

Clinico-Epidemiological Study and Topical Therapy of Acne Vulgaris

Pragathi H M^{1*}, Sahana A S¹, Navya D¹, Preetham Billemane M K¹, Rohan G¹¹Doctor of Pharmacy Interns, Sree Siddaganga College of Pharmacy, Tumkur, Karnataka, India, 572103.DOI: <https://doi.org/10.36347/sajp.2026.v15i10.008>

| Received: 19.08.2026 | Accepted: 26.10.2026 | Published: 31.10.2026

*Corresponding author: Pragathi H M

Doctor of Pharmacy Interns, Sree Siddaganga College of Pharmacy, Tumkur, Karnataka, India

Abstract

Original Research Article

Background: Acne vulgaris is a prevalent chronic inflammatory skin illness that primarily affects adolescents and young adults and can result in acne scarring, post-acne hyperpigmentation, and psychological anguish. The purpose of this study was to investigate the clinico-epidemiological profile of acne vulgaris patients, as well as the therapy patterns used in their management. Six-month observational research including 100 acne vulgaris patients was carried out in the Department of Dermatology at Siddaganga Hospital in Karnataka. A pre-made, semi-structured questionnaire addressing sociodemographic traits, clinical history, related factors, skin type, lesion features, and treatment patterns was used to gather data. Among the 100 participants, 70% were female and 30% were male. The majority of patients (86%) belonged to the 13–29-year age group, while 87% were urban residents and 51% were students. Oily skin was observed in 47% of patients, followed by combination skin (31%) and dry skin (22%). The face represented 94% of cases of acne, with pustules (94%) and papules (93%) being the most frequent lesions. 98% of patients reported having acne for less than six months. 53% of individuals had moderate scarring, and the usage of cosmetics and dairy products were commonly mentioned as contributing reasons. According to the study's findings, acne vulgaris mostly afflicted young women and frequently manifested as inflammatory lesions on the face. In addition to supporting effective therapeutic care, an understanding of the clinical and epidemiological features of acne and its treatment patterns may assist minimize consequences including scarring and hyperpigmentation after acne.

Keywords: Acne Vulgaris, Topical Therapy, Clinico-Epidemiological Profile, Pilosebaceous Unit, Post-Acne Scarring.

Copyright © 2026 The Author(s): This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY-NC 4.0) which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use provided the original author and source are credited.

INTRODUCTION

A chronic inflammatory condition of the pilosebaceous unit, acne vulgaris is typified by a number of lesions, including papules, pustules, nodules, scarring, and comedones, which are hallmark lesions [1]. The incidence of acne is estimated to be 9.38% worldwide, making it one of the most prevalent skin conditions [2]. Approximately 85 percent of young individuals suffer from acne, according to the Global Burden of Diseases (GBD) research [3].

Around 27% of adults and 72.3% of adolescents in India suffer from acne [4,5]. With a greater distribution of pilosebaceous glands, acne typically affects the face, chest, back, upper arms, and neck [6]. Acne affects both sexes however it is more severe in men than in women due to androgen activity [7]. Due to the earlier onset of puberty, acne appears sooner in women than in men and tends to last longer in women until later in life [8]. The etiology of acne vulgaris is multifactorial. Precipitating factors include genetics, exposure to industrial compounds, trauma, rubbing from tight

clothing, cosmetics, emotional stress and unfavourable climate. Propionibacterium acne (formerly known as Cutibacterium acne) activity, inflammation, increased sebum production, and follicular epidermal hyperproliferation are some of the main contributing factors to acne, a multifactorial skin condition [6,9]. The "host-microbiome" connection that plays a role in the pathophysiology of acne vulgaris is another modern intriguing component [9]. Recently, there has been a noticeable rise in the prevalence of acne vulgaris. It may have as its contributing components environmental influences, dietary westernization, lifestyle variance, and personal hygiene. In addition to causing patients' distress from their symptoms, acne can have a psychological impact because of its complications, such as scarring and post-acne hyperpigmentation [10]. It is necessary to explore the burden of the disease in hospitals with clinical profile and treatment pattern from time to time. So, as to evaluate the clinico-epidemiological study and their outcome with various topical modalities of treatment in Acne Vulgaris and to reduce adverse consequences like scars, the study is required [11].

Citation: Pragathi, H. M., Sahana, A. S., Navya, D., Billemane, M. K. P., & Rohan, G. (2026). Clinico-Epidemiological Study and Topical Therapy of Acne Vulgaris. *Sch Acad J Pharm*, 15(10), 273-277. <https://doi.org/10.36347/sajp.2026.v15i10.008>

Although there have been few studies describing the clinicodemographic profile of acne in various parts of India, there is a dearth of information about the clinical pattern of acne in the country's southwest. By assessing the clinical pattern of acne vulgaris patients who are seen at a tertiary care hospital in Karnataka, our study seeks to close this knowledge gap. This will assist the clinician in making decisions to prevent and manage acne vulgaris and will also help them better understand the scope of the issue.

OBJECTIVES:

- To determine the clinical, epidemiological profile of patient with acne vulgaris.
- To evaluate the topical therapy in the management of acne vulgaris.

MATERIALS AND METHODS

Study design: Observational study.

Sample size: $n = (Z^2 (1-\alpha) \times P(1-P)) / d^2$

Where n = sample size, $Z = 1.96$ (associated with 95% CI)

$d = 5\%$ (0.05, absolute precision value)

$P = 7\% = 0.07$ (population proportion).

The sample size for the present study was determined based on a previously published study by Dr. K. Lakshminarayana titled 'Clinico-Epidemiological Study of Acne Vulgaris and Quality of Life Assessment', published in the Scholars Journal of Applied Medical Sciences (SJAMS), which included 100 patients.

Inclusion criteria:

- All the cases of acne vulgaris aged between 13-55 years.
- Cases of both the sexes.

Exclusion criteria:

- Pregnant and lactating patients.
- Patients unwilling to participate will not be included in the study.
- Grade IV (Severe nodular) acne.
- Patients with other variants of acne like chloracne, conglobata and acne fulminans.
- Patient receiving hormone replacement therapy [HRT].

RESULTS

Table 1: Baseline characteristics of the study population

Category / Parameter	Sub-Category / Classification	Number of Patients (n)	Percentage (%)
Gender	Female	70	70%
	Male	30	30%
Age Distribution	13–19 years	33	33%
	20–29 years	53	53%
	30–39 years	6	6%
	40–49 years	7	7%
	50–55 years	1	1%
Skin Type	Oily skin	47	47%
	Combination skin	31	31%
	Dry skin	22	22%
Residence	Urban (Metropolitan)	87	87%
	Rural	13	13%
Site of Acne	Face	94	94%
	Chest	5	5%
	Back	4	4%
Duration of Acne	< 6 months	98	98%
	6–12 months	2	2%
	13–18 months	0	0%
Type of Acne Lesion	Pustules	94	94%
	Papules	93	93%
	Comedones	24	24%
	Nodules	7	7%
	Cysts	0	0%
Presence of Acne Scarring	Moderate Scarring	53	53%
	Severe Scarring	25	25%
	Mild Scarring	17	17%
	No Scarring	5	5%
Occupation	Students	51	51%
	Office Workers	36	36%
	Homemakers	13	13%

Table 1 presents the demographic and clinical characteristics of the 100 patients included in the study. Females accounted for 70% of the participants, while males represented 30%. The majority of patients (86%) were aged between 13 and 29 years, with 53% belonging to the 20–29-year age group and 33% to the 13–19-year age group. Most participants were from urban areas (87%). Students formed the largest occupational group (51%), followed by office workers (36%) and homemakers (13%). Regarding skin type, oily skin was most common (47%), followed by combination skin (31%) and dry skin (22%).

The face was the predominant site of acne involvement, affecting 94% of patients, while lesions on the chest and back were reported in 5% and 4% of

patients, respectively. Nearly all participants (98%) reported an acne duration of less than six months. Among the different lesion types, pustules (94%) and papules (93%) were most frequently observed, followed by comedones (24%) and nodules (7%). Acne-related scarring was present in 95% of patients, with moderate scarring being the most prevalent (53%), followed by severe scarring (25%) and mild scarring (17%). Only 5% of participants had no scarring.

As shown in figure-1, the distribution of patients based on their habits revealed that 98% of patients reported using cosmetics, making it the most prevalent habit. 94% of patients reported consuming dairy products, and 85% reported smoking.

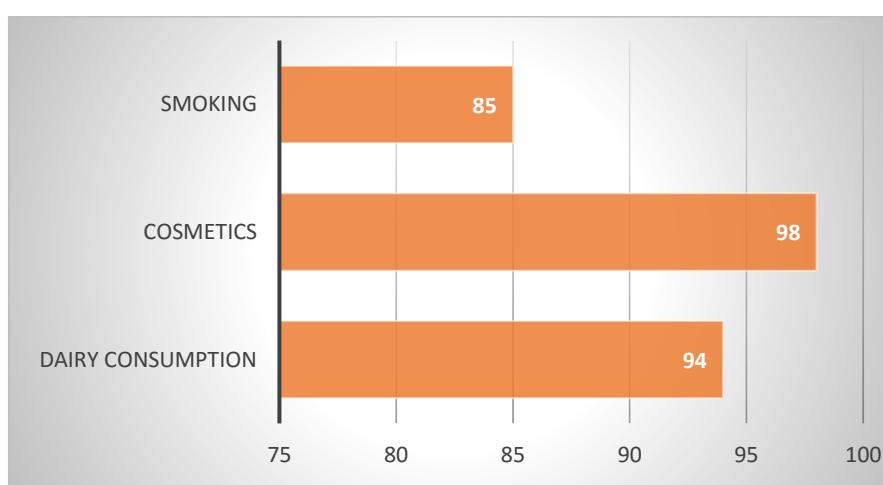


Fig 1: Prevalence of Contributing Lifestyle and Dietary Habits

Figure-2 illustrates that Acne Grade 3 comprised the largest group (51%), followed by Acne Grade 2 (36%) and Acne Grade 1 (13%).

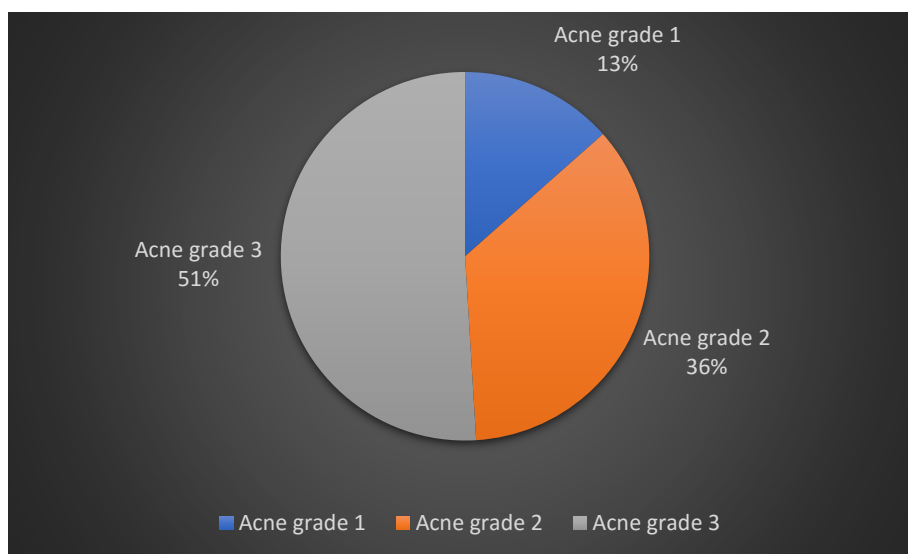


Fig 2: Percentage distribution of patients by acne grade

According to figure-3, Clindamycin comprised the largest group of acne patients (35%), followed by Dapsone (33%) and Benzoyl Peroxide (23%).

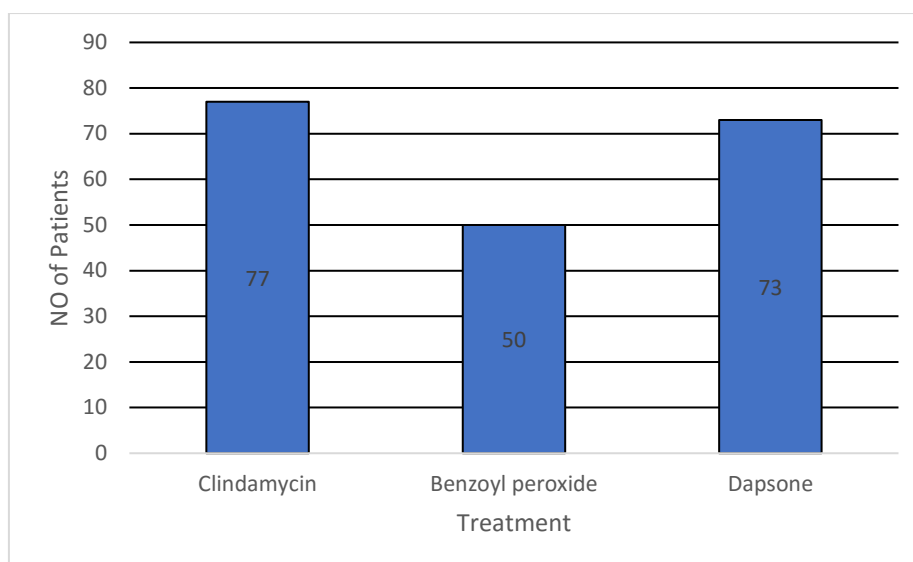


Fig 3: Topical Treatment Regimens

DISCUSSION

The present study revealed a higher proportion of female patients (70%) than male patients (30%), which is consistent with the findings of Pathak *et al.*, who reported female predominance in 68% of cases [12]. Most participants (86%) were aged between 13 and 29 years, comparable to the study by Deuri *et al.*, in which the highest proportion of patients (69%) belonged to the 16–25-year age group [13]. Urban residents accounted for 87% of the study population, reflecting a similar pattern reported by Manivannan *et al.*, [14]. Facial acne was observed in 94% of patients, consistent with Pathak *et al.*, who identified the face, particularly the cheeks, as the most commonly affected site (83%) [12]. Pustules (94%) and papules (93%) were the predominant lesions in the present study, similar to the findings of Manivannan *et al.*, who also reported papules and pustules as the major lesion types [14]. Grade 3 acne was the most frequently observed severity grade (51%), whereas Deuri *et al.*, reported Grade 2 acne as the predominant presentation (54%) [13].

Cosmetic use was reported by 98% of participants, while dairy product consumption was reported by 94%. In comparison, Lakshminarayana *et al.*, identified topical cosmetic use as a potential aggravating factor in 38% of patients [15]. Leung *et al.*, discussed the possible association between dairy consumption, increased circulating insulin-like growth factor 1 (IGF-1) levels, and follicular hyperkeratinization [16]. Moderate acne scarring was observed in 53% of the present study population, whereas Deuri *et al.*, reported post-acne scarring in 23% of patients [13]. Regarding topical treatment patterns, clindamycin was the most frequently used agent (35%), followed by dapsone (33%) and benzoyl peroxide (23%). Leung *et al.*, highlighted the importance of combining clindamycin with benzoyl peroxide to reduce the risk of antibiotic resistance [16].

CONCLUSION

The study evaluated the clinical and epidemiological characteristics of acne vulgaris and the patterns of topical treatment among 100 patients visiting the Department of Dermatology at Siddaganga Hospital, Karnataka. The results indicated a higher prevalence among females (70%) and individuals aged 13–29 years (86%). Acne predominantly affected the face (94%), with papules (93%) and pustules (94%) being the most frequently identified lesions. Oily skin was observed in 47% of patients, while moderate acne scarring was present in 53%. Cosmetic use (98%) and dairy product consumption (94%) were commonly reported among the study participants. Among the topical medications used, clindamycin accounted for 35%, followed by dapsone (33%) and benzoyl peroxide (23%).

These findings highlight the need for early identification and appropriate management of acne vulgaris through suitable topical therapy, patient counselling, and regular clinical monitoring. Prompt and individualized treatment can help control acne manifestations and reduce the risk of complications, including scarring and post-inflammatory hyperpigmentation. Further research involving larger study populations and extended follow-up periods is necessary to assess the effectiveness of topical treatments and their long-term clinical outcomes.

REFERENCES

1. Siddappa K, Sachidanand S, Oberai C, Inamdar AC. IADVL Textbook of Dermatology, 4th Edition, vol 2. Mumbai: Balani Publication House, 2015.
2. Heng AHS, Chew FT. Systematic review of the epidemiology of acne vulgaris. *Sci Rep*. 2020 Apr 1;10(1):5754. doi: 10.1038/s41598-020-62715-3, PMID 32238884, PMCID PMC7113252.
3. Lynn DD, Umari T, Dunnick CA, Dellavalle RP. The epidemiology of acne vulgaris in late

- adolescence. *Adolesc Health Med Ther*. 2016 Jan 19;7:13-25. doi: 10.2147/AHMT.S55832. PMID PMC4769025.
4. Sharma RK, Dogra S, Singh A, Kanwar AJ. Epidemiological patterns of acne vulgaris among adolescents in North India: A cross-sectional study and brief review of the literature. *Indian J Paediatr Dermatol*. 10.4103/ijpd.IJPD_82_16.
 5. Budamakuntla L, Parasramani S, Dhoot D, Deshmukh G, Barkate H. Acne in Indian population: an epidemiological study evaluating multiple factors. *IP Indian J Clinexp Dermatol*. 2020;6(3):237-42.
 6. Wolff K, Goldsmith L, Katz S, Gilchrest B, Paller AS, Leffell D. *Fitzpatrick's dermatology in general medicine*. 8th ed. New York: McGraw-Hill; 2011.
 7. Prasad SB. Acne vulgaris: a review on pathophysiology and treatment. *Asian J Pharm Clin Res*. 2016 Jul 1;9(4):54-9.
 8. Burton JL, Cunliffe WJ, Stafford I, Shuster S. The prevalence of acne vulgaris in adolescence. *Br J Dermatol*. 1971 Aug;85(2):119-26. doi: 10.1111/j.1365-2133.1971.tb07195.x. PMID 4255129.
 9. O'Neill AM, Gallo RL, hosts. Host microbiome interactions and recent progress into understanding the biology of acne vulgaris. *Microbiome*. 2018;6(1):177. doi: 10.1186/s40168-018-0558-5, PMID 30285861.
 10. Khan SN, Hussain S, Beg MA, Raihan M. Acne vulgaris and its effect on the quality of life: a cross-sectional study. *Int arch BioMedClin Resources*. 2022 Aug 4;4(1):160-4.
 11. Epstein E. Incidence of facial acne in adults. *Dermatol Digest* 1968;7:49-58.
 12. Pathak, S., *et al.*, (2025). A clinico-epidemiological study of acne vulgaris in patients visiting a tertiary care center. *International Journal of Current Pharmaceutical Review and Research*.
 13. Deuri, B., *et al.*, (2022). A hospital-based observational study on clinical pattern of acne vulgaris in a tertiary care hospital of Upper Assam. *International Journal of Pharmacy and Pharmaceutical Sciences*, 14(11), 43–47.
 14. Manivannan, M., & Karunakaran, M. (2020). *A clinico-epidemiological study of facial dermatoses among adults* (MD dissertation, The Tamilnadu Dr. M.G.R. Medical University).
 15. Lakshminarayana, K. (2018). Clinico-epidemiological study of acne vulgaris and quality of life assessment. *Scholars Journal of Applied Medical Sciences*, 6(7), 2863–2868.
 16. Leung, A. K. C., Barankin, B., Lam, J. M., Leong, K. F., & Hon, K. L. (2021). Dermatology: Acne vulgaris. *Drugs in Context*, 10, Article 2021-8-6.