle with different psychological issues such as accepting difficult situations or emotions, fear-distressing thoughts, being mindful, and leading to high levels of aggression (Yilmaz et al., 2023). It is also associated with high

reactivity issues, judging others more, and high cognitive diffusion (Shepherd et al., 2019). A study on both genders reported that SAA is positively related to automatic thoughts, depression, anxiety, and stress (Celik & Tolan, 2021).

### Psychological adjustment

Psychological adjustment is an individual's capacity to effectively adapt and manage the different demands and difficulties experienced in life (Piqueras et al., 2019). This process includes actively managing inner thoughts, emotional states, and behavioral tendencies to respond to external stresses or changes in the external environment (Stanton et al., 2007). Prior literature provides the essence of psychological adjustment and its role in making our life happy and increasing wellness (Sarkar et al., 2021). It is essential

for mental health and overall well-being, including multiple areas of an individual's life, such as personal, social, and occupational aspects (Sarkar et al., 2021; Tse & Yip, 2009). It is the general happiness and life satisfaction that individuals obtain as an outcome of reducing the stress associated with adopting an unfamiliar environment (Akter et al., 2019). Shephard et al. (2019) found that those individuals experiencing higher SAA have difficulty in managing tragic emotions, and an inability to step out from negative thoughts. A cross-sectional study on Pilates women reported that SAA was negatively associated with psychological well-being (Duyan et al., 2022). Similarly, a study conducted on adolescents in Switzerland suggested that SAA was negatively related to adaptive coping while positively associated with maladaptive coping (Antonietti et al., 2020).

### **Resilience as a Mediator**

Adverse events are experienced in every individual's life, including stressful personal relationships, world crises, health and financial issues, and frustration with the profession. When people suffer from these types of events, resilient people may easily be taken aback, rather than staying down. They can cope with the situations and flexibly bounce back from their adverse circumstances (Spry & Marlow, 2020). Zhou et al. (2022) investigated the mediational effect of resilience in the relationship between psychological predictors and health-related quality of life among 231 Chinese breast cancer survivors. They reported that the relationship between coping styles, perceived social support, and health-related behaviors was significantly mediated by resilience. Additionally, a study conducted on 325 undergraduate college adolescents in the USA, reported that resilience partially mediated the relationship between negative life events and six dimensions of psychological well-being (Faircloth, 2017).

Similarly, a structural equation modeling analysis found that resilience significantly mediated the Big Five personality traits and psychological adjustments (self-care and quality of life) among the 125 patients of drainage enterostomy (Temprado et al., 2017).

### **Self-Esteem as a Mediator**

Self-esteem is an important positive psychological trait that protects and maintains our psychological well-being and mental health (Rosenberg, 1965). It is how we give value and understand ourselves. Self-esteem is based on how we believe and perceive ourselves, which may be difficult to change (Al-Amer et al., 2022). Self-esteem provides strength and increases our self-efficacy in adverse and challenging situations (Mansell & Gatto, 2022). Researchers reported that self-esteem is one of the major factors in mental health. Empirical studies suggested that individuals with high levels of self-esteem experience low levels of psychological distress and depressive symptoms (Yin et al., 2022), and high levels of adaptive behavior, quality of life, and psychological adjustment (Augestad, 2017; Pasha & Munaf, 2013). Conversely, individuals experiencing high SAA engaged in high negative self-evaluation. Demirel (2019) reported that people with high social appearance anxiety have low self-acceptance and perceived lower levels of self-esteem than their counterparts or those who were experiencing low levels of SAA. A study conducted on Taiwanese adolescents with Tourette's syndrome found that self-esteem potentially mediated the association of psychosocial stress and social adjustments among these adolescents (Lee et al., 2022). Overall, we showed that previous studies have indicated that self-esteem is a potential mediator in different contexts to decrease negative relationships. However, we found a scarcity of empirical literature focusing on self-esteem as a potential mediator between

SAA and psychological adjustment. Thus, the current study will examine the mediational role of self-esteem in the relationship between SAA and psychological adjustment.

### The rationale of the study

Empirical evidence suggests that a low level of psychological adjustment is related to mental health issues and unhealthy interpersonal relationships (Olasupo et al., 2018) and also affects students' well-being and academic achievement in their lives (Sarkar & Banik, 2017). Although there are some studies available to explain the psychological correlates of psychological adjustment, studies focusing on the relationship between psychological adjustment and SAA are few and far between. This is an initial attempt to fill the previous research gaps that exist in the literature about psychological adjustment. In addition, researchers have failed to examine the effect of SAA on psychological adjustment via self-esteem and resilience. In the current study, we also attempt to fill these research gaps and examine the mediational effect of resilience and self-esteem in the relationship between social appearance anxiety and psychological adjustment.

Hence, the primary objective of the present study is to evaluate the strength and direction

of the relationship between social appearance anxiety, and psychological adjustment along with the mediational role of resilience, and self-esteem. In addition, this study also examines the role of demographic factors on psychological adjustment and social appearance anxiety which is also shown in Figure 1.

### Major Hypotheses:

- H<sub>1</sub>: Higher levels of social appearance anxiety would negatively predict psychological adjustment in university students.
- H<sub>2a</sub>: Higher levels of self-esteem would positively predict psychological adjustment in university students.
- H<sub>2b</sub>: Higher levels of resilience would positively predict psychological adjustment in university students.
- H<sub>3</sub>: Self-esteem would significantly mediate the relationship between SAA and psychological adjustment in university students.
- H<sub>4</sub>: Resilience would significantly mediate the relationship between SAA and psychological adjustment in university students.

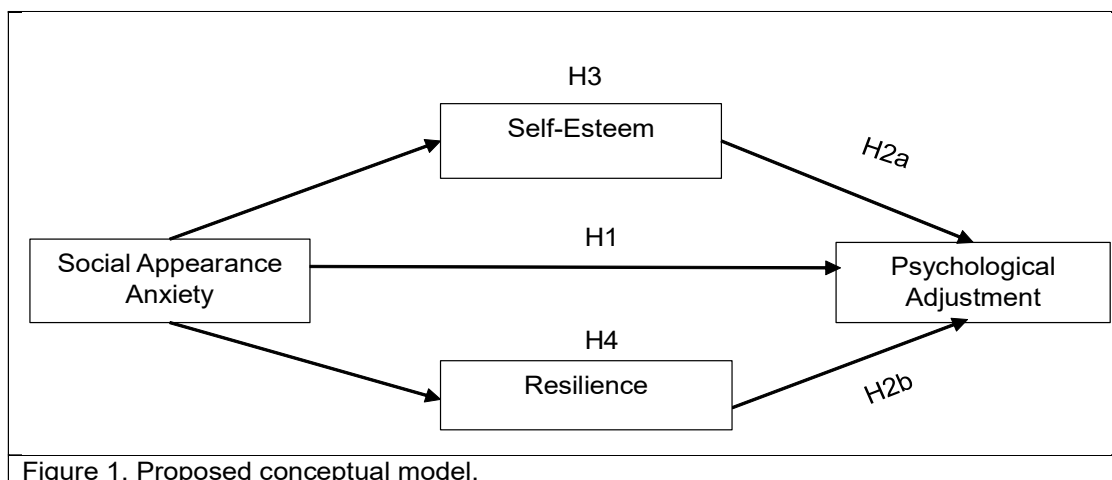


Figure 1. Proposed conceptual model.

## Method

This study employed a cross-sectional research design, and participants enrolled at Banaras Hindu University (BHU) were selected to fill out the online questionnaire measuring social appearance anxiety, resilience, self-esteem, and psychological adjustment.

### Inclusion criteria

The participants were included if they have fulfilled the following criteria: (i) ages between 18 years to 25 years, (ii) Students who were able to read and understand the English language, (iii) Both male and female students, and enrolled in the BHU and IIT-BHU.

### Exclusion criteria

The participants with major physiological or psychological diseases/disorders, out of the age range 18 to 25 years, and not able to read and write English language were excluded from the present study.

### Participants

The participants were selected through convenience sampling techniques. A sample of 215 participants were selected for the current study. Among them, 203 responses were received (response rate 94.41%). Further, 7 participants were excluded due to incomplete responses and the final sample consisted of 196 participants with an age range from 18 to 25 years ( $M_{age} = 23.2$ ,  $SD = 1.2$ ). In included participants 152 (77.6%) were females and 44 were males. 76% of participants were graduates, 15.8% had completed their intermediate, and 8.2% participants were post-graduate.

### Measures

*Rosenberg self-esteem:* Self-esteem was measured through Rosenberg's Self-Esteem Scale (RSES; 1965). It has a total of ten items. Among them, five reverse-coded items are available with a 4-point Likert rating scale

(0 ~ indicates "Strongly Disagree", while 3 ~ indicates "Strongly Agree"). The higher scores in RSES suggested a higher self-esteem. Participants reported an acceptable Cronbach's alpha ( $\alpha$ ) value of 0.87.

*Appearance Anxiety Inventory (AAI):* The SAA level of the participants was measured through the Appearance Anxiety Inventory (AAI; Veale et al., 2014). The measure consists of 10 items that particularly evaluate the cognitive and behavioral components of general appearance-related anxiety. AAI follows the 5-point rating system that ranges from 0 to 4 (0 ~ "not at all" and 4 ~ "all the time"). The scale exhibited a Cronbach's alpha coefficient of 0.85.

*Brief Resilience Scale (BRS):* The resilience level of the participants was measured through the Brief Resilience Scale (BRS; Smith et al., 2008). The participants have responded to six items for resilience in a 5-point Likert scale (1 ~ strongly disagree, 5 ~ strongly agree). The reported value of Cronbach's alpha ( $\alpha$ ) was 0.69.

*Brief Adjustment Scale (BAS):* We use the Brief Adjustment Scale (BAS; Cruz et al., 2019) to assess the participant's psychological adjustment. It has six items and it is based on the 7-point rating system (1 ~ not at all to 7 ~ extremely). A 0.86 alpha value was reported in this study.

### Procedure

For a complete response, the average time taken was 15-20 minutes. The participants once obtaining their consent to participate in the study were instructed to carefully read and internalize each item of the scale with their own live experiences. They were also encouraged to respond with honest answers to all questions. This study strictly adhered to ethical guidelines and norms of the Helsinki Declaration and APA ethical guidelines of human participants. After the completion of the study, the participants were debriefed about the study.

## Results

Results Table 1 indicated that the participants with an age range of 18-21 years, reported experiencing higher levels of SAA than young adults,  $t = -2.52, p = .05$ . Age did not affect psychological adjustment. The gender differences in psychological adjustment and SAA were not found.  $F$ -statistics indicated that education has a significant impact on SAA,  $F(2, 193) = 4.66, p = .05$ . In addition, following religious

traditions, birth order, and type of social media use have a significant effect on psychological adjustment. Birth order also [ $F(4, 191) = 4.69, p = .01$ ] has a significant effect on SAA.

Table 2 presents descriptive statistics and Pearson 'r'. The bivariate correlations indicate that SAA negatively correlated, whereas resilience and self-esteem positively correlated with psychological adjustment.

Table 1. Demographic details of the participants and effect on psychological adjustment and social appearance anxiety.

	Category	n	Percentage (%) of participants	PA		SAA	
				Mean	t/Fvalue	Mean	t/Fvalue
Age (in Years)	18-21	62	31.6	26.69	.53	9.31	-2.52*
	22-25	134	68.4	26.04		6.95	
Gender	Male	44	22.4	26.08	-.52	8.84	1.13
	Female	152	77.6	26.79		7.64	
Education	Intermediate	31	15.8	25.58	.30	5.87	4.66*
	Graduate	149	76	26.25		9.30	
	Post-Graduate	16	8.2	26.24		7	
Follow of religious traditions	Not at all	20	10.2	19.90	7.51**	8.65	.05
	Moderately	141	71.9	26.97		8.63	
	Highly	35	17.9	26.91		8.26	
Birth Order in Family	Single	12	6.1	23	4.08**	7.58	4.69**
	Eldest	81	41.3	24.23		13.92	
	Second	41	20.9	28.63		9.88	
	Third	16	8.2	30.25		5.31	
	Youngest	46	23.5	27.11		8.87	
Sexual Orientation	Homosexual	22	11.2	28.05	1.10	6.86	.65
	Heterosexual	150	76.5	25.74		8.73	
	Bisexual	14	7.1	26.57		9	
	Other	10	5.1	29.40		9.20	
Residential Area	Urban	132	67.3	25.78	.76	8.47	.05

Yearly Family Income	Rural	11	5.6	26.36	1.06	8.82	2.39
	Semi-Urban	53	27	27.38		8.75	
	More than 8 lakhs	42	21.4	24.14		9.97	
	6-8 Lakhs	37	18.9	26.43		6.13	
	2-5	74	37.8	26.67		8.96	
	0-2	39	19.9	27.23		8.92	
Type of Social Media Use	BPL	4	2	26.24	2.75*	5.50	1.25
	All	60	30.6	26.65		7.83	
	Instagram	47	24	23.44		9.56	
	WhatsApp	76	38.8	27.46		6.85	
	YouTube	13	6.6	27.38		9.10	

Note. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ , SAA = social appearance anxiety, PA = Psychological Adjustment.

Table 2. Shows descriptive statistics and Pearson 'r' among variables.

Variables	Mean	SD	Minimum	Maximum	1	2	3	4
1. Res	18.46	3.35	10	25	1			
2. SAA	8.57	6.18	0	24	-.15*	1		
3. SE	29.03	4.88	17	40	.31**	-.43**	1	
4. PA	26.24	7.98	7	42	.31**	-.33**	.410**	1

Note. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ , Res = Resilience, SAA = social appearance anxiety, SE = Self-Esteem, PA = Psychological Adjustment

To investigate how resilience and self-esteem predict psychological adjustment after controlling for SAA, a hierarchical linear regression was computed. The assumptions of linearity, multicollinearity, and normally distributed errors were checked. Additionally, means and standard deviations (SDs) are shown in Table 2. The result revealed that when SAA was entered alone, it significantly but negatively predicted psychological adjustment,  $F(1, 194) = 22.87$ ,  $p = .001$ , adjusted  $R^2 = .10$ . However, adjusted  $R^2$  indicated that SAA 10% variance in

psychological adjustment. When other variables were added, they significantly increased the prediction,  $R^2$  change = .12,  $F(2, 192) = 19.01$ ,  $p = .001$ , and SAA although a significant negative predictor with a lower effect,  $p = .05$ . The hierarchical regression analysis indicated that SAA alone significantly and negatively predicted the psychological adjustment, however, resilience and self-esteem significantly lowered the negative effect of SAA on psychological adjustment.

Table 3. Shows hierarchical multiple regression analysis summary predicting psychological adjustment from resilience and self-esteem, when controlling social appearance anxiety (N = 196).

	Variables	B	SE	$\beta$	$R^2$	$\Delta R^2$
Model 1	SAA	-.42	.09	-.33***	.11	.11
	Constant	29.83	0.93			
Model 2	SAA	-.23	.09	-.18*	.23	.12
	Resilience	.46	.16	.19**		
	Self-Esteem	.45	.12	.27***		
	Constant	6.74	4.26			

Note. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ , SAA = social appearance anxiety.

This study tested the model fit indices for all metric scales using Amos version 23. To measure the goodness of fit, the authors considered the normed model chi-square ( $\chi^2/df$ ), with values of  $< 3$  considered to be a good fit (Hu & Bentler, 1999). RMSEA value of the mediational model is .055 which indicates a good fit. The TLI value indicates

a level of relative fit, with a value close to  $>.95$  for an adequate fit, and above  $>.80$  is acceptable (Hu & Bentler, 1999). In the present mediational model, goodness of fit indices like TLI (.948), and CFI (.956) are considered to be a good fit.

Fig. 2 shows the mediational effect of self-esteem and resilience in the relationship between SAA and psychological adjustment. In indirect effect, the mediational effect of self-esteem significantly affected the relationship with a value of  $\beta = -.12$ ,  $SE = .04$ , 95% CI  $[-.24, -.06]$ , and the mediational effect of resilience was not significant with a value of  $\beta = -.03$ , with a standard error of .02, 95% CI  $[-.08, .01]$ . The results revealed that self-esteem positively buffers the aversive relationship between SAA and psychological adjustment. In terms of the predictor-mediator relationship, social appearance anxiety yielded negative correlations with resilience value of  $\beta = -.15$ ,  $SE = .04$ , 95% CI  $[-.15, -.01]$ , and self-esteem value of  $\beta = -.43$ ,  $SE = .05$ , 95% CI  $[-.44, -.24]$ . The findings revealed that higher self-esteem and resilience abilities are negatively associated with social appearance anxiety.

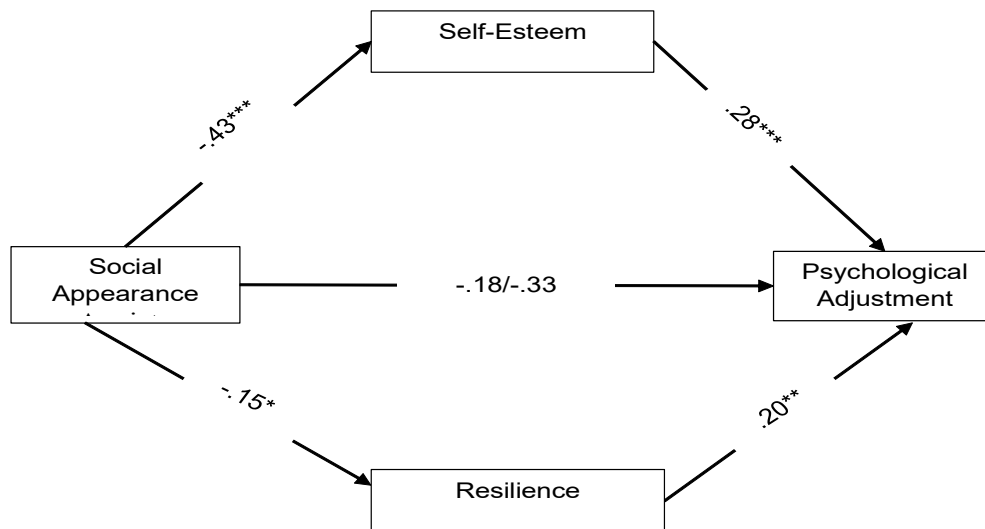


Figure 2. the direct and indirect effects of SAA, self-esteem, and resilience on psychological adjustments.

## Discussion

The results revealed that late adolescents exhibit higher levels of SAA compared to young adults and gender differences in SAA and psychological adjustment were found to be insignificant. Similarly, those who had lower education levels reported a greater level of SAA than those who had higher levels of education. This finding corresponded with Sukma (2022), who reported that individuals with low body esteem experienced a higher level of social anxiety. The current study also revealed that participants identifying as moderately to highly religious and adhering to religious rituals and customs had higher psychological adjustment than those who did not. This aligns with Barry et al. (2019), who found that higher levels of religiosity and spirituality are positively and significantly associated with higher levels of adjustment abilities. Furthermore, those adhering to religious traditions generally exhibit better-coping skills in challenging conditions (Bockrath et al., 2022).

Participants identified as the eldest child in their families experienced lower psychological adjustment and higher SAA, which supports the findings of Ýlmen and Sürücü (2022), who indicated that the eldest and only child experienced lower levels of marital adjustment. The current study also demonstrated that participants who mainly engaged in Instagram use exhibited lower psychological adjustment and higher SAA relative to users of other social media platforms and it supported by the previous findings of Lajunen and Haug (2023) indicating that individuals who experience feelings of inferiority in real-life contexts as a result of constant social comparisons are more likely to usage social media platforms to obtain emotional support and enhance their self-esteem in the digital realm, which adversely impacts their psychological adjustment, self-esteem, and overall life satisfaction.

Bivariate correlations revealed an inverse relationship between SAA and psychological adjustment. Although no prior studies have specifically examined this relationship, some previous empirical studies have reported that individuals with high SAA experience multiple psychological issues such as low levels of coping ability (Beltaci et al., 2021), low levels of psychological well-being (Duyan et al., 2022), and high levels of anxiety and depression (Celik & Tolan, 2021). This study also revealed that high SAA was negatively related to self-esteem among university students, which is supported by the findings of Lee et al. (2022), who reported that individuals experiencing higher levels of SAA tend to have lower levels of self-esteem and resilience, particularly among adolescents (Celen et al., 2022). Yan-Fan (2024) also suggested that resilience has an advantageous effect by diminishing negative emotions and promoting positive ones. Similarly, Seki and Dilmac (2015) found that increasing SAA leads to decreased resilience. Meanwhile, Schneider et al. (2013) identified resilience as vital in helping individuals manage, adapt, create social interactions, and regulate their emotions. Furthermore, Reyes et al. (2022) demonstrated that resilience is positively connected to productive and non-productive coping mechanisms among pre-adolescents.

Model 1 of the regression analysis revealed that SAA adversely predicted psychological adjustment. Although past research has not employed the same typology, related studies on social physique anxiety have yielded equivalent outcomes. For example, Abdollahi et al. (2023) observed that higher levels of social physique anxiety negatively predicted body compassion and positively predicted physical appearance perfectionism in young people, which further leads to low emotional and social adjustment ability (Moreira et al., 2009). Model 2 found

that individuals with higher self-esteem positively predicted psychological adjustment ability, consistent with findings by Shen et al. (2021) and Mansell and Gatto (2022). Self-esteem is a major component of mental health and it enhances self-efficacy in adverse conditions (Yin et al., 2022). Additionally, studies suggested that high self-esteem also leads to lower psychological and emotional issues (Shen et al., 2021).

Additionally, research demonstrated that high resilience significantly predicted psychological adjustment among students. This is supported by previous research showing that resilience protects individuals from various stressors (Secer & Ulas, 2020), is negatively associated with negative psychological traits such as loneliness and fear of COVID-19 (Cetin & Anuk, 2020), anxiety, and depression (Kazmi & Muazzam, 2020), and is positively linked with positive traits like life satisfaction (Tagay et al., 2016) and quality of life (Zhou et al., 2022).

To the best of our knowledge, this study represents the first attempt to investigate the mediating effect of resilience and self-esteem on the association between SAA and psychological adjustment. The present research attempted to fill this gap in the literature. The findings of the mediational model revealed that self-esteem significantly lowers the negative effect of SAA on the psychological adjustment ability of university students. This finding corresponds with Duchesne et al. (2017), who revealed that high self-esteem is associated with low psychological maladjustment and high social adjustment. Conversely, individuals with lower self-esteem are likely to experience greater social avoidance and anxiety (Pan et al., 2018).

In addition, self-esteem worked as a mediator between authoritarian parenting and emotional instability, academic

achievement, and antisocial behavior of adolescents (Martinez et al., 2021). Adolescents' adjustment is positively improved by acceptance and engagement practices through increasing levels of self-esteem (Martinez et al., 2021). Moreover, self-esteem is associated with distinct positive psychological constructs and behavioral outcomes such as positive emotions, engagement in academic activities, and prosocial behavior (Veiga et al., 2015; Leary & Macdonald, 2003). Moreover, although resilience mediated the relationship between SAA and psychological adjustment, the effect was not significant. This study suggested that resilience may work as a protective factor, but it is not sufficient for reducing the negative effects of social appearance anxiety on psychological adjustment. Therefore, family and peer support are important for reducing the negative effect of SAA (Erçevik (2021).

### **Limitations**

The current study also has some limitations. First, it was analyzed in a small sample size with a limited of 196 participants. Therefore, further studies must use a large sample size for analysis of the results. Second, this study is based on cross-sectional design which may not provide a cause-and-effect relationship among variables. Next studies may conduct an experimental study to examine the cause-and-effect relationship and may also use longitudinal studies to examine the following effect. Third, the current study used a convenience sampling method, which may create selection bias. Hence, further study must use probability sampling methods to reduce this bias. Fourth, in mediational analysis self-esteem partially mediated the relationship between social appearance anxiety and psychological adjustment. Therefore, further study must include the other variables that fully mediated the above relationship.

### Implications

This study has some important findings that may be helpful for mental health practitioners, educators, policymakers, and students. Mental health providers may focus on late adolescents and young adults who are more sensitive to SAA and provide early intervention strategies to address body esteem and SAA. Promoting involvement in religious and spiritual activities can be enhance psychological well-being, underscoring the need to integrate spirituality and religious engagement into mental health initiatives. Additionally, there can be heightened awareness about the possible detrimental effects of social media, especially Instagram, with educational campaigns and seminars supporting better social media habits. Building higher self-esteem may enhance psychological well-being and reduce SAA, therefore there is an urgent need to use different counseling strategies to boost self-esteem. Strengthening family and peer support systems through community-based initiatives and support groups may provide vital social support for those suffering from high levels of SAA. Moreover, implementing mental health education into university curriculums, with media literacy, body acceptance, and emotional regulation courses, can help students manage SAA effectively. Policymakers should concentrate funding for mental health activities targeting social appearance anxiety, boosting mental health awareness, and resources regarding psychological support, particularly among adolescents and young populations.

### Conclusion

The study concludes that individuals with higher SAA have lower psychological adjustment, self-esteem, and resilience. SAA is negatively predicated, and self-esteem and resilience are positively predicated psychological adjustment. Self-esteem

significantly mediated the relationship between SAA and psychological adjustment. Although resilience did not significantly mediate the present relationship, it positively correlated with psychological adjustment and self-esteem. Therefore, the study may conclude that the mediational effect of resilience can change the strength of the association between SAA and psychological adjustment. Thus, resilience builds intervention programs, and education for improving self-worth is needed. ‘

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