



**To Study The Prevalence of Anxiety and Depression Among Patients with Skin Disorder Attending Dermatology OPD**

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**Abstract**

**Background:** The skin, being the largest organ of the human body, plays a critical role in determining physical appearance. It plays a distinctive role in psychiatry due to its heightened sensitivity to emotional stimuli and its capacity to reflect emotions such as anger, fear, shame, and frustration. Dermatological conditions, especially those affecting appearance, can lead to social stigma, shame, and diminished self-esteem, often resulting in anxiety, depression, and other psychiatric issues.

**Methods:** The cross-sectional study was conducted at tertiary care hospital ASCOMS, including 100 patients with age above 16 years, diagnosed with dermatological condition. Data was collected by doing face to face interviews using General Health Questionnaire-12 (GHQ-12) and Generalized Anxiety Disorder 7 (GAD-7) scales.

**Results:** In present study the majority of the studied cases were in the age group ranging from 18-35 years with mean age  $32.5 \pm 10.2$  years and slight female predominance (52%). The prevalence of anxiety was

30% and depression was 14% and 56% have neither, based on the entire sample (N=100). Skin conditions that have chronic course like psoriasis (45% anxiety, 25% depression) and acne (36% anxiety, 16% depression) had significant psychological burden. Furthermore, significant associations ( $p < 0.05$ ) between socio-demographic variables and anxiety/depression, with higher rates among younger age groups, females, unmarried, urban and unemployed patients identifying key risk factors.

**Conclusion:** This study underscores the substantial psychological burden experienced by dermatology patients, with anxiety and depression affecting 30% and 14% of the sample, respectively. The majority of anxiety cases were of mild to moderate severity, while depressive symptoms demonstrated a heterogeneous distribution. Significant associations were observed between anxiety and depression and specific dermatological conditions, notably psoriasis and acne, as well as socio-demographic factors including younger age, female gender, unmarried status, urban residence, and unemployment. These

findings highlight the critical need for a multidisciplinary approach in dermatological practice that incorporates routine psychological assessment and appropriate mental health interventions to enhance patient care and psychosocial outcomes.

**Keywords:** Dermatological conditions, anxiety, depression.

### **Introduction**

The skin, being the largest organ of the human body, plays a critical role in determining physical appearance. The maintenance of healthy skin is integral not only to physical health but also to psychological well-being and the promotion of self-esteem.<sup>1</sup>

It provides a vital defense mechanism, guarding against external injuries, pathogens, and environmental changes.<sup>2</sup>

The connection between the skin and brain extends beyond the brain's psychological functions; both originate from the ectoderm and are regulated by shared hormones and neurotransmitters, underscoring their close biological relationship. The integration of these fields involves a complex interaction between the neuroendocrine and immune systems, known as the neuro-immuno-cutaneous system (NICS). This system facilitates the interplay between the nervous system, skin, and immunity through the release of various mediators.<sup>4,5</sup>

The skin plays a distinctive role in psychiatry due to its heightened sensitivity to emotional stimuli and its capacity to reflect emotions such as anger, fear, shame, and frustration.<sup>6</sup>

Dermatological conditions, especially those affecting appearance, can lead to social stigma, shame, and diminished self-esteem. These conditions negatively impact quality of life, body image, and social interactions, often resulting in anxiety, depression, and other psychiatric issues.<sup>7,8</sup>

Psychiatric disorders are reported to affect 25-43% of patients seeking care at dermatology clinics.<sup>9</sup>

Psychiatric disturbances and psychosocial impairment affect at least 30% of dermatology patients, with anxiety and depression being the most prevalent disorders.<sup>10</sup>

As a result, dermatologists frequently encounter patients with co-existing psychiatric conditions. Optimal management of dermatological diseases often involves a comprehensive assessment of anxiety and depression. With this background, this study has been taken up with the objective to assess depression and anxiety among the dermatology patients.

### **Material and Methods**

It is a hospital based cross-sectional descriptive study. This study included 100 patients, with age above 16 years both, males and females and providing informed consent were included in the study. The patients diagnosed with dermatological condition by a Senior Consultant of Dermatology Department at ASCOMS Hospital were enrolled for the study according to inclusion and exclusion criteria after obtaining written informed consent.

The present cross-sectional study was conducted at tertiary care hospital ASCOMS. Data was collected from dermatology patients attending tertiary care hospital ASCOMS and were screened for depression and anxiety. Convenience sampling technique was used to obtain the sample. Appropriate ethical clearance was obtained from the Institutional Ethics Committee of tertiary care hospital ASCOMS vide no. ASCOMS/IEC/2024/ Meeting-I/FM/55 and measures were undertaken to maintain confidentiality of caregivers throughout the study and also during the analysis of data. All participants were fully informed about the purpose of the study. Written informed consent was obtained from each participant after the consent form was read by the

participants. The consent form was in Hindi and in English, and it stated that the participation was completely voluntary and that the participant could withdraw at any time from the study. Confidentiality was maintained throughout the study.

**Inclusion criteria**

1. Those patients who are diagnosed with dermatological conditions coming to the OPD.
2. All the patients of any gender above the age of 16 years who give consent to participate will be included in the study.

**Exclusion criteria**

1. Patients who have underlying previous psychiatric morbidity.
2. Patients who are acutely ill or not able to cooperate with the study.
3. Patients not willing to sign the consent form.

**Socio demographic data**

This arranged format was used to assess the variables of sociodemographic profile such as sex, age, marital status, religion, income, locality, and type of family.

**General Health Questionnaire-12 (GHQ-12)**

It is a psychometric screening tool to identify common psychiatric conditions such as anxiety disorder, depression, and bipolar disorder.

**Generalized Anxiety Disorder 7 (GAD-7)**

It is a self-reported questionnaire for screening and severity measuring of generalized anxiety disorder.

**Statistical Analysis**

Microsoft Excel was used in creating the database and producing graphs, while the data was analyzed using the Statistical Package for the Social Sciences (SPSS) version 23 for Windows. Mean and standard deviation ( $\pm$ SD) were used to describe quantitative data meeting normal distribution. Continuous two independent groups were compared by parametric independent Student's t

test. Discrete (categorical) groups were compared by chi-square ( $\chi^2$ ) test was used. p values less than 0.05 ( $p < 0.05$ ) was considered statistically significant.

**Results**

In this study (N = 100), the majority of participants were between 18 and 35 years of age, with a mean age of  $32.5 \pm 10.2$  years and a slight predominance of females (52%). The prevalence of anxiety and depression was 30% and 14%, respectively, while 56% of participants reported neither condition. Chronic dermatological conditions, particularly psoriasis (45% anxiety, 25% depression) and acne (36% anxiety, 16% depression), were significantly associated with greater psychological distress. Moreover, anxiety and depression were significantly correlated with socio-demographic variables ( $p < 0.05$ ), with higher prevalence observed among younger individuals aged 18–25 years (50% anxiety, 26.7% depression), females (38.5%, 19.2%), unmarried individuals (41.7%, 20%), urban residents (36.9%, 18.5%), and the unemployed (44%, 22%) identifying these as key psychosocial risk groups.

Table 1: Socio-Demographic Characteristics of the Study Population (N=100)

| Variables     | Frequency (%) OR Mean $\pm$ SD |
|---------------|--------------------------------|
| Age (Years)   | 32.5 $\pm$ 10.2                |
| Age Category  |                                |
| - 18–25 years | 30 (30%)                       |
| - 26–35 years | 35 (35%)                       |
| - 36–45 years | 25 (25%)                       |
| - >45 years   | 10 (10%)                       |
| Gender        |                                |
| - Male        | 48 (48%)                       |
| - Female      | 52 (52%)                       |

|                   |          |
|-------------------|----------|
| Marital Status    |          |
| - Married         | 40 (40%) |
| - Unmarried       | 60 (60%) |
| Residence         |          |
| - Urban           | 65 (65%) |
| - Rural           | 35 (35%) |
| Employment Status |          |
| - Employed        | 50 (50%) |
| - Unemployed      | 50 (50%) |

Table 1: represents demographic profile of the participants (N = 100). The majority of participants were aged between 18 and 35 years (65%) and had a mean age of  $32.5 \pm 10.2$  years, Females comprised 52% of participants. A majority were unmarried (60%) and resided in urban areas (65%). Employment status was evenly split, with 50% employed and 50% unemployed.

Table 2: Distribution of Anxiety and Depression Among Dermatological Patients.

| Condition  | Frequency (%) |
|------------|---------------|
| Anxiety    | 30 (30%)      |
| Depression | 14 (14%)      |
| Absent     | 56 (56%)      |

Table 2: This table indicates that anxiety was present in 30% of participants, while 14% reported symptoms of depression, 56% exhibited neither condition. These findings indicate that a significant proportion of dermatology patients experience mental health concerns, particularly anxiety.

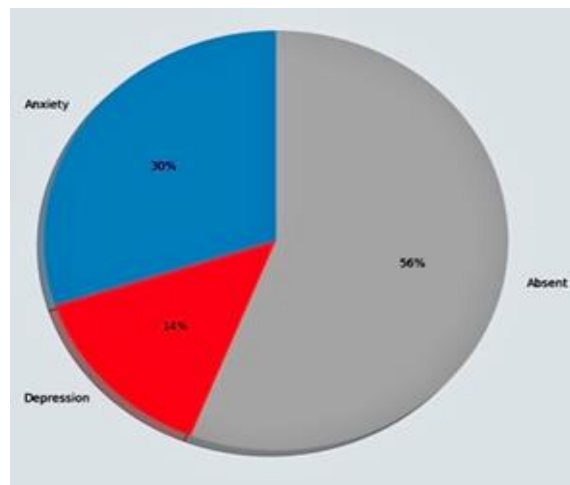


Figure 1: Distribution of Anxiety and Depression Among Dermatological Patients.

Table 3: Prevalence of Anxiety Based on GAD-7 scores (N=30)

| GAD-7 Scale | Score Range | Frequency (%) | Mean Score $\pm$ SD | 95% CI       |
|-------------|-------------|---------------|---------------------|--------------|
| Mild        | 5–9         | 18 (60%)      | $6.8 \pm 1.4$       | [6.3, 7.3]   |
| Moderate    | 10–14       | 9 (30%)       | $11.5 \pm 1.3$      | [10.8, 12.2] |
| Severe      | 15–21       | 3 (10%)       | $16.8 \pm 1.5$      | [15.7, 17.9] |

Table 3: This table represents the anxiety severity among participants with anxiety (n = 30), the majority (60%) had mild symptoms (mean score:  $6.8 \pm 1.4$ ), 30% had moderate anxiety (mean score:  $11.5 \pm 1.3$ ), and 10% reported severe anxiety (mean score:  $16.8 \pm 1.5$ ), based on the GAD-7 scale. These findings suggest that most patients experienced anxiety of mild to moderate severity.

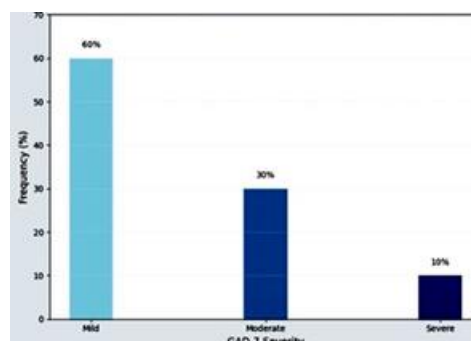


Figure 2: Prevalence of Anxiety Based on GAD-7 scores

Table 4: Prevalence of Depression Based on GHQ-12 scores (N=14)

| GHQ-12 Scale | Frequency (%) | Mean Score $\pm$ SD | 95% CI     |
|--------------|---------------|---------------------|------------|
| GHQ <3       | 4 (28.6%)     | 1.8 $\pm$ 0.9       | [1.6, 2.0] |
| GHQ $\geq$ 3 | 10 (71.4%)    | 5.5 $\pm$ 2.1       | [4.9, 6.1] |

Table 4: This table represents participants with depression (N = 14). 71.4% (n = 10) scored  $\geq$ 3 on the GHQ-12, indicating significant psychological distress (mean score 5.5  $\pm$  2.1), while 28.6% (n = 4) scored <3, suggesting minimal distress (mean score 1.8  $\pm$  0.9; 95%).

These results demonstrate a high prevalence of psychological morbidity in this subgroup.

Table 5: Association of Anxiety and Depression with Dermatological

| Dermatological Condition | Total Patients | Anxiety (%) | Depression (%) | P-Value (Anxiety, X <sup>2</sup> ) | P-Value (Depression, X <sup>2</sup> ) |
|--------------------------|----------------|-------------|----------------|------------------------------------|---------------------------------------|
| Acne                     | 25             | 12 (48%)    | 6 (24%)        | 0.01                               | 0.03                                  |
| Psoriasis                | 20             | 11 (55%)    | 6 (30%)        | <0.01                              | 0.01                                  |
| Urticaria                | 15             | 4 (26.7%)   | 1 (6.7%)       | 0.04                               | 0.04                                  |
| Eczema                   | 15             | 2 (13.3%)   | 1 (6.7%)       | 0.03                               | 0.04                                  |
| Vitiligo                 | 15             | 1 (6.7%)    | 0 (0%)         | 0.01                               | 0.02                                  |
| Alopecia                 | 10             | 0 (0%)      | 0 (0%)         | <0.01                              | 0.03                                  |

**Conditions**

Table 5: This table presents association of anxiety and depression with dermatological conditions. Patients with psoriasis and acne exhibited the highest rates of psychological morbidity, with anxiety present in 55%

and 48%, and depression in 30% and 24%, respectively. These rates were significantly greater compared to other dermatological conditions (p < 0.05). Conditions such as urticaria, eczema, and vitiligo showed considerably lower prevalence of anxiety and depression.

Table 6: Association of Socio-Demographic Characteristics with Anxiety and Depression (N=100)

| Socio-Demographic Variable | Total Patients | Anxiety (%) | Depression (%) | p-value (Anxiety, $\chi^2$ ) | p-value (Depression, $\chi^2$ ) |
|----------------------------|----------------|-------------|----------------|------------------------------|---------------------------------|
| AGE CATEGORY               |                |             |                | <0.01                        | 0.01                            |
| - 18–25 years              | 30             | 15 (50%)    | 8 (26.7%)      |                              |                                 |
| - 26–35 years              | 35             | 11 (31.4%)  | 4 (11.4%)      |                              |                                 |
| - 36–45 years              | 25             | 4 (16%)     | 2 (8%)         |                              |                                 |
| - >45 years                | 10             | 0 (0%)      | 0 (0%)         |                              |                                 |
| GENDER                     |                |             |                | 0.03                         | 0.04                            |
| - Male                     | 48             | 10 (20.8%)  | 4 (8.3%)       |                              |                                 |
| - Female                   | 52             | 20 (38.5%)  | 10 (19.2%)     |                              |                                 |
| MARITAL STATUS             |                |             |                | <0.01                        | 0.01                            |
| - Married                  | 40             | 5 (12.5%)   | 2 (5%)         |                              |                                 |
| - Unmarried                | 60             | 25 (41.7%)  | 12 (20%)       |                              |                                 |
| RESIDENCE                  |                |             |                | 0.02                         | 0.03                            |
| - Urban                    | 65             | 24 (36.9%)  | 12 (18.5%)     |                              |                                 |
| - Rural                    | 35             | 6 (17.1%)   | 2 (5.7%)       |                              |                                 |
| EMPLOYMENT STATUS          |                |             |                | <0.01                        | 0.01                            |
| - Employed                 | 50             | 8 (16%)     | 3 (6%)         |                              |                                 |
| - Unemployed               | 50             | 22 (44%)    | 11 (22%)       |                              |                                 |

Table 6: This table demonstrates that anxiety and depression were significantly associated with socio-demographic factors ( $p < 0.05$ ). Higher rates were observed in younger patients (18–25 years: 50% anxiety, 26.7% depression), females (38.5%, 19.2%), unmarried individuals (41.7%, 20%), urban residents (36.9%, 18.5%), and the unemployed (44%, 22%). These factors represent key risk groups for psychological morbidity in dermatology patients.

**Discussion**

In the present study, the majority of the participants fall within the age groups aged 18–35 (65%) (mean age  $32.5 \pm 10.2$  years), with female predominance (52%), 60% unmarried, 65% urban residents, with 50% employed and 50% unemployed. The findings of our study align with studies conducted by Aslam R et al., (2007) who observed that the majority of the study population was

between 16 to 30 years of age, with a predominated number of females. Although a study conducted by Goyal A et al., (2017) who found that 69% of dermatology OPD patients were married which is in contrast to our study and also reported an employed population of 53% which is in concordance to our study. Also, Aharwal D et al., (2023) reported 75% urban predominance suggesting that tertiary care centers often cater more to urban populations. In our study, prevalence of anxiety was 30% and depression was 14% while 56% of the participants had neither. These findings are in alignment with several previous studies Aharwal D et al., (2023) reported anxiety (28.7%) as the most prevalent disorder, followed by depression (17.33%) in his study participants. Dalgard FJ et al., (2015) reported that depression was present in 10.1% patients and anxiety was present in 17.2% in dermatological patients supporting

our findings. In the present study, among patients identified with anxiety (n = 30), 60% demonstrated mild symptoms, 30% had moderate and 10% exhibited severe anxiety suggesting that majority of affected individuals experienced anxiety of mild to moderate severity. These findings are consistent with those of Gieler U et al., (2015), who reported that most dermatology patients with anxiety presented with mild to moderate symptoms on standardized assessment tools. Similarly, Lamb RC et al., (2017) found that 13.1% of dermatology patients met criteria for generalized anxiety disorder, with GAD-7 scores >9, reflecting moderate to severe anxiety. In the present study, 71.4% of patients with depression (n = 14) had GHQ-12 scores  $\geq 3$ , indicating likely clinical depression, while 28.6% had scores <3, suggesting mild to moderate psychological distress. This indicates a varied distribution of depressive symptoms within the affected group. Similarly, Kumar A et al., (2016) reported that 33.3% of dermatology patients scored above the threshold on the GHQ-12 and were clinically diagnosed with depression. Similarly, a study by Mleeh NT et al., (2019) found depressive symptoms in 15.8% of dermatology patients, of whom 10.6% had moderate symptoms, 4.4% had moderately severe symptoms, and only 0.7% exhibited severe depression. In the present study, a significant association ( $p < 0.05$ ) was observed between specific dermatological conditions and psychological morbidity. Patients with psoriasis and acne demonstrated the highest prevalence of anxiety (55% and 48%) and depression (30% and 24%). In contrast, conditions such as urticaria, eczema, and vitiligo were associated with substantially lower rates of psychological distress. These findings are supported by the study conducted by Mahindru A et al., (2021) found that acne vulgaris can lead to higher risk for depression and anxiety. The appearance of acne and resulting distress

can significantly impact self-esteem and social interactions, contributing to mental health issues. Similarly, Mavrogiorgou P et al., (2020) further emphasized the frequent co-occurrence of depression with psoriasis indicating the need for the early detection and treatment of such comorbid patients. O'Leary CJ et al., (2004) also found higher levels of anxiety and depression in patients with psoriasis, but they found no association between severities of psoriasis with anxiety. Golpour M et al., (2012) further corroborated these findings, reporting depression in 67% in and anxiety in 45% of patients with psoriasis. In the present study, significant associations ( $p < 0.05$ ) were observed between socio-demographic variables and the presence of anxiety and depression among dermatology patients. Higher rates were noted among younger individuals (18–25 years: 50% anxiety, 26.7% depression), females (38.5%, 19.2%), unmarried individuals (41.7%, 20%), urban residents (36.9%, 18.5%), and the unemployed (44%, 22%), identifying these groups as key psychosocial risk factors. These findings are consistent with previous studies. Koo J et al., (2001) emphasized that younger dermatology patients often experience greater psychosocial distress due to body image concerns and social stigmatization. Gupta MA et al., (1998) found that female dermatology patients are more likely to suffer from depression and suicidal ideation, particularly in relation to conditions such as acne and psoriasis. Similarly, Nguyen CM et al. (2016) reported that unmarried individuals exhibited higher anxiety and depression, while married participants were largely free of such issues. Additionally, Thompson AR et al. (2010) reported that over half (56.1%) unmarried participants would not consider marrying with vitiligo, underscoring the social stigma contributing to psychological distress. Tseloni A et al. (2010) suggested that rural settings may

offer stronger social support networks and reduced exposure to urban stressors, contributing to better mental health outcomes. Furthermore, students and unemployed individuals, particularly those facing academic and psychosocial stress, demonstrated a notably high rate of psychiatric morbidity (75.86%) in the study by Aslam R et al. (2007), supporting the trends observed in our findings.

### **Limitations**

- The small sample size affects generalizability.
- Being a cross-sectional study, causality cannot be established
- The data cannot be generalized for larger area as the study was carried out in tertiary care hospital.

### **Conclusion**

This study underscores the substantial psychological burden experienced by dermatology patients, with anxiety and depression affecting 30% and 14% of the sample, respectively. The majority of anxiety cases were of mild to moderate severity, while depressive symptoms demonstrated a heterogeneous distribution. Significant associations were observed between anxiety and depression and specific dermatological conditions, notably psoriasis and acne, as well as socio-demographic factors including younger age, female gender, unmarried status, urban residence, and unemployment. These findings highlight the critical need for a multidisciplinary approach in dermatological practice that incorporates routine psychological assessment and appropriate mental health interventions to enhance patient care and psychosocial outcomes.

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