DOI: https://doi.org/10.54393/pjhs.v7i8.3742

PAKISTAN JOURNAL OF HEALTH SCIENCES
(LAHORE)
https://thejas.com.pk/index.php/pjhs
ISSN (E): 2790-9352, (P): 2790-9344
Volume 7, Issue 08 (August 2026)

Original Article

Psychological Burden in Patients with Acne Vulgaris

Sundus Shafi[1*], Azhar Hosain Minhas[1], Farah Mehboob[2], Amara Sarwar[1], Warda Nazar[1] and Mehjabeen Ibrar[1]

[1]Department of Dermatology, Combined Military Hospital, Kharian, Pakistan
[2]Department of Physical Medicine and Rehabilitation, Combined Military Hospital, Kharian, Pakistan

ARTICLE INFO

Keywords:
Acne Vulgaris, Psychological Burden, Anxiety, Social Stigma, Coping Mechanisms, Multidisciplinary Care

How to Cite:
Shafi, S., Minhas, A. H., Mehboob, F., Sarwar, A., Nazar, W., & Ibrar, M. (2026). Psychological Burden in Patients with Acne Vulgaris: Psychological burden and Acne Vulgaris. Pakistan Journal of Health Sciences, 7(8), 167-172. https://doi.org/10.54393/pjhs.v7i8.3742

***Corresponding Author:**
Sundus Shafi
Department of Dermatology, Combined Military Hospital, Kharian, Pakistan
dr.sundus01@gmail.com

Received Date: 27th November, 2025
1st Revision Received: 15th January, 2026
2nd Revision Received: 19th March, 2026
Acceptance Date: 14th April, 2026
Published Date: 31st August, 2026

ABSTRACT

Acne vulgaris is a common and recurrent skin disorder that affects more than 70% of human beings across the world. Acne is associated with several psychological problems in addition to the physical ones. **Objective:** To evaluate the psychological burden of acne vulgaris, defined by anxiety levels (GAD-7) and acne-related quality of life (CADI), and to identify coping strategies among patients. **Methods:** This cross-sectional study was conducted at the Department of Dermatology, Combined Military Hospital, Kharian, between March and October 2024, and 135 patients aged 16 years and above, diagnosed with acne vulgaris, were enrolled through a non-probability convenience method. A pre-designed proforma was used to measure the demographic characteristics, clinical history, psychological burden (GAD-7 scale and Cardiff Acnes Disability Index), and coping mechanisms. SPSS version 25.0 was used to conduct descriptive and inferential analysis. **Results:** 61.48% female and 38.52% male, 45.93% had moderate anxiety, and 20.00% severe anxiety. The perceived stigma was quite high, and 51.11% respondents reported differential treatment, as well as 43.70% respondents avoided social situations. The impact of acne on the day-to-day life was also negative, with 60.74% of the respondents expressing concerns and 48.89% showing reduced performance in work or school. The coping strategies were makeup or cosmetic (42.22%), avoidance (25.19%), and talking to friends and family (20.74%). **Conclusions:** Acne vulgaris has a very strong impact on psychological well-being, as it increases significantly the rate of anxiety, stigma, and poor quality of life.

INTRODUCTION

Acne vulgaris is a chronic and prevalent skin disorder that occurs in more than 70% of the global population and has a duration of at least three years, and is one of the most common dermatoses. Even though acne is most often considered a skin condition, its physical and psychological outcomes are severe, as acne impacts the self-esteem, psychological state, and overall well-being of patients. The majority of the affected population is comprised of adolescents and young adults, and it is reasonable to assume that they undergo distress daily due to the presence of lesions on the skin, which, despite being stigmatized, condemned, and leading to social exclusion, also result in the symptoms of a severe depressive disorder [1, 2]. There is a complex relationship between acne and anxiety. It has been found that, in addition to skin-related problems, there were symptoms of stress, anxiety, depression, and even suicidal thoughts in the patients with acne [3, 4]. People with acne are more likely to experience depression than people without acne, according to another meta-analysis, which suggests that early psychological involvement is not to be overlooked [5]. Additionally, there is a significant association between the severity of acne and psychological outcomes, and patients express being less satisfied with their personal lives as the severity of their lesions increases [6]. Acne has more serious psychological impacts than other disorders because of societal stigma. Many people isolate themselves, perform poorly at work or school, and lose acquaintances because

DOI: https://doi.org/10.54393/pjhs.v7i8.3742

they believe that their skin condition is being used as a basis for judgment [7, 8]. Stigma related to these conditions usually results in feelings of shame and low self-esteem, added to the psychological symptoms. Thus, these findings confirm the need for a multifaceted approach to acne treatment with reference to both dermatological and psychological interventions. Social media's influence on how people perceive beauty and self-worth contributes to these problems. According to various studies, when an individual is continuously exposed to envisioned photos on social media, their anxiety levels related to acne and body image may rise [9]. Twitter and Facebook even give the means to share experiences and interact with other people, but they also include advertisements for perfect skin and disseminate the psychological load of acne patients. Patients' strategies of handling situations can range from makeup and isolation to visiting a dermatologist and seeing a psychologist. The strategies, however, have an individual difference in applicability to particular conditions of a patient and the availability of integrated treatment services. It is still disputed when mental health screening should start as a routine approach, but new guidelines propose an interdisciplinary approach to treating acne, which involves mental health assessment along with dermatological assessment [10].

Although there is increased awareness of the psychological burden of acne, there are still gaps in the study of the multifaceted nature of such a burden. The proposed study will fill this gap by examining the psychological distress linked with acne vulgaris among acne patients. The research will inform the overall management of acne by assessing anxiety, the perception of stigmas, and coping among patients to enhance patient outcomes.

METHODS

This cross-sectional study was conducted after taking ethical approval (bearing no. A/24/07; dated March 2024) from the Ethical Committee/ Institutional Review Board of CMH Kharian. All diagnosed patients with acne vulgaris visiting the Department of Dermatology, Combined Military Hospital, Kharian, from March 2024 to October 2024 were enrolled for the study. All the patients who were selected for the study were briefly informed about the study purpose, and written informed consent was taken before being included in the study. A total of 135 patients diagnosed with acne vulgaris were recruited using a non-probability convenience sampling technique. The sample size was calculated by using the WHO sample size calculator with the help of 95% confidence level, anticipated population proportion (prevalence of patients having a significant psychological impact of Acne) of 66% [7], absolute precision required of 8%, and the sample size turned out to be 135 patients. The study included patients aged 16 years or older with a clinical diagnosis of acne vulgaris and provided informed consent. Exclusion criteria comprised individuals with chronic psychiatric illnesses, ongoing psychiatric treatment, other significant dermatological conditions, severe systemic diseases, or those unwilling to participate. Data were collected through structured interviews using a pre-designed proforma. The proforma consisted of four sections. The initial section was a collection of demographic and general data, such as age, sex, education level, profession, marital status, and household earnings per month. The second part concerned the clinical history of acne, where data regarding the duration, the severity (mild, moderate, or severe according to clinical examination based on Investigator's Global Assessment (IGA), the types of lesions (comedones, papules, pustules, nodules, cysts), and information about the history of treatment were gathered. The third section was the evaluation of the psychological burden of acne. In this study, psychological burden was defined as the presence of anxiety symptoms (measured using the GAD-7 scale) and impairment in acne-related quality of life (measured using the Cardiff Acne Disability Index, CADI) (scores ranged between 0 and 15). The GAD-7 scale was used to assess the level of anxiety; the measures of anxiety were classified under mild (score 5-9), moderate (score 10-14), and severe (score 15-21). Both of these questionnaires were filled out by the researcher herself at the time of inclusion of the patients in the study after informed consent. Differentiated treatment, discrimination /teasing, and social avoidance of acne were questions over perceived social stigma. Effects of acne on everyday life were examined by asking questions that discussed how acne had an effect on work/school performance, relationships, and how much people spent worrying about the acne. The last part was devoted to coping mechanisms, where the respondents cited avoidance, use of cosmetics, talking to friends/family, seeking medical help, and social media use.

The data collected were entered and processed by use of SPSS version 25.0. Categorical variables were determined using descriptive statistics (frequency and Percentages), whereas means and standard deviations were provided to describe the continuous variables. The association between demographic variables, clinical characteristics, psychological burden, and coping mechanisms was studied using cross-tabulations. Inferential statistical analysis was performed to examine associations between acne severity and psychological burden variables using the Chi-square test, with a significance level set at $p<0.005$.

DOI: https://doi.org/10.54393/pjhs.v7i8.3742

RESULTS

A total of 135 patients with acne vulgaris were included in the study. Table 1 demonstrates the demographic attributes of the research subjects. Most of the participants were women (61.48%). The majority of the (41.48%) participants had a high school education, (32.59%) were undergraduates, and (24.83%) were postgraduates. More than half of the interviewees were students (53.33%), 35.56% employees, and 11.11% housewives. Most of the participants were single (64.44%), where 30.37% were married, and 5.19% were divorced or widowed (Table 1).

Table 1: Demographic and General Characteristics

Demographic Variable	Frequency (%)
Gender	
Male	52 (38.52%)
Female	83 (61.48%)
Educational Background	
No formal education	12 (8.89%)
Primary school	23 (17.04%)
High school	56 (41.48%)
Undergraduate/Postgraduate	44 (32.59%)
Occupation	
Students	72 (53.33%)
Employed	48 (35.56%)
House wife	15 (11.11%)
Marital Status	
Single	87 (64.44%)
Married	41 (30.37%)
Divorced/Widowed	7 (5.19%)
Total	135 (100.0%)

It summarizes the clinical history of acne among the participants. Most (37.78%) of the participants had acne for 1-2 years, and (31.11%) had acne for 6-12 months. A small number of (17.78%) participants reported less than 6 months, and (13.33%) over 2 years. Moderate acne was the most prevalent (47.41%), followed by severe (28.15%) and mild (24.44%) cases. The lesions that were seen were Comedones (56.30%), papules (45.19%), pustules (42.22%), nodules (21.48%), and cysts (12.59%) (Table 2).

Table 2: Distribution of Clinical History of Acne

Clinical History of Acne	Frequency (%)
Duration of Acne	
<6 Months	24 (17.78%)
6-12 Months	42 (31.11%)
1-2 Years	51 (37.78%)
>2 Years	18 (13.33%)
Severity of Acne	
Mild	33 (24.44%)
Moderate	64 (47.41%)
Severe	38 (28.15%)
Lesion Types	
Comedones	76 (56.30%)
Papules	61 (45.19%)
Pustules	57 (42.22%)
Nodules	29 (21.48%)
Cysts	17 (12.59%)

The psychological burden of acne. Anxiety levels assessed using the GAD-7 scale showed that 45.93% (95% CI: 37.5–54.3) of participants had moderate anxiety and 20.0% (95% CI: 13.3–26.7) had severe anxiety. Perceived stigma was also common, with 51.11% (95% CI: 42.7–59.5) reporting differential treatment and 43.70% (95% CI: 35.4–52.1) avoiding social situations (Table 3).

Table 3: Psychological Burden Assessment

Psychological Burden	n (%)	95% Confidence Interval
Anxiety Level (GAD-7)		
Mild	46 (34.07%)	26.1 – 42.0
Moderate	62 (45.93%)	37.5 – 54.3
Severe	27 (20.00%)	13.3 – 26.7
Perceived Social Stigma		
Differential Treatment	69 (51.11%)	42.7 – 59.5
Bullying/Teasing	51 (37.78%)	29.6 – 46.0
Avoiding Social Situations	59 (43.70%)	35.4 – 52.1
Impact on Daily Life		
Effect on Work/School Performance	66 (48.89%)	40.5 – 57.3
Effect on Relationships	49 (36.30%)	28.2 – 44.4
Worrying About Acne	82 (60.74%)	52.4 – 69.0

The coping strategies and the use of social media. The most (42.22%) commonly used coping mechanism was makeup/cosmetics (25.19%), followed by avoidance behavior (20.74%), and seeking support through talking to friends or family. The use of medical assistance (8.15%) and alternative approaches (3.70%) was less common. In terms of social media influence, 67.41% of the respondents had compared themselves with other people, and 62.96% said that social media made them more aware of their looks. Acne-related quality of life was assessed using the Cardiff Acne Disability Index (CADI). Nearly half of the participants (47.41%) experienced moderate impairment, while 23.70% reported severe impairment in quality of life due to acne (Table 4).

Table 4: Distribution of Coping Mechanisms

Characteristics	n (%)
Coping Mechanism	
Avoidance	34 (25.19%)
Makeup/Cosmetic Use	57 (42.22%)
Talking To Friends/Family	28 (20.74%)
Seeking Medical Help	11 (8.15%)
Other Methods	5 (3.70%)

DOI: https://doi.org/10.54393/pjhs.v7i8.3742

Social Media Use	
Comparison	91 (67.41%)
Consciousness Increase	85 (62.96%)
CADI Score Distribution (Quality of Life Impact)	
Low Impact (0-5)	39 (28.89%)
Moderate Impact (6-10)	64 (47.41%)
High Impact (11-15)	32 (23.70%)

A statistically significant association was observed between acne severity and anxiety levels. Patients with severe acne had a higher proportion of moderate to severe anxiety compared to those with mild acne (Chi-square test, p=0.028)(Table 5).

Table 5: Association Between Acne Severity and Anxiety Level

Acne Severity	Mild Anxiety, n (%)	Moderate Anxiety, n (%)	Severe Anxiety, n (%)	Total	p-value
Mild (n=33)	18 (54.5%)	11 (33.3%)	4 (12.1%)	33	0.028*
Moderate (n=64)	19 (29.7%)	33 (51.6%)	12 (18.7%)	64	
Severe (n=38)	9 (23.7%)	18 (47.4%)	11 (28.9%)	38	
Total	46	62	27	135	–

DISCUSSION

Acne vulgaris is a common dermatological disorder affecting a large number of people worldwide, as it has negative effects on not only physical but also psychological health. The results of the current research reveal the significant psychological burden associated with acne, so the disease requires a more complex way of treating the disease. Although physical symptoms are frequently the main concerns of treatment, psychological and social consequences of the acne should not be disregarded. Existing studies affirm that acne may cause great psychological problems, like anxiety, depression, and other emotional issues. This study, in line with the previous studies, the present study found a significant association between acne severity and anxiety levels, with higher anxiety observed among patients with more severe acne. About 2/3 of the participants had moderate to severe anxiety (45.93% moderate and 20.0% severe anxiety), which is in line with other studies that postulate that people with more severe acne is more susceptible to mental distress, especially depression and anxiety. In a study by El Kazzi *et al.* and Srivastava *et al.* noted that about 40% of the participants were feeling down, depressed, or hopeless, and 18% of the participants had suicidal and self-hurt [11, 12]. Acne, particularly when it appears on the face, may worsen the sense of social isolation and low self-esteem, and the quality of life will decrease significantly. It is important to note, as our results demonstrate, that it is not only essential to manage the dermatological symptoms of acne, but also the psychological condition of the patients, understanding that it affects the overall health of the patients in a dual manner. Another important determinant that influences acne patients is social stigma. Nevertheless, even though it is a widespread issue among individuals of all ages, acne is a stigmatized disease that is mostly seen as a disease of youth. We discovered that more than half of the respondents (51.11%) indicated having received unequal treatment because of their acne, 43.70% avoided social situations, and 37.78% were bullied or teased. This is in line with the earlier studies indicating the adverse impact of stigmatization [13, 14]. The stigma associated with acne may result in social isolation and increased distress, which increases the psychological load of the condition. A decrease in the quality of life and rise in emotional trauma are frequent outcomes of this isolation, and psychosocial aspects must be addressed as an integral component of the overall acne treatment. Another big theme that appeared in our work was the role of social media in the formation of body image and self-esteem. There was a large number of respondents (67.41%) who experienced a sense of being more self-conscious and making comparisons with others on social media, and 62.96% respondents said that social media had made them more conscious of their appearance. This conforms to the past research that had linked acne to low self-esteem and increased mental health problems in the face of impracticality of beauty standards propagated via the internet [15]. The use of social media may increase the pressure to meet the beauty ideals, which negatively affects the mental health of acne sufferers. It emphasizes the necessity of interventions that would take into account the effect of social media on body image and self-perception. The coping strategies that were used by the participants in this study demonstrated that they preferred using makeup, avoidance behaviors, and, to a lesser degree, social networks. In particular, there was 42.22% of the respondent's used makeup or cosmetics, 25.19% of the patients avoided behaviors, and 20.74% respondents sought the support of friends or family. The strategies are in line with prior studies on the coping mechanisms of patients with acne and the psychological distress associated with it. Acne lesions and low self-esteem were frequently covered with makeup, which acted as a stopgap measure to the stigma associated with acne [16, 17]. Nevertheless, the fact that these coping strategies are widely employed did not result in the fact that 8.15 percent of the participants sought medical assistance regarding psychological distress, and thus, the applied help was not exercised. This indicates that mental health support should be included in the acne treatment regimen, where the physical as well as emotional nature of the disorder is addressed. This present study revealed that acne had a strong influence on relationships and work or school performance, as 48.89% of the sample responded that acne had an impact on their work or school performance, 60.74% were worried, and 36.30% said acne had an impact

DOI: https://doi.org/10.54393/pjhs.v7i8.3742

on their relationships. The outcomes are in agreement with other researchers that acne may have detrimental impacts on many spheres of life because of emotional and social difficulties [18]. Self-esteem problems caused by acne may lead to changes in academic performance, work status, and relationships with people, which once again highlights the importance of an integrated care approach that would have to focus on all the problems that people with acne may face [19]. The study supports the fact that acne vulgaris has a major psychological influence on the patients. The findings highlight the significance of the creation of holistic treatment programs that would involve the use of psychological as well as dermatological treatment. The emotional and social impacts of acne should be identified and treated by the health care providers as integrated in the treatment models, to enhance the overall quality of life of people with acne. Considering the physical and psychological dimensions of acne, medical professionals can promote the performance of treatment of this condition and offer more patient-centered care to patients [20].

There were some limitations of this research. It is a single-center, cross-sectional study with non-probability convenience sampling that could limit the generalizability of the findings, and the results cannot be used to draw causal conclusions. The study lacks longitudinal follow-up, which limits the evaluation of time changes in terms of psychological burden. Moreover, reliance on self-reported measures could result in a response bias, even though validated instruments were used. It is recommended to conduct multicenter and longitudinal studies based on random sampling to reinforce evidence in this field even further. Further studies are needed to incorporate multicenter, large-scale longitudinal studies with random sampling to enhance its generalizability and causal interpretation. Further research into structured psychological interventions and dermatological therapy, to create integrated, patient-centered care models, is also suggested.

CONCLUSIONS

This study found that acne vulgaris had a moderate effect on anxiety, stigma, and quality of life while causing considerable psychological distress. Patients experience moderate to severe anxiety, and social stigma exacerbates their mental health problems. The use of cosmetics and avoidance as coping strategies are indicators of underutilization of professional psychiatric help and suggest that individuals who are experiencing difficulties require more comprehensive and potentially successful therapy. These results highlight the necessity of both a multimodal acne treatment program and mental health evaluation in addition to dermatological care.

Acknowledgement

The authors would like to thank all patients who took part in this research. We also acknowledge the support of the staff of the Dermatology Department, CMH Kharian, during data collection. We also thankful to the Institutional Review Board of CMH Kharian, who gave the Ethical approval and guidance.

Authors' Contribution

Conceptualization: SS
Methodology: SS, AS, WN, MI
Formal analysis: SS, WN
Writing and Drafting: SS, AHM, FM, AS, MI
Review and Editing: SS, AHM, FM, AS, WN, MI

All authors approved the final manuscript and take responsibility for the integrity of the work

Conflicts of Interest

All the authors declare no conflict of interest.

Source of Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

REFERENCES

[1] Shulamite S. The Psychological Implications of Living in Social Exclusion: A. Samriddhi. 2025 Jan: 88.

[2] Reynolds RV, Yeung H, Cheng CE, Cook-Bolden F, Desai SR, Druby KM *et al.* Guidelines of Care for the Management of Acne Vulgaris. Journal of the American Academy of Dermatology. 2024 May; 90(5): 1006-E1. doi: 10.1016/j.jaad.2023.12.017.

[3] Islam RK, Tong VT, Lipner SR. A Clinical Review of Suicide Risks in Dermatology. Journal of the American Academy of Dermatology Reviews. 2025 Jun; 4: 195-202. doi: 10.1016/j.jdrv.2025.02.007.

[4] Faruga-Lewicka W, Dudek M, Staśkiewicz-Bartecka W, Kardas M. Self-Esteem, Self-Perception, and Self-Image of Women with Acne Vulgaris at Different Age Ranges. Dermatology Reports. 2025 Apr; 17(4): 10191.doi: 10.4081/dr.2025.10191.

[5] Dziuba N, Mioduszewska J, Sim A, Rot P, Poniewozik P, Pernal M *et al.* Physical Activity–Friend or Foe of Acne? A Literature Review. Quality in Sport. 2026 Apr; 53: 70262-. doi: 10.12775/QS.2026.53.70262.

[6] Powell JL. Towards a Framework of Coping Following Severe Traumatic Brain Injury: A Grounded Theory Study. Psychology, Health and Medicine. 2026 Mar: 1-24. doi: 10.1080/13548506.2026.2637194.

[7] Pratheepa AR and Gupta S. Association Between Acne Severity, Body Image Disturbance, and Depressive Symptoms Among Late Adolescents: An Observational Study. European Journal of

DOI: https://doi.org/10.54393/pjhs.v7i8.3742

Cardiovascular Medicine. 2025 Nov; 15: 304-8.
[8] Singh IP, Poonia K, Bajaj K. Quality of Life in Young Adults with Acne: Results of a Cross-Sectional Study. Journal of Cosmetic Dermatology. 2021 Dec; 20(12): 4017-23.
[9] Khalaf AM, Alubied AA, Khalaf AM, Rifaey AA, Alubied A, Rifaey A. The Impact of Social Media on the Mental Health of Adolescents and Young Adults: A Systematic Review. Cureus. 2023 Aug; 15(8). doi: 10.7759/cureus.42990.
[10] Ertekin SS, Salici NS, Bas VM, Karali MG, Ergün EZ, Avcı EB *et al.* Influence of social media and Internet on Treatment Decisions in Adult Female Acne Patients: A Cross-Sectional Survey Study. Dermatology Practical and Conceptual. 2024 Jul; 14(3): E2024156. doi: 10.5826/dpc.1403a156.
[11] El Kazzi T, Shahine M, Salameh P. Effect of Severity of Acne on the Mental Health of Lebanese Patients with Acne: Findings from an Online Survey. BioMed Central Psychology. 2025 May; 13(1): 502. doi: 10.1186/s40359-025-02808-8.
[12] Srivastava S, Bhatia MS, Das P, Bhattacharya SN. A Cross-Sectional Study of Quality of Life and Psychiatric Morbidity in Patients with Acne Vulgaris. Journal of Pakistan Psychiatric Society. 2008 Dec; 5(2): 86-9.
[13] Timkova V, Mikula P, Nagyova I. Psychosocial Distress in People with Overweight and Obesity: The Role of Weight Stigma and Social Support. Frontiers in Psychology. 2025 Jan; 15: 1474844. doi: 10.3389/fpsyg.2024.1474844.
[14] Stamu-O'Brien C, Jafferany M, Carniciu S, Abdelmaksoud A. Psychodermatology of acne: psychological aspects and effects of acne vulgaris. Journal of Cosmetic Dermatology. 2021 Apr; 20(4): 1080-3. doi: 10.1111/jocd.13765.
[15] Khalaf AM, Alubied AA, Khalaf AM, Rifaey AA, Alubied A, Rifaey A. The Impact of Social Media on the Mental Health of Adolescents and Young Adults: A Systematic Review. Cureus. 2023 Aug; 15(8). doi: 10.7759/cureus.42990.
[16] Loney T, Standage M, Lewis S. Not Just Skin Deep: Psychosocial Effects of Dermatological-Related Social Anxiety in a Sample of Acne Patients. Journal of Health Psychology. 2008 Jan; 13(1): 47-54. doi: 10.1177/1359105307084311.
[17] Li M, Li M, Wei J, Zhou L, Zhu Y, Yang K *et al.* The Psychological Journey of Patients with Atrophic Acne Scarring: A Qualitative Study Based on Uncertainty in Illness Theory. Clinical, Cosmetic and Investigational Dermatology. 2025 Dec: 3223-38. doi: 10.2147/CCID.S545766.
[18] Zaenglein AL, Pathy AL, Schlosser BJ, Alikhan A, Baldwin HE, Berson DS *et al.* Guidelines of Care for the Management of Acne Vulgaris. Journal of the American Academy of Dermatology. 2016 May; 74(5): 945-73. doi: 10.1016/j.jaad.2015.12.037.
[19] El-Hamd MA, Nada EE, Moustafa MA, Mahboob-Allah RA. Prevalence of Acne Vulgaris and Its Impact on the Quality of Life Among Secondary School-Aged Adolescents in Sohag Province, Upper Egypt. Journal of Cosmetic Dermatology. 2017 Sep; 16(3): 370-3.doi: 10.1111/jocd.12328.
[20] Rashid S, Jamil Z, Azeem S, Afzal N. Living with Acne: A Patient-Centered Study on Myths, Beliefs, and Perceptions. Journal of Pakistan Association of Dermatologists. 2023 Oct; 33(4): 1314-24.