



## ACNE VULGARIS AND ITS EFFECT ON QUALITY OF LIFE: A CROSS-SECTIONAL STUDY

Dr Pallabi Hatikakoty<sup>1\*</sup>, Dr. Krishna Talukdar<sup>2</sup>, Dr. Minakshi Narah<sup>3</sup>, Dr. Balu Haridas<sup>4</sup>, Dr. Harmeet Singh<sup>5</sup>, Dr. Satyendra Singh<sup>6</sup>

<sup>1\*</sup> Junior Resident, Department of Dermatology, Venereology and Leprosy, Jorhat Medical College and Hospital, Jorhat Assam

<sup>2</sup> Professor and HOD, Department of Dermatology, Venereology and Leprosy Jorhat Medical College and Hospital, Jorhat, Assam

<sup>3</sup> Assistant professor, Department of Dermatology, Venereology and Leprosy Jorhat Medical College and Hospital, Jorhat, Assam

<sup>4</sup> Junior Resident, Department of Dermatology, Venereology and Leprosy, Jorhat Medical College and Hospital, Jorhat Assam

<sup>5</sup> Junior Resident, Department of Dermatology, Venereology and Leprosy, Jorhat Medical College and Hospital, Jorhat Assam

<sup>6</sup> Junior resident, Department of Dermatology, Venereology and Leprosy Jorhat Medical College and Hospital, Jorhat, Assam

**\*Corresponding Author:** Dr. Pallabi Hatikakoty

\*Junior Resident, Jorhat Medical College, Department of Dermatology, Venereology and Leprosy, Jorhat, Assam. Email id – pallabihatikakoty95@gmail.com

Dermatology Full address for Hard copy with name : Dr. Pallabi Hatikakoty, Nazira Town, Sivasagar, Assam. PO- Nazira, Pin code-785685, Mobile No-8011166944

### Abstract

**Background:** Acne vulgaris, a widespread dermatological condition, significantly impacts the quality of life of affected individuals, particularly adolescents and young adults. While not life-threatening, its psychosocial and emotional effects can be profound, influencing self-esteem and social interactions. In this study we aimed to look at the proportion of acne vulgaris and its effect on quality of life among patients attending Dermatology OPD in JMCH. **Methodology:** This one-year, tertiary hospital-based cross-sectional study investigated the impact of acne on 200 patients. The research aimed to determine the prevalence of acne vulgaris among dermatology outpatients at JMCH and to establish an association between acne severity and quality of life. The interview involved detailed patient history, comprehensive cutaneous and psychological examinations, and the recording of disease severity using the Global Acne Grading System (GAGS) score. The Dermatology Life Quality Index (DLQI) questionnaire assessed the impact on quality of life. **Results:** The study found an average patient age of  $24.34 \pm 6.29$  years, with a predominance of females and facial involvement. While Grade III was the most common grade of acne, the mean GAGS score was  $9.98 \pm 5.06$ , indicating that mild acne was most prevalent overall. The average DLQI score was  $31.42 \pm 25.30$ , revealing a significant impact on quality of life across participants. Specifically, 24.5% experienced a very large effect, 35.5% a moderate effect, 3.5% an extremely large effect, and 28.5% a small effect on their quality of life. **Conclusion:** Acne vulgaris extends beyond a cosmetic issue, profoundly affecting emotional and psychological well-being. The study confirms a direct correlation between

increased disease severity and a greater impact on quality of life. Effective treatment must therefore address both the physical manifestations and the mental health aspects to improve overall patient outcomes.

**Keywords:** Acne vulgaris, Quality of life, GAGS, DLQI

## Introduction

Acne vulgaris is a chronic inflammatory condition that affects the pilosebaceous unit. It most commonly appears on hands, upper back, chest and face. Teenagers are affected more commonly (85%) but the condition can continue into adulthood in about half of them. Deep lesions can lead to hyperpigmentation & scarring (1). Increase in collagen can turn the scars into hypertrophic & keloidal. Presence of this condition dramatically affects individual with severe emotional & psychological problems which can last long even after the lesions have healed (2). To comprehend the entire extent of the disease burden and ascertain the efficacy of therapy, it is crucial to assess the influence of acne on health-related quality of life. Research on the longer-term impacts of acne on well-being is still in its initial stages, despite the disease's high prevalence. A person's social, occupational, and personal life are all affected by the enormous and far-reaching effects of acne vulgaris on their self-esteem and confidence.

## Aims and objectives

To estimate the disease burden of acne vulgaris & its associations, with our objectives as to study the proportion of acne vulgaris & to determine the association between severity of acne vulgaris and quality of life in patients attending Dermatology, Venereology and Leprosy OPD in JMCH.

## Methodology

Ethical approval was obtained from the Institutional Ethics Committee of Jorhat Medical College and Hospital (memo number before the study commenced). This cross-sectional observational study was conducted in the Department of Dermatology, Venereology, and Leprosy at Jorhat Medical College and Hospital from November 2023 to October 2024. A sample size of 200 patients was determined using a prevalence rate of 87%, a 95% confidence interval, and a 5% margin of error, adjusted for a 10% non-response rate. Consecutive sampling was employed to select patients aged 15 years and above diagnosed with acne vulgaris who provided informed consent. Data collection involved detailed medical history, examinations, GAGS for severity, and DLQI for quality-of-life impact. The Tools used were GAGS (to evaluate and classify the severity of Acne vulgaris lesions and the patient's response to treatment) & DLQI Questionnaire: A 10-item questionnaire designed for adults, assessing various aspects that may affect the quality of life.

## Results

**Table 1: Demographic factors of people diagnosed with Acne vulgaris (n=200)**

Sl no	Variable	Category	Frequency (n)	Percentage (%)
1.	Age	15-20 years	58	29
		21-25	73	36.5
		26-30	40	20
		31-35	16	8
		>35 years	13	6.5
2.	Sex	Female	123	61.5
		Male	77	38.5
3.	Occupation	Self-employed	5	2.5
		Housewife	8	4
		Job	40	20
		Student	123	61.5
		Unemployed	24	12
4.	Smoking/Alcohol consumption	Alcohol only	23	11.5
		Smoking only	2	1

	Smoking & Alcohol	8	4
	Nil	167	83.5

The demographic characteristics of the study population are detailed in Table 1. The majority of participants were in the 21–25-year age group (36.5%), followed by the 15–20-year age group (29%). Females constituted 61.5% of the sample. The most common occupation was student (61.5%). A significant majority of the participants (83.5%) reported no history of smoking or alcohol consumption.

**Table 2: Grading of Acne vulgaris (n=200)**

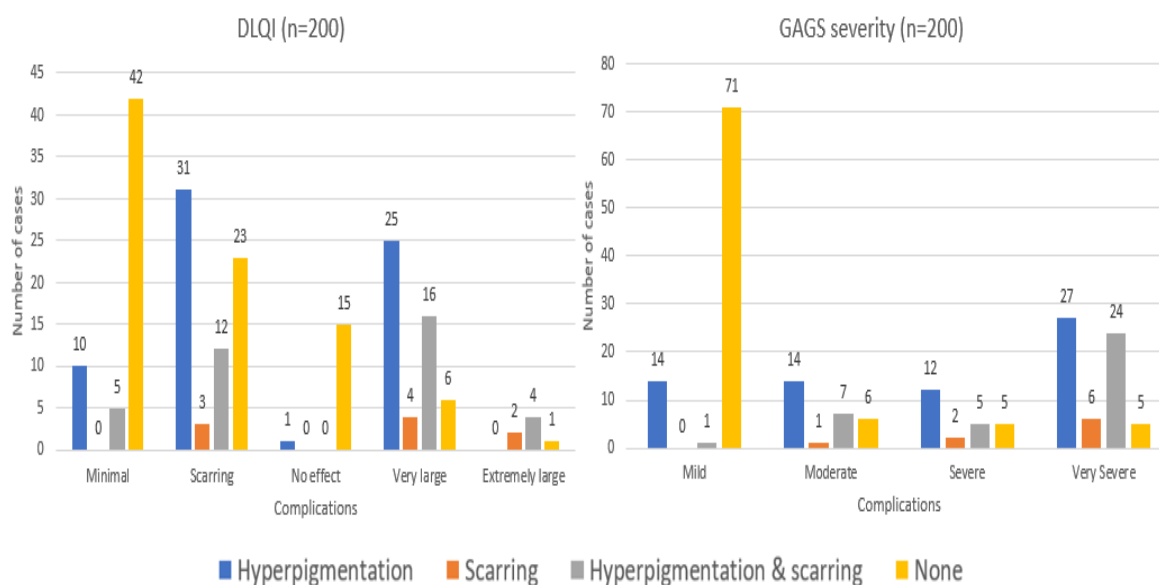
Sl No	Grade of Acne	Frequency	Percentage
1.	I	25	12.50
2.	II	71	33.50
3.	III	81	40.50
4.	IV	23	11.50

The clinical severity of acne, graded from I to IV, is presented in Table 2. The most frequently observed grades were Grade III (40.5%) and Grade II (33.5%). Grade I and Grade IV were less common, representing 12.5% and 11.5% of cases, respectively.

**Table 3 Frequency of patients affected by disease and its impact on their life according to DLQI (n=200)**

SL No	DLQI score range	DLQI Impact	No of cases	Percentage	Mean $\pm$ SD
1.	0-1	No effect	16	8	0.93 $\pm$ 5.09
2.	2-5	Minimal effect	57	28.5	4.45 $\pm$ 1.01
3.	6-10	Moderate effect	71	35.5	8.35 $\pm$ 1.40
4.	11-20	Very large effect	49	24.5	14.14 $\pm$ 2.07
5.	21-30	Extremely large effect	7	3.50	22.00 $\pm$ 1.41

The impact of acne on patients' quality of life was assessed using the Dermatology Life Quality Index (DLQI), as shown in Table 3. A moderate effect (DLQI score 6-10) was reported by the largest group of patients (35.5%). A minimal effect (28.5%) and a very large effect (24.5%) were also substantially represented. A small proportion of patients reported no effect (8%) or an extremely large effect (3.5%).



The analysis revealed a clear trend between post-acne complications and disease burden. Patients with no complications were concentrated in the low-impact DLQI categories and the mild GAGS severity group. Hyperpigmentation was the most frequent complication found in patients with moderate-to-very-large DLQI impacts and moderate-to-severe GAGS scores. The combination of hyperpigmentation and scarring was most prominent at the highest severity levels, dominating the very severe GAGS category and the extremely large DLQI impact group.

**Table 4: GAGS severity based on DLQI interpretation (n=200)**

Sl No	GAGS severity	DLQI impact					
		No effect	Minimal effect	Moderate effect	Very large effect	Extremely large effect	Total
1.	Mild	16	47	21	2	0	86
2.	Moderate	0	8	15	5	0	28
3.	Severe	0	1	16	7	0	24
4.	Very severe	0	1	19	35	7	62
5.	Total	16	57	71	49	7	200

Table 4 presents the cross-tabulation of Global Acne Grading System (GAGS) severity and DLQI impact. A positive correlation was observed between clinical severity and impairment in quality of life. Patients with mild GAGS predominantly reported no or minimal effect on their DLQI (n=16 and n=47, respectively). Conversely, as GAGS severity increased, the DLQI impact became more pronounced. All patients (n=62) with very severe acne reported moderate to extremely large effects on their quality of life. Similarly, the majority of patients with severe GAGS (n=23 of 24) reported moderate or very large effects.

### Discussion

This study analysed 200 cases of acne vulgaris at a single centre over one year. The mean patient age was 24.34 years, with the 21-25 age group being the largest (36.5%). This aligns with studies by Nair et al (3) & Reza Ghaderi et al (4) but contrasts with other study by Shabnam et al (5) reported a lower mean age. Females were more frequently affected (61.5%), a trend consistent with some reports by Eleni Tasoula et al (6) and Shabnam et al (5) but differing from another study by Hanisah et al (7) others that showed higher male prevalence. Clinically, acne was most often localized to the face (77.5%). Grade III (40.5%) and Grade II (35.5%) were the most common diagnoses, findings that are broadly consistent with previous literature by Gupta et al (8). Post-inflammatory hyperpigmentation was a frequent complication (43.5%). A positive family history was noted in 15% of cases. Various aggravating factors were reported, including premenstrual flares (33.3%), stress (11.5%), diet, and seasonal worsening in summer (17.5%). While the prevalence of these factors was lower than some reports, their association with acne is supported by other research from Gupta et al (8) and Sardana K et al (9). The impact on quality of life was significant, with the DLQI assessment revealing a moderate effect in the largest patient group (35.5%), a finding well-supported studies by Hazarika N et al (10), Pillai et al (11). While this study provides valuable regional data on the link between acne severity and psychological well-being, it is limited by its cross-sectional design and sample size. The subjective nature of self-administered questionnaires like the DLQI also presents a potential for information bias.

### Conclusion

This study confirms that the severity of acne vulgaris and its complications, such as hyperpigmentation and scarring, directly correlates with a significant decline in patients' psychological well-being and quality of life (QOL). This highlights the necessity for dermatologists to integrate routine QOL assessments into patient evaluations to fully gauge the disease's burden and effectively monitor treatment responses. Management should extend beyond pharmacotherapy to a multidisciplinary approach that includes psychological support and counselling, particularly for moderate to severe cases. Furthermore, developing and validating culturally relevant QOL assessment

tools is recommended to better address the needs of the local population and improve overall patient outcomes.

### **Recommendation**

Given the high prevalence of post-inflammatory hyperpigmentation (PIH) observed in this study, clinicians should prioritize the early and effective management of inflammatory acne to prevent this common complication. Patient education should emphasize strategies for managing identified dietary triggers and the seasonal worsening of acne during summer months. Integrating routine quality-of-life (QOL) assessments is crucial for addressing the significant psychosocial burden observed in young adults. A holistic approach combining medical treatment with psychological support is therefore essential for improving overall patient outcomes.

**Funding:** Nil

**Conflict of interest:** Nil

### **List of reference**

1. IADVL TEXTBOOK OF DERMATOLOGY 3 VOLUMES SET – Dattani Book Agency [Internet]. [cited 2025 Jun 5]. Available from: <https://dattanibookagency.in/products/iadvl-textbook-of-dermatology-3-volumes-set>
2. Khan SN, Hussain S, Beg MA, Raihan M. Acne Vulgaris and its Effect on Quality of Life: A Cross-Sectional Study. *Int Arch Biomed Clin Res*. 2018;160–4.
3. Durai PCT, Nair DG. Acne vulgaris and quality of life among young adults in South India. *Indian J Dermatol*. 2015;60(1):33–40.
4. Ghaderi R, Saadatjoo A, Ghaderi F. Evaluating of life quality in patients with acne vulgaris using generic and specific questionnaires. *Dermatol Res Pract*. 2013;2013:108624.
5. . S. A Study on Prevalence of Acne Vulgaris and Its Impact on Quality of Life in Adolescents of Kendriya Vidyalaya's of Jalahalli Area of Bangalore. *Int J Health Sci Res*. 2021 Sep 7;11(9):33–40.
6. Tasoula E, Gregoriou S, Chalikias J, Lazarou D, Danopoulou I, Katsambas A, et al. The impact of acne vulgaris on quality of life and psychic health in young adolescents in Greece. Results of a population survey. *An Bras Dermatol*. 2012;87(6):862–9.
7. Hanisah A, Omar K, Shah SA. Prevalence of acne and its impact on the quality of life in school-aged adolescents in Malaysia. *J Prim Health Care*. 2009 Mar;1(1):20–5.
8. Gupta A, Sharma YK, Dash KN, Chaudhari ND, Jethani S. Quality of life in acne vulgaris: Relationship to clinical severity and demographic data. *Indian J Dermatol Venereol Leprol*. 2016;82(3):292–7.
9. Sardana K, Sharma RC, Sarkar R. Seasonal variation in acne vulgaris--myth or reality. *J Dermatol*. 2002 Aug;29(8):484–8.
10. Hazarika N, Rajaprabha RK. Assessment of Life Quality Index Among Patients with Acne Vulgaris in a Suburban Population. *Indian J Dermatol*. 2016;61(2):163–8.
11. Pillai RT, Ms S, Mysa. A cross-sectional study on the assessment of dermatology life quality index among the adolescents and young adults with acne vulgaris in south Indian population. *IP Indian J Clin Exp Dermatol* [Internet]. 2025 Apr 24 [cited 2025 Jun 11];4(4). Available from: <https://ipindexing.com/article/69062>