FREQUENCY OF DEPRESSION AMONG PATIENTS WITH ACNE VULGARIS

Dr Bilal Zafar[*1], Dr Zainab Bibi[2], Dr Asma Ul Hussain[3]

[*1]Liaquat National Hospital, Karachi
[2,3]Agha Khan University Health Facility

Abstract

Introduction: These days psychological problems are rising in our society. Minute changes in the skin result in a serious emotional state. Acne vulgaris is one of the most common skin diseases in this region. **Objective**: This study aimed to determine the frequency of depression in patients with acne vulgaris. **Methodology**: This Cross-sectional study was conducted at the OPD of the Dermatology Department, LNH during April 06 2023 to Oct 06 2023. A total of 150 patients who presented at the OPD of the Dermatology Department, LNH, meeting the eligibility criteria were included in the study. Frequency and percentage were calculated for gender, smoking (yes/no), alcohol consumption (yes/no), educational status, marital status, residential status, income status, occupational status, acne severity, and the presence of depression (yes/no). **Results**: Of the 150 patients, 61 (40.6%) were males and 89 (59.3%) were women. The mean age of the patients was 33.4 ± 7.60 years and mean duration of disease was 12 ± 6 months. Of the total number of patients with acne vulgaris, 94 (62.8%) had a moderate form of acne and the remaining patients were equally distributed between the mild and severe acne groups 28 (18.6%). Of 150 patients with acne vulgaris, 90 (60%) had depression. **Conclusion**: A high incidence of depression in the patients with acne vulgaris has been found in the current study, which is related to age group and other factors also. Long-term psychometric assessments are essential for the management of acne vulgaris.

INTRODUCTION

Psychological issues have become increasingly prevalent in our culture. Minute changes in the skin may result in significant emotional conditions. [1]. Acne vulgaris is one of the most frequent skin diseases in our area. Acne vulgaris is a chronic dermatological disease characterized by the formation of comedones, reddish papules, and cysts with or without scarring due to inflammation of the pilosebaceous unit. It is most frequent throughout adolescence and in young people aged 15–25 years, with a frequency of up to 85% among teenagers. It mostly affects the face, although it may also appear on the back, deltoid, and upper trunk. [2]. Post-adolescent acne includes two unique subtypes: persistent acne, which begins in adolescence and lasts until maturity; and late-onset acne, which originates beyond the age of 25 years. [3]. Acne imposes a considerable psychological burden because it is often visible on the face, indicating unhappiness with the concept of body image and facial beauty. [4]. This may be explained by the fact that the face is an effective means of visual attention that people use for social communication. [5]. In adolescence, daily activities are more likely to affect the acne, as at this age physical, intellectual development, and emotional changes occur; therefore, it can have significant psychosocial impact. [6].

Acne patients often experience emotions of humiliation, poor confidence, sadness, tension, anxiety, and trouble applying for employment, particularly after trying several treatments. They also feel self-conscious about the recurrence of skin lesions, especially their redness and scarring. [7]. Patients with acne are likely to experience long-term stress, anxiety, and depression. Numerous studies have revealed that individuals with acne have significant prevalence rates of anxiety and despair, up to >40%, with 6-7% of cases being suicidal. The rise of psychological comorbidities in long-term illnesses is the cause of this. [8]. Acne causes long-term psychological consequences, such as low self-esteem, poor self-image, unhappiness with facial appearance, and problems forming social relationships. As a result, long-term acne therapy, including measurement of psychometric results, is the most effective treatment for acne vulgaris and may increase self-confidence and self-esteem. [9]. A study conducted by Ragique, et. al, in which depression was observed in most cases (62%) as compared to anxiety (51%) and stress (40%) in different severity of acne patients [10]. The aim of this study was to determine the frequency of depression among acne vulgaris patients. Very few studies have emerged on this topic on national as well as international level, but no study has ever been conducted in Karachi as this city is different in demographic characteristics, so we have decided to conduct a cross-sectional study to investigate the frequency of depression in acne patients. The potential future implication of this study could be that this study could be used as a local reference for further research and to streamline the patient's referral towards specialized health care.

Objective

To determine the frequency of depression among acne vulgaris patients.

Methodology

This Cross-sectional study was conducted at the OPD of the Dermatology Department, LNH during April 06 2023 to Oct 06 2023. Data were collected through Non-probability consecutive sampling

Sample size:

Sample size was calculated by using the Openepi.com sample size calculator through statistics of: P (frequency of depression in acne vulgaris patients): 62%.
Confidence level: 95%
Margin of error: 8%
Calculated sample size as 142 total patients.
Sample size was calculated by using online sample size calculator from Openepi.com.

Inclusion Criteria:

- Patients presenting at the OPD of the Dermatology Department, LNH, with acne vulgaris (as per the operational definition)
- Both genders.
- Age 12 to 45 years.

Exclusion Criteria:

- Patients with known history of depression or mental disorders.
- Using creams or lotions for treatment of acne.
- Patients who are on prior medication like corticosteroids or Phenobarbital.
- Pregnant women.
- Patients with co-existent disease of DM, HTN, Thyroid disorders, Chronic liver disease, chronic kidney disease by inquiring from history or looking at past medical records.

Data Collection

The study was started after the approval of a synopsis from the CPSP and the ethical review committee of the hospital. The data was collected from the OPD of the dermatology department by the researcher himself. Patients presenting at the OPD of the Dermatology Department, LNH, meeting the eligibility criteria, were included in the study. Informed consent from the patient or guardian (in cases less than 18 years old) was obtained prior to enrolling them in the study. The patient was briefed about the study details before giving consent. Data regarding the age, gender, height (m), weight (kg), BMI, duration of acne, gender, smoking (yes/no), alcohol consumption (yes/no), educational status, marital status, residential status, income status, occupational status, and severity of acne were taken and noted on pre-designed, approved Performa. The

presence of depression was diagnosed with Beck's Depression Inventory and was labeled as positive as per the operational definition.

Data Analysis

All collected data was entered into SPSS software version 23 and analyzed. The Shapiro-Wilk test was applied to check the normality of quantitative data like age, height (m), weight (kg), BMI, and duration of acne. Frequency and percentage were calculated for gender, smoking (yes or no), alcohol consumption (yes or no), educational status, marital status, residential status, income status, occupational status, severity of acne, and the presence of depression (yes or no). Stratification with respect to age, duration of disease, BMI, gender, smoking (yes or no), alcohol consumption (yes or no), educational status, marital status, residential status, income status, severity of acne, and occupational status was done to address the effect modifiers. A post-stratification Chi-square or Fisher exact test was used to see the effect of effect modifiers on the outcome variable. A P-value ≤ 0.05 is considered statistically significant.

Results

The mean age of the patients was 33.4 ± 7.60 years with mean height was 1.7 ± 0.1 m, mean weight 73.6 ± 83.87 kg, mean BMI was 29.48 ± 8.8 kg/m² and mean duration of disease was 12 ± 6 months. Out of 150 patients, 61 (40.6%) were male and 89 (59.3%) females. 69 (46%) were urban residents and 81 (54%) were rural residents. 39 (26%) were smokers, and 39 (26%) were consuming alcohol. 80 (53.3%) of the patients had a monthly income of Rs. < 20,000; 38 (25.3%) had between Rs. 20,000 and 50,000; and 32 (21.3%) had >Rs. 50,000. 70 (46.6%) were illiterate, 25 (16.6%) were primary pass, 15 (10%) were secondary pass, 39 (26%) were intermediate pass, and only one patient graduated. The majority of the patients were single (80, 53.3%), married (19, 12.6%), divorced (39, 26%), and widowed (12, 8%). Of the total number of patients with acne vulgaris, 94 (62.8%) had a moderate form of acne, and the rest of the patients were equally distributed between the mild and severe acne groups (28, 18.6%). Out of 150 patients with acne vulgaris, 90 (60%) of the cases had depression.

Table 1: Demographic data of patients

Parameter	Mean ± SD
Age	33.4 ± 7.60
Height (m)	1.7 ± 0.1
Weight (kg)	73.6 ± 83.87
BMI (kg/m²)	29.48 ± 8.8
Duration of Acne (months)	12 ± 6

Table 2. Demographic and Clinical Characteristics of Patients with Acne Vulgaris (n=150)

Parameter	Category	Frequency	Percentage
Gender	Male	61	40.6%
	Female	89	59.3%
Residential Status	Urban	69	46%
	Rural	81	54%
Smoking Status	Yes	39	26%
	No	111	74%
Alcohol Consumption	Yes	39	26%
	No	111	74%
Monthly Income	< Rs. 20,000	80	53.3%
	Rs. 20,000 - 50,000	38	25.3%
	> Rs. 50,000	32	21.3%
Educational Status	Illiterate	70	46.6%
	Primary	25	16.6%

	Secondary	15	10%
	Intermediate	39	26%
	Graduation & Above	1	0.66%
Marital Status	Single	80	53.3%
	Married	19	12.6%
	Divorced	39	26%
	Widow	12	8%
Severity of Acne	Mild	28	18.6%
	Moderate	28	18.6%
	Severe	94	62.8%
Prevalence of Depression	Yes	90	60%
	No	60	40%

The results show that depression is significantly more prevalent in younger patients aged 12-30 (79 vs. 32, p=0.000) and those with a higher BMI (67 vs. 16, p=0.000). Gender-wise, a higher proportion of females experienced depression compared to males (63 vs. 27, p=0.001). Depression was more common among urban residents (55 vs. 14, p=0.000), smokers (30 vs. 9, p=0.012), and those with lower monthly income (< Rs. 20,000, 51 vs. 29, p=0.01). Additionally, illiteracy (21 vs. 49, p=0.000) and more severe acne (60 vs. 34, p=0.000) were associated with higher depression rates.

Table 3. Stratification of Prevalence of Depression Among Patients with Acne Vulgaris (n=150)

Parameter	Category	Depression (Yes)	Depression (No)	P-value
Age Groups	12-30 (n=111)	79	32	0.000
	≥30-40 (n=39)	11	28	
BMI (kg/m²)	≤29 (n=67)	23	44	0.000
	≥29 (n=83)	67	16	
Duration of Acne (months)	<12 (n=87)	55	32	0.344
	≥12 (n=63)	35	28	
Gender	Female (n=89)	63	26	0.001
	Male (n=61)	27	34	
Residential Status	Urban (n=69)	55	14	0.000
	Rural (n=81)	35	46	
Alcohol Consumption	Yes (n=39)	27	12	0.171
	No (n=111)	63	48	
Smoking Status	Yes (n=39)	30	9	0.012
	No (n=111)	60	51	
Monthly Income Status	< Rs. 20,000 (n=80)	51	29	0.01
	Rs. 20,000 - 50,000 (n=38)	27	11	
	≥Rs. 50,000 (n=32)	12	20	
Marital Status	Single (n=80)	43	37	0.000
	Married (n=19)	2	17	
	Divorced (n=39)	33	6	
	Widow (n=12)	12	12	

Educational Status	Illiterate (n=70)	21	49	0.000
	Primary (n=25)	12	13	
	Secondary (n=15)	13	2	
	Intermediate (n=39)	33	6	
	Graduation & Above (n=1)	1	0	
Severity of Acne	Mild (n=28)	7	21	0.000
	Moderate (n=28)	23	5	
	Severe (n=94)	60	34	

Discussion

Many studies have shown that dermatological disorders such as acne, eczema, and psoriasis affect the psychological status of patients, relationships, daily activities, and increase the incidence of depression and anxiety [11]. This study was conducted for the assessment of depression in patients with acne vulgaris. In our study, females outnumbered males in seeking treatment for acne. This may be because females, as compared to males, visit the doctor earlier for treatment as they are more image-conscious. The young mean age favors previous studies indicating that acne is highly prevalent at this age. Most of them were unmarried. This is in concordance with previous studies [12,13]. Others advocate that the difference in the prevalence of acne between males and females is related to the onset of puberty [14]. On the other hand, Ali et al found that marriage is a protective factor against acne, which is consistent with this study's finding. The influence of marital status on the incidence of acne has not been fully elucidated yet, with considerable ambiguity. Nevertheless, few researchers believe that marriage has a pleasant impact on acne vulgaris [15,16], which is attributed to a normal sexual activity and in turn elicits a desirable overall impact on individuals. This rationale is clearly not well grounded. On the other hand, decreased sexual activity was associated with the development of acne [17]. Of the total number of patients with acne vulgaris, 62.8% had a moderate form of acne, and the rest of the patients were equally distributed between the mild and severe acne groups (18.6%). This result corresponds to the report of Kurtalić et al., who found that most respondents (80%) were diagnosed as having a moderate form of acne. Several studies have shown that patients with acne, in addition to their physical problem, also experience psychological complications [18]. The chief psychological complication was depression, which occurred in 13% to 19% of cases [19]. Few studies have reported a higher level of depression in 25.6% and 31.1% of acne patients respectively. In our study, we found a higher percentage of acne patients (60%) having depression. The reason of this higher percentage in our study could be high turnover of the patients belonging to the low socio-economic status presented in our hospital. In the current study, a significant association was found between the severity of acne and depression, indicating that we can take the clinical features of acne as a predicator of the psychological status of patients [20]. Similarly, other studies showed that depression is an important indicator of the disease and showed a high prevalence in comparison with the control group. Some reports also suggested that acne severity worsened the psychological status of patients, mainly those with depression [21]. Alternatively, other authors advocate that higher educational attainment is inversely related to mental status, which in turn is in accordance with this study finding. This can be explained by the expansion of education and the discrepancy in educational level and occupation. In addition, the goal of educational attainment with the desired benefits from the rewards given according to educational degrees earned will have consequences for personal life, family, and well-being. In this study, we did not include other factors that might have direct psychosocial effects on the patients with acne, including those receiving psychiatric treatments, therapeutic management, and non- therapeutics such as nutritional supplementation.

Conclusion

A high incidence of depression in patients with acne has been found in the current study, which is

related to age group and other factors as well. In the management of acne vulgaris, long-term psychometric assessment and treatment is essential. Further multicentered studies with a larger sample size and a better study design are required to elucidate the incidence of depression among acne vulgaris patients.

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