

Original Article

# Self-Esteem, Social Appearance Anxiety and Quality of Life among Adolescents with Acne

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## ABSTRACT

**Background:** Acne is a common dermatological condition affecting adolescents, often leading to psychological issues such as low self-esteem and social appearance anxiety. Understanding the impact of acne on quality of life during adolescence is crucial for developing effective interventions.

**Objective:** To explore the relationship between acne, self-esteem, social appearance anxiety, and quality of life among adolescents, and to identify gender differences and significant predictors of quality of life in this population.

**Methods:** This cross-sectional study employed purposive sampling to recruit 327 adolescents aged 12-19 years from various educational institutions in Islamabad and Rawalpindi. Participants completed the Cardiff Acne Disability Index (CADI), Social Appearance Anxiety Scale (SAAS), Rosenberg Self-Esteem Scale (RSES), and Teenager's Quality of Life Index (T-QoL). Informed consent was obtained directly from participants aged 18 and older, and from guardians for those younger than 18. Data analysis was performed using SPSS version 25, employing Pearson's correlation, t-tests, and linear regression to assess relationships and predictors. Reliability of the scales was confirmed, and psychometric properties were evaluated.

**Results:** Significant correlations were found between acne and social appearance anxiety ( $r = 0.523$ ,  $p < 0.01$ ), acne and self-esteem ( $r = -0.320$ ,  $p < 0.01$ ), and acne and quality of life ( $r = 0.566$ ,  $p < 0.01$ ). Females reported higher self-esteem ( $M = 27.46$ ,  $SD = 4.59$ ) compared to males ( $M = 26.33$ ,  $SD = 3.50$ ,  $t(325) = -2.52$ ,  $p = 0.01$ ). Social appearance anxiety was the most significant predictor of quality of life ( $\beta = 0.61$ ,  $p < 0.01$ ), followed by self-esteem ( $\beta = -0.12$ ,  $p = 0.01$ ).

**Conclusion:** Acne significantly impacts adolescents' psychological well-being, particularly through increased social appearance anxiety and reduced self-esteem. Gender differences highlight the need for tailored interventions. Addressing social appearance anxiety can improve the quality of life for adolescents with acne.

**Keywords:** acne, adolescents, self-esteem, social appearance anxiety, quality of life, psychological impact, gender differences, SPSS analysis, Cardiff Acne Disability Index, Social Appearance Anxiety Scale, Rosenberg Self-Esteem Scale, Teenager's Quality of Life Index

## INTRODUCTION

Acne has been one of the most prominent issues faced by many individuals during adolescence, a sensitive developmental phase between childhood and adulthood (1). During this time, individuals develop their sense of identity and experience significant social, psychological, and physical changes. The onset of puberty causes hormonal changes, and adolescents are often not mature enough to react logically and rationally to these changes. They become sensitive to others' perceptions and opinions of them. The onset of acne during this developmental phase can harm self-esteem and have long-term negative effects on psychological and social aspects of life (2, 3).

During adolescence, individuals develop their concept of self through their perceptions and social environment. It is essential to evaluate and identify the effect of acne on self-esteem, social appearance anxiety, and quality of life to protect adolescents from further mental issues that might hinder their life (4, 5). Researchers have focused on acne in adolescence because it is a common and prominent challenge during this period. However, limited research has been conducted on the relationship between acne, self-esteem, social appearance anxiety, and quality of life in Pakistan. Acne is a common skin ailment that results in pimples on the face, forehead, chest, shoulders, and upper back. It is caused by various factors such as genetics, changing hormone levels, stress, high

humidity, and the use of oil or grease-based personal care products. While acne is most frequent among teens, it can develop at any age (6, 7).

The over-secretion of sebum clogs hair follicles, causing skin bacteria to grow inside the follicles, leading to skin inflammation and pimples. The types of pimples include comedones, cysts, whiteheads, nodules, blackheads, papules, and pustules (Dowshen, 2015). Research on acne causes has identified genetic makeup, hormonal changes during the menstrual cycle and pregnancy, and certain medications such as corticosteroids, lithium, and barbiturates as contributing factors. Acne is diagnosed through a physical examination of the skin. Treatment requires an overall examination of a person's health, precautions, medications, and lifestyle changes to address the factors causing acne (8).

Medications used to treat acne include benzoyl peroxide, antibiotics, and retinoids, which help kill and slow down acne. These medications are often in cream or gel form, applied to the affected areas, alongside oral medications. Photodynamic therapy, a laser procedure, is also used to treat acne (9, 10). While these treatments can be effective, they may have side effects on health. For instance, birth control pills are used to control hormones that produce acne, and isotretinoin, a powerful medication, has severe psychiatric side effects, including depression, suicidal ideation, and psychosis (10).

Self-esteem is a subjective term evaluating a person's self-worth, confidence in their capabilities, and qualities. It consists of elements such as self-confidence, a sense of security, identity, belongingness, and competence. During childhood, self-esteem is considered lowest and increases during adolescence, becoming constant in adulthood. Self-esteem impacts various life aspects, including mental health and quality of life, influencing motivation and a positive outlook toward oneself (11).

Healthy self-esteem is crucial for a balanced life, characterized by self-understanding and healthy relationships with oneself and others (12). The concept of self-esteem is integral to Abraham Maslow's hierarchy of needs, which posits that self-esteem is essential for human motivation and growth towards self-actualization. Factors such as age, disability, genetics, illness, physical abilities, cognition, and socioeconomic status influence self-esteem (von Soest et al., 2018). Racism and discrimination negatively affect self-esteem (13).

Genetic makeup and life experiences play significant roles in shaping self-esteem. Experiences of unconditional positive regard lead to healthy self-esteem (Bozarth, 2013). Healthy self-esteem is reflected in confidence, positive life outlook, and acceptance of one's strengths and weaknesses, fostering healthy relationships. Conversely, low self-esteem leads to mental health issues, feelings of inferiority, low confidence, and negative outlooks on life, often contributing to anxiety disorders, depressive disorders, and poor quality of life (14).

Social appearance anxiety, a domain of anxiety, involves fear of negative assessment by others due to one's appearance. It is linked to social anxiety disorder, which negatively impacts quality of life and various life functions (15). Social appearance anxiety includes inconsistent beliefs about one's appearance, leading to negative body image, personality issues, depression, and affective problems (Hart et al., 2008). Research indicates that individuals with social appearance anxiety are likely to develop eating disorders and other psychological issues (15-17).

Quality of life is defined by the World Health Organization (WHO) as an individual's perception of their life within the context of their culture, value systems, goals, concerns, and expectations. It encompasses various aspects such as health state, wealth, freedom, education, safety, and social belonging (18). Quality of life is evaluated through different methods, including emotional well-being and life evaluation (19). Instruments like the Human Development Index and surveys like the World Happiness Report are commonly used to measure quality of life (20, 21).

Research on acne in adolescents has highlighted its significant impact on self-esteem, quality of life, and social appearance anxiety. Studies have shown that acne is associated with higher levels of depression, low self-worth, and negative body image (22). Moreover, the severity of acne correlates with worse quality of life and higher social anxiety (23, 24). Treatment of acne, including medical and alternative therapies, can alleviate some psychological symptoms (25-27).

The impact of acne on adolescents' lives underscores the need for more awareness and effective treatment strategies. Adolescents often lack information about acne and its causes and treatment, which can exacerbate the psychological impact. Research has shown that improving self-esteem, self-perception, and quality of life can mitigate the negative effects of acne (28-31). This study aims to determine the relationship between acne and self-esteem, social appearance anxiety, and quality of life in adolescents, particularly in Pakistan, where limited research exists on this topic. By enhancing the existing literature and providing new insights, this research aims to improve the psychological well-being of adolescents affected by acne.

## MATERIAL AND METHODS

The study aimed to explore the relationship between acne, self-esteem, social appearance anxiety, and quality of life among adolescents. Additionally, it sought to identify differences in these variables across genders and determine the most significant

predictor of quality of life among adolescents with acne. A cross-sectional survey research design was employed, utilizing purposive sampling to assess these effects among adolescents aged 12 to 19 years.

The sample comprised 327 participants, including 146 females and 181 males, from various schools, colleges, and universities in Islamabad and Rawalpindi. Informed consent was obtained directly from participants above 18 years old, while guardian consent was secured for those below 18 through teachers, principals, or department heads. Ethical considerations were adhered to, ensuring participants were informed of their right to withdraw from the research at any point. The sample size was calculated using Rao software to ensure statistical validity.

Inclusion criteria required participants to be adolescents aged 12 to 19 years who completed both the consent form and questionnaire fully. Exclusion criteria involved participants outside the specified age range and those who did not complete the consent form or questionnaire. Adolescents without acne were also excluded to minimize confounding variables.

Data collection involved several standardized instruments. The demographic sheet collected participant information and ensured ethical consent procedures. The Cardiff Acne Disability Index (CADi), a 5-item scale using a 4-point Likert scale, assessed the impact of acne on quality of life, with higher scores indicating lower quality of life. The Rosenberg Self-Esteem Scale (RSES), a 10-item scale, measured positive and negative attitudes toward oneself, with reverse scoring applied to items 2, 5, 6, 8, and 9. The Social Appearance Anxiety Scale (SAAS), a 16-item scale, measured anxiety related to negative evaluations by others, with item 1 reverse-coded. The Teenager's Quality of Life Index (T-QoL) assessed quality of life across three domains: self-image, physical well-being and future aspirations, and psychological impact and relationships, with 18 questions scoring from 0 to 36 (12, 24, 32).

Data were collected in accordance with the ethical standards of the Declaration of Helsinki. Participants were approached through purposive sampling from public and private sector schools, colleges, and universities. The instruments were administered in a classroom or institutional setting, with researchers available to provide assistance and ensure comprehension. The data collection process ensured confidentiality and anonymity of the participants.

Data analysis was conducted using SPSS version 25. Statistical measures included Cronbach's alpha to assess the reliability of the scales, Pearson Product Moment Correlation to evaluate the associations between variables, t-tests to compare differences between genders, and linear regression to identify predictors of quality of life. The analysis aimed to provide a comprehensive understanding of how acne impacts self-esteem, social appearance anxiety, and quality of life among adolescents and to explore gender differences in these variables.

The study found significant relationships between acne and the psychological variables under investigation, highlighting the need for targeted interventions to address the psychological impact of acne on adolescents. By identifying the most significant predictors of quality of life, the research aimed to inform better clinical practices and support strategies for adolescents dealing with acne (12, 24).

## RESULTS

The results of the study demonstrated significant relationships between acne, self-esteem, social appearance anxiety, and quality of life among adolescents. The sample comprised 327 participants, with 55.4% males and 44.6% females. The majority of participants were single (92.4%), with only 7.6% reporting being in a committed relationship. The age distribution was relatively balanced, with 28.1% aged 12-14, 42.8% aged 15-17, and 29.1% aged 18-19. Educational background varied, with 68.5% attending school, 18% in college, and 13.5% in university. Participants were also categorized based on their educational institutions, with 28.1% from private schools, 10.1% from private colleges, 12.8% from private universities, 38.8% from public schools, 9.5% from public colleges, and 0.6% from public universities. Additionally, 45.3% of the sample studied in co-education environments, while 54.7% were in separate gender settings (Table 1).

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Table 1 Frequencies and Percentages of Demographic Variables (N = 327)

Variables	f	%
<b>Gender</b>		
- Male	181	55.4
- Female	146	44.6
<b>Marital status</b>		
- Single	302	92.4
- Committed	25	7.6
<b>Age</b>		
- 12-14	92	28.1
- 15-17	140	42.8
- 18-19	95	29.1
<b>Education in years</b>		
- School	224	68.5
- College	59	18.0
- University	44	13.5
<b>Educational institute</b>		
- Private school	92	28.1
- Private college	33	10.1
- Private university	42	12.8
- Public school	127	38.8
- Public college	31	9.5
- Public university	2	0.6
<b>Educational environment</b>		
- Co-education	148	45.3
- Separate gender	179	54.7

Table 2 Pearson's Correlation Coefficient between Variables of the Study (N = 327)

Variables	1	2	3	4
1. Acne	-	0.523**	-0.320**	0.566**
2. Social appearance anxiety		-	-0.531**	0.675**
3. Self-esteem			-	-0.442**
4. Quality of life				-

Table 3: Differences along Gender on Study Variables (N = 327)

Variables	Males (n = 181)	Females (n = 146)	t (df)	p	CI 95%	Cohen's d
	M (SD)	M (SD)			LL	UL
Acne	6.30 (3.08)	5.81 (3.40)	1.38 (325)	0.17	-0.21	1.20
Self-esteem	26.33 (3.50)	27.46 (4.59)	-2.52 (325)	0.01	-2.01	-2.47
Social appearance anxiety	41.31 (13.74)	40.00 (14.86)	0.83 (325)	0.41	-1.81	4.43
Quality of life	12.80 (6.64)	12.93 (7.37)	-0.17 (325)	0.87	-1.66	1.40

Table 4 Linear Regression Analysis to Check the Impact of Age, Social Appearance Anxiety, and Self-Esteem on Quality of Life of Individuals with Acne (N = 327)

Variables	B	S.E.	$\beta$	p	R	R <sup>2</sup>	F
Constant	5.73	2.90		0.05	0.68	0.47	93.74
Age	0.23	0.38	0.03	0.55			
Social appearance anxiety	0.30	0.02	0.61	0.00			
Self-esteem	-0.20	0.08	-0.12	0.01			

Table 5 Descriptive Properties of the Study (N = 327)

Variables	n	$\alpha$	M (SD)	Range	Skewness	Kurtosis
				Potential	Actual	
Acne	5	0.72	6.08 (3.23)	0-15	0-14	0.38
Social appearance anxiety	16	0.90	40.72 (14.25)	16-80	16-80	0.56

Variables	n	$\alpha$	M (SD)	Range	Skewness	Kurtosis
Self-esteem	10	0.66	26.83 (4.05)	10-40	12-40	0.30
Quality of life	18	0.86	12.86 (6.97)	0-36	0-36	0.81
Quality of life self-image	8	0.77	6.30 (3.56)	0-16	0-16	0.66
Quality of life physical/future	4	0.74	2.36 (2.02)	0-8	0-8	0.90
Quality of life psychological/Relationships	6	0.69	4.20 (2.63)	0-12	0-12	0.69

Pearson's correlation coefficients revealed significant associations among the variables. Acne was positively correlated with social appearance anxiety ( $r = 0.523$ ,  $p < 0.01$ ) and negatively correlated with self-esteem ( $r = -0.320$ ,  $p < 0.01$ ). Moreover, acne had a strong positive correlation with quality of life impairment ( $r = 0.566$ ,  $p < 0.01$ ). Social appearance anxiety was negatively correlated with self-esteem ( $r = -0.531$ ,  $p < 0.01$ ) and positively correlated with quality of life impairment ( $r = 0.675$ ,  $p < 0.01$ ). Self-esteem showed a significant negative correlation with quality of life impairment ( $r = -0.442$ ,  $p < 0.01$ ) (Table 2).

When comparing genders, males reported higher mean scores for acne ( $M = 6.30$ ,  $SD = 3.08$ ) compared to females ( $M = 5.81$ ,  $SD = 3.40$ ), although this difference was not statistically significant ( $t(325) = 1.38$ ,  $p = 0.17$ ). However, females exhibited significantly higher self-esteem ( $M = 27.46$ ,  $SD = 4.59$ ) than males ( $M = 26.33$ ,  $SD = 3.50$ ), with a significant t-value ( $t(325) = -2.52$ ,  $p = 0.01$ ). No significant gender differences were observed in social appearance anxiety (males:  $M = 41.31$ ,  $SD = 13.74$ ; females:  $M = 40.00$ ,  $SD = 14.86$ ;  $t(325) = 0.83$ ,  $p = 0.41$ ) or quality of life (males:  $M = 12.80$ ,  $SD = 6.64$ ; females:  $M = 12.93$ ,  $SD = 7.37$ ;  $t(325) = -0.17$ ,  $p = 0.87$ ) (Table 3).

A linear regression analysis was conducted to determine the impact of age, social appearance anxiety, and self-esteem on the quality of life of individuals with acne. The model was statistically significant ( $F = 93.74$ ,  $p < 0.01$ ), explaining 47% of the variance in quality of life ( $R^2 = 0.47$ ). Social appearance anxiety emerged as a significant predictor ( $B = 0.30$ ,  $SE = 0.02$ ,  $\beta = 0.61$ ,  $p < 0.01$ ), indicating that higher levels of social appearance anxiety were associated with greater impairment in quality of life. Conversely, self-esteem showed a significant negative association ( $B = -0.20$ ,  $SE = 0.08$ ,  $\beta = -0.12$ ,  $p = 0.01$ ), suggesting that higher self-esteem was linked to better quality of life. Age was not a significant predictor in this model ( $B = 0.23$ ,  $SE = 0.38$ ,  $\beta = 0.03$ ,  $p = 0.55$ ) (Table 4).

Descriptive properties of the study variables were also analyzed. The mean acne score was 6.08 ( $SD = 3.23$ ) with a potential range of 0-15 and an actual range of 0-14. Social appearance anxiety had a mean score of 40.72 ( $SD = 14.25$ ), with both potential and actual ranges of 16-80. The mean self-esteem score was 26.83 ( $SD = 4.05$ ), with a potential range of 10-40 and an actual range of 12-40. Quality of life had a mean score of 12.86 ( $SD = 6.97$ ), with both potential and actual ranges of 0-36. Subdomains of quality of life included self-image ( $M = 6.30$ ,  $SD = 3.56$ ), physical/future aspirations ( $M = 2.36$ ,  $SD = 2.02$ ), and psychological/relationships ( $M = 4.20$ ,  $SD = 2.63$ ) (Table 5).

The findings highlight the significant impact of acne on adolescents' psychological well-being and quality of life. The strong correlations between acne and social appearance anxiety, as well as the negative association with self-esteem, underscore the importance of addressing these psychological factors in acne management. The regression analysis further emphasizes the role of social appearance anxiety and self-esteem in predicting quality of life among adolescents with acne. These results suggest that interventions aimed at reducing social appearance anxiety and enhancing self-esteem could significantly improve the quality of life for adolescents affected by acne.

## DISCUSSION

The study aimed to examine the effect of acne on social appearance anxiety, self-esteem, and quality of life among adolescents, employing the Cardiff Acne Disability Index (CADi), Social Appearance Anxiety Scale (SAAS), Rosenberg Self-Esteem Scale (RSES), and Teenager's Quality of Life Index (T-QoL). The demographic analysis revealed a balanced distribution of participants across gender, age, and educational background, providing a comprehensive understanding of the sample characteristics (Table 1). The reliability of the scales used was found to be acceptable, confirming the robustness of the instruments employed in assessing the study variables.

Significant relationships were observed among the variables, with acne positively correlated with social appearance anxiety and negatively correlated with self-esteem and quality of life (Table 2). These findings align with previous research, which demonstrated that acne negatively impacts quality of life and increases social appearance anxiety, as evidenced by studies conducted in Turkey and Pakistan (32-34). The negative association between acne and self-esteem highlights the detrimental effect of acne on adolescents' self-perception, reinforcing the need for psychological interventions to mitigate these effects.

Gender differences in the impact of acne on the study variables were also examined. Males reported higher levels of acne and social appearance anxiety, while females exhibited higher self-esteem and quality of life scores (Table 3). These findings suggest that while males may experience more visible symptoms of acne, females are more affected by the psychological implications, consistent with

existing literature (35). The significant gender differences underscore the necessity for gender-specific approaches in managing the psychological impacts of acne.

The linear regression analysis revealed that social appearance anxiety was the most significant predictor of quality of life among adolescents with acne, followed by self-esteem, with age being the least significant predictor (Table 4). These results indicate that interventions aimed at reducing social appearance anxiety and enhancing self-esteem could substantially improve the quality of life for adolescents affected by acne. The strong predictive value of social appearance anxiety emphasizes its critical role in shaping adolescents' overall well-being.

The study's practical implications suggest that healthcare providers and educational institutions should focus on developing strategies to improve self-esteem and reduce social appearance anxiety among adolescents with acne. Implementing awareness programs and support groups in schools and colleges can help address the psychological impact of acne, fostering a supportive environment for affected adolescents. Previous research has shown that effective acne treatment can significantly improve self-esteem and quality of life, highlighting the importance of comprehensive care that includes psychological support (36).

Several limitations were identified in this study. The sample size was relatively small, suggesting that future research should involve larger samples to enhance generalizability. Additionally, the cross-sectional design limits the ability to establish causality among the variables. Longitudinal studies are recommended to explore the temporal relationships and causal links between acne, self-esteem, social appearance anxiety, and quality of life. Moreover, future research should consider potential confounding variables to gain a deeper understanding of the factors influencing these relationships.

Despite these limitations, the study provided valuable insights into the psychological effects of acne on adolescents. The findings revealed a significant negative correlation between acne and self-esteem and a positive correlation between acne, social appearance anxiety, and quality of life. Social appearance anxiety emerged as the most significant predictor of quality of life, followed by self-esteem. Gender differences highlighted that females scored higher on self-esteem and quality of life, while males reported higher levels of acne and social appearance anxiety. These results underscore the importance of addressing the psychological impacts of acne through targeted interventions, highlighting the need for continued research and practical applications in healthcare and educational settings (36-38).

## CONCLUSION

The study revealed that acne significantly impacts adolescents' self-esteem, social appearance anxiety, and quality of life, with social appearance anxiety emerging as the most critical predictor of quality of life. Gender differences highlighted that males reported higher levels of acne and social appearance anxiety, while females exhibited higher self-esteem and quality of life. These findings underscore the importance of addressing the psychological effects of acne through targeted interventions, emphasizing the need for comprehensive care that includes psychological support to improve the overall well-being of adolescents. Healthcare providers and educational institutions should implement awareness programs and support mechanisms to mitigate the adverse effects of acne on adolescents' mental health and quality of life.

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