JOURNAL OF BASHIR INSTITUTE OF HEALTH SCIENCES

RESEARCH ARTICLE

OPEN ACCESS

ARTICLE INFO
Received: 13 October 2025
Revised: 11 December 2025
Published online: 19 December 2025

Clinical Assessment of Skin Type, Acne Severity, and Psychosocial Burden: Implications for Pharmacist-Led Dermatologic Care in Pakistan

[a]Marina Khan*, [b]Hafsa Kanwal, [c]Muhammad Wajid Khan

[a]Department of Pharmacy, Quaid-I-Azam University, Islamabad Pakistan.
[b]Department of Pharmacy, Quaid-I-Azam University, Islamabad Pakistan.
[c]HBS Medical & Dental College, Islamabad Pakistan.

*CORRESPONDENCE
Marina Khan
Department of Pharmacy,
Quaid-I-Azam University,
Islamabad Pakistan
E-mail:
marinakhan190@gmail.com

ABSTRACT

Background: One of the most prevalent skin conditions among young people in Pakistan is acne vulgaris, which is influenced by genetic predisposition, hormonal activity, and skin type. Despite having a significant psychosocial impact, it is frequently overlooked in community settings. This study was designed to clinically assess skin type distribution, acne severity, and psychosocial burden among acne patients in Pakistan and explore the implications for pharmacist-led dermatologic care. **Methodology:** A community-based cross-sectional study involving 100 acne patients (ages 12–30) was conducted in Islamabad. Skin type, acne severity, and psychosocial distress were assessed using structured questionnaires and interviews. Chi-square tests were used to analyze associations. **Results:** Oily skin was the most common skin type (69%). A significant association was found between skin type and acne severity ($\chi^2 = 18.36$, $p = 0.019$). Severe acne was predominantly observed in oily (63.8%) and sensitive skin types (66.7%). Psychosocial burden was substantial, with 78% reporting embarrassment or reduced self-confidence. **Conclusion:** Skin type significantly influences acne severity, with oily and sensitive skin types being at highest risk. High psychosocial distress highlights the need for pharmacist-led acne counseling, early screening, and community-based dermatologic interventions in Pakistan. **Keywords:** Acne vulgaris, Skin type, Psychosocial burden, Community pharmacy, Dermatologic care, Pakistan

INTRODUCTION

Acne vulgaris is a chronic inflammatory disorder of the pilosebaceous unit and remains one of the most common skin conditions worldwide. It is estimated to affect approximately 9.4% of the global population, placing it among the leading dermatological diseases in terms of prevalence. Acne predominantly occurs during adolescence, affecting over 85% of teenagers; however, it frequently persists into adulthood, particularly among women, who account for nearly two-thirds of dermatology consultations related to acne [1].

Sebum, a lipid-rich secretion produced by sebaceous glands, plays an essential role in maintaining skin homeostasis. It forms a protective hydrophobic barrier that limits transepidermal water loss, preserves hydration of the stratum corneum, and contains antimicrobial components that help prevent pathogenic colonization. In addition, sebum contributes to maintaining a balanced perifollicular inflammatory environment. Nevertheless, proper regulation of sebum production is critical, as both excessive and

Volume 6, Issue 2, 2025 | https://doi.org/10.53576/bashir.006.02.0261

insufficient secretion are associated with various dermatological conditions. This dual role underscores the importance of understanding how sebum influences skin health in different clinical contexts.

Clinical evidence indicates that approximately one-quarter of adults exhibit an oily skin type, defined by sebum secretion rates exceeding 1.5 mg/cm² over three hours, while nearly half of the population presents with combination skin, reflecting marked regional variability in sebum production [2]. Beyond its physical manifestations, acne is widely recognized for its negative psychological impact, often leading to emotional distress, diminished self-esteem, and a reduced quality of life. The prevalence, clinical presentation, and management strategies for acne vary across populations and are influenced by factors such as age, gender, ethnicity, genetic predisposition, lifestyle, and environmental exposure. In Pakistan, data regarding acne prevalence, clinical patterns, and associated sociodemographic factors remain limited, highlighting the need for focused local research to better inform management practices and gender-specific treatment preferences [3]. Assessing the quality of life of individuals affected by acne has therefore become an essential component of comprehensive disease evaluation and management [4].

In more severe cases, acne may progress to persistent cysts, nodules, and subcutaneous sinus tracts that respond poorly to conventional therapy. Lesions most commonly appear on the face, neck, chest, and upper back, regions with a high density of sebaceous glands. In addition to acne vulgaris, several related follicular occlusion disorders—including acne conglobata, perifolliculitis capitis abscedens et suffodiens (dissecting cellulitis), and hidradenitis suppurativa—share similar pathogenic mechanisms and are often resistant to treatment, frequently resulting in nodules, cysts, and hypertrophic scarring [5].

Improving adherence to evidence-based acne management guidelines among healthcare professionals is therefore essential, particularly for community pharmacists who serve as easily accessible points of care [6]. Pharmacists increasingly play an expanded role in dermatological health, as patients are more likely to seek advice from community pharmacies than from primary care facilities. With the evolving role of pharmacists from medication dispensers to active participants in patient counseling and care coordination, their contribution to acne management has become increasingly significant. In dermatological practice, pharmacists are often the first professionals consulted for over-the-counter treatments, especially given the complexity of topical therapies, which differ in application techniques, storage requirements, treatment duration, and potential adverse effects [7]. Consequently, the impact of acne on patients' quality of life must be carefully evaluated and addressed through appropriate counseling and management strategies to ensure optimal outcomes [8].

METHODOLOGY

The current study was conducted in the Quaid i Azam University, Islamabad, Pakistan. It was a community-based, cohort study designed to determine the relationship between skin types and acne severity, as well as to evaluate psychosocial challenges among acne patients. A convenience sample of 100 Pakistani individuals diagnosed with acne vulgaris was recruited for the study. The participants comprised 58 females and 42 males, aged between 12 and 30 years. The study population included 62 students, 23 housewives, and 15 working professionals. Individuals with a clinical diagnosis of acne vulgaris who were willing to participate were included. Patients with co-existing dermatological conditions, those receiving systemic acne therapy, pregnant women, and individuals unable to provide informed consent were excluded from the study.

A structured questionnaire was developed to assess skin type (normal, oily, combination, dry, or sensitive) using a validated skin type determination software. Acne severity was categorized as mild, moderate, or severe based on clinical presentation. The questionnaire also evaluated psychosocial challenges associated with acne, including feelings of embarrassment and emotional distress. Written informed consent was obtained from all participants prior to data collection, and personal interviews were conducted to ensure the accuracy and completeness of the responses. The variables assessed in the study included demographic characteristics such as age, gender, occupation, and family history of acne. Skin type distribution among acne patients was evaluated, along with the association between skin type and acne severity. In addition, the psychosocial impact of acne, including feelings of embarrassment and emotional distress, was assessed.

Volume 6, Issue 2, 2025 | https://doi.org/10.53576/bashir.006.02.0261

RESULTS

A total of 100 individuals with acne participated in the study, comprising 58 females and 42 males. The majority of the participants were within the 18–24-year age group (45%), followed by 25–30 years (30%) and 12–17 years (25%). Most respondents were students (62%), while the remaining were housewives (23%) and working professionals (15%). Additionally, 32% reported a positive family history of acne, indicating a possible genetic predisposition within the sample.

Figure.1 presents the distribution of skin types among the acne patients included in the study. The majority of participants had oily skin (69%), followed by combination skin (13%), dry skin (9%), and normal skin (6%). Sensitive skin was the least represented category, accounting for only 3% of the sample.

Table 1: Demographic Characteristics of Participants (n = 100)

Variable	Category	n (%)
Gender	Female	58%
	Male	42%
Age Group	12–17	25%
	18–24	45%
	25–30	30%
Occupation	Students	62%
	Housewives	23%
	Professionals	15%
Family History of Acne	Yes	32%
	No	68%

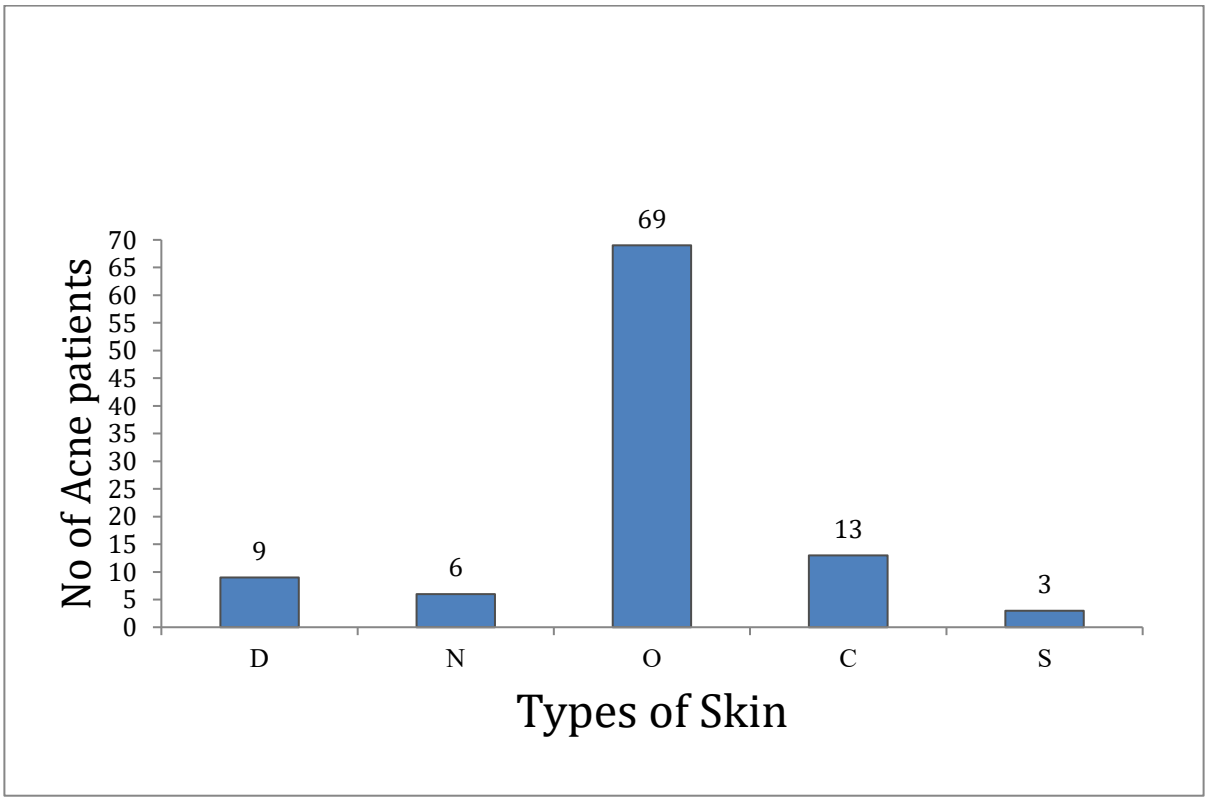

Figure 1: Prevalence of different skin types in acne patients. For dry (D) 9%, normal (N) 6%, oily (O) 69%, combinational (C) 13% and sensitive (S) 3%.

Volume 6, Issue 2, 2025 | https://doi.org/10.53576/bashir.006.02.0261

Table 2 shows the distribution of acne severity across different skin types. A clear trend was observed, with oily skin being predominantly associated with severe acne, as 63.8% of oily skin participants fell into the severe category. In contrast, dry and combination skin types were more frequently linked to mild-to-moderate acne, with 50% of dry skin individuals presenting mild acne and 46.2% of combination skin individuals showing mild severity. Interestingly, although sensitive skin was less common in the sample, 66.7% of those with sensitive skin reported severe acne. Statistical analysis confirmed a significant association between skin type and acne severity ($\chi^2 = 18.36$, $p = 0.019$), indicating that individuals with oily and sensitive skin were more likely to experience severe acne compared to other skin types. Although effect size was not formally calculated, the distribution indicates a disproportionately higher prevalence of severe acne among individuals with oily and sensitive skin types, suggesting a clinically meaningful relationship warranting further investigation.

Figure 2 illustrates the psychosocial challenges experienced by the study participants. A substantial proportion of acne patients (78%) reported strong feelings of embarrassment related to their skin condition, while only 22% indicated no such emotional distress. When assessed in relation to skin type, embarrassment was more frequently reported among patients with oily and sensitive skin, in line with their higher representation in the severe acne category. Participants with dry, normal, or combination skin demonstrated comparatively lower levels of psychosocial discomfort.

Table 2. Association between Skin Type and Acne Severity

Skin Type	Mild	Moderate	Severe	Total
Oily	10.1%	26.1%	63.8%	69
Combination	46.2%	38.5%	15.4%	13
Dry	50%	44.4%	5.6%	9
Normal	16.7%	33.3%	50%	6
Sensitive	0%	33.3%	66.7%	3

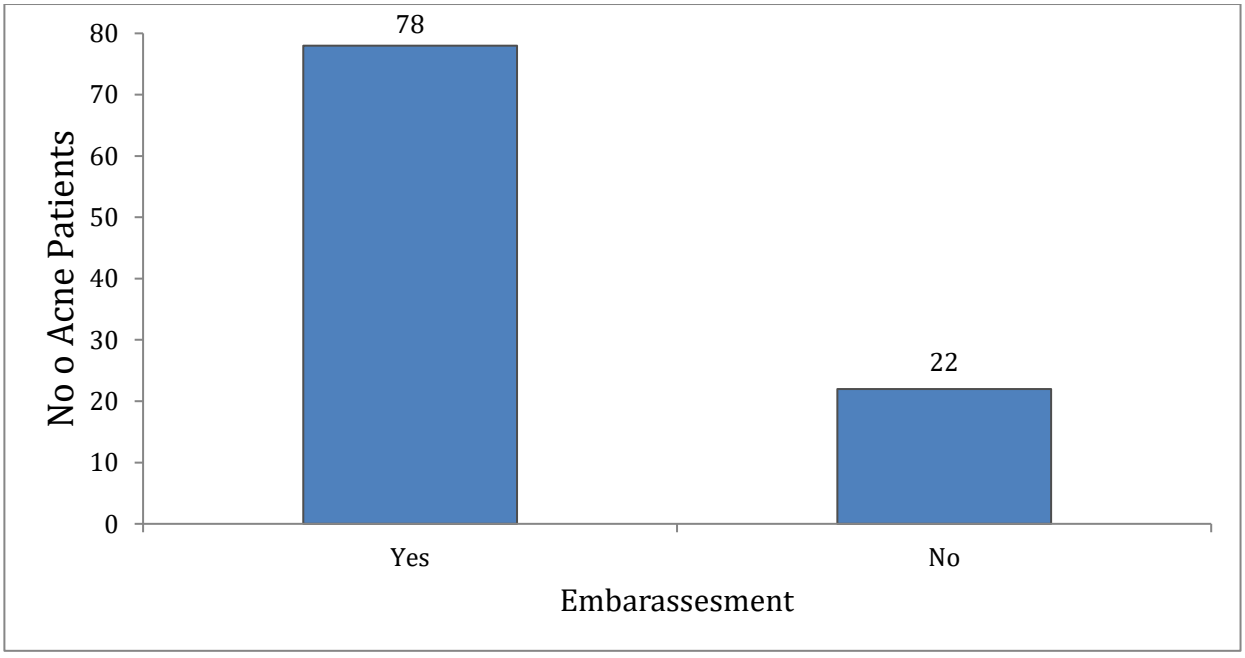

Figure 2: Psychosocial challenges faced by acne patients. 78% patients have strong feeling of embarrassment while 22% have no such feelings.

Volume 6, Issue 2, 2025 | https://doi.org/10.53576/bashir.006.02.0261

DISCUSSION

The findings of this study demonstrate a clear relationship between skin type and acne severity, with oily skin identified as both the most common and the most acne-prone type among participants. This aligns with global dermatologic evidence showing that excessive sebum production creates an ideal environment for comedone formation, follicular obstruction, and subsequent inflammation. Acne vulgaris is a widespread condition involving the pilosebaceous unit and affects nearly 9.4% of people worldwide. In most individuals, the condition leaves behind some form of scarring, and when combined with ongoing lesions, it can have a considerable negative impact on psychological well-being and social confidence [9]. Sensitive skin also emerged as a high-risk category for developing severe acne, which may be attributed to a compromised skin barrier that increases susceptibility to irritation, inflammation, and microbial penetration. Although acne may develop at any stage of life, it most commonly affects adolescents and young adults. Clinically, it presents as a combination of comedones, papules, pustules, cysts, and nodules, predominantly involving sebaceous-rich regions of the face and typically showing a symmetrical pattern of distribution [10]. The underlying mechanisms of acne are complex and multifactorial, with contributing roles from genetic susceptibility, hormonal regulation, metabolic activity, environmental exposure, dietary habits, and immune responses [11]. Together, these observations highlight that individuals with oily or sensitive skin require more targeted preventive and therapeutic strategies to manage acne effectively.

In addition to the dermatologic findings, the study revealed a substantial psychosocial burden associated with acne, with 78% of patients reporting emotional distress such as embarrassment, anxiety, low self-esteem, or social withdrawal. A comprehensive literature review was carried out using the MEDLINE and EMBASE databases accessed through OVID. The search strategy incorporated multiple related keywords, including acne vulgaris, medical students, self-esteem, mental health, psychology, psychiatry, suicidal ideation, self-harm, as well as both positive and negative psychological outcomes such as anxiety, depression, and overall psychological well-being [12]. These results are consistent with international research showing that acne can significantly impair psychological well-being, particularly in cultures where physical appearance strongly influences confidence, social acceptance, and perceived self-worth. Globally, acne and hyperpigmentation are among the most common skin concerns in young adults. These conditions frequently continue beyond adolescence and affect more than appearance alone, often leading to considerable emotional and psychological burden [13]. The psychosocial impact observed underscores that acne is not merely a cosmetic issue but a condition that can deeply affect mental and emotional health, especially among adolescents and young adults who are already navigating sensitive developmental stages. Acne is especially common in young adults, and in East Asian societies, where physical appearance, social media influence, and the cultural importance of maintaining social image (“mianzi”) are strongly emphasized, visible facial skin conditions can lead to heightened social pressure and psychosocial impact [14].

In light of these challenges, this study highlights the important contribution pharmacists can make to strengthening dermatologic care in Pakistan. Within the evolving healthcare system, pharmacists are increasingly recognized for their role in ensuring the safe and effective use of dermatological therapies. Sound knowledge and appropriate dispensing practices are essential for optimizing treatment outcomes and minimizing misuse of skin medications [7]. As some of the most accessible healthcare professionals, pharmacists are well positioned to provide first-line support by assessing skin type, grading acne severity, and recognizing early signs of psychological distress associated with visible skin conditions.

Pharmacist-led acne management, guided by standardized care protocols, has been implemented successfully for more than a decade in countries such as the United States, the United Kingdom, and Canada. Evidence from these settings demonstrates that such models are both safe and effective, while also improving timely access to care for patients [15]. Through individualized, evidence-based counseling, pharmacists can guide patients on appropriate skincare routines, treatment choices, lifestyle adjustments, and the correct use of medications, helping to curb the widespread practice of unsupervised self-medication.

Irresponsible self-medication remains a global concern with substantial health and socioeconomic consequences, underscoring the need for a more coordinated and informed approach. Promoting responsible self-care while addressing the risks associated with inappropriate medication use is therefore essential [16]. In addition, pharmacists play a critical role in identifying patients

Volume 6, Issue 2, 2025 | https://doi.org/10.53576/bashir.006.02.0261

with severe, persistent, or worsening acne and facilitating prompt referral to dermatologists. Such timely intervention can improve clinical outcomes and reduce long-term complications, including scarring and lasting psychological effects. Overall, a structured, pharmacist-led approach has the potential to significantly enhance acne management and improve patient well-being across Pakistan.

LIMITATIONS

Our study has few limitations. First, the sample was limited to a specific urban population, which means the findings may not fully represent people from rural areas or those with different lifestyle and environmental exposures. Second, the study relied on self-reported information, especially for psychosocial experiences such as embarrassment, which may be influenced by individual perception or reluctance to share openly. Lastly, psychological impact was assessed using a single-item question rather than a standardized scale, so future research using validated tools may provide a more detailed understanding of emotional outcomes. Future studies should include participants from multiple regions of Pakistan (urban and rural) to capture broader environmental, dietary, and cultural influences on acne prevalence and severity. Future research can utilize validated scales (e.g., Dermatology Life Quality Index [DLQI], Acne-QoL, or Hospital Anxiety and Depression Scale) to measure psychosocial impact more precisely. Conducting longitudinal studies can help determine causal relationships between skin type, hormonal fluctuations, and acne severity, while intervention trials could assess the effectiveness of tailored treatment plans for oily skin types. Further studies should assess lifestyle factors—such as diet, stress, pollution, and cosmetic use to clarify their role in acne exacerbation among oily skin individuals. Introducing psychological support or counseling interventions alongside dermatological treatment may improve both emotional well-being and therapeutic outcomes for acne patients. Future work should involve dermatologists, psychologists, pharmacists, and public health professionals to create a holistic approach to acne management.

CONCLUSION

Oily skin (69%) emerged as the predominant skin type among acne patients in Pakistan, indicating a strong physiological predisposition toward increased sebum production in this population. The study further revealed a significant association between skin type and acne severity ($p = 0.019$), with severe acne occurring most frequently in individuals with oily and sensitive skin. This pattern highlights the heightened vulnerability of these skin types to inflammatory and severe acne presentations. Additionally, the psychosocial burden of acne was considerable, with 78% of patients reporting embarrassment, reduced self-confidence, or other forms of emotional distress. Collectively, these findings emphasize the urgent need for pharmacist-led dermatologic interventions in Pakistan, including patient counseling, early acne screening, skin-type–based management guidance, and psychosocial support to improve overall patient outcomes and quality of life.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest regarding the publication of this manuscript. All data were collected, analyzed, and reported in compliance with ethical standards and data privacy regulations.

AUTHOR CONTRIBUTIONS

MK Conceptualized and designed the study, supervised project execution, critically reviewed and revised the manuscript, and provided final approval. **HK** Developed the methodology, performed statistical analysis using SPSS, curated and validated the data, and drafted the original manuscript. **MWK** Assisted in data collection, participant recruitment, resource facilitation, and contributed to manuscript writing and review. All authors reviewed and approved the final manuscript and accept responsibility for the integrity and accuracy of the work.

ACKNOWLEDGEMENTS : The authors sincerely acknowledge the Quaid-I-Azam University, Islamabad, for providing a supportive environment and necessary facilities for participant recruitment and data collection. We also thank all study participants for their voluntary cooperation.

FUNDING SOURCE

This study did not receive any specific funding from public, commercial, or not-for-profit funding agencies.

REFERENCES

1. Vasam, M., S. Korutla, and R.A. Bohara, *Acne vulgaris: A review of the pathophysiology, treatment, and recent nanotechnology based advances.* Biochemistry and Biophysics Reports, 2023. **36**: p. 101578.
2. Li, D., et al., *A Comprehensive Review: The Bidirectional Role of Sebum in Skin Health.* Bioengineering, 2025.
3. Rasool, F., et al., *Acne Vulgaris: Prevalence, Clinical forms and its Management in Pharmacy Students from Bahawalpur, Pakistan.* Value in Health, 2017. **20**(9): p. A802.
4. Babar, O. and A. Mobeen, *Prevalence and psychological impact of acne vulgaris in female undergraduate medical students of Rawalpindi and Islamabad, Pakistan.* Cureus, 2019. **11**(9).
5. Kurokawa, I. and K. Nakase, *Recent advances in understanding and managing acne.* F1000Research, 2020. **9**: p. F1000 Faculty Rev-792.
6. Sercan, A., A.M. ABDI, and M.D. AYDIN, *Assessment of the Management of Acne Vulgaris: A Study of Dermatologists and Community Pharmacists in North Cyprus, and the Psychological Impact of a Pharmacist-Led Educational Intervention.* Archives of Clinical Psychiatry, 2023. **50**(6).
7. Taha, S., et al., *The role of pharmacists in dermatology: a cross-sectional evaluation of the educational needs, knowledge, and practices of community pharmacists regarding the use of topical medications in chronic dermatological diseases.* BMC Health Services Research, 2025. **25**(1): p. 1419.
8. Naveed, S., et al., *Impact of acne on quality of life in young Pakistani adults and its relationship with severity: A multicenter study.* Pakistan journal of medical sciences, 2021. **37**(3): p. 727.
9. Etgu, F. and G.S. Tatar, *Risk Factors and Epidemiology of Acne Severity and Acne Scar Development: A Comprehensive Clinical Study.* Dermatology Practical & Conceptual, 2025. **15**(4): p. e20256108.
10. Deng, Y., F. Wang, and L. He, *Skin Barrier Dysfunction in Acne Vulgaris: Pathogenesis and Therapeutic Approaches.* Medical Science Monitor: International Medical Journal of Experimental and Clinical Research, 2024. **30**: p. e945336.
11. Li, Y., et al., *Acne treatment: research progress and new perspectives.* Frontiers in Medicine, 2024. **11**: p. 1425675.
12. Sachdeva, M., et al., *The prevalence, risk factors, and psychosocial impacts of acne vulgaris in medical students: a literature review.* International journal of dermatology, 2021. **60**(7): p. 792-798.
13. Khan, M., M.H.A.A. Mansour, and H. Zhang, *Psychological Impact of Hyperpigmentation and Acne on the Self-Esteem and Academic Performance of International Students.* Cureus, 2025. **17**(10).
14. Xu, F., et al., *Exploring Social Avoidance and Psychosocial Factors in Young Adults with Acne in East China.* Clinical, Cosmetic and Investigational Dermatology, 2025: p. 2617-2627.
15. Adams, J.A., A.J. Adams, and M.E. Klepser, *Pharmacist prescriptive authority for acne: an evidence-based approach to policy.* INNOVATIONS in pharmacy, 2021. **12**(2): p. 10.24926/iip. v12i2. 3897.
16. Aljinović-Vučić, V. *Self-medication as a global health concern: overview of practices and associated factors—a narrative review*. in *Healthcare*. 2025. MDPI.