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Psychiatric Comorbidity and Quality of Life Impairment in Adult Patients with Dermatophytosis: A Cross-Sectional OPD-Based Study

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Abstract

Background:
Dermatophytosis (Tinea infections) is among the most common superficial fungal infections worldwide, with a significant psychosocial burden. Chronic itching, visible lesions, and cosmetic disfigurement often lead to psychological distress. However, the magnitude of psychiatric comorbidities among dermatophytosis patients in Indian OPD settings remains underexplored.

Objective:
To determine the prevalence and correlates of psychiatric disorders—specifically anxiety and depression—among adult patients with dermatophytosis and to assess their quality of life.

Methods:
A cross-sectional study was conducted among 120 adult patients attending the Dermatology and Psychiatry OPDs of Smt. Kashibai Navale Medical College and General Hospital, Pune, from March to August 2021. After informed consent, participants were assessed using the Hospital Anxiety and Depression Scale (HADS), Dermatology Life Quality Index (DLQI), and Brief Psychiatric Rating Scale (BPRS).

Results:
Out of 120 participants, 62 (51.6%) were male and 58 (48.3%) females, with a mean age of 32.7 ± 10.5 years. Psychiatric disorders were identified in 68 (56.6%) patients, comprising anxiety disorders in 40 (33.3%) and depressive disorders in 28 (23.3%). Severity of psychiatric illness positively correlated with the duration of dermatophytosis ($r = 0.42$, $p < 0.01$). Mean DLQI score was 14.2 ± 5.8, indicating a large effect on quality of life. Patients with psychiatric comorbidities had significantly higher DLQI and BPRS scores ($p < 0.001$).

Conclusion:
Psychiatric comorbidities, especially anxiety and depression, are highly prevalent among patients with dermatophytosis. Incorporating psychiatric screening into dermatology OPD assessments can enhance holistic patient care and improve quality of life.

Keywords:
Dermatophytosis, Tenia, Anxiety, Depression, Psych dermatology, Quality of Life

I. Introduction

Psychodermatology represents a vital interdisciplinary field that bridges dermatology and psychiatry, focusing on the intricate bidirectional relationship between the skin and the mind. The human skin is not only the largest sensory organ but also a reflection of emotional and psychological states, owing to its shared embryological origin with the central nervous system from the ectodermal layer [1] . This neurocutaneous connection explains

why psychological distress often manifests through cutaneous symptoms such as itching, burning, and inflammatory reactions. Conversely, chronic skin diseases can significantly influence a person's emotional well-being and lead to various psychiatric complications, thereby creating a cyclical interaction between psychological and dermatologic processes [2] . Psychological stress alters hormonal and immune pathways, activating the HPA axis and increasing cortisol, which disrupts immune balance and promotes inflammation. Stress-related neuropeptides like substance P and CRH further intensify skin inflammation by affecting mast cells, circulation, and keratinocyte activity.Together, these reactions help explain why stress can worsen skin diseases, underscoring the need to consider emotional well-being alongside dermatologic treatment [1,2] .

Among the vast spectrum of cutaneous diseases, dermatophytosis (Tinea infections) stands out as one of the most prevalent and persistent fungal infections globally. Dermatophytes are keratinophilic fungi that infect keratinized tissues such as skin, hair, and nails, producing lesions that are pruritic, erythematous, and cosmetically disfiguring. Epidemiological studies estimate that more than 20–25% of the world's population is affected by dermatophytosis at any given time [3] . In India, the prevalence of dermatophytosis has increased dramatically over the past decade, largely attributed to climatic factors (high humidity, temperature), overcrowding, frequent use of topical steroid combinations, and incomplete antifungal treatments [4] Such chronicity and visibility make these infections more than a dermatological problem—they become psychosomatic conditions with far-reaching effects on quality of life and mental health [5] .

The psychosocial impact of dermatophytosis can be profound. Dermatology patients, especially those with visible lesions, are often judged by others as unhygienic or contagious, leading to social withdrawal, low self-esteem, and poor body image. Many avoid social gatherings or professional interactions for fear of discrimination. Studies in psychodermatology have documented that patients with chronic skin diseases frequently develop anxiety, depression, and somatoform disorders as secondary complications [6] .

Several landmark studies in dermatology have highlighted similar comorbidities. In psoriasis, for instance, rates of depressive disorders reach up to 60%, while anxiety disorders are reported in nearly 30–40% of patients [6] . Similarly, individuals with vitiligo experience significant emotional disturbances, largely due to social stigma and cosmetic visibility, often comparable to those with chronic psychiatric illnesses [7] . In acne vulgaris**,** particularly among young adults, embarrassment, low self-esteem, and body dysmorphic concerns have been strongly correlated with depressive and anxious symptoms [8] .

Dermatology clinics in India often focus on antifungal management and mycological cure, overlooking the psychological dimension of patient suffering. However, the repeated relapses, prolonged pruritus, and cosmetic disfigurement seen in tinea infections contribute to chronic stress, insomnia, and mood disturbances, especially among individuals of lower socioeconomic strata who may perceive the condition as a sign of personal failure or neglect [4,5] .

Given these interlinked pathways, coordinated care involving dermatologists, psychiatrists, and clinical psychologists is essential. Western literature has underscored the value of "liaison psychodermatology," advocating routine mental health screening within dermatology practice. [2,6] .

This study serves as a timely effort to examine the psychiatric burden of dermatophytosis in Indian outpatient settings. It systematically assesses adults attending dermatology clinics for anxiety and depression using validated tools, including HADS, BPRS, and DLQI. By linking psychiatric severity with disease duration and type, the study aims to clarify how dermatophytosis affects mental health and daily life. In conclusion, the present study recognizes dermatophytosis as a model condition for exploring the skin–mind interface in the Indian population. Quantifying the prevalence and correlates of psychiatric disorders among dermatophytosis patients it underscores the importance of a holistic, patient-centered approach in dermatologic care—an approach where treating the skin without addressing the mind may be only a partial cure.

II. Materials and Methods

1. Study Design: **cross-sectional observational design**

2. Study Setting: The study was carried out at the **Departments of Psychiatry and Dermatology**, Smt. Kashibai Navale Medical College and General Hospital (SKNMC & GH), Narhe, Pune. The study was conducted between **March 2021 and August 2021**.

3. Study Population: Participants were **adult patients (≥18 years)** clinically diagnosed with **Tenia (dermatophytosis)** attending the Dermatology OPD.

4. Inclusion Criteria

- Adults aged 18 years and above.
- Both male and female patients with clinically confirmed dermatophytosis (Tenia corporis, Tenia cruris, Tenia faciei, or mixed forms).
- Patients willing to provide informed written consent and participate in psychiatric assessment.

4. Exclusion Criteria

To eliminate confounding factors, the following were excluded:

- Individuals with pre-existing psychiatric disorders diagnosed prior to the onset of dermatophytosis.
- Patients with severe systemic, neurological, or endocrine illnesses (e.g., hypothyroidism, diabetes with neuropathy, epilepsy) that could independently influence mood or anxiety.
- Individuals unable to comprehend or respond to the study questionnaires or those unwilling to participate.

6. Sampling Method and Sample Size

A **convenience sampling technique** was used, including consecutive eligible patients attending the OPD during the study period. Based on outpatient flow and feasibility, a **sample of 120 participants** was targeted. This number was sufficient to detect moderate correlations ($r > 0.3$) between dermatophytosis duration and psychiatric symptom severity with 80% power at $\alpha = 0.05$.

7. Data Collection Procedure

1. **Dermatological Assessment:** Conducted by a dermatologist to confirm diagnosis and record disease characteristics—site, duration, and extent of lesions.
2. **Psychiatric Assessment:** Conducted by a psychiatrist on the same day to screen for anxiety, depression, and other psychiatric symptoms using validated instruments.

8. Data Collection Tools

The following standardized instruments were employed:

- (a) Socio-demographic Proforma
- (b) Hospital Anxiety and Depression Scale (HADS
- (c) Brief Psychiatric Rating Scale (BPRS
- (d) Dermatology Life Quality Index (DLQI
- (e) ICD-10 Diagnostic Criteria

10. Ethical Considerations

Prior to commencement, the study obtained approval from the **Institutional Ethics Committee (IEC)** of SKNMC & GH. The study adhered to the principles of the **Declaration of Helsinki (2013 revision)**. Written informed consent was obtained from all participants after explaining the study objectives, confidentiality, and voluntary participation. No participant was coerced or financially induced to participate.

11. Confidentiality and Data Protection

Each participant was assigned a unique study identification number. Personal identifiers were removed during analysis to maintain anonymity. Data were stored securely in password-protected systems accessible only to the research team.

12. Data Entry and Statistical Analysis

Data were coded and entered into **IBM SPSS Statistics version 26.0**.

- **Descriptive statistics** (mean, standard deviation, and frequency percentages) were used for sociodemographic and clinical variables.
- **Inferential statistics:**
  - **t-test** was applied for mean comparisons between groups (with vs. without psychiatric morbidity).
  - **Chi-square (χ^2)** test was used for categorical variables.
  - **Pearson's correlation coefficient (r)** assessed relationships between duration of infection and psychiatric severity scores.

  A *p-value < 0.05* was considered statistically significant.

14. Outcome Measures

Primary outcomes included:

- Prevalence of psychiatric disorders (anxiety and depression) among dermatophytosis patients.
- Correlation between dermatophytosis duration and psychiatric severity.
- Impact of psychiatric comorbidity on quality of life (DLQI).

Secondary outcomes involved examining gender, age, and socioeconomic differences in psychiatric morbidity.

15. Funding, Support, and Conflict of Interest

The study was conducted without external funding or sponsorship. All materials and logistics were supported by institutional facilities. There were no conflicts of interest among the investigators, ensuring objectivity and transparency throughout the research process.

III. Results

This study included 120 adults with dermatophytosis, with nearly equal gender distribution (51.6% males, 48.3% females) and a mean age of 32.7 ± 10.5 years. Most participants belonged to the 21–40-year age group, indicating greater vulnerability among socially and occupationally active individuals.

Clinical evaluation showed that 40% had disease duration ≤3 months, 38.3% had 3–6 months, and 21.7% had >6 months, with a mean duration of 4.7 ± 2.3 months. Tinea corporis was most common (36.7%), followed by tinea cruris (26.6%) and mixed infections (21.7%). Pruritus severity was high (mean 7.4 ± 1.9).

Psychiatric morbidity was significant, affecting 56.6% of patients (anxiety 33.3%, depression 23.3% as per ICD-10). Mean scores confirmed clinically relevant symptoms (BPRS 36.4, HADS-Anxiety 12.1, HADS-Depression 10.5). Chronic dermatophytosis strongly predicted psychological distress—84.6% of those with >6-month duration had psychiatric symptoms versus 48.9% with shorter duration ($p = 0.002$). Longer disease duration showed moderate positive correlations with anxiety ($r = 0.42$, $p < 0.01$) and depression ($r = 0.38$, $p < 0.05$). Psychiatric cases also showed higher mean BPRS scores (41.6 vs. 29.2; $p < 0.001$).

Quality of life was markedly impaired (overall DLQI 14.2 ± 5.8), especially among those with psychiatric morbidity (17.8 ± 4.6 vs. 9.2 ± 3.8; $p < 0.001$). Extensive and visible lesions were independently associated with higher anxiety and depression levels ($p < 0.001$). Sleep disturbance and psychosomatic symptoms were frequent in psychiatric cases.

No significant gender differences in psychiatric morbidity were observed ($p = 0.21$), though younger adults showed a trend toward higher anxiety. Lower socioeconomic status and public-facing occupations were associated with greater distress, reflecting psychosocial burden from visible skin lesions.

Overall, more than half of dermatophytosis patients experienced significant anxiety and depression, intensified by chronicity, lesion extent, and social visibility. Dermatophytosis substantially compromised quality of life, underscoring the need for integrated psychodermatology evaluation and management.

IV. Discussion

The findings of the present cross-sectional study demonstrate a notably high prevalence of psychiatric comorbidities (56.6%) among adult patients with dermatophytosis, emphasizing that this seemingly minor superficial fungal infection carries a substantial psychological and social burden. This observation reinforces the growing body of evidence in psychodermatology, which asserts that skin and mind are intimately connected through shared neuroimmunology and neuroendocrine pathways**.** Chronic cutaneous diseases do not merely affect the body's physical appearance—they profoundly shape emotional states, behaviour, and interpersonal functioning [1,5] .

V. Conclusion

This study shows that more than half of patients with dermatophytosis (56.6%) experience psychiatric distress, most commonly anxiety (33.3%) and depression (23.3%). Although dermatophytosis is often viewed as a minor skin infection, its persistent itching, visible lesions, frequent relapses, and related social stigma significantly affect emotional well-being and daily life.

Longer disease duration was strongly linked with higher anxiety and depression levels, suggesting a vicious cycle: prolonged infection increases stress, and stress may worsen the skin condition. The mean DLQI score of 14.2 ± 5.8 reflects a very large impact on quality of life, which was even greater in those with psychiatric symptoms ($p < 0.001$).

Both men and women were equally affected, indicating that the psychological burden of dermatophytosis is universal rather than gender-specific. Overall, the findings show that dermatophytosis is not just a skin problem—it also affects mental health and social functioning. Routine screening for anxiety, depression, and quality-of-life issues should be incorporated into dermatology visits. Early psychological support, counseling, or referral can improve treatment adherence, reduce relapses, and support better recovery. A holistic approach that cares for both skin and mind is essential for improving outcomes in patients with chronic dermatophytosis.

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Table.01: Socio-demographic Profile of Study Participants (n = 120)

Variable	Category	Frequency (n)	Percentage (%)
Age (years)	Mean ± SD	32.7 ± 10.5	—
Gender	Male	62	51.6
	Female	58	48.3
Marital status	Married	81	67.5
	Unmarried	39	32.5
Education	Primary or less	22	18.3
	Secondary	58	48.3
	Graduate and above	40	33.4
Occupation	Public-facing jobs (sales, teaching, etc.)	56	46.7
	Non-public/household	64	53.3
Socioeconomic status	Lower	52	43.3
	Middle	49	40.8
	Upper	19	15.9

Interpretation: The cohort comprised mostly young to middle-aged adults with near-equal gender distribution. Almost half engaged in public-interaction jobs, amplifying visibility-related distress.

Table.02: Clinical Characteristics of Dermatophytosis (n = 120)

Parameter	Category	n (%)
Type of infection	*T. corporis*	44 (36.7)
	T. cruris	32 (26.6)
	T. faciei	18 (15.0)
	Mixed type (≥2 sites)	26 (21.7)
Duration of infection	≤3 months	48 (40.0)
	3–6 months	46 (38.3)
	>6 months	26 (21.7)
Extent of lesions	Localized (≤2 sites)	76 (63.3)
	Extensive (≥3 sites)	44 (36.7)
Pruritus severity (VAS 0–10)	Mean ± SD	7.4 ± 1.9

Interpretation: One-fifth of cases were chronic (>6 months), and one-third had extensive or mixed infections, supporting the chronic-recurrent nature of dermatophytosis in Indian OPD populations.

Table.03: Prevalence of Psychiatric Morbidity Among Dermatophytosis Patients

Psychiatric Diagnosis	Frequency (n)	Percentage (%)
Any psychiatric disorder	68	56.6
— Anxiety disorder	40	33.3
— Depressive disorder	28	23.3
No psychiatric disorder	52	43.4
Mean BPRS score (± SD)	—	36.4 ± 7.9
Mean HADS-Anxiety score (± SD)	—	12.1 ± 3.6
Mean HADS-Depression score (± SD)	—	10.5 ± 3.2

Interpretation: Over half of dermatophytosis patients met criteria for psychiatric morbidity, predominantly anxiety and depression. BPRS and HADS scores confirm mild-to-moderate symptom severity.

Table 04: Correlation Between Dermatophytosis Duration and Psychiatric Severity Scores

Parameter	Correlation Coefficient (r)	p-value	Interpretation
Duration of dermatophytosis vs. HADS-Anxiety	0.42	<0.01	Moderate positive correlation

Duration of dermatophytosis vs. HADS-Depression	0.38	<0.05	Moderate positive correlation
Duration of dermatophytosis vs. BPRS	0.35	<0.05	Longer duration associated with higher psychiatric severity
HADS-Anxiety vs. DLQI	0.57	<0.001	Strong positive correlation
HADS-Depression vs. DLQI	0.52	<0.001	Strong positive correlation

Interpretation: Disease chronicity directly worsens psychological distress and quality-of-life impairment, reinforcing a stress–disease feedback loop.

Table.05: Comparison of Quality of Life (DLQI) and Psychiatric Scores Between Groups

Parameter	With Psychiatric Morbidity (n = 68)	Without Psychiatric Morbidity (n = 52)	t / χ^2 value	p-value
Mean DLQI score (± SD)	17.8 ± 4.6	9.2 ± 3.8	$t = 10.45$	<0.001
Mean BPRS score (± SD)	41.6 ± 6.8	29.2 ± 5.1	$t = 9.37$	<0.001
Mean HADS-Anxiety score	13.8 ± 3.4	8.9 ± 2.7	$t = 7.23$	<0.001
Mean HADS-Depression score	12.2 ± 3.9	8.2 ± 2.5	$t = 6.18$	<0.001
Gender distribution (M:F)	34:34	28:24	$\chi^2 = 1.56$	0.21
Duration >6 months (%)	32.4	8.5	$\chi^2 = 9.82$	0.002

Interpretation: Participants with psychiatric comorbidities exhibited significantly higher DLQI, HADS, and BPRS scores, confirming greater psychological burden and reduced life quality, whereas gender had no significant influence.

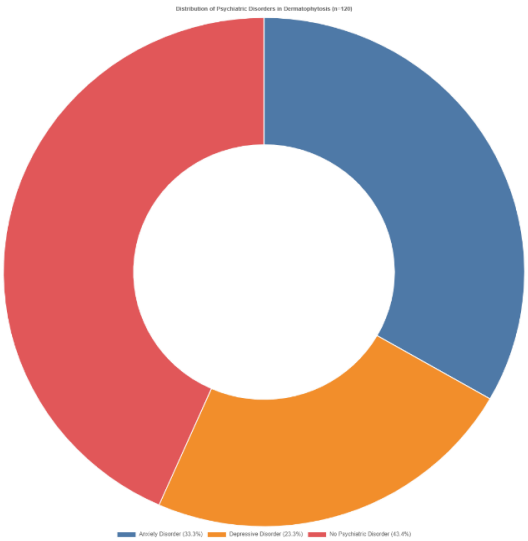

Figure: 1. Distribution of psychiatric disorders in dermatophytosis

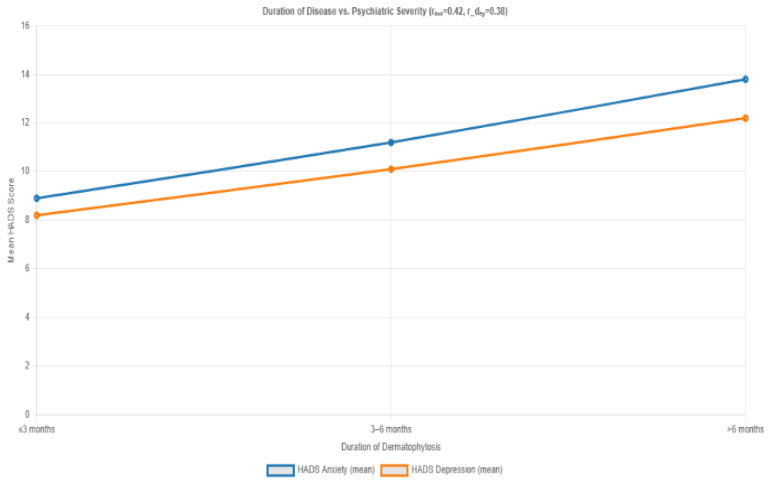

Figure: 2. Illustrate a clear positive correlation between disease duration and psychiatric severity

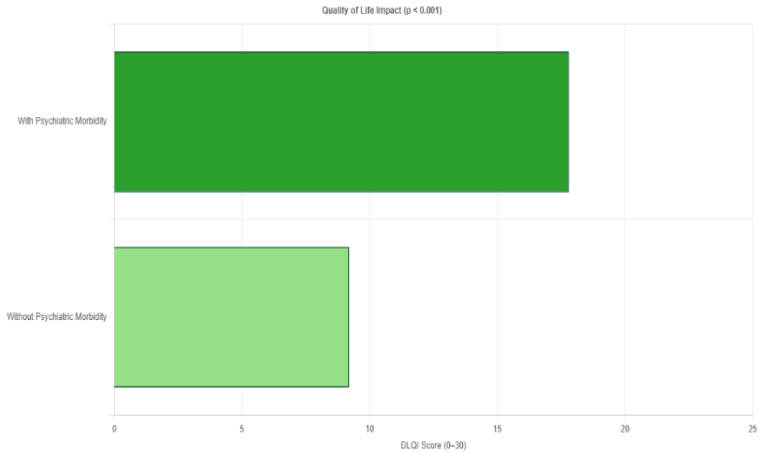

Figure: 3. Quality of life analysis