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Psychological Impact of Acne Vulgaris Among Adolescents and Adults Attending a Tertiary Care Hospital

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ABSTRACT

Background: Acne vulgaris is a prevalent dermatological condition among adolescents and adults, with psychological effects that are often under-recognized in clinical settings. It can lead to significant mental health issues such as anxiety, depression, and low self-esteem, regardless of clinical severity.

Objectives: To assess the psychological impact of acne vulgaris using standardized tools and to evaluate the relationship between acne severity and levels of anxiety, depression, and self-esteem.

Methods: A cross-sectional observational study was conducted from March to June 2025 in the Dermatology OPD of a tertiary care hospital in Lucknow. A total of 160 patients aged 15–35 years with clinically diagnosed acne were enrolled through consecutive sampling. Acne severity was assessed using the Global Acne Grading System (GAGS), while psychological parameters were evaluated using the Hamilton Anxiety Rating Scale (HAM-A), Hamilton Depression Rating Scale (HAM-D), and Rosenberg Self-Esteem Scale (RSES). Data were analysed using SPSS version 24.

Results: Moderate acne was the most common (51.9%). Moderate-to-severe anxiety and depression were observed in 47.5% and 28.75% of participants, respectively, while 51.25% had low self-esteem. Acne severity showed a strong positive correlation with anxiety ($r = 0.52$) and depression ($r = 0.47$), and a negative correlation with self-esteem ($r = –0.41$), all statistically significant ($p < 0.001$). Females had significantly higher anxiety and depression scores and lower self-esteem than males ($p < 0.05$).

Conclusion: Acne vulgaris significantly affects psychological well-being. Routine mental health assessment should be integrated into acne management, especially in high-risk groups such as females and those with moderate-to-severe acne.

Keywords: *Acne Vulgaris, Psychological Impact, Anxiety and Depression, Self-Esteem, Adolescents and Adults*

1. INTRODUCTION

Acne vulgaris is among the most common dermatological disorders worldwide, affecting nearly 85% of adolescents and adults at some point in their lives (1). It is a chronic, inflammatory condition of the pilosebaceous unit characterized by the formation of comedones, papules, pustules, nodules, and cysts. The most frequently affected areas—the face, chest, and back—make the condition highly visible and often distressing. Although it is not life-threatening, acne can have profound psychological and social consequences, particularly during adolescence, a period marked by identity formation and heightened concern with appearance (2,3).

While the physical manifestations of acne are routinely addressed in clinical practice, the psychological burden is often overlooked. Numerous studies have shown that acne can lead to significant emotional distress, including low self-esteem, anxiety, depression, social withdrawal, and in severe cases, suicidal ideation (4,5). The psychosocial impact may persist long after the visible lesions have resolved, especially in individuals with acne scarring or a history of negative social experiences related to their skin condition (6).

The mental health effects of acne are not always proportional to its clinical severity. Several studies have highlighted that even individuals with mild to moderate acne can report significant psychological morbidity, often related more to their perception of the disease than to objective clinical assessment (7). Thus, psychological assessment tools are essential for evaluating the full impact of acne on patients. Widely used instruments include the Hamilton Anxiety Rating Scale (HAM-A) for anxiety, the Hamilton Depression Rating Scale (HAM-D) for depressive symptoms, and the Rosenberg Self-Esteem Scale (RSES) for assessing self-worth (8–10). These tools provide a structured and standardized approach for identifying individuals who may benefit from psychological support.

In various population-based studies, adolescents with acne consistently reported lower self-esteem and increased body dissatisfaction compared to unaffected peers (4,11). Dalgard et al. demonstrated a strong association between acne and psychological impairment, independent of acne severity, emphasizing the need for routine mental health evaluation in dermatology (11). In the Indian context, Hazarika and Archana found that more than half of the acne patients surveyed experienced psychological symptoms, reinforcing the need for culturally sensitive interventions (12).

Gender differences in the psychological impact of acne are well documented. Female patients tend to experience higher levels of anxiety, body image disturbance, and social distress than their male counterparts, likely due to sociocultural expectations around physical appearance (13). Aktan et al. found that adolescent girls with acne were significantly more likely to experience psychological morbidity compared to boys (14).

In India, the social stigma surrounding skin disorders is compounded by increased exposure to social media and Western beauty ideals, which can lead to heightened dissatisfaction and distress among adolescents and adults (15). The sociocultural environment, therefore, plays a crucial role in shaping how individuals perceive and respond to acne.

Despite growing recognition of the psychosocial burden of acne, mental health evaluation remains largely absent from routine dermatological care (16). Dermatologists often focus solely on the physical symptoms, missing opportunities to identify and intervene in underlying psychological distress. This can lead to poor treatment adherence, diminished quality of life, and long-term emotional sequelae.

This study aims to assess the psychological impact of acne vulgaris—specifically anxiety, depression, and self-esteem—among adolescents and adults attending a tertiary care hospital in North India. By using standardized tools and correlating findings with acne severity and demographic variables, the study seeks to generate evidence to support a more integrated, patient-centered approach to acne management that addresses both dermatological and psychological needs.

OBJECTIVES:

Primary Objective:

- To assess levels of anxiety, depression, and self-esteem among patients diagnosed with acne vulgaris using standardized scales.

Secondary Objectives:

- To explore the association of psychological impact with demographic variables (age, gender, educational status).
- To assess the correlation between acne severity and levels of anxiety, depression, and self-esteem

2. METHODOLOGY

This was a cross-sectional, observational study conducted in the Outpatient Department of Dermatology at the Integral Institute of Medical Sciences & Research (IIMSR), Lucknow. The study was carried out over a period of three months, from 15th March to 15th June 2025.The study included adolescents and adults aged 15–35 years, who were clinically diagnosed with acne vulgaris and attended the dermatology OPD during the study period.

Inclusion Criteria:

- Age ≥ 15 years
- Clinically diagnosed with acne vulgaris
- Willing to provide written informed consent

Exclusion Criteria:

- History of diagnosed psychiatric illness

- Current use of psychotropic medications
- Presence of other significant dermatological conditions
- Unwillingness to participate

Sample Size and Sampling Technique

A sample size of 160 participants was calculated based on a previous prevalence study by Pethani et al., using standard sample size estimation methods. A consecutive samplingtechnique was employed, enrolling all eligible patients who attended the OPD until the desired sample size was achieved.

Study Tools: A pre-structured and pre-tested questionnaire was used to collect data on participant age, gender, education, occupation, acne duration, and treatment history. These tools provided quantitative, reliable, and valid measures of psychological well-being, enabling standardized assessment and comparison.

1. **Global Acne Grading System (GAGS)**: The GAGS is a validated clinician-rated tool used to determine acne severity across six anatomical regions. Each region is assigned a factor based on its surface area and lesion type. Final grading categorizes acne as mild, moderate, severe, or very severe. This helped standardize the dermatological assessment.

2. **Hamilton Anxiety Rating Scale (HAM-A):** The HAM-A is a 14-item clinician-administered scale that evaluates both psychic and somatic anxiety symptoms. Each item is scored from 0 (not present) to 4 (very severe), producing a total anxiety score. It allowed quantification of anxiety levels across participants.

3. **Hamilton Depression Rating Scale (HAM-D):** The HAM-D consists of 17 items and is one of the most widely used instruments for assessing depression severity. It captures mood, somatic complaints, and cognitive symptoms, offering a detailed profile of depressive symptomatology.

4. **Rosenberg Self-Esteem Scale (RSES):** The RSES is a self-administered 10-item Likert scale measuring global self-worth and self-esteem. Participants responded using a four-point scale ranging from "strongly agree" to "strongly disagree." It was essential in capturing the psychosocial dimension of acne impact from the patient's perspective.

Data Collection Procedure: Following approval from the Institutional Ethics Committee (IEC), participants were approached in the dermatology OPD. Written informed consent was obtained from each participant; for those aged 12–18 years, assent along with parental consent was obtained. The data collection process involved:

- **Dermatological Assessment**: Acne severity was evaluated using the GAGS by a trained dermatologist.
- **Psychological Assessment:** The HAM-A and HAM-D were administered by trained mental health professionals in a private, confidential setting to ensure the integrity of the assessment.
- **Self-esteem Assessment:** Participants were guided in completing the RSES under supervision to ensure understanding and completeness.

Each session took approximately 20–30 minutes. All data were de-identified and coded to maintain anonymity and confidentiality.

Statistical Analysis: The collected data were entered into Microsoft Excel and analyzed using SPSS version 24. Descriptive statistics were used to summarize the data—means and standard deviations for continuous variables, and frequencies and percentages for categorical variables. Inferential statistical tests were applied to examine associations between variables: Pearson correlation was used to assess relationships between acne severity and psychological scores (anxiety, depression, and self-esteem); independent samples t-test was used to compare anxiety levels across gender; chi-square test examined associations between acne severity and self-esteem levels; and linear regression analysis was conducted to determine whether acne severity could predict depression scores. A p-value < 0.05 was considered statistically significant.

Ethical Considerations: Ethical approval was obtained from the Institutional Ethics Committee (IEC), IIMSR Lucknow (Ref. IEC/IIMSR/2025/74). Written informed consent was secured from all participants. Confidentiality was ensured throughout the study by anonymizing data and maintaining secure records. Participants who exhibited moderate to severe psychological distress based on HAM-A or HAM-D scores were referred to the Psychiatry Department for further evaluation and intervention.

3. RESULTS

Table 1: Demographic Profile of the Participants:

Characteristics		**Frequency (n)**	**Percentage (%)**
Gender	Male	101	63.1
	Female	59	36.9
Age Group	<20 Years	54	33.8
	>20 Years	106	66.3
Occupation	Homemaker	29	18.1
	skilled worker	38	23.8
	Student	50	31.3
	Unemployed	23	14.4
	unskilled worker	20	12.5

Table 2: Distribution of Participants according to Scoring:

Scoring System	**Grades**	**No. of Participants**	**Percentage (%)**
GAGS	MODERATE	83	51.88
	MILD	45	28.12
	SEVERE	22	13.75
	VERY SEVERE	10	6.25
HAM-A	MODERATE	52	32.5
	MILD	42	26.25
	NORMAL	42	26.25
	SEVERE	16	10
	VERY SEVERE	8	5
HAM-D	MODERATE	42	26.25
	MILD	60	37.5
	NORMAL	54	33.75
	SEVERE	4	2.5
RSES	HIGH	16	10
	LOW	82	51.25
	NORMAL	38	23.75
	VERY LOW	24	15

Table 3: Mean scores of psychological scales used:

Variable	Mean ± SD
GAGS (Acne Severity)	22.17 ± 9.48
HAM-A (Anxiety)	14.8 ± 11.3
HAM-D (Depression)	11.7 ± 7.7
RSES (Self-Esteem)	14.4 ± 6.3

Table 4: Association of Psychological Impact with Gender (t-test)

Psychological Parameter	Gender	Mean ± SD	*p*-value
HAM-A Score	Male	12.1 ± 10.3	0.021
	Female	16.3 ± 11.8	
HAM-D Score	Male	9.8 ± 6.9	0.019*
	Female	12.8 ± 8.0	
RSES Score	Male	16.2 ± 6.1	0.034*
	Female	13.4 ± 6.2	

*Statistically significant at $p < 0.05$.

Table 5: Pearson Correlation Between Acne Severity and Psychological Scores

Variable Pair	Pearson *r*	*p*-value
GAGS vs HAM-A	+0.52	<0.001
GAGS vs HAM-D	+0.47	<0.001
GAGS vs RSES	-0.41	<0.001

Table 6: Linear Regression Models (GAGS as Independent Variable)

Dependent Variable	β Coefficient	R^2	*p*-value
HAM-A Score	+0.48	0.27	<0.001
HAM-D Score	+0.42	0.22	<0.001
RSES Score	-0.39	0.17	<0.001

A total of 160 participants were included in the study. The mean age of the study population was 24.55 ± 6.2 years. The majority of participants were male (63.1%), and a larger proportion belonged to the age group above 20 years (66.3%). Regarding occupational distribution, students comprised the largest group (31.3%), followed by skilled workers (23.8%), homemakers (18.1%), unemployed individuals (14.4%), and unskilled workers (12.5%) (Table 1).

The distribution of participants according to acne severity and psychological scores is presented in Table 2. As per the Global Acne Grading System (GAGS), 51.88% had moderate acne, 28.12% had mild acne, 13.75% had severe acne, and 6.25% were classified as having very severe acne. On the Hamilton Anxiety Rating Scale (HAM-A), 32.5% of participants exhibited moderate anxiety, 26.25% had mild anxiety, another 26.25% were within the normal range, while 10% and 5% had severe and very severe anxiety, respectively. Depression levels assessed by the Hamilton Depression Rating Scale (HAM-D) revealed that 37.5% of participants had mild depression, 26.25% had moderate depression, 33.75% were in the normal range, and 2.5% had severe depression. Evaluation of self-esteem using the Rosenberg Self-Esteem Scale (RSES) showed that 51.25% had low self-esteem, 23.75% had normal self-esteem, 15% had very low self-esteem, and only 10% had high self-esteem.

The mean scores of the psychometric scales are summarized in Table 3. The GAGS score was 22.17 ± 9.48, HAM-A score was 14.8 ± 11.3, HAM-D score was 11.7 ± 7.7, and RSES score was 14.4 ± 6.3. Gender-wise comparison using an independent samples t-test demonstrated statistically significant differences in psychological parameters (Table 4). Females had significantly higher mean scores of anxiety (16.3 ± 11.8 vs 12.1 ± 10.3; $p = 0.021$) and depression (12.8 ± 8.0 vs 9.8 ± 6.9; $p = 0.019$) compared to males. Conversely, self-esteem scores were significantly higher in males (16.2 ± 6.1) than in females (13.4 ± 6.2), with a p-value of 0.034.

Correlation analysis using Pearson's correlation coefficient revealed a statistically significant moderate to strong positive correlation between acne severity and anxiety ($r = 0.52$, $p < 0.001$), and a moderate positive correlation with depression scores ($r = 0.47$, $p < 0.001$). A statistically significant negative correlation was also observed between acne severity and self-esteem scores ($r = -0.41$, $p < 0.001$), suggesting that higher acne severity was associated with lower self-esteem (Table 5).

Linear regression analysis confirmed that acne severity (GAGS score) was a significant predictor of psychological outcomes (Table 6). The GAGS score positively predicted HAM-A anxiety scores ($\beta = 0.48$, $R^2 = 0.27$, $p < 0.001$) and HAM-D depression scores ($\beta = 0.42$, $R^2 = 0.22$, $p < 0.001$). It also significantly predicted lower self-esteem, as measured by the RSES score ($\beta = -0.39$, $R^2 = 0.17$, $p < 0.001$). These findings indicate a substantial psychological impact of acne on the studied population.

4. DISCUSSION

In our cohort of 160 participants (mean age 24.6 ± 6.2 years), we observed a moderate-to-strong positive correlation between acne severity (GAGS) and anxiety ($r = 0.52$, $p < 0.001$) as well as depression ($r = 0.47$, $p < 0.001$); conversely, self-esteem levels diminished with increased acne severity ($r = –0.41$, $p < 0.001$). Regression models revealed that GAGS independently explained 27%, 22%, and 17% of the variance in anxiety, depression, and self-esteem scores, respectively (all $p < 0.001$). These outcomes are well-aligned with Morshed et al. (2023), whose study in Scientific Reports found even stronger relationships between acne and psychological distress—$r = 0.66$ for anxiety, $r = 0.63$ for depression—and demonstrated that acne and anxiety/stress together explained 55% of variance in self-esteem through regression analysis [17]. Similarly, Uslu et al.'s work in Turkey ($n = 550$) revealed that subjective acne severity was significantly related to lower self-esteem [18]. This reinforces our findings that even moderate acne severity can substantially impact psychological well-being.

Gender differences in our study revealed that female participants had significantly higher levels of anxiety and depression, but lower self-esteem compared to males ($p < 0.05$). This gender disparity parallels broader mental health research suggesting women are more prone to internalizing symptoms and lower self-worth [19], as well as specific evidence among acne-affected populations [17].

Notably, some studies have reported weaker associations. For example, Karaagaç et al. (2024) found no significant link between acne severity and psychological distress when using the DASS-21 [20], and the female-only study by Öztekin and Öztekin (2020) similarly found no correlation between GAGS and depression [21]. Disparities across studies may reflect differences in participant age, assessment tools, or the distinction between subjective and objective measures of acne severity.

Our study improves upon earlier work by combining validated instruments (GAGS, HAM-A, HAM-D, RSES) and including both genders within a single sample. It emphasizes the biopsychosocial nature of acne and underscores a need for integrated mental health screening in dermatological care [17,19,22].

A study by Md Faizi Karim et al in 2025 at IIMSR Lucknow, observed that forty patients with mild to moderate acne (as per Global Acne Grading System - GAGS) were randomized into two groups. Group A received 70% GA peel, and Group B received 30% SA peel, with treatments administered at an interval of 2 weeks for a total of 6 sessions (12 weeks). Outcome was assessed by GAGS score and clinical photography. In their study they found that Group B (SA) demonstrated faster and greater GAGS score reduction (65%) compared to Group A (GA, 46%). Both treatments were well tolerated, with minor adverse events in <15% of patients [23].

There was another study by Manthankumar K. Jhad et al in 2025 at IIMSR Lucknow where they recoded that out of thirty patients with keloids were enrolled and randomized into two equal groups: Group A received intralesional TAC (40 mg/mL), and Group B underwent a modified intralesional RF technique with TAC. Four treatment sessions were conducted at 4-week intervals, with outcomes evaluated by Patient and Observer Scar Assessment Scale (POSAS). In their study it was noted that Group B exhibited a greater reduction in POSAS scores 71.53% compared to Group A (65.32%). Group B also showed a more significant reduction in keloid size and technique was well tolerated in treatment of keloids [24].

Hence the disability caused by acne must be taken into account when individualizing treatment by health professionals and include QoL measurements to provide better care.

5. CONCLUSION

This study demonstrates that greater acne severity is significantly associated with higher levels of anxiety and depression and lower self-esteem, particularly among female patients. These findings underscore the profound psychosocial burden of

acne beyond its physical manifestations. Integrating routine psychological assessment into acne management is essential for holistic patient care and improved outcomes.

STRENGTHS AND LIMITATIONS:

Our study's strengths include a substantial sample size and validated psychometric tools. Nonetheless, the cross-sectional design limits causal interpretations, and excluding individuals with diagnosed psychiatric conditions may underestimate psychological morbidity. Cultural perceptions of acne also vary, which may limit generalizability.

CLINICAL IMPLICATIONS AND FUTURE DIRECTIONS:

Given the robust predictive value of acne severity for psychological outcomes, dermatologists and primary care providers should consider routine screening for anxiety, depression, and self-esteem issues in acne patients. Psychological interventions focusing on self-esteem enhancement could help mitigate emotional distress. Longitudinal research is warranted to assess whether early mental health intervention alongside dermatological treatment improves overall outcomes.

CONFLICT OF INTEREST: There is no conflict of interest.

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REFERENCES

[1] Bhate K, Williams HC. Epidemiology of acne vulgaris. Br J Dermatol. 2013;168(3):474–85.

[2] Koo JY, Smith LL. Psychologic aspects of acne. Pediatr Dermatol. 1991;8(3):185–8.

[3] Tasoula E, Gregoriou S, et al. The impact of acne vulgaris on psychic health in young adolescents. An Bras Dermatol. 2012;87(6):862–9.

[4] Dalgard F, Gieler U, Holm JO, et al. Self-esteem and body satisfaction among adolescents with acne. J Am Acad Dermatol. 2008;59(5):746–51.

[5] Purvis D, Robinson E, Merry S, Watson P. Acne, anxiety, depression and suicide in teenagers. J Paediatr Child Health. 2006;42(12):793–6.

[6] Samuels DV, Rosenthal R, Lin R, Chaudhari S, Natsuaki MN. Acne vulgaris and risk of depression and anxiety: A meta-analytic review. J Am Acad Dermatol [Internet]. 2020;83(2):532–41. Available from: http://dx.doi.org/10.1016/j.jaad.2020.02.040

[7] Halvorsen JA, Stern RS, Dalgard F, et al. Suicidal ideation and social impairment in adolescents with acne. J Invest Dermatol. 2011;131(2):363–70.

[8] Hamilton M. The assessment of anxiety states by rating. Br J Med Psychol. 1959;32(1):50–5.

[9] Hamilton M. A rating scale for depression. J Neurol Neurosurg Psychiatry. 1960;23(1):56–62.

[10] Rosenberg M. Society and the adolescent self-image. Princeton University Press; 1965.

[11] Dalgard F, Gieler U, Holm JØ, et al. Psychological impact of acne among adolescents. J Am Acad Dermatol. 2008;59(5):746–51.

[12] Hazarika N, Archana M. The psychosocial impact of acne vulgaris. Indian J Dermatol. 2016;61(5):515–20.

[13] Halvorsen JA, Stern RS, et al. Acne and mental health in adolescents: A population-based study. J Invest Dermatol. 2011;131(2):363–70.

[14] Aktan S, Ozmen E, Sanli B. Anxiety, depression, and acne in adolescents. Int J Dermatol. 2000;39(5):354–7.

[15] Fried RG, Gupta MA, Gupta AK. Depression and skin disease: dermatology and psychiatry interface. Dermatol Clin. 2005;23(3):665–74.

[16] Pethani N, Pethani Y. Psychological impact of acne among adolescents. SEEJPH. 2024;XXIV(S4):1767–76.

[17] Morshed ASM, Noor T, Ahmed MAU, Rahman MM, Khandaker S, Islam S, et al. Understanding the impact of acne vulgaris and associated psychological distress on self-esteem and quality of life via regression modeling with CADI, DLQI, and WHOQoL. Sci Rep. 2023;13:21084.

[18] Uslu MM, Kılıç F, Arslan G. How acne bumps cause the blues: relationship between subjective acne severity and self-esteem in Turkish students. J Eurasian Acad Dermatol Venereol. 2017;1:25–30.

[19] Gradowicz W. Subjective perceptions of acne severity affect self-esteem more than objective measures. In:

Acne in Adolescents and Self-Esteem. Springer; 2024.

[20] Karaagaç M, Akça HM, Acet Ö. Lack of association of acne severity with depression, anxiety, stress, and eating attitudes: a cross-sectional study. J Pers Med. 2024;14(2):133.

[21] Öztekin C, Öztekin A. The association of depression, loneliness, and internet addiction levels in patients with acne vulgaris: a female-only analysis. BioPsychoSocial Med. 2020;14:17.

[22] Gradowicz Engler M. Stress and skin diseases: Overview using acne vulgaris as an example. Aesthetic Cosmetol. 2023.

[23] Md Faizi Karim et al. Comparative Study On The Efficacy Of 70% Glycolic Acid Versus 30% Salicylic Acid Peel In The Management Of Mild To Moderate Acne Vulgaris. Journal of Neonatal Surgery. 2025; 14(31): 667-672.

[24] Manthankumar K. Jhad et al. Comparative Evaluation of Therapeutic Efficacy and Safety of Intralesional Triamcinolone Acetonide Alone Versus Modified Intralesional Radiofrequency with Triamcinolone Acetonide in The Treatment of Keloids. Journal of Neonatal Surgery. 2025; 14 (31):680-687.