Psychiatric Comorbidities in Patients with Acne

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Abstract: ***Background**: Acne is one of the most recognizable facial abnormalities, resulting in several forms of emotional distress and psychological consequences. Patients with chronic dermatological disorders are more unstable and prone to frustration, aggression, dissatisfaction with appearance and embarrassment. **Aim**: To evaluate the frequency and type of psychiatric comorbidity, disease related disability and factors associated among the patients with Acne. **Method**: A cross sectional study was conducted among 96 patients with acne. Acne severity was determined according to Indian Association of Dermatologists, Venereologists and Leprologists (IADVL). MINI PLUS and Sheehan Disability Scale (SDS) was administered to the study participants. **Results**: The most common psychiatric comorbidities were Major depressive disorder (28.1%) followed by obsessive compulsive disorder (14.6%), generalized anxiety disorder (10.7%), Suicidality (10.7%), panic disorder (6.3%) and social phobia (5.2%). Out of total,43.7% had at least one psychiatric comorbidity whereas remaining 56.3% had none of the psychiatric comorbidities. Social economic status, longer duration of acne and acne severity were significant factors associated with psychiatric comorbidities. Higher disabilities were observed in occupational activities, social life along with leisure activities, and family life among the patients with psychiatric comorbidities compared to their counterpart. (p value <0.05). **Conclusion**: Acne is associated with prevalence of psychiatric comorbidity such as Major depressive disorder, generalized anxiety disorder, Suicidality, panic disorder and social phobia. Regardless of the severity of the patient's acne, it is crucial to important to enquire about the psychological health. Early detection of psychiatric comorbidities can reduce suffering of these patients.*

Keywords: Acne, depression, anxiety, pscyhiatric comorbidity

1. Introduction

The skin is the largest organ of the human body and it serves as initial point of contact between the internal and external surrounding. The skin experiences external pollution, poisons, allergies, and other unfriendly environmental components. (1, 2) Also, emotional factors can disturb the dermatological conditions. (2) Acne vulgaris is one the most prevalent dermatological disorders that occur mainly at puberty and during adolescence also affecting the adult population to some extent. (3, 4)

Physical appearance is an chief component of the normal socialization process. (4) Beauty is a focal point of concern for many individuals in the 21st century than in previous generations. (1) \Acne interact complexly and plays a considerable role in one's social, physical and psychological fitness. (1,5) Acne can be related with developmental issues of body image, depression, anxiety, low self-esteem, feeling of social isolation, high social anxiety, shame, loneliness, anger, inward closure, lower body satisfaction., interaction with strangers and reduced employment opportunities. And sexuality. (5-7) The psychiatric co-morbidity is a significant measure of the overall patient's disability and they can be related with psychiatric emergencies. Patients with dermatological diseases are more likely to report anxiety, depressive symptoms and suicidal ideation than those without any chronic dermatological conditions. (8) It was found that the frequency of social phobia was significantly higher in AV patients. (4) Hence considering these factors is essential for the effective management of the skin disorder as the psychiatric comorbidity is one of the most important indices of the overall disability associated with the skin condition.(9)

Objectives

1) To evaluate the frequency and type of psychiatric comorbidity occurring among acne patients.
2) To evaluate the relationship between socio demographic and clinical variables of psychiatric comorbidity in patients with Acne vulgaris.
3) To determine functional disability in work, social, and family life and psychiatric comorbidity in patients with Acne vulgaris.

2. Methodology

A cross sectional study was conducted in Father Muller Medical College Hospital, Dermatology department for a period of 6 months from January 2022 to June 2022. Based on the findings of a previous study where 52.4% had psychiatric comorbidity. (2) Hence, sample size (n) was calculated using the formula $n = 4pq/d^2$. Considering 52.4% as p, with 95% confidence interval, an allowable error (d) of 10% the sample size estimated for the study was 96. The study included the patients between the age group 18 to 45 years of both genders. Any pre-existing disfiguring facial condition which by itself causes psychological stress, pre-existing diagnosed psychiatric disorder on treatment and patients with chronic / debilitating medical illness were excluded from the study.

A Semi-structured proforma was used to collect information on socio demographic variables and clinical profile of the study participants. MINI PLUS was used to evaluate the frequency and type of psychiatric comorbidity occurring among acne patients. (10) Sheehan Disability Scale (SDS) was used to determine functional disability in work, social, and family life. Acne severity was determined according to Indian Association of Dermatologists, Venereologists and Leprologists (IADVL). (11)

Sheehan Disability Scale is a brief self-report tool which measures functional impairment in three inter-related domains such as work/school, social and family life. On a 10-point visual analogue scale, the patient scores the impact of their symptoms on work/school, social life, and home life

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or family duties which evaluates impairment using verbal, numerical, and spatiovisual anchors all at once. (12)

Statistical analysis

Data was entered in Microsoft Excel and analysed using SPSS version 27. Categorical data was presented as frequency and percentage. Continuous data was presented as mean and standard deviation or median and Interquartile range. Chi square test was used evaluate the relationship between socio demographic and clinical variables of psychiatric comorbidity in patients with Acne vulgaris. Independent sample t test was used determine functional disability in work, social, and family life and of psychiatric comorbidity in patients with Acne vulgaris. P value <0.05 was considered to be statistically significant.

3. Results

Out of total 96 study participants, Majority (78.1%) were females from urban area (63.5%). Almost half (52.1%) were unemployed or students. 3.1% and 12.5% were from lower and upper class respectively. It is observed that 39.6% were single, 42.7% were married, 24% were from nuclear families and 40.6% had duration of acne to be more than six months. According to Indian Association of Dermatologists, Venereologists and Leprologists (IADVL). Acne severity was categorized. 34.4% had grade 3 followed by grade 2 (31.3%), grade 4(25.0%) and the least was grade 1 (9.4%). (Table 1)

Table 1: Distribution of the socio demographic profile of the study participants

Study variables		Frequency (n=96)	Percentage (%)
Gender	Male	21	21.9
	Female	75	78.1
Area of residence	Urban	61	63.5
	Rural	35	36.5
Level of Education	Primary	5	5.2
	Secondary	7	7.3
	Higher Secondary	24	25.0
	College and above	60	62.5
Employment Status	Employed	46	47.9
	Unemployed	50	52.1
Socio-Economic status	Upper	12	12.5
	Upper-Middle	31	32.3
	Lower-middle	28	29.2
	Upper-lower	22	22.9
	Lower	3	3.1
Marital Status	Married	41	42.7
	Married and separated	13	13.5
	Divorce	4	4.2
	Single	38	39.6
Type of family	Joint	23	24.0
	Nuclear	54	56.3
	Extended	19	19.8
Duration of illness (In months)	<1	15	15.6
	1-3	19	19.8
	4-6	23	24.0
	>6	39	40.6
Acne severity	Grade 1	9	9.4
	Grade 2	30	31.3
	Grade 3	33	34.4
	Grade 4	24	25.0

Table 2 shows that the most common psychiatric comorbidity was Major depressive disorder (28.1%) followed by obsessive compulsive disorder (14.6%), generalized anxiety disorder (9.4%), Suicidality (9.4%), panic disorder (6.3%) and social phobia (5.2%).

Table 2: Psychiatric comorbidities among study participants

Psychiatric Comorbidities*	Frequency (n=96)	Percentage (%)
Major depressive disorder	27	28.1
Generalized anxiety disorder	9	9.4
Panic disorder	6	6.3
Social phobia	5	5.2
Obsessive compulsive disorder	14	14.6
Suicidality	9	9.4

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Table 3: Association of the socio demographic profile with Psychiatric Comorbidities

Socio Demographic Profile		Psychiatric Comorbidities Absent (n=54)	Psychiatric Comorbidities Present (n=42)	Chi Square test statistics	P value
Gender	Male	15(71.4)	6(28.6)	2.516	0.133
	Female	39(52.0)	36(48.0)		
Area of residence	Urban	33(54.1)	28(45.9)	0.315	0.575
	Rural	21(60.0)	14(40.0)		
Level of Education	Primary	3(60.0)	2(40.0)	1.263	0.738
	Secondary	3(42.9)	4(57.1)		
	Higher Secondary	12(50.0)	12(50.0)		
	College and above	36(60.0)	24(40.0)		
Employment Status	Employed	22(47.8)	24(52.2)	2.547	0.111
	Unemployed	32(64.0)	18(36.0)		
Socio-Economic status	Upper	5(41.7)	7(58.3)	10.788	0.024*
	Upper-Middle	23(74.2)	8(25.8)		
	Lower-middle	17(60.7)	11(39.3)		
	Upper-lower	7(31.8)	15(68.2)		
	Lower	2(66.7)	1(33.3)		
Marital Status	Married	22(53.7)	19(46.3)	2.467	0.481
	Married and separated	7(53.8)	6(46.2)		
	Divorce	1(25.0)	3(75.0)		
	Single	24(63.2)	14(36.8)		
Type of family	Joint	12(52.2)	11(47.8)	4.673	0.097
	Nuclear	35(64.8)	19(35.2)		
	Extended	7(36.8)	12(63.2)		
Duration of illness(in months)	<1	11(73.3)	4(26.7)	12.520	0.006*
	1-3	15(78.9)	4(21.1)		
	4-6	14(60.9)	9(39.1)		
	>6	14(35.9)	25(64.1)		
Acne severity	Grade 1	7(77.8)	2(22.2)	12.445	0.005*
	Grade 2	22(73.3)	8(26.7)		
	Grade 3	18(54.5)	15(45.5)		
	Grade 4	7(29.2)	17(70.8)		

*p value <0.05 is considered to be statistically significant
Test used: Chi Square test

Out of total, 43.7% had at least one psychiatric comorbidity whereas remaining 56.3% had none of the psychiatric comorbidities. Social economic status, (p value=0.024) longer duration of acne (p value =0.006) and acne severity (p value =0.005) were significant factors associated with psychiatric comorbidities. i.e., As the duration of illness and Acne severity increased the chance of having psychiatric comorbidity increased.

Table 4: Comparison of Sheehan Disability with Psychiatric Comorbidities

Disabilities	Psychiatric Comorbidities (mean ± SD) Absent (n=54)	Psychiatric Comorbidities (mean ± SD) Present (n=42)	Test statistics	P value
Occupational activities	4.11±1.920	4.98±1.760	-13.452	<0.0001*
Social life/ leisure activities	4.06±1.774	5.07±1.702	-2.271	0.025*
Family life	3.44±1.920	5.02±1.957	-2.833	0.006*

*p value <0.05 is considered to be statistically significant
Test used: Independent sample t test

From table 4, Higher disabilities were observed in occupational activities, social life along with leisure activities, and family life among the patients with psychiatric comorbidities compared to their counterpart. (p value <0.05).

4. Discussion

The present study demonstrated a major depressive disorder and other psychological abnormalities associated with acne. Psychological stress and abnormalities in acne may be consequences of disfiguring skin lesion, which may have a negative impact on person's mood, self-esteem and body image (2). In earlier studies, the major psychiatric disorders associated with acne were reported as depression, anxiety disorder, social phobia and body dysmorphic disorder (2,6,13). On the other hand, the stress due to worsening of acne may lead to psychological disorders (2). In a study by Sereflican et al, the severity of depression, anxiety, social anxiety, anxiety severity had a higher prevalence in already depressed type-D personality individuals (1). In earlier published articles, it was shown that patients suffering from acne had high social phobia and acne had a negative psychosocial impact in different stages of life of the individual (4,14). In a study on adolescents who were suffering from ace, self-injurious behavior, psychiatric comorbidities and suicidal tendency were observed. This study emphasizes the need of psychiatric intervention during

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the treatment (7). This finding supports the present observation of at least one psychiatric comorbidity in 43.7% of the study participants. Among the factors associated with psychiatric comorbidities, socio-economic status, duration of acne and severity of acne had significant association. In contrast to the above finding, a slightly lower quality of life was observed in acne patients in one of the documented studies (15). Similar observations of low self-esteem, and poor quality of life were documented in adolescent acne patients (3). In the present study, the population suffering from acne had inability to perform occupational activities, poor quality of social life, inefficient leisure activities, and acne affected their family life as well. In this regard, the multidisciplinary approach comprising of a dermatologist, psychiatrist and psychologist may play a crucial role in optimal care and treatment there by improving the quality of life of the suffering individual (16). The present observation also demands multidisciplinary approach in treating acne.

5. Conclusion

Acne is associated with prevalence of psychiatric comorbidity such as Major depressive disorder, OCD, generalized anxiety disorder, suicidality, panic disorder and social phobia. Regardless of the severity of the patient's acne, it is crucial and important to enquire about the psychological health. Observation of psychiatric comorbidities and disabled social life in acne patients emphasizes a early and interdisciplinary approach comprising of dermatologist, psychiatrist and psychologist in a liaison clinic could be beneficial for optimal acne care and patient's quality of life.

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