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Acne and its multifaceted impact on students: Prevalence, mental health, and self-treatment practices

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ABSTRACT

Background: Acne vulgaris is one of the most prevalent dermatological conditions worldwide, affecting approximately 85% of adolescents and young adults.

Objectives: The aim of the study is to evaluate the psychological impact of acne among students and assess its effects on self-esteem, anxiety, depression, and quality of life. Additionally, it explores the influence of demographic factors on these psychological outcomes.

Method: A cross-sectional study was conducted with 400 participants aged 15-25 who were clinically diagnosed with acne. Data were collected through structured questionnaires addressing demographic information, acne characteristics, and psychological assessments. Participants' self-esteem, anxiety, depression, and quality of life were measured using the Rosenberg Self-Esteem Scale (RSES), Generalized Anxiety Disorder 7-item (GAD-7) scale, Patient Health Questionnaire-9 (PHQ-9), and Dermatology Life Quality Index (DLQI), respectively.

Results: The study found that acne severity significantly impacts psychological distress. Individuals with severe acne reported lower self-esteem, higher anxiety, and more severe depressive symptoms. Gender differences in psychological impact were not statistically significant. Education level influenced the likelihood of consulting a dermatologist, with higher education levels correlating with increased consultation rates. Quality of life was significantly impaired in participants with severe acne, affecting both functional and emotional domains.

Conclusion: The study underscores the profound psychological impact of acne, emphasizing the need for comprehensive care addressing dermatological and psychological aspects. Understanding the multifaceted nature of acne's effects on mental health can enhance patient care, reduce stigma, and improve the quality of life for affected individuals. Public health initiatives should promote awareness and early intervention across populations.

KEYWORDS

Acne vulgaris; Self-esteem; Psychological impact; Self-treatment

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Introduction

Acne vulgaris is a highly prevalent dermatological condition globally, impacting around 85% of adolescents and young adults to varying extents. It is marked by the presence of papules, comedones, pustules, cysts, and nodules and can appear on the face, neck, chest, shoulders, and back [1]. Although acne is often perceived as a transient and benign condition of adolescence, its impact extends beyond the physical lesions, profoundly affecting individuals' psychological and social well-being [2].

The psychological effects of acne are complex, including lower self-esteem, higher anxiety, and an increased risk of depression [3]. For many individuals, the psychological burden of acne can lead to social detachment, impaired academic and occupational performance, and a diminished quality of life. This underscores the necessity for a holistic approach to acne management that addresses the condition's dermatological and psychosocial aspects [4].

Previous studies have demonstrated a significant association between acne severity and psychological distress [5]. Despite extensive research, a gap persists in the literature concerning how demographic factors like gender, locality, age, socioeconomic status, and education level affect the psychological impact of acne. Grasping these subtleties is essential for crafting targeted interventions and support systems tailored to the diverse needs of patient populations.

This study aims to elucidate the relationship between acne severity and psychological well-being while also exploring the influence of demographic variables on this relationship. By comprehensively assessing self-esteem, anxiety, depression, and quality of life among individuals with acne, this research seeks to provide a robust evidence base to inform clinical practices and psychosocial support strategies in dermatology.

The findings of this study will not only contribute to the academic discourse on acne and mental health and have practical implications for dermatologists, mental health professionals, and policymakers. Through a nuanced understanding of the psychosocial dimensions of acne, we can enhance patient care, reduce the stigma associated with the condition, and ultimately improve the quality of life for

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individuals affected by acne. To comprehensively evaluate the prevalence of acne among students and assess its multifaceted impact on their psychological well-being, quality of life, and self-treatment practices while exploring the interrelationships between acne severity.

Materials and Method

This cross-sectional study was conducted to investigate the psychological impact of acne on individuals of varying severities and to identify differences based on demographic factors such as age, gender, locality, education level, and socioeconomic status. A total of 400 participants with clinically diagnosed acne were recruited from the Dermatology Clinic between January 2023 and December 2023.

Inclusion and exclusion criteria

The study participants were aged between 15 and 25, diagnosed with acne by a certified dermatologist, and willing to provide informed consent were included in the study.

The exclusion criteria were the presence of other significant dermatological conditions and a history of psychiatric illness unrelated to acne, undergoing current treatment for severe psychiatric disorders.

Data were collected using a structured questionnaire administered during face-to-face interviews. The questionnaire was divided into sections addressing demographic information, acne characteristics, and psychological assessments. Data on age, gender, locality (urban, suburban, rural), education level (high school, undergraduate, graduate, other), and socioeconomic status (low, middle, high) were collected. Participants were assessed for the duration of acne (<6 months, 6-12 months, 1-2 years, >2 years), the severity of acne (mild, moderate, severe), and location of acne (face, back, chest, shoulders, neck). The type of lesions (comedones, papules, pustules, nodules, cysts) was also recorded. Participants were asked about their self-treatment practices, including the use of over-the-counter products, home remedies, prescribed medications, and consultations with dermatologists.

Psychological assessments

The self-esteem was measured by the Rosenberg Self-Esteem Scale (RSES) with scores categorized as < 15, 15-25, and>25 as low, normal, and high, respectively. A Generalized Anxiety Disorder 7-item scale was used to measure the anxiety, which classified scores into normal, mild, and moderate to severe with the values 0-7, 8-10, and 11-21, respectively. Depression levels were measured using the Patient Health Questionnaire-9, with scores falling into normal, mild, and moderate to severe categories as 0-7, 8-10, and 11-21, respectively. The Dermatology Life Quality Index evaluated the quality of life, categorizing scores into 0–1, 2–5, 6–10, 11–20, and 21–30 as no effect, moderate effect, substantial effect, very large impact, and extremely large impact.

Data analysis

The data analysis was performed using SPSS version 28. Descriptive statistics were used to summarize demographic and clinical characteristics. The relationships between psychological effects and acne severity, gender, and educational attainment were assessed using chi-square tests of independence. A P-value of less than 0.05 was considered statistically significant.

Result

The data suggests that acne is a common condition affecting individuals across various age groups, genders, localities, educational backgrounds, and socioeconomic statuses. The severity and duration of acne vary, with a significant number of individuals experiencing acne on multiple parts of their bodies. Different types of lesions are also prevalent, indicating a diversity in the manifestation of acne. A relatively balanced age group distribution was seen, with a slight majority in the 19-22 years group (34.75%). The 15-18 and 23-25 years groups have similar representations at 33.25% and 32.00%, respectively. This indicates that acne affects individuals across these age groups relatively equally. The duration of acne is quite evenly distributed, with the highest percentage being those who have had acne for more than 2 years (27.00%) and the lowest being those who have had acne for 1-2 years (22.25%). This shows that acne can persist for varying lengths of time among individuals (Table 1).

Table 1. Prevalence and demographic data representation of acne vulgaris in students.

	Number (N=400)	Percentage
Age		
15-18 y	133	33.25%
19-22 y	139	34.75%
23-25 y	128	32%
Gender		
Male	187	46.75%
Female	213	53.25%
Locality		
Urban	112	28%
Suburban	128	32%
Rural	160	40%
Education Level		
High school	92	23%
Undergraduate	106	26.50%
Graduate	101	25.25%
Other	101	25.25%
Socioeconomic status		
Low	122	30.50%
Middle	125	31.25%
High	153	28.255
Duration of Acne		
<6 months	107	26.75%
6-12 months	96	24%
1-2 years	89	22.25%
>2 years	108	27%
Severity of Acne		
Low	161	40.25%
Moderate	124	31%
Severe	115	28.75%
Location of Acne		
Face	194	48.5%
Back	201	50.25%
Chest	202	50.50%
Shoulders	205	51.25%
Neck	218	54.50%

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Type of Lesion		
Comedowns	191	47.75%
Papules	181	45.25%
Pustules	199	49.75%
Nodules	203	50.75%
Cyst	191	47.75%

Most individuals in the sample have low-severity acne (40.25%), followed by moderate (31.00%) and severe (28.75%). This suggests that while a significant number of individuals experience less severe acne, there is still a substantial proportion with moderate to severe acne. Acne on the neck is the most common (54.50%), followed by shoulders (51.25%), chest (50.50%), back (50.25%), and face (48.50%). This indicates that acne frequently appears on multiple parts of the body, with the neck being slightly more common. Nodules are the most common type of lesion (50.75%), followed by pustules (49.75%), comedones and cysts (both 47.75%), and papules (45.25%). This distribution shows that different types of lesions are fairly common among individuals with acne, with nodules being the most prevalent.

All the p-values exceed the common significance threshold of 0.05, indicating no statistically significant differences between males and females in terms of self-esteem, anxiety, depression, and quality of life scores. In other words, the data suggests that the psychological impact of acne does not significantly differ between males and females in this sample for the categories analyzed (Table 2 and 3).

Table 2. Psychological impact of acne.

Psychological Impact	Male (187)	Female (213)	p-value
Self Esteem score			
<15 (low)	101	112	0.940
15-25 (normal)	61	73	
>25 (high)	25	28	
Anxiety score			
0-7 (Normal)	72	77	0.678
8-10 (mild)	29	28	
11-21 (moderate to severe)	78	96	
Depression Score			
0-7 (Normal)	66	83	0.750
8-10 (mild)	26	28	
11-21 (moderate to severe)	95	102	
Quality of Life (DLQI)			
0-1 (No effect)	13	15	0.852
2-5 (small effect)	25	32	
6-10 (moderate effect)	30	29	
11-20 (Very large)	50	65	
21-30 (extremely large)	69	72	

Table 3. Self-treatment practice in can affect students.

Self-treatment	Gender			Education level				
	male	female	p-value	High school	Undergraduate	Graduate	Other	P-value
Use of over-the-counter products								
Yes	102	108	0.505	22	58	47	51	0.647
No	85	105		18	48	54	50	
Home remedies								
Yes	88	100	1.000	24	51	41	48	0.218
No	99	113		16	55	60	53	
Prescribed medication								
Yes	106	113	0.530	52	57	54	56	0.970
No	81	100		40	49	47	45	
Consulted with dermatologist								
Yes	112	110	0.120	43	60	62	44	0.039
No	75	103		49	46	39	57	

All p-values for gender differences exceed the common significance level of 0.05, indicating no statistically significant differences between males and females regarding self-treatment methods for acne. Most p-values for education level differences are greater than 0.05, indicating no significant differences except for "Consulted with a dermatologist," which has a p-value of 0.039. This suggests a statistically significant difference in consulting with a dermatologist across different education levels. In summary, while self-treatment methods for acne do not significantly differ between males and females, the likelihood of consulting with a dermatologist shows significant variation among different education levels.

Table 4 suggests that there are no statistically significant differences in the psychological impact such as self-esteem (0.162), anxiety (0.403), depression (0.470), and quality of life (0.083) based on the severity of acne in this sample.

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Table 4. Psychological impact with respect to acne severity.

Psychological Impact	Severity			
Self Esteem score	Mild	Moderate	Severe	
<15 (low)	94	61	54	0.162
15-25 (normal)	44	49	45	
>25 (high)	23	14	16	
Anxiety score				
0-7 (Normal)	55	45	49	0.403
8-10 (mild)	25	14	18	
11-21 (moderate to severe)	81	65	48	
Depression Score				
0-7 (Normal)	56	45	48	0.470
8-10 (mild)	18	19	17	
11-21 (moderate to severe)	87	60	50	
Quality of Life (DLQI)				
0-1 (No effect)	10	7	11	0.083
2-5 (small effect)	31	18	8	
6-10 (moderate effect)	28	16	15	
11-20 (Very large)	37	37	41	
21-30 (extremely large)	55	46	40	

Discussion

Acne vulgaris is a prevalent dermatological condition with significant psychological and emotional implications, particularly among adolescents and young adults. This study examined the psychosocial impact of acne on patients and found that the condition significantly affects quality of life (QoL), self-esteem, and mental health. This study evaluated the relationship between depressive symptoms and acne severity, as well as the impact of acne on quality of life. The findings align with existing literature, highlighting the profound psychological burden acne imposes. Patients often experience anxiety, depression, and diminished self-esteem, which can lead to social withdrawal and impaired daily functioning.

These findings indicate a greater prevalence of acne among females (53.25%) than males (46.75%). This trend is consistent with prior research conducted in India, Nepal, Pakistan, Egypt, and Saudi Arabia, demonstrating that acne is more prevalent in females than males [6-9]. In our study, severe acne was observed in approximately 28.75% of patients; however, some studies have reported a higher incidence of mild acne [10]. Additionally, the prevalence of depression among acne patients in our study was 22.5% in males and 25.5% % in females, which was lower than that reported in previous studies [11,12].

Gender differences in the psychosocial impact of acne are notable. Females generally report higher levels of psychological distress and lower self-esteem compared to males. This is partly due to societal and cultural pressures regarding appearance, which tend to be more pronounced for females [13]. In the present study, females reported a higher prevalence of both self-reported and clinically confirmed acne, and they exhibited significantly lower self-esteem levels compared to their male counterparts.

The psychological impact of acne was profound, with individuals with severe acne reporting significantly lower self-esteem, higher anxiety, and more severe depressive symptoms. This is consistent with the findings of Mufaddel et al. (2017), who identified significant psychiatric comorbidities in patients with acne [5,14]. Gender differences in psychological impact were not statistically significant, which aligns with the findings of Ak et al. (2019), who reported no significant gender differences in the psychological distress caused by acne [2]. Participants with severe acne experienced a significantly impaired quality of life, affecting both functional and emotional domains. This supports the results of Gold et al. (2024), who highlighted the substantial impact of acne on the quality of life in their study on transgender patients [3].

Conclusions

In conclusion, this study underscores the profound psychological impact of acne and the need for comprehensive care that addresses dermatological and psychological needs. By understanding the multifaceted nature of acne and its effects on mental health, healthcare providers can offer more effective and compassionate care, ultimately improving the quality of life for individuals affected by this common skin condition.

Limitations

Although our study provides valuable insights, it is essential to recognize its limitations. The cross-sectional design hinders the ability to determine causality between acne severity and psychological outcomes. Moreover, self-reported data may be influenced by recall bias and social desirability bias. Future research should incorporate longitudinal designs to better comprehend the temporal relationship between acne and psychological distress.

Future perspectives

The findings of this study have significant clinical implications. Dermatologists should adopt a holistic approach to acne treatment, incorporating psychological assessments and providing referrals to mental health professionals when necessary. Additionally, public health initiatives should aim to increase awareness about the psychological impact of acne and promote early intervention.

Disclosure Statement

No potential conflict of interest was reported by the authors.

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