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Psychological Impact of Acne Vulgaris on Quality of Life

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Abstract **Original Research Article**

Background: Acne vulgaris, though not life-threatening, exerts significant psychological and social effects that can impair self-esteem, emotional well-being, and overall quality of life. These psychosocial consequences are often overlooked in clinical settings, particularly in resource-limited contexts such as Bangladesh. Therefore, the purpose of the study is to assess the psychological burden and quality-of-life impairment associated with acne vulgaris among affected individuals. ***Aim of the study:*** The aim of the study was to assess the psychological burden and quality-of-life impairment associated with acne vulgaris among affected individuals. ***Methods:*** This cross-sectional study was conducted at the Department of Dermatology & Venereology, Bangladesh Medical University, from January to June 2025, including 180 patients with clinically diagnosed acne vulgaris. Socio-demographic data were collected via structured questionnaire; acne severity was assessed using GAGS, psychological impact with HAM-A, HAM-D, and RSES, and quality of life with DLQI. Data were analyzed using SPSS v26, with descriptive statistics reported as frequencies, percentages, means ± SD, and Pearson correlations to assess relationships between acne severity, psychological scores, and DLQI ($p < 0.05$). ***Results:*** Among 180 participants (mean age 22.3 ± 2.48 years; 64.4% female), moderate acne predominated (102; 56.7%). Moderate anxiety affected 59 (32.8%), mild depression 68 (37.5%), and low self-esteem 92 (51.1%). DLQI showed moderate/very large impact in 113 (62.8%). GAGS, HAM-A, HAM-D correlated positively, RSES negatively with DLQI ($p < 0.0001$). ***Conclusion:*** Acne vulgaris substantially affects psychological well-being and quality of life, highlighting the need for holistic dermatological and psychosocial care.

Keywords: Psychological Impact, Acne Vulgaris, Quality of Life.

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INTRODUCTION

Acne vulgaris is a prevalent dermatological condition that affects a significant proportion of adolescents, with many adults experiencing it at some point in their lives [1]. This disorder represents a chronic inflammatory process of the pilosebaceous unit, manifesting as comedones, papules, pustules, nodules, and cystic lesions [2]. The most frequently involved areas include the face, chest, and back, with young adults being particularly susceptible to developing the condition [3,4].

Although acne vulgaris does not pose a threat to life, it can exert substantial psychological and social effects, especially during adolescence—a developmental stage characterized by identity formation and heightened self-consciousness about physical appearance [1]. Post-inflammatory hyperpigmentation, macular changes, and scarring are common sequelae. Many affected individuals perceive their appearance as unattractive, which can lead to social withdrawal, avoidance of gatherings, and feelings of isolation [5]. While acne typically emerges during puberty, it may continue into adulthood, often persisting beyond 25 years, and is more frequently observed in women [6,7].

The presence of acne is strongly associated with psychological comorbidities, including depression, anxiety, and reduced self-esteem, all of which negatively influence overall quality of life. Despite its lack of direct physical impairment, acne can impose a considerable psychosocial burden, contributing to heightened anxiety, anger, depression, and frustration, which in turn may affect academic performance, occupational functioning, and self-perception [8]. Multiple studies indicate that

acne can result in significant emotional distress, encompassing low self-esteem, social withdrawal, and, in severe instances, suicidal thoughts [9,10]. Furthermore, greater acne severity is often linked with increased anxiety, depressive symptoms, and more pronounced effects on daily life.

Quality of life refers to the general well-being of individuals and communities, encompassing both positive and negative life attributes [11]. The Dermatology Life Quality Index (DLQI) serves as a tool specifically designed to assess the impact of dermatological conditions. It includes ten items evaluating disease-related symptoms, emotional responses, daily activities, clothing choices, social and physical functioning, exercise, professional or educational performance, interpersonal relationships, marital interactions, and treatment effects [7]. Assessing quality of life provides valuable insight into the disabling impact of acne and is crucial for evaluating treatment outcomes and guiding clinical decision-making.

Despite growing recognition of the psychosocial impact of acne vulgaris, the psychological dimension of the disease often remains underexplored in routine dermatological practice, particularly in developing countries. Many previous studies have focused primarily on clinical severity and treatment outcomes, overlooking the emotional and social consequences that significantly affect patients' daily functioning and self-esteem. Moreover, variations in cultural perception, social stigma, and healthcare accessibility can influence how individuals experience and cope with acne, yet these factors have received limited attention in local research contexts. In Bangladesh, data assessing the relationship between acne severity, psychological distress, and quality of life are scarce. Therefore, the present study aims to address this gap by evaluating the psychological burden and quality-of-life impairment associated with acne vulgaris among affected individuals.

Objective

- To assess the psychological burden and quality-of-life impairment associated with acne vulgaris among affected individuals.

METHODOLOGY & MATERIALS

This cross-sectional study was conducted at the Department of Dermatology & Venereology, Bangladesh Medical University, from January 2025 to June 2025. A total of 180 patients with a clinical diagnosis of acne vulgaris were included, selected based on specific inclusion and exclusion criteria. Data were collected using a structured questionnaire to assess the psychological impact and quality of life of the participants.

Inclusion Criteria:

- Participants aged 16 years and above diagnosed with acne vulgaris.
- Willingness to provide informed consent.
- Both male and female participants.
- Ability to complete psychological and quality-of-life questionnaires.

Exclusion Criteria:

- Participants with other chronic dermatological conditions (e.g., eczema, psoriasis).
- History of major psychiatric disorders or ongoing psychiatric treatment.
- Unwillingness to participate or inability to provide reliable responses.

Socio-demographic data, including age, gender, and occupation, were recorded using a structured questionnaire. Acne severity was assessed using the Global Acne Grading System (GAGS), while psychological impact was evaluated with the Hamilton Anxiety Rating Scale (HAM-A), Hamilton Depression Rating Scale (HAM-D), and Rosenberg Self-Esteem Scale (RSES). Quality of life was measured using the Dermatology Life Quality Index (DLQI). The mean age of participants was 22.3 ± 2.48 years.

Informed written consent was obtained from all participants. Data analysis was performed using SPSS version 26, with descriptive statistics presented as frequencies, percentages, means, and standard deviations. Pearson correlation coefficients were applied to assess relationships between acne severity, psychological scores, and DLQI, with $p < 0.05$ considered statistically significant.

RESULTS

Table 1: Socio-Demographic Characteristics of Participants (n = 180)

Variables		Frequency (n)	Percentage (%)
Age group (years)	≤20	78	43.3
	21–25	72	40.0
	>25	30	16.7
	Mean age ± SD (years)	**22.3 ± 2.48**	
Gender	Male	64	35.6
	Female	116	64.4
Occupation	Homemaker	29	16.1

Variables		Frequency (n)	Percentage (%)
	Skilled worker	38	21.1
	Student	50	27.8
	Unemployed	23	12.8
	Unskilled worker	20	11.1
	Others / Missing	20	11.1

The study included 180 participants with a mean age of 22.3 ± 2.48 years, of whom 116 (64.4%) were female and 64 (35.6%) were male. Most participants were young adults, with 78 (43.3%) aged ≤20 years and 72 (40.0%) aged 21–25 years, while 30 (16.7%) were older than 25 years. Regarding occupation, the largest group was students (50; 27.8%), followed by skilled workers (38; 21.1%) and homemakers (29; 16.1%), while smaller proportions were unemployed (23; 12.8%), unskilled workers (20; 11.1%), or others/missing (20; 11.1%).

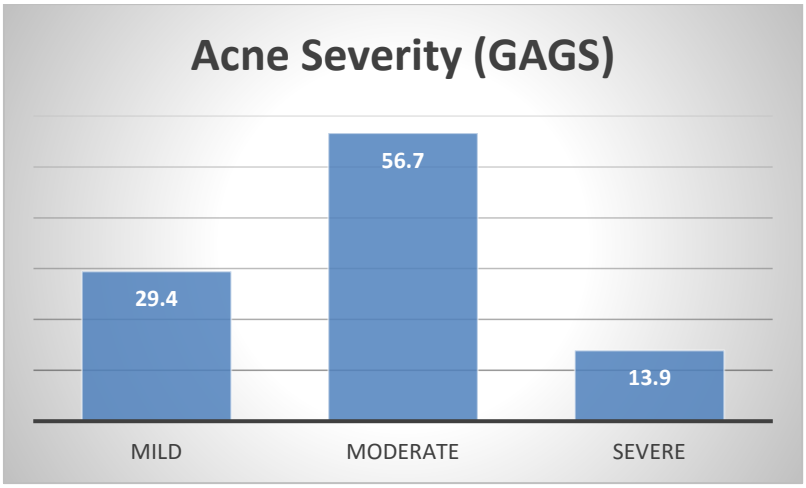

Figure 1: Distribution of Participants According to Acne Severity (n = 180)

According to the Global Acne Grading System (GAGS), the majority of participants (102; 56.7%) had moderate acne, followed by 53 (29.4%) with mild acne and 25 (13.9%) with severe acne.

Table 2: Distribution of Participants According to Psychological Assessment Scores (n = 180)

Psychological Domain	Assessment Scale	Severity Level	Frequency (n)	Percentage (%)
Anxiety	HAM-A	Normal	47	26.1
		Mild	47	26.1
		Moderate	59	32.8
		Severe	18	10.0
		Very Severe	9	5.0
Depression	HAM-D	Normal	61	33.8
		Mild	68	37.5
		Moderate	47	26.2
		Severe	4	2.5
Self-Esteem	RSES	High	18	10.0
		Normal	43	23.9
		Low	92	51.1
		Very Low	27	15.0

Psychological assessment of the 180 participants revealed that anxiety levels, measured by HAM-A, were predominantly moderate (59; 32.8%), followed by normal (47; 26.1%) and mild (47; 26.1%) levels, with fewer participants experiencing severe (18; 10.0%) or very severe (9; 5.0%) anxiety. Depression, assessed by HAM-D, was most frequently mild (68; 37.5%) and normal (61; 33.8%), with 47 (26.2%) showing moderate depression and only 4 (2.5%) experiencing severe depression. Self-esteem measured by RSES indicated that the majority had low self-esteem (92; 51.1%), while 43 (23.9%) had normal, 27 (15.0%) very low, and 18 (10.0%) high self-esteem.

Table 4: Distribution of Participants According to Dermatology Life Quality Index (DLQI) Scores (n = 180)

DLQI Category	Score Range	Frequency (n)	Percentage (%)
No effect	0–1	16	8.9
Small effect	2–5	44	24.4
Moderate effect	6–10	65	36.1
Very large effect	11–20	48	26.7
Extremely large effect	21–30	7	3.9

Assessment of quality of life using the Dermatology Life Quality Index (DLQI) revealed that the majority of participants experienced a moderate to very large impact. Specifically, 65 (36.1%) reported a moderate effect, 48 (26.7%) experienced a very large effect, and 7 (3.9%) were affected extremely. Smaller proportions of participants reported small (44; 24.4%) or no effect (16; 8.9%).

Table 5: Correlation Between Acne Severity, Psychological Scores, and Quality of Life (DLQI) (n = 180)

Variable	Correlation with DLQI (r)	p-value
GAGS Score	0.42	<0.0001
HAM-A Score	0.65	<0.0001
HAM-D Score	0.58	<0.0001
RSES Score	–0.59	<0.0001

Correlation analysis revealed significant associations between acne severity, psychological distress, and quality of life. The GAGS score showed a moderate positive correlation with DLQI ($r = 0.42$; $p < 0.0001$), indicating that higher acne severity was associated with poorer quality of life. Similarly, anxiety (HAM-A) and depression (HAM-D) scores demonstrated strong positive correlations with DLQI ($r = 0.65$ and $r = 0.58$, respectively; $p < 0.0001$ for both), suggesting that increased psychological distress contributes substantially to impaired quality of life. In contrast, self-esteem (RSES) exhibited a strong negative correlation with DLQI ($r = –0.59$; $p < 0.0001$).

DISCUSSION

Acne vulgaris, a common dermatological disorder predominantly affecting adolescents and young adults, extends beyond physical manifestations to exert substantial psychosocial consequences. The findings of this study highlight the strong association between acne severity and increased levels of anxiety and depression, along with decreased self-esteem and impaired quality of life. These results emphasize that acne is not merely a cosmetic concern but a condition with significant psychological and social dimensions, underscoring the need for comprehensive management strategies that address both physical symptoms and mental well-being.

In the present study, the majority of participants were young adults, with 43.3% aged ≤20 years and 40.0% aged 21–25 years, resulting in a mean age of 22.3 ± 2.48 years. This aligns with previous findings, such as Zhu *et al.*,[12], who reported the highest age-specific prevalence of acne among adolescents aged 15–19 years, and the Pierre Fabre Global Study, which identified the highest global prevalence in individuals aged 16–24 years [13]. Females comprised 64.4% of participants, consistent with these studies showing higher acne prevalence among young women. Regarding occupation, students constituted the largest group (27.8%), followed by skilled workers (21.1%) and homemakers (16.1%), reflecting the predominance of acne in younger, school- or university-aged populations. Smaller proportions were unemployed (12.8%), unskilled workers (11.1%), or categorized as others/missing (11.1%), indicating that acne affects individuals across occupational backgrounds, though it is most prominent in younger, academically active groups. Overall, these findings corroborate global trends demonstrating that acne vulgaris is most prevalent among adolescents and young adults, particularly females.

Acne severity assessed by GAGS revealed that most participants had moderate acne (102; 56.7%), followed by mild (53; 29.4%) and severe (25; 13.9%) cases. These results are broadly consistent with previous studies. Shahbag *et al.*,[14] reported that among 48 acne patients in Bangladesh, 29.17% had mild, 41.6% moderate, 16.7% severe, and 12.5% very severe acne, showing a comparable predominance of moderate cases. Similarly, Madhuri *et al.*,[15] observed that 28.2% of patients had moderate acne, with mild and severe cases comprising 14.7% and 57.1%, respectively. These observations suggest that while the proportion of severe cases may differ across populations, moderate acne frequently predominates among young adults, aligning with our findings.

Psychological assessment revealed notable impacts on anxiety, depression, and self-esteem. Anxiety (HAM-A) was predominantly moderate (59; 32.8%), with smaller proportions experiencing severe (18; 10.0%) or very severe (9; 5.0%) anxiety. Depression (HAM-D) was most frequently mild (68; 37.5%) or normal (61; 33.8%), with fewer participants showing moderate (47; 26.2%) or severe (4; 2.5%) depression. More than half of the participants (92; 51.1%) had low

self-esteem (RSES), and 27 (15.0%) reported very low self-esteem. These findings are consistent with Kazan *et al.*,[16], who demonstrated higher anxiety and depression scores and lower self-esteem among adolescents with acne, and Morshed *et al.*,[17], who reported significant associations between acne severity and elevated psychological distress as well as reduced self-esteem. Collectively, these findings highlight the substantial psychosocial burden of acne vulgaris on young adults.

Quality of life assessment using DLQI revealed that most participants experienced a moderate (65; 36.1%) or very large effect (48; 26.7%), while smaller proportions reported a small (44; 24.4%) or no effect (16; 8.9%), and only 7 (3.9%) experienced an extremely large effect. These results align with previous studies: Hazarika *et al.*,[18] reported that 33.3% experienced a mild effect and 91% had elevated DLQI scores, Ghaderi *et al.*,[19] observed a mean DLQI of 8.18 ± 4.83, and Veldi *et al.*,[20] reported an average DLQI of 11.14, with nearly 48% of participants experiencing a very large effect. These studies reinforce that acne vulgaris imposes a considerable psychosocial burden, affecting social, emotional, and daily functioning.

Correlation analysis demonstrated significant associations between acne severity, psychological distress, and quality of life. GAGS scores were moderately positively correlated with DLQI ($r = 0.42$; $p < 0.0001$), while anxiety (HAM-A) and depression (HAM-D) showed strong positive correlations ($r = 0.65$ and $r = 0.58$, respectively; $p < 0.0001$). Self-esteem (RSES) exhibited a strong negative correlation with DLQI ($r = –0.59$; $p < 0.0001$). These findings align with Dhunna *et al.*,[21], who reported moderate positive correlations between GAGS and HAM-A/HAM-D and a negative correlation with RSES, Morshed *et al.*,[17], who found similar relationships between acne severity and psychological distress, and Alsulaimani *et al.*, [22], who observed a significant positive correlation between GAGS and DLQI ($r = 0.639$; $p < 0.001$). Collectively, these results underscore the intricate interplay between acne severity, psychological well-being, and quality of life, highlighting the importance of holistic management addressing both dermatological and psychosocial aspects.

Limitations of the study

The study had a few limitations:

- The study was conducted with a relatively small sample size, which may limit the generalizability of the findings to the broader population.
- As a single-center study based in one hospital, the results may not fully represent the national population or reflect variations in other regions.

CONCLUSION

Acne vulgaris significantly impacts psychological well-being and quality of life, particularly among young adults and females. The study showed that anxiety, depression, and low self-esteem are common in affected individuals, with quality of life moderately to severely impaired. These findings highlight the need for holistic management addressing both dermatological and psychosocial aspects of acne.

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