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Original Research Article

Clinical Patterns and Prevalence of Acne Vulgaris: A Cross-Sectional Study

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Abstract:

Background: Acne vulgaris is a common chronic inflammatory disorder of the pilosebaceous unit, predominantly affecting adolescents and young adults, with significant psychosocial impact.

Aim: To assess the clinical patterns, prevalence, treatment-seeking behavior, and quality-of-life impact of acne vulgaris.

Methodology: A hospital-based cross-sectional study was conducted among 150 patients aged 15–35 years attending a Department of Skin, Venereology and Leprosy, Sheikh Bhikhari Medical College and Hospital, Hazaribagh, Jharkhand, India. Data were collected using a structured questionnaire and detailed dermatological examination. Statistical analysis was performed using SPSS.

Results: Females constituted 64% of participants, with the highest prevalence in the 21–25-year age group (36.7%). Papular (48%) and comedonal (45.3%) acne were the most common types, while moderate acne predominated (46%). The face was the most frequently affected site (92%). Acne significantly affected quality of life, with low self-esteem (38.7%) and disturbed body image (32.7%) being common. Increasing severity showed a significant association with worsening psychosocial impact ($p < 0.01$). Over-the-counter medications (60.7%) and dermatologist consultation (55.3%) were the most common treatment approaches.

Conclusion: Acne vulgaris is highly prevalent among young adults and is associated with considerable psychosocial burden, particularly in moderate to severe cases, underscoring the need for early and comprehensive management.

Keywords: Acne Vulgaris, Prevalence, Clinical Patterns, Quality of Life, Cross-Sectional Study.

Introduction

Acne vulgaris is one of the most common chronic dermatological conditions worldwide and represents a significant public health concern, particularly among adolescents and young adults. It is a distressing condition that affects not only the physical appearance of individuals but also their emotional, social, and psychological well-being. The onset of acne typically coincides with puberty, a critical developmental period characterized by profound physical and psychosocial changes. As a result, the presence of acne during this vulnerable phase of life can have long-lasting impacts on self-esteem, interpersonal relationships, and overall quality of life.

Epidemiological studies indicate that acne vulgaris occurs in more than 80% of teenagers, making it virtually a universal feature of adolescence. However, this often-self-limiting condition may well persist into well into adulthood: in approximately 3% of men and 12% of women, it extends beyond the age of 25 years. Acne, therefore, cannot be regarded simply as a disease confined to adolescence but as a chronic disease for a significant section of the population. Its persistence into adult life makes the need to understand the clinical patterns, prevalence, and long-term impact on affected individuals, all the more important [1].

Acne vulgaris is a chronic inflammatory disease of the pilosebaceous unit, comprising the hair follicle and the attached sebaceous gland. Acne has a multifactorial pathogenesis that encompasses increased sebum production, follicular hyper keratinization, colonization by Cutibacterium acnes, and inflammatory mechanisms. Clinically, acne presents with several lesions varying in severity and morphology. The most common forms include non-inflammatory comedones-open and closed-as well as inflammatory papules and pustules. In more severe grades of acne, deeper inflammatory lesions such as nodules

and cysts may arise. Such severe lesions are far more likely to result in permanent scarring, post-inflammatory hyperpigmentation, and significant psychological anguish, thus further compounding the disease load [1].

Acne vulgaris prevalence and clinical presentation depend on several demographic and biological parameters such as age, gender, and race. Investigations have shown that acne prevalence varies according to age, with the highest during adolescence and early adulthood. Acne prevalence has also varied between genders, with the prevalence of acne being higher among males at approximately age 18 years. However, from the age of 23 onwards, clinically active acne is seen more in females because of the gradual reduction in prevalence among males. This could be due to variation in hormonal changes, living habits, use of cosmetics, and health-seeking behaviors of men and women [2]

Beyond physical manifestations, acne vulgaris also carries a great psychosocial burden. As many as one in three adolescents consider acne to be a major problem or burden for themselves in everyday life. Facial lesions often carry the accompanying stigma of embarrassment, social retreat, anxiety, and depression. Acne may have a negative impact on performance in school, among work peers, or in social situations. Despite its prevalence and impact, acne is often minimized as a disease by patients and healthcare systems alike. Accordingly, fewer than half of all cases of acne are diagnosed or treated by a physician; many individuals self-manage [3].

Self-management of acne is a common practice, especially among adolescents and young adults. Many people with the disorder use a variety of measures to deal with their disease without being advised or monitored professionally. These have included traditional or herbal remedies, frequent visits to beauty clinics, increased intake of water, and application of over-the-counter topical agents. During flare-ups of the disease, patients are more likely to use these alternative methods than to consult a doctor. This was indicative of poor awareness of available effective treatments, concern about medication side effects, and potential barriers to dermatological care [4].

Adding to the challenge of acne management is the reliance on non-medical sources for information. Most patients get their information about acne and how it is treated from non-physician sources, which include family members, friends, social networking sites, the internet, and estheticians [5]. Although some of them may be very helpful in divulging useful advice, others may spread misinformation, which may result in inappropriate practices of treatment, delays in seeking medical consultation, and aggravation of the disease condition. Easy access to unregulated information calls for a need to assess the accuracy and utility of the resources that are commonly used by patients.

The high prevalence, chronic nature, and impact of acne vulgaris on quality of life underscore the need for studies on the clinical patterns of the disease, as well as patients' behaviors, perceptions, and sources of knowledge. Understanding how different age groups are affected, how patients seek treatment, and where they obtain information will be helpful in targeted educational interventions by healthcare providers and in improving patient outcomes. Moreover, assessment of the psychological and quality-of-life impact of acne might highlight the need for early diagnosis and identification of comprehensive management strategies that deal with both the physical and emotional aspects of the disease.

Thus, this cross-sectional study intends to find the prevalence of acne vulgaris within different age groups, treatment-seeking practices, and sources of information about the treatment of acne. The study also aims to understand the effect of acne vulgaris on the quality of life and psychological status of the affected individuals. In this way, it is intended to provide relevant information that could result in improved patient education, better management strategies, and overall care for those suffering from acne vulgaris.

Methodology

Study Design: This was a hospital-based cross-sectional observational study conducted to assess the prevalence and clinical patterns of acne vulgaris among patients attending a tertiary care center.

Study Area: The study was carried out in the Department of Skin, Venereology and Leprosy, Sheikh Bhikhari Medical College and Hospital, Hazaribagh, Jharkhand, India.

Study Duration: The study was conducted over a period for six months

Sample Size: The total sample size was 150 patients. The sample size was chosen based on feasibility and patient availability during the study period and was considered adequate to estimate the prevalence and describe the clinical patterns of acne vulgaris in the study population.

Study Population: The study population included patients aged 15–35 years attending the outpatient department of Dermatology (Skin, VD & Leprosy) at Sheikh Bhikhari Medical College and Hospital, who were diagnosed clinically with acne vulgaris during the study period.

Inclusion Criteria

- Patients aged 15–35 years
- Clinically diagnosed cases of acne vulgaris
- Patients attending the Dermatology OPD during the study period

- Patients who gave informed consent to participate in the study

Exclusion Criteria

- Patients below 15 years or above 35 years of age
- Patients with acneiform eruptions due to drugs or systemic diseases
- Patients with severe systemic illness
- Patients unwilling to give consent

Data Collection: Data were collected from patients attending the Dermatology Outpatient Department of the Department of Skin, Venereology and Leprosy at Sheikh Bhikhari Medical College and Hospital, Hazaribagh, Jharkhand. Eligible participants were identified based on the inclusion and exclusion criteria. After obtaining informed consent, each participant was interviewed using a pre-designed and structured questionnaire to record socio-demographic details and clinical history related to acne vulgaris. A detailed dermatological examination was conducted by a qualified dermatologist to assess the site, type, and severity of acne lesions. All observations were recorded systematically, and the collected data were compiled into a master sheet for further analysis.

Procedure

Eligible patients attending the Dermatology OPD were screened for acne vulgaris. After obtaining informed consent, participants were interviewed using the structured questionnaire. A detailed dermatological examination was performed to assess the type, site, and severity of acne lesions. The collected data were entered into a master chart for analysis.

Statistical Analysis: The data collected were entered into Microsoft Excel and subsequently analyzed using the Statistical Package for Social Sciences (SPSS) software. Continuous variables such as age were expressed as mean and standard deviation, while categorical variables such as gender, clinical type, and severity of acne were expressed as frequencies and percentages. Associations between categorical variables were assessed using the Chi-square test. A p-value of less than 0.05 was considered statistically significant."

Result

Table 1 summarizes the demographic characteristics of the 150 study participants, showing a predominance of females (96, 64%) compared to males (54, 36%). The majority of participants were aged 21–25 years (55, 36.7%), followed by those aged 15–20 years (42, 28%), indicating that acne was most common in young adults. Most participants were single (104, 69.3%), while 44 (29.3%) were married. Regarding education, over half were undergraduates (84, 56%), with 38 (25.3%) having high school education and 28 (18.7%) being postgraduates, reflecting a predominantly young and educated study population.

Table 1: Demographic Characteristics of the Study Participants (N = 150)

Parameter	Details	Count	Percentage (%)
Gender	Female	96	64
	Male	54	36
Age (years)	15 – 20	42	28
	21 – 25	55	36.7
	26 – 30	31	20.7
	31 – 35	22	14.6
Marital Status	Single	104	69.3
	Married	44	29.3
	Others	2	1.4
Educational Status	High school	38	25.3
	Undergraduate	84	56
	Postgraduate	28	18.7

Table 2 shows that among the 150 study participants, papular acne was the most common type, observed in 72 patients (48%), followed closely by comedonal acne in 68 patients (45.3%), while pustular and nodulocystic acne were seen in 39 (26%) and 21 (14%) patients, respectively. In terms of severity, moderate acne predominated, affecting 69 participants (46%), followed by mild acne in 63 (42%), whereas severe acne was relatively less common, noted in 18 participants (12%), indicating that most cases fell within the mild-to-moderate spectrum.

Table 2: Prevalence and Clinical Characteristics of Acne Vulgaris among Study Participants (N = 150)			
Parameter	**Details**	**Count**	**Percentage (%)**
Type of Acne*	Comedonal	68	45.3
	Papular	72	48
	Pustular	39	26
	Nodulocystic	21	14
Severity of Acne	Mild	63	42
	Moderate	69	46
	Severe	18	12

Table 3 demonstrates that acne lesions were most commonly distributed on the face, affecting 138 patients (92%), making it the predominant site of involvement. This was followed by the back in 66 patients (44%), the chest in 29 patients (19.3%), and the shoulders in 21 patients (14%). Overall, the table indicates that acne vulgaris predominantly involves exposed areas, particularly the face, with a substantial proportion also having truncal involvement.

Table 3: Distribution of Acne Lesions by Site (N = 150)		
Site of Involvement*	**Count**	**Percentage (%)**
Face	138	92
Back	66	44
Chest	29	19.3
Shoulders	21	14

Table 4 shows that acne vulgaris had a considerable impact on the quality of life of the 150 patients studied. Low self-esteem was the most frequently reported issue, affecting 58 patients (38.7%), followed by disturbed body image in 49 patients (32.7%). Affected daily activities, including study or work, were reported by 45 patients (30%), while avoidance of social activities was noted in 41 patients (27.3%). Overall, Table 4 highlights the substantial psychosocial and functional burden associated with acne vulgaris.

Table 4: Impact of Acne Vulgaris on Quality of Life (N = 150)		
Impact Parameter*	**Count**	**Percentage (%)**
Low self-esteem	58	38.7
Avoidance of social activities	41	27.3
Disturbed body image	49	32.7
Affected daily activities (study/work)	45	30

Table 5 demonstrates a significant association between acne severity and its negative impact on quality of life among 150 patients. The prevalence of low self-esteem increased progressively with severity, affecting 22.2% of patients with mild acne, 43.5% with moderate acne, and 77.8% with severe acne, which was statistically significant ($p = 0.001$). Similarly, disturbed body image was reported by 19.0% of mild, 37.7% of moderate, and 61.1% of severe acne patients ($p = 0.003$). The proportion of patients with affected daily activities also rose markedly from 15.9% in mild acne to 34.8% in moderate and 61.1% in severe cases, showing a significant association ($p = 0.002$). Overall, Table 5 highlights that increasing acne severity is strongly correlated with worsening psychosocial and functional impairment.

Table 5: Association between Acne Severity and Impact on Quality of Life (N = 150)				
Impact Parameter	**Mild (n = 63) n (%)**	**Moderate (n = 69) n (%)**	**Severe (n = 18) n (%)**	**p-value**
Low self-esteem	14 (22.2)	30 (43.5)	14 (77.8)	0.001
Disturbed body image	12 (19.0)	26 (37.7)	11 (61.1)	0.003
Affected daily activities	10 (15.9)	24 (34.8)	11 (61.1)	0.002

Table 6 describes the treatment-seeking behavior among acne patients (N = 150) and shows that a majority actively pursued some form of treatment. Over the counter (OTC) medications were the most commonly used modality, reported by 91 patients (60.7%), followed by dermatologist consultation in 83 patients (55.3%), indicating that more than half sought professional care. Home remedies were used by 48 patients (32%), reflecting reliance on traditional or self-care approaches, while 21 patients (14%) did not take any treatment. Overall, the table highlights a high level of treatment engagement,

with OTC products being slightly more prevalent than specialist consultation.

Table 6: Treatment-Seeking Behavior among Acne Patients (N = 150)		
Treatment Modality*	**Count**	**Percentage (%)**
Dermatologist consultation	83	55.3
Over-the-counter medication	91	60.7
Home remedies	48	32
No treatment taken	21	14

Discussion

In our cross-sectional study of 150 participants, the prevalence and clinical patterns of acne vulgaris were observed among young adults aged 15 to 35 years. Women constituted the majority in the study group, 64%, a fact that is in agreement with findings from a Saudi Arabian study on higher prevalence in females, Darwish & Al-Rubaya, 2013 [6], though different from the Syrian and UK studies, Al-Kubaisy et al., 2014; Smithard et al., 2001 [7,8], where males were more predominantly affected. The dominance by young adults aged 21–25 years in our study, at 36.7%, agrees with the generally observed peak prevalence of acne during late adolescence and early adult years. A European multicountry study, for example, reported the highest prevalence among 15- to 17-year-olds and a decrease with increasing age, Wolkenstein et al., 2017 [9], while Perkins et al. 2011 [10] put peak prevalence between 16 and 20 years in most racial groups, except in Hispanic women who experience it slightly later. The three sets of information have collectively brought out the fact that late adolescents and young adults are commonly affected with acne across different populations, with slight variations due to demographic and cultural differences".

Analysis of clinical features showed that papular acne was the most frequent type, 48%, followed by comedonal acne, 45.3%, whereas pustular and nodulocystic acne were less frequent, 26% and 14%, respectively. Moderate acne was the most frequent degree of severity, 46%, followed by mild, 42%, and severe, 12%. This trend is in keeping with similar studies carried out in the UK and Nigeria showing a higher prevalence of mild to moderate forms of acne (Akinboro et al., 2018; Perkins et al., 2011) [11,10]. On the other hand, the prevalence of severe acne was very low in Nigerian students, only one student, and may therefore indicate geographical or genetic variation in the clinical presentation of the disease (Akinboro et al., 2018) [11]. The high prevalence of lesions on the face, 92%, is in agreement with previous reports where the face was the most commonly affected area due to high density of sebaceous glands, whereas truncal lesions have been reported less frequently (Tasoula et al., 2012) [12]. Facial acne is clinically significant because visible facial acne significantly affects psychological well-being.

The psychosocial impact in our study was significant: 38.7% reported low self-esteem, 32.7% disturbed body image, and 27.3% avoidance of social activities, while 30% reported impairment in daily activities. These findings are supported by other studies showing that acne has a negative effect on the quality of life, especially in people with moderate to severe lesions (Tasoula et al., 2012; Hosthota & Basavaraja, 2016) [12,13]. There was a significant association between severity and psychosocial impact: low self-esteem was found among 22.2% of mild, 43.5% of moderate, and 77.8% of severe cases, while disturbed body image showed a similar trend in the increase in these categories ($p < 0.01$). These findings are in agreement with the literature that states that more severe acne is associated with greater psychosocial and emotional impairment in patients (Gallitano & Berson, 2017) [14]. On the other hand, while some studies reported significant avoidance of social activities as the severity progresses, this domain was not statistically significant in our study, suggesting cultural or contextual differences in the way people with this condition behave in a social setting.

Moreover, in terms of treatment-seeking behaviors, more than half of our participants (55.3%) consulted dermatologists, while self-administration of over-the-counter medications accounted for 60.7%, and 32% resorted to home remedies. Interestingly, 14% did not seek any treatment. This mixed pattern corroborates global evidence of underutilization of medical care for acne despite its psychological impact. For example, a London-based survey reported help-seeking rates below 30% among adolescents (Desai et al., 2017) [15], while a U.S. study also reported only 17% of participants sought medical care (Hosthota & Basavaraja, 2016) [13]. Preferences for self-treatment and over-the-counter products, especially females in our study, echo findings by Nijsten and Lambert (2007) [16], portraying the use of easily available remedies. Non-medical sources of information were primarily the internet in our cohort, unlike other studies where traditional media and family members were more used to obtain information (Tan et al., 2001) [17]; these differences indicate an evolution of patterns in health-seeking behavior influenced by improvements in technology and access to internet resources.

Taken together, our study again confirms that acne vulgaris is extremely common among young adults, with females predominating, and the majority of cases consist of mild to moderate comedonal or papular facial acne. Psychosocial impairment is strongly associated with disease severity and can have a profound impact on self-esteem, body image, and daily functioning. While a substantial number of the participants in this sample sought professional care, the common use of over-the-counter therapies and heavy reliance on non-medical information sources again identify a disappointing shortcoming in the formal medical management of the disease, consistent with reports from other parts of the world. These findings argue for increased public awareness, focused education, and improved dermatological access as important strategies in minimizing both the clinical and psychological impact of the disease.

Conclusion

This cross-sectional study emphasizes that acne vulgaris is a common dermatological disorder, especially in the younger generation, but with increased frequency among females and individuals in early adulthood. The condition most frequently presented with both an inflammatory and a non-inflammatory clinical pattern and with the degree of severity being more often mild to moderate and less often severe. Facial involvement predominated, but lesions on the trunk were often associated, indicating that acne may be both visible and widespread. Acne had a significant impact on quality of life, with self-esteem, body image, social interactions, and daily functioning being strongly related to disease severity. While a relevant percentage of patients sought professional care or used medications, self-treatment or home remedies were also common, suggesting shortcomings in optimal management. Overall, the findings highlight that early recognition, proper clinical management, and psychosocial support need to be established in order to reduce the burden of acne vulgaris and improve patient well-being.

References

1. Purdy S, de Berker D. Acne vulgaris. BMJ clinical evidence. 2011 Jan 5; 2011:1714.
2. Cunliffe WJ, Gould DJ. Prevalence of facial acne vulgaris in late adolescence and in adults. Br Med J. 1979 Apr 28;1(6171):1109-10.
3. Szepietowski JC, Wolkenstein P, Veraldi S, Tennstedt D, Machovcová A, Delarue A. Acne across Europe: an online survey on perceptions and management of acne. Journal of the European Academy of Dermatology and Venereology. 2018 Mar;32(3):463-6.
4. Suh DH, Shin JW, Min SU, Lee DH, Yoon MY, Kim NI, Kye YC, Lee ES, Ro YS, Kim KJ. Treatment-seeking behaviors and related epidemiological features in Korean acne patients. Journal of Korean Medical Science. 2008 Dec 1;23(6):969-74.
5. Corey KC, Cheng CE, Irwin B, Kimball AB. Self-reported help-seeking behaviors and treatment choices of adolescents regarding acne. Pediatric Dermatology. 2013 Jan;30(1):36-41.
6. Darwish MA, Al-Rubaya AA. Knowledge, beliefs, and psychosocial effect of acne vulgaris among Saudi acne patients. International Scholarly Research Notices. 2013;2013(1):929340.
7. Al-Kubaisy W, Abdullah NN, Kahn SM, Zia M. Sociodemographic characteristics of acne among university students in Damascus, Syria. Epidemiology Research International. 2014;2014(1):974019.
8. Smithard A, Glazebrook C, Williams HC. Acne prevalence, knowledge about acne and psychological morbidity in mid-adolescence: a community-based study. British Journal of Dermatology. 2001 Aug 1;145(2):274-9.
9. Wolkenstein P, Machovcová A, Szepietowski JC, Tennstedt D, Veraldi S, Delarue A. Acne prevalence and associations with lifestyle: a cross-sectional online survey of adolescents/young adults in 7 European countries. Journal of the European Academy of Dermatology and Venereology. 2018 Feb;32(2):298-306.
10. Perkins AC, Cheng CE, Hillebrand GG, Miyamoto K, Kimball AB. Comparison of the epidemiology of acne vulgaris among Caucasian, Asian, Continental Indian and African American women. Journal of the European Academy of Dermatology and Venereology. 2011 Sep;25(9):1054-60.
11. Akinboro AO, Ezejiofor OI, Olanrewaju FO, Oripelaye MM, Olabode OP, Ayodele OE, Onayemi EO. The impact of acne and facial post-inflammatory hyperpigmentation on quality of life and self-esteem of newly admitted Nigerian undergraduates. Clinical, cosmetic and investigational dermatology. 2018 May 10:245-52.
12. Tasoula E, Gregoriou S, Chalikias J, Lazarou D, Danopoulou I, Katsambas A, Rigopoulos D. The impact of acne vulgaris on quality of life and psychic health in young adolescents in Greece: results of a population survey. Anais brasileiros de dermatologia. 2012; 87:862-9.
13. Hosthota A, Bondade S, Basavaraja V. Impact of acne vulgaris on quality of life and self-esteem. Cutis. 2016 Aug 1;98(2):121-4.
14. Gallitano SM, Berson DS. How acne bumps cause the blues: the influence of acne vulgaris on self-esteem. International journal of women's dermatology. 2018 Mar 1;4(1):12-7.
15. Desai KP, Martyn-Simmons C, Viner R, Segal T. Help-seeking behaviours, opportunistic treatment and psychological implications of adolescent acne: cross-sectional studies in schools and

hospital outpatient departments in the UK. BMJ open. 2017 Sep 1;7(9):e016964.
16. Nijsten T, Rombouts S, Lambert J. Acne is prevalent but use of its treatments is infrequent among adolescents from the general population. Journal of the European Academy of Dermatology and Venereology. 2007 Feb;21(2):163-8.
17. Tan JK, Vasey K, Fung KY. Beliefs and perceptions of patients with acne. Journal of the American Academy of Dermatology. 2001 Mar 1;44(3):439-45.