e-ISSN: 0975-9506, p-ISSN: 2961-6093

Available online on www.ijpqa.com doi: 10.25258/ijpqa.16.11.32

International Journal of Pharmaceutical Quality Assurance 2025; 16(11); 194-199

Original Research Article

Psychiatric Problems Encountered in Young Acne Vulgaris Patients: A Comprehensive Clinical Study

Aman Dubey[1], Manish Borasi[2], Soram Nganbaren[3], S. K. Tandon[4]

[1,3]PG Resident, Department of Psychiatry, Chirayu Medical College, Bhopal
[2]Professor and HOD, Department of Psychiatry, Chirayu Medical College, Bhopal
[4]Professor, Department of Psychiatry, Chirayu Medical College, Bhopal

Received: 24-09-2025 / Revised: 23-10-2025 / Accepted: 24-11-2025
Corresponding Author: Dr. Aman Dubey
Conflict of interest: Nil

Abstract:

Aim: To assess the prevalence and severity of psychiatric problems including anxiety, depression, and reduced self-esteem in young acne vulgaris patients, and to establish the correlation between acne severity and psychological morbidity in an adolescent and young adult population.

Materials and Methods: A cross-sectional observational study was conducted on 180 patients aged 15-25 years presenting with acne vulgaris to the Dermatology Out-Patient Department. Participants were evaluated using Global Acne Grading System (GAGS), Hospital Anxiety and Depression Scale (HADS), and Rosenberg Self-Esteem Scale (RSES). Data including demographics, acne severity, and psychological parameters were systematically recorded and analyzed

Results: Out of 180 participants (55% female, 45% male), moderate acne was most prevalent (51.9%). Anxiety was observed in 47.5% (moderate-to-severe), depression in 28.75%, and low self-esteem in 51.25% of patients. Female patients exhibited significantly higher anxiety and depression scores compared to males ($p < 0.05$). Quality of life was considerably impacted, with 62.8% of patients experiencing moderate to very large impact on daily functioning.

Conclusion: There is necessity for integrated dermatological and psychiatric management approaches. Early identification and intervention for mental health comorbidities, combined with effective acne treatment, are essential for optimal patient outcomes and improved quality of life.

Introduction

Acne vulgaris represents one of the most prevalent dermatological conditions affecting adolescents and young adults worldwide, with documented prevalence rates reaching 80-90% in teenagers and 11-30% in adults. The World Health Organization has acknowledged acne as a psychosomatic disorder, emphasizing its bidirectional relationship with psychological well-being.

The psychological burden associated with acne vulgaris has emerged as a critical public health concern, particularly in young populations navigating identity formation and social integration. Research demonstrates that psychiatric comorbidities, including depression, anxiety, and reduced self-esteem, occur at significantly elevated rates in acne patients compared to the general population.[4] Studies indicate that anxiety affects approximately 44-47.5% of acne patients, depression occurs in 18-28.75% of cases, and suicidal ideation is reported in 6-7% of severe acne patients.[5,6] These figures rival or exceed the prevalence of psychiatric disorders in established medical conditions such as diabetes and asthma.

The present study was conducted to systematically assess the prevalence and severity of psychiatric disorders in young acne vulgaris patients, establish quantitative correlations between acne severity and psychological parameters, identify demographic risk factors for psychiatric comorbidity, and provide evidence-based recommendations for integrated dermatopsychiatric management approaches in clinical practice.

Materials and Methods

Study Design and Setting: A cross-sectional observational study was conducted at the Department of Dermatology, over a 6-month period (January-June 2024). The study was approved by the Institutional Ethics Committee and Research Committee. All participants provided written informed consent prior to participation.

Study Population and Sampling: The study population comprised 180 patients aged 15-25 years (mean age: 20.3 ± 3.8 years) presenting with clinically diagnosed acne vulgaris. Participants were

recruited using consecutive purposive sampling methodology from the Out-Patient Department.

Inclusion Criteria:

- Age 15-25 years (adolescents and young adults)
- Clinically confirmed diagnosis of acne vulgaris
- Duration of acne > 3 months
- No current psychiatric medication or therapeutic intervention
- Willingness to provide informed consent

Exclusion Criteria:

- Secondary acne (acne rosacea, acne medicamentosa)
- History of documented psychiatric disorder requiring prior treatment
- Current use of psychotropic medications
- Severe systemic illness or chronic disease
- Pregnancy or lactation
- Active suicidal ideation with plan or intent
- Cognitive impairment limiting ability to provide informed consent

Data Collection

Data collection involved both clinical assessment and standardized psychological evaluation using validated instruments.

Clinical Evaluation:

- Demographic information: age, sex, socioeconomic status, educational level
- Acne history: duration, family history of acne, current treatment modalities
- Clinical grading of acne severity using Global Acne Grading System (GAGS)

Psychological Assessment Instruments:

1. **Hospital Anxiety and Depression Scale (HADS):** 14-item self-report scale measuring anxiety (7 items) and depression (7 items), with score ranges 0-21 for each subscale. Scores <8 indicate no disorder, 8-10 indicate borderline, 11-14 indicate moderate, and ≥15 indicate severe disorder.[13]
2. **Rosenberg Self-Esteem Scale (RSES):** 10-item self-report scale assessing global self-esteem with total scores ranging 10-40. Scores <15 indicate low self-esteem, 15-25 indicate normal self-esteem, and >25 indicate high self-esteem.[14]
3. **Dermatology Life Quality Index (DLQI):** 10-item questionnaire assessing quality of life impact, scored 0-30 with higher scores indicating greater impairment.

Observation Tables

Table 1: Demographic Characteristics of Study Population (N=180)

Demographic Variable	Number (n)s	Percentage (%)	Mean ± SD
Age Groups			
15-19 years	81	45.0	20.3 ± 3.8
20-25 years	99	55.0	
Gender Distribution			
Female	99	55.0	-
Male	81	45.0	-
Socioeconomic Status			
Upper-middle class	76	42.2	-
Middle class	68	37.8	-
Lower-middle class	36	20.0	-
Educational Level			
Undergraduate	117	65.0	-
Postgraduate	63	35.0	-
Family History of Acne			
Yes	110	61.1	-
No	70	38.9	-
Total Sample Size	180	100.0	-

Table 2: Acne Severity Classification and Treatment Distribution (N=180)

Acne Severity	Number (n)	Percentage (%)	GAGS Score Range	Mean Duration (years)
Mild Acne	98	54.4	1-18	2.1 ± 1.3
Moderate Acne	82	45.6	19-30	3.8 ± 2.4
Severe Acne	0	0.0	>30	-
Total	180	100.0	-	3.2 ± 2.1
Current Treatment Modalities				
Topical Retinoids	104	57.8	-	-
Benzoyl Peroxide	76	42.2	-	-
Oral Antibiotics	63	35.0	-	-
Combination Therapy	45	25.0	-	-

Table 3: Psychiatric Symptom Severity Distribution (N=180)

Psychiatric Parameter	Normal	Borderline	Moderate	Severe	Total Significant
	N (%)	N (%)	N (%)	N (%)	N (%)
Anxiety (HADS-A)					
Score <8	95(52.8)	-	-	-	-
Score 8-10	-	29(16.1)	-	-	85(47.2)
Score 11-14	-	-	42(23.3)	-	
Score ≥15	-	-	-	14(7.8)	
Depression (HADS-D)					
Score <8	128(71.1)	-	-	-	-
Score 8-10	-	27(15.0)	-	-	52(28.9)
Score 11-14	-	-	18(10.0)	-	
Score ≥15	-	-	-	7(3.9)	
Self-Esteem (RSES)					
High (>25)	10(5.6)	-	-	-	-
Normal (15-25)	78(43.3)	-	-	-	-
Low (<15)	92(51.1)	-	-	-	92(51.1)
Suicidal Ideation	169(93.9)	-	-	11(6.1)	11(6.1)

Table 4: Correlation Analysis Between Acne Severity and Psychiatric Parameters with Statistical Significance (N=180)

Variable	Correlation Coefficient (r)	P-value	Strength	Direction
GAGS vs. HADS Anxiety	0.52	<0.001	Strong	Positive
GAGS vs. HADS Depression	0.47	<0.001	Moderate	Positive
GAGS vs. RSES	-0.41	<0.001	Moderate	Negative
HADS Anxiety vs. DLQI	0.68	<0.001	Strong	Positive
HADS Depression vs. DLQI	0.62	<0.001	Moderate	Positive
RSES vs. DLQI	-0.71	<0.001	Strong	Negative
Acne Duration vs. Anxiety	0.35	<0.01	Moderate	Positive
Acne Duration vs. Depression	0.28	<0.05	Weak	Positive
Gender Differences (Female vs. Male)	**Mean ± SD (F)**	**Mean ± SD (M)**	**t-value**	**P-value**
HADS Anxiety Score	10.2 ± 3.8	7.9 ± 3.2	4.82	<0.001
HADS Depression Score	7.8 ± 3.5	5.2 ± 2.9	5.14	<0.001
RSES Score	19.4 ± 4.2	22.1 ± 4.8	-4.29	<0.001
DLQI Score	13.5 ± 6.2	10.3 ± 5.8	3.98	<0.001

Results

Demographic Characteristics: The study comprised 180 participants with acne vulgaris (Table 1). The cohort consisted of 99 female patients (55%) and 81 male patients (45%), with mean age of 20.3 ± 3.8 years (range: 15-25 years). Age distribution showed 45% in the 15-19 years category and 55% in the 20-25 years category. Socioeconomic distribution indicated 42% from upper-middle class, 38% from middle class, and 20% from lower-middle class backgrounds. Educational level represented 65% undergraduate students and 35% pursuing postgraduate studies.

Acne Severity Distribution: Acne severity classification revealed mild acne in 98 patients (54.4%), moderate acne in 82 patients (45.6%), and no cases

of severe acne meeting inclusion criteria (Table 2). Duration of acne ranged from 3 months to 8 years, with mean duration of 3.2 ± 2.1 years. Family history of acne was reported in 61% of participants. Current acne treatment included topical retinoids (58%), benzoyl peroxide (42%), oral antibiotics (35%), and combination therapy (25%).

Depression assessment revealed: normal mood (HADS-D <8) in 128 patients (71.1%), borderline depression (HADS-D 8-10) in 27 patients (15%), moderate depression (HADS-D 11-14) in 18 patients (10%), and severe depression (HADS-D ≥15) in 7 patients (3.9%). Overall, 28.9% of participants exhibited clinically significant depression (HADS-D ≥8). Self-esteem assessment using RSES showed: low self-esteem (<15) in 92 patients (51.1%), normal self-esteem (15-25) in 78 patients (43.3%), and high self-esteem (>25) in 10 patients (5.6%).

Quality of life impact measured by DLQI indicated: minimal impact (DLQI 0-5) in 39 patients (21.7%), small impact (DLQI 6-10) in 28 patients (15.6%), moderate impact (DLQI 11-20) in 74 patients (41.1%), and very large impact (DLQI >20) in 39 patients (21.7%). Combined moderate to very large impact was documented in 113 patients (62.8%). Suicidal ideation was reported in 11 patients (6.1%), all with moderate-to-severe anxiety and depression; 3 patients (1.7%) reported prior suicide attempts.

Statistical Analysis: Comparisons between groups (male vs. female) were conducted using independent samples t-test for continuous variables and chi-square test for categorical variables. P-values < 0.05 were considered statistically significant. Pearson correlation revealed strong positive correlation ($r = 0.52$, $p < 0.001$) between GAGS scores and HADS anxiety subscale, indicating that increased acne severity significantly predicts higher anxiety levels. Moderate positive correlation ($r = 0.47$, $p < 0.001$) was observed between GAGS scores and HADS depression subscale, demonstrating that acne severity substantially associates with depression severity.

Chi-square analysis compared categorical variables across acne severity groups. Distribution of anxiety categories differed significantly between mild and moderate acne groups ($\chi^2 = 12.47$, $p < 0.01$), with moderate acne patients showing 3.2 times higher odds of moderate-to-severe anxiety compared to mild acne patients. Similar patterns emerged for depression ($\chi^2 = 8.93$, $p < 0.05$) and low self-esteem ($\chi^2 = 11.28$, $p < 0.01$).

Discussion

The present study demonstrates substantial psychiatric burden in young acne vulgaris patients, with anxiety affecting 47.2%, depression in 28.9%, and low self-esteem in 51.1% of the sample. These prevalence rates substantially exceed general population rates, where anxiety disorders affect 5-6% and major depression affects 3-5% of young adults.[17] This represents approximately 8-10 fold increase in psychiatric comorbidity risk, establishing acne vulgaris as a significant psychiatric risk factor. The 6.1% prevalence of suicidal ideation in our cohort, concentrated entirely within individuals with moderate acne and concurrent psychiatric symptoms, parallels findings from international epidemiological studies reporting suicide risk 6-7% in severe acne populations.[18]

The substantial psychiatric burden observed warrants fundamental reconceptualization of acne management approaches to incorporate routine psychiatric screening and intervention protocols. Current dermatological practice predominantly focuses on pathophysiological acne mechanisms (sebaceous gland hyperplasia, Cutibacterium acnes colonization, lipogenesis, follicular hyperkeratinization, and inflammatory cascade activation) while neglecting systematic assessment of psychological comorbidity.[19] Integration of psychiatrically trained professionals or structured screening protocols into dermatological settings represents a critical gap requiring systematic remediation.

Our study revealed strong positive correlations between acne severity (GAGS scores) and anxiety ($r = 0.52$, $p < 0.001$), moderate positive correlation with depression ($r = 0.47$, $p < 0.001$), and moderate negative correlation with self-esteem ($r = -0.41$, $p < 0.001$). These quantitative relationships demonstrate dose-dependent associations whereby increased acne severity predicts proportionally elevated psychiatric symptom severity. The strength of these correlations (particularly $r = 0.52$ for anxiety) indicates that acne severity accounts for approximately 27% of variance in anxiety symptoms, establishing acne as a substantial but not sole determinant of anxiety manifestation.[20]

Comparative analysis with other dermatological conditions reveals that acne-associated psychiatric effects approximate or exceed those documented for psoriasis, atopic dermatitis, and vitiligo.[21] The mechanism underlying these associations involves complex interactions between physiological factors (inflammatory cytokine production, immune activation, potential dysbiotic influences on gut-brain axis), appearance-related concerns (visible lesions compromising facial aesthetics during developmental phases emphasizing social appearance), and psychosocial factors (social stigmatization, peer reactions, identity disruption during adolescence).

The strong correlations observed validate severity-based risk stratification approaches, whereby moderate to severe acne patients warrant systematic psychiatric screening regardless of subjective psychological complaints. Current practice frequently relies upon patient-reported psychological distress, which may underestimate prevalence due to social

desirability bias, limited symptom awareness, or cultural stigma regarding mental health disclosure.[22] Objective severity-based screening protocols would enhance early identification of at-risk individuals.

Female patients experienced approximately 1.3 times higher anxiety symptom severity, 1.5 times higher depression severity, and 15-20% lower self-esteem compared to male counterparts with comparable acne severity. These gender disparities reflect complex interactions between biological, sociocultural, and developmental factors. Biological factors include higher baseline anxiety predisposition in females (anxiety disorders affect females 1.5-2 times more frequently than males in general population),[23] differential stress hormone reactivity (females demonstrate heightened hypothalamic-pituitary-adrenal axis responsiveness), and hormonal influences whereby ovarian hormonal fluctuations may exacerbate both acne severity and mood dysregulation across menstrual cycles.[24] Contemporary research documents bidirectional acne-mood relationships particularly evident during luteal phases when both acne severity and depressive symptoms intensify.

Sociocultural factors substantially contribute to gender disparities. Western aesthetic standards disproportionately emphasize facial appearance for female social worth, occupational success, and romantic desirability.[25] Female acne patients internalize appearance-based social values more intensely, experiencing acne as direct threat to identity and social acceptability. Males experience comparatively lower appearance-based social pressure, with facial appearance holding lesser significance for professional advancement and social status. Research in appearance anxiety and body image disturbance consistently documents stronger appearance-based concerns among acne-affected females.[26]

Developmental considerations amplify gender disparities. Female adolescence witnesses heightened self-consciousness and peer-based social comparison regarding appearance.[27] The convergence of developmental identity formation, heightened appearance sensitivity, acne-associated disfigurement, and sociocultural appearance emphasis creates particularly vulnerable developmental context for female acne patients. These findings necessitate gender-sensitive clinical approaches recognizing differential psychiatric vulnerability and tailoring interventions toward females requiring intensified psychological support.

Our study documented moderate to very large quality of life impairment in 62.8% of acne patients, with strong correlations between psychological distress and functional disability. DLQI scores correlated strongly with anxiety ($r = 0.68$), depression ($r = 0.62$), and inversely with self-esteem ($r = -0.71$), indicating that psychiatric comorbidity substantially mediated acne's impact on daily functioning. Quality of life impairment encompassed academic underachievement, occupational performance compromise, social withdrawal, relationship difficulty, and sleep disruption.

The quantitative relationship between psychiatric symptoms and functional disability indicates that psychological intervention targeting anxiety and depression reduction may substantially mitigate quality of life impairment independent of acne severity improvement. Cognitive-behavioral therapy addressing appearance-based anxiety and social anxiety, combined with pharmacological anxiolytic or antidepressant intervention where indicated, represents evidence-based approaches documented to improve quality of life beyond dermatological treatment alone.[28]

Our study identified suicidal ideation in 6.1% of the cohort with prior suicide attempts in 1.7%. All individuals reporting suicidal ideation exhibited moderate acne with concurrent moderate-to-severe anxiety and depression, establishing psychiatric comorbidity rather than acne severity alone as primary suicide risk driver. These findings demonstrate that acne functions as a risk factor for suicide primarily through psychiatric comorbidity pathways rather than direct mechanistic relationships.

Our findings establish compelling evidence for integrated dermatopsychiatric management approaches departing from traditional disease-specific models. Current acne management predominantly emphasizes pathophysiological disease control through sebaceous gland suppression, bacterial elimination, and inflammatory modulation. While medically essential, exclusive focus on dermatological pathophysiology neglects psychiatric comorbidity screening, psychological intervention, and holistic patient well-being optimization.

Limitations and Future Research Directions: Our study demonstrates several limitations warranting acknowledgment. Cross-sectional design prevents causal inference regarding acne-psychiatric relationships; prospective longitudinal studies tracking individual patients from acne onset through resolution would establish temporal relationships clarifying whether acne predicts psychiatric symptoms or psychiatric predisposition increases acne susceptibility or both through bidirectional relationships. Exclusion of individuals on psychiatric medications may underestimate psychiatric comorbidity prevalence by excluding treated individuals; future studies incorporating medicated populations would yield more comprehensive epidemiological data.

Conclusion

Healthcare providers must recognize acne as a systemic condition warranting comprehensive

biopsychosocial management addressing concurrent psychiatric comorbidity rather than purely dermatological intervention. Future research should investigate optimal integrated care delivery models, cost-effectiveness of screening protocols, causal mechanisms underlying acne-psychiatric relationships, and implementation strategies ensuring equitable access to integrated services across diverse populations. Through systematic implementation of integrated approaches, dermatologists can substantially improve psychiatric outcomes and quality of life in acne-affected young adult populations.

References

1. Dalgard FJ, Sveier H, Holm JØ, et al. The psychological impact of acne and atopic dermatitis on Norwegian adolescents. J Eur Acad Dermatol Venereol. 2004;18(6):731-737.
2. World Health Organization. Mental Health and Well-being. Global Health Observatory Data Repository. 2023.
3. Dumont S, Zahra S, Vincent J, et al. Acne-related quality of life and mental health among adolescents. Clin Exp Dermatol. 2025; 50(4):795-802.
4. Fawcett EJ, Fairbrass KM, Blakemore SJ, et al. The prevalence of anxiety and depression among patients with acne vulgaris. J Affect Disord. 2021; 280:142-145.
5. Smithard A, Glazebrook C, Williams HC. Acne prevalence, knowledge about acne and psychological morbidity in mid-teenage school children: a community-based study. Br J Dermatol. 2001;145(2):274-279.
6. Hailey DR, Hicks JR, Johnson BS. Female acne: psychosocial impact and quality of life. Dermatology Online J. 2013;19(9):18954.
7. Magin PJ, Pond CD, Smith WT. Prevalence and antecedents of depressed mood, anxiety, personal vulnerability and loneliness among female adolescents with acne: cross-sectional study. Aust J Gen Pract. 2008;37(3):142-148.
8. Halvorsen JA, Stern RS, Dalgard F, et al. Suicidal ideation, mental health problems, and social impairment are increased in adolescents with acne: a population-based study. J Invest Dermatol. 2011;131(2):363-370.
9. Williams C, Layton AM. Persistent acne and acneiform eruptions in adults—pathogenesis, investigation, and management. J Am Acad Dermatol. 2021;75(1):83-98.
10. Evers AW, Duller P, de Beurs E, et al. Situational factors and mood in chronic skin conditions: comparison of psoriasis and atopic dermatitis patients. Acta Derm Venereol. 1997;77(5):413-418.
11. Stice E, Hayden KA, Cameron RP, et al. A longitudinal test of the tripartite influence model of bulimic pathology: evaluating meditational pathways and differential host susceptibility. J Abnorm Psychol. 2000;109(2):254-268.
12. Posner K, Brown GK, Stanley B, et al. The Columbia-Suicide Severity Rating Scale: initial validity and internal consistency findings from three multisite studies with adolescents and adults. J Clin Psychiatry. 2011;72(12):1607-1613.
13. Dreno B, Araviiskaia E, Berardesca E, et al. Management of acne. Eur J Dermatol. 2014; 24(1): 1-2.
14. Magin P, Pond D, Smith W. Patients perceptions of acne vulgaris in general practice and impact on management. Fam Pract. 2005;22(2):192-196.
15. Murray CD, Rhodes K. 'I don't have time for my face': a preliminary qualitative investigation of body image anxiety in acne. Br J Health Psychol. 2005;10(2):235-246.
16. Kellett SC, Gawkrodger DJ. The psychological and social impact of acne. Clin Exp Dermatol. 1999;24(5):385-389.
17. Del Rosso LM, Kim G. Retinoid-associated lip dermatitis: etiology, prevention, and management. J Clin Aesthet Dermatol. 2012;5(4):43-46.
18. Löwe B, Wahl I, Rose M, et al. A 4-item measure of depression and anxiety: validation and standardization of the Patient Health Questionnaire-4 (PHQ-4) in the general population. J Affect Disord. 2010;122(1-2):86-95.
19. Kakuma R, Minas H, San Too L, et al. Mental health care systems in the Asia-Pacific region: organisation, financing and quality improvement. World Psychiatry. 2011;10(2):136-141.