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PREVALENCE OF MODERATE TO SEVERE ACNE VULGARIS IN YOUNG PATIENTS AND ITS ASSOCIATION WITH ANXIETY, DEPRESSION, AND SOCIAL LIFE INTERACTION: AN OBSERVATIONAL STUDY IN FAISALABAD

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ABSTRACT

Background: Acne is a common chronic inflammatory skin condition that affects the pilosebaceous units is acne vulgaris. Although it usually manifests as comedones, papules, pustules, or nodules, its effects go beyond the skin and have a major impact on social and psychological well-being, particularly in young adults and adolescents.

Objective: This observational study set out to determine the prevalence of moderate to severe acne vulgaris in young people in Faisalabad and investigate the relationship between the condition and social interactions, anxiety, and depression.

Methodology: The study included 100 participants in total, ages 15 to 30. Using standardized instruments, information on the severity, duration, BMI, and mental health factors of acne was gathered. One-way ANOVA, independent samples t-test, chi-square test, Pearson correlation, and multiple linear regression were among the statistical analyses used.

Results: The majority of participants were female (88.9%), with a mean age of 21.5 ± 2.3 years. Moderate (48.5%) and severe (31.3%) acne were most common. Acne severity showed significant positive correlations with anxiety ($r = 0.48$), depression ($r = 0.45$), and social life disruption ($r = 0.41$), all $p < 0.001$. Duration of acne also correlated with these psychological variables but to a lesser extent. Regression analysis revealed that acne severity ($\beta = 0.42$, $p < 0.001$) and duration ($\beta = 0.30$, $p = 0.008$) significantly predicted anxiety levels. Females reported higher anxiety than males ($p = 0.022$). Chi-square analysis showed no significant association between gender and acne severity ($p = 0.127$). ANOVA indicated that depression scores significantly varied with acne severity ($p = 0.008$).

Conclusion: This study highlights the high prevalence of moderate to severe acne in young individuals, especially females, and its significant association with anxiety, depression, and impaired social interaction. These findings emphasize the need for holistic acne management approaches that incorporate mental health support alongside dermatological care.

INTRODUCTION

Acne vulgaris is a common chronic inflammatory skin disease of the pilosebaceous unit that affects predominantly adolescents and young adults and is defined by the presence of comedones, papules, pustules, and nodules (Zaenglein et al., 2016; Kurokawa et al., 2020). Although the face is the most frequent site of lesions, lesions may appear on the upper arms, chest, and back (Fabbrocini et al., 2018). Although it is otherwise regarded as a cosmetic condition, acne has a profound effect on the quality of life and the psychological status of the individual, leading to social embarrassment and low self-esteem (Babar & Mobeen, 2019; Bondade et al., 2011).

The psychologic effect of acne vulgaris has been extensively documented in the literature, with numerous studies repeatedly documenting its link with depression, anxiety, low self-esteem, and social isolation (Naveed et al., 2021; Kumar et al., 2016). These effects have the capability of interfering with interpersonal relationships, academic performance, and quality of life (Roussel et al., 2020). Of note, patient self-rating of the severity of acne is more highly related to psychological distress than clinical evaluation (Choi et al., 2017). This highlights the subjective and multifaceted nature of the psychosocial effect of acne (Dalgard et al., 2015).

Recent evidence indicates that lifestyle and psychosocial factors e.g., heavy internet use, negative body image, and troubled interpersonal relationships can contribute to the emotional impact of acne, particularly in young adult populations (Kar et al., 2017; Dos Santos et al., 2014). Female participants tend to bear an increased psychological burden because of social beauty standards and cultural expectations (Hazarika & Archana, 2016). These factors render the adolescent and early adult years particularly susceptible years for the development of psychological distress from acne (Koo & Smith, 1991; Magin et al., 2006).

There is no local study that has examined the relationship between the severity of acne and mental health status in adolescents and young adults in Pakistan (Iqbal et al., 2020). In order to formulate well-balanced management plans incorporating both dermatological and psychological considerations, it is essential to know such relationships in the context of local culture. Therefore, in the present study, the objective is to determine the prevalence of moderate to severe acne vulgaris in the age group of 15 to 30 years in Faisalabad and also to examine its relationship with depression, anxiety, and interference with social life, thus emphasizing the need for integrated, multidisciplinary management (Babar & Mobeen, 2019; Kumar et al., 2016).

METHODOLOGY

This was an observational study and was conducted in Faisalabad.The calculated sample size was 100 by using prevalence of acne vulgaris. Inclusion criteria is the patients within the age group of 15-30 years, have been diagnosed as moderate or severe acne vulgaris for at least last 3 months by dermatologist. Both genders male and female. Exclusion criteria is the patients with history of diabetes and hypertension, females who are pregnant, adults more than age 30 and patients with other skin diseases.

In data collection procedure the informed consent had been taken from each participant before inclusion to participate in this study, they were briefed about objectives of this study. Detailed history and records had been obtained. Patients fulfilling the selection criteria initially were given a questionnaire to gather information regarding their characteristics and acne vulgaris status. To assess the validity of questionnaire for assessing in acne vulgaris patients.

Systemic and health parameters are the Patients fulfilling the requisite criteria were examined and investigated for involvement other than acne vulgaris. History reports of all the patients had been carefully analyzed before recruiting the participants for examination such as hormonal imbalance, weight gain, body mass index BMI, and life style. Psychological parameters level had been obtained through questionnaire.

Clinical parameters include the examination for the presence or absence of acne vulgaris. Diagnosis for moderate or severe acne vulgaris was according to the physical examination. Bleeding, pus formation, itching complain and scars formation had been recorded. Anxiety, lack of confidence and social life interactions, loneliness parameters were also included.

In statistical analysis data was analyzed using the statistical package for the social sciences (SPSS).Continuous variables were given as mean and standard deviation and categorical variables as numbers and percentage. Statistical significance between groups was analyzed. Pearson chi-square analysis was used for the differences between categorical variables. Statistical significance was considered as $p \leq 0.05$.

RESULTS

Demographic details

As a number of subjects, a total of 100 were included (11 males (11. 1%) and 88 females (88. 9%). The mean age of the participants was 21.5 ± 2.3 years. When it comes to BMI, most of the participants (58. 6%) showed an abnormal BMI while 26. 3% were overweight, 7. 0% were obese and 8. 1% were underweight. Most participants (57.6%) reported that they had acne for more than one year, followed by 24. 2% who had acne for few months, and 18. 2% who had acne for few weeks. As regards severity of acne, 48.5% participants were found to have moderate acne, 31.3%) severe acne, while only 20. 2% had mild acne.

Table 1

Frequency and Percentage of Demographic variables

Variable	Categories	Frequency (n)	Percentage (%)
Gender	Male	11	11.1%
	Female	88	88.9%
Age (Mean ± SD)	-	21.5 ± 2.3	-
BMI	Underweight	8	8.1%
	Normal weight	58	58.6%
	Overweight	26	26.3%
	Obese	7	7.0%
Duration of acne			
	Few weeks	18	18.2%
	Few months	24	24.2%
	Few Years	57	57.6%
Acne Severity			
	Mild	20	20.2%
	Moderate	48	48.5%
	Severe	31	31.3%

Relationship between acne vulgaris and psychological outcomes

The following result is the pearson correlation analysis to assess the strength and direction of the relationship between acne severity, duration of acne, BMI, and psychological outcomes (anxiety, depression, and social life disturbance). There was a moderate positive correlation (r = 0. 48), a depression (r = 0. 45), and social life disturbance (r = 0. 41) that was all statistically significant at p=0.001. As a

result, those who had more severe acne were also likely to have more anxiety / depression and have trouble talking to other people. Duration of acne also revealed a small to moderate positive correlation with anxiety, depression and social life disturbance, in other words individuals with acne for longer periods of time tend to experience worse psychological outcomes. BMI showed a weak (non-significant) relationship with psychological variables; i. e., BMI is not a strong predictor of anxiety, depression or social life problems in acne patients in this sample.

Table 2

Correlation Analysis For Study Variables

Variables	Anxiety Score	Depression Score	Social Life Score
Acne Severity	r = 0.48, p < 0.001	r = 0.45, p < 0.001	r = 0.41, p < 0.001
Duration of Acne	r = 0.30, p = 0.004	r = 0.25, p = 0.01	r = 0.22, p = 0.02
BMI	r = 0.18, p = 0.07	r = 0.15, p = 0.11	r = 0.10, p = 0.25

Different statistical tests details

Table 3

Regression Coefficients of acne severity, duration of acne, BMI, and gender on anxiety scores

Variables	*B*	*SE*	Beta	*T*	p-value
Acne Severity	1.20	0.28	0.42	4.29	<0.001
Duration of Acne	0.65	0.24	0.30	2.70	0.008
BMI	0.08	0.05	0.13	1.60	0.11
Gender (Male=1)	-0.75	0.32	-0.18	-2.34	0.022

Model Summary: $R^2 = 0.32$, Adjusted $R^2 = 0.30$

Overall regression model had a significant effect (32%) of the variance in anxiety scores. Acne severity was a significant positive (β=0. 42; p0. 001) predictive factor of anxiety; the corresponding effect size was large (each unit increase in acne severity increased the anxiety score markedly). Duration of acne was also an independent, significant predictor (β = 0. 30, p = 0. 008), suggesting that longer duration of acne was associated with increased anxiety. Gender was an important negative predictor (β= -0. 18% p = 0. 022) of anxiety in females (relative risk of anxiety scores vs. males). BMI was not a significant predictor (p = 0.11).

Table 4

Chi-Square Test for Association Between Gender and Acne Severity

Test	Value	*df*	p-value
Chi-Square (χ^2)	4.12	2	0.127

Gender does not appear to be a strong predictor of acne severity by chi-square test (p = 0. 127). This means that men and women in the sample had similar levels of acne severity and having a gender did not influence the severity of the person 's acne.

Table 5

An independent samples t-test was conducted to compare anxiety scores between male and female participants.

Group	Mean Anxiety Score	SD
Male	2.9	1.0
Female	4.1	1.2

t(97) = -3.15, p = 0.002

Table 5 shows that there was a statistically significant difference in anxiety score between men and women. Females had significantly higher anxiety scores (Mean = 4.1) than males (Mean = 2.9), probably meaning that acne has a greater influence on women mental health than males.

Table 6

A one-way ANOVA was performed to assess differences in depression scores across three acne severity groups (mild, moderate, severe).

Source	*SS*	*df*	*MS*	*F*	*P*
Between Groups	14.5	2	7.25	5.10	0.008
Within Groups	137.6	96	1.43		

An ANOVA test showed that Depression scores were significantly different between the levels of acne severity (p = 0. 008). Severe acne was associated with higher depression score among subjects compared with moderate and mild acne. This finding suggests that as the severity of acne increases the depressive symptoms also get worse.

DISCUSSION

The present study considered the prevalence of moderate to severe acne vulgaris in young people and young adults of Faisalabad. It also considered the relationship of acne with depression, anxiety, and difficulty in social interaction. As in other countries, in the present study the majority of the participants were females, which is due to both biological and social influences regarding appearance (Babar & Mobeen, 2019; Hazarika & Archana, 2016). The findings indicated a robust relationship between the severity of acne and mental illness. This is in line with increasing evidence that acne is no longer merely a skin disorder but is also extremely socially and emotionally distressing (Naveed et al., 2021; Kar et al., 2017).

There was also a high positive correlation between the severity of acne and anxiety. People with severe acne indicated avoiding others, being highly self-conscious, and being isolated—a set of symptoms characteristic of anxiety disorders (Kumar et al., 2016; Choi et al., 2017). These findings are consistent with previous work that has indicated that visible skin issues are one of the primary causes of emotional distress, particularly in appearance-valued societies (Roussel et al., 2020). Beauty ideals and social expectation in Pakistan can heighten anxiety, particularly among young women who are exposed to pressure from friends and relatives regarding appearance (Hazarika & Archana, 2016).

Depression was highly related to the severity and chronicity of acne. Participants reported feeling depressed, losing interest in activities, and avoiding social contacts (Bondade et al., 2011; Gollnick et al., 2003). These results support findings that, at a time of peak identity formation during adolescence, acne might damage self-esteem and emotional resilience (Dalgard et al., 2015). In cultures where flawless skin is a mark of beauty and acceptance, acne can cause intense emotional suffering (Dos Santos et al., 2014). The influence of changed beauty standards presented on social media can increase self-image concerns and generate unrealistic expectations (Magin et al., 2006).

There were distinct gender differences, with more psychological distress reported by women. This is probably because of hormonal fluctuations from such as their menstrual cycle and conditions like polycystic ovary syndrome (PCOS). Social pressures also come into play, linking skin appearance to marriage and social standing (Koo & Smith, 1991; Kar et al., 2017). These findings underscore the need for integrated care addressing treatment of the skin involved and mental health care for acne. There must be coordination among dermatologists, mental health workers, teachers, and public health workers, along with early screening and culturally appropriate counseling, to reduce the long-term social and mental consequences of acne in resource-poor environments (Naveed et al., 2021; Kumar et al., 2016).

CONCLUSION

This study was to examine the prevalence rate of moderate/severe acne vulgaris among the youths of Faisalabad and its relationship with mental health

complications (anxiety, depression and difficulties in interaction of social life). The findings bring to the fore that acne vulgaris is very rampant among the youth especially females and it is full of the psychological effect. The statistical outcomes of correlation and regression were consistent with substantial correlations between the severity of acne and mental health symptoms, which supported the hypothesis that acne is not only a problem of dermatology but also of psychology and sociology.

Limitation

Factors such as academic stress, family history of mental health disorders, or other dermatological conditions were not controlled for and could influence psychological outcomes.

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