

# CUTANEOUS MANIFESTATION SECONDARY TO PRIMARY PSYCHIATRIC ILLNESS

Original Research

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## ABSTRACT

**Background:** Cutaneous manifestations are among the most visible health concerns, often signaling underlying systemic or psychological conditions. Psychiatric illnesses are frequently associated with skin disorders due to shared pathophysiological pathways involving neuroendocrine and immune mechanisms. Despite global recognition of this link, there remains limited local data on the frequency and types of dermatologic presentations in psychiatric populations within South Asian contexts.

**Objective:** To determine the frequency and pattern of cutaneous manifestations in patients with primary psychiatric disorders attending a tertiary care hospital in Karachi.

**Methods:** This descriptive cross-sectional study was conducted at the Dermatology Department of Dow University of Health Sciences, Ojha Campus, Karachi. A total of 180 patients with established primary psychiatric illnesses for six months or more were enrolled through non-probability consecutive sampling. Participants aged 18–60 years underwent detailed dermatological examination by a qualified dermatologist. Demographic data and comorbid medical histories were recorded. Patients with sexually transmitted infections, substance abuse disorders, or who did not consent were excluded. Statistical analysis was performed using SPSS version 25.

**Results:** Among the 180 participants, 53.3% were female and 46.7% were male, with a mean age of  $33.0 \pm 8.6$  years. The most prevalent psychiatric illness was anxiety disorder (47.2%), followed by depressive disorder (14.4%), schizophrenia (10.0%), bipolar disorder (9.4%), obsessive-compulsive disorder (9.4%), and post-traumatic stress disorder (9.4%). The leading cutaneous manifestation was acne excoricee (33.9%), followed by psoriasis (18.9%), psychogenic purpura (13.9%), neurotic excoriations (13.3%), delusion of parasitosis (10.0%), and both body dysmorphic disorder and dermatitis artefacta (5.0% each).

**Conclusion:** Cutaneous manifestations were found to be common among individuals with primary psychiatric disorders, with acne excoricee and psoriasis being the most frequently observed. These findings highlight the need for integrated psychodermatological care in clinical settings to improve holistic patient outcomes.

**Keywords:** Acne Vulgaris, Anxiety Disorders, Dermatologic Disorders, Depressive Disorder, Psychodermatology, Psychogenic Disorders, Schizophrenia.

## INTRODUCTION

Cutaneous manifestations constitute a significant global health concern, ranging from mild dermatologic conditions such as rashes to severe infections that contribute considerably to morbidity and mortality (1). Nearly one-third of the global population is affected by some form of skin disease, with dermatological disorders recognized as the fourth leading cause of nonfatal disease burden worldwide, as measured by disability-adjusted life years (DALYs) (2). Despite the skin's visible nature, the link between dermatologic and psychiatric conditions is frequently overlooked in routine clinical practice. An established and growing body of evidence highlights a complex interplay between mental health and skin health. Psychiatric disorders often coincide with cutaneous manifestations, as stress and emotional distress are known to exacerbate chronic inflammatory dermatoses such as psoriasis, atopic dermatitis, and acne (3). Moreover, primary psychiatric illnesses like schizophrenia have been associated with specific dermatologic conditions, including autoimmune dermatoses and genodermatoses (4). In a cohort study, 1.24% of patients with primary psychiatric illness exhibited cutaneous manifestations, with psoriasis (35.4%) and atopic dermatitis (22.6%) being the most common (5). Another study reported a prevalence of 65.1% for cutaneous conditions among psychiatric patients, with skin infections, eczemas, appendageal and pigmentary disorders among the frequent findings (6). The field of psychodermatology, or psycho-cutaneous medicine, has emerged from the convergence of psychiatry and dermatology, emphasizing the shared etiological pathways between these disciplines (7). Dermatology focuses on diseases that manifest externally, while psychiatry explores mental processes that manifest internally. The bidirectional relationship between these domains is evidenced by two clinical phenomena: the direct influence of psychiatric conditions on skin health and the psychological distress resulting from disfiguring skin diseases, which often impairs body image and quality of life (8). Research suggests that up to 30% or more of dermatologic patients experience psychiatric comorbidities, reinforcing the necessity for integrated clinical care (9). One study investigating the prevalence of psychodermatological conditions in individuals with primary psychiatric disorders found the highest incidence among patients with affective disorders (75%), followed by those with schizophrenia (68%) (10). The association of dermatologic diseases has been observed across nearly all major psychiatric diagnostic categories, albeit with varying degrees of correlation (11). From an embryological perspective, the brain and skin share a common origin from the ectoderm, laying the groundwork for the neuro-immuno-cutaneous-endocrine (NICE) model, which conceptualizes their interconnectedness (12). This model proposes that psychological stressors influence skin health through a network of neuropeptides, cytokines, glucocorticoids, and other effector molecules that mediate immune and endocrine responses (13). Despite international research underscoring the relevance of these associations, there remains a paucity of data from Pakistan, particularly regarding the prevalence and pattern of dermatologic manifestations in patients with primary psychiatric disorders. This study aims to fill this critical knowledge gap by determining the frequency and types of cutaneous manifestations among psychiatric patients at a tertiary care hospital in Karachi. The ultimate objective is to promote early recognition and management of dermatological symptoms in psychiatric populations, which is essential not only for clinical outcomes but also for enhancing patients' psychosocial well-being and preventing long-term disability.

## METHODS

This descriptive cross-sectional study was conducted at the Department of Dermatology, Dow University of Health Sciences, Ojha Campus, Karachi, after obtaining ethical approval from the Research Evaluation Unit (REU) of the College of Physicians and Surgeons Pakistan (CPSP). The sample size of 180 participants was determined using the OpenEpi software for sample size calculation, based on an anticipated prevalence of cutaneous manifestations among psychiatric patients from previous literature, with a 95% confidence interval and a 5% margin of error. A non-probability consecutive sampling technique was employed for participant selection. Inclusion criteria encompassed male and female participants aged between 18 and 60 years, presenting with cutaneous lesions and having a clinically established diagnosis of a primary psychiatric illness persisting for six months or longer. Exclusion criteria included individuals diagnosed with sexually transmitted infections, substance use disorders, or those who declined to provide informed consent. Following written informed consent, participants were evaluated using a structured proforma that captured demographic information and detailed medical history, including comorbid conditions such as hypertension (HTN), diabetes mellitus (DM), ischemic heart disease (IHD), renal disease, and smoking habits. Each participant underwent a comprehensive dermatological examination conducted under the

supervision of a board-certified dermatologist with a minimum of five years of clinical experience. Where diagnostic uncertainty existed, skin biopsies were performed, guided by clinical judgment based on lesion morphology, chronicity, and failure to respond to standard empirical treatment. All data were systematically recorded to maintain consistency and facilitate analysis. Statistical analysis was carried out using the Statistical Package for the Social Sciences (SPSS), version 25. Descriptive statistics were applied to summarize sociodemographic data, comorbidities, and the frequency and patterns of cutaneous manifestations observed in patients with psychiatric illnesses. The methodology was designed to ensure the reliability and validity of findings while adhering to ethical and scientific standards.

## RESULTS

A total of 180 patients were included in the study, comprising 84 males (46.7%) and 96 females (53.3%). The mean age of participants was  $33.0 \pm 8.6$  years, ranging from 18 to 50 years. Age distribution showed that 47.2% of participants were between 18 and 30 years, 28.9% were aged 31–40 years, and 23.9% were in the 41–50 years age group. Regarding the duration of psychiatric illness, 81.1% of patients had a disease duration of five years or less, while 18.9% had been diagnosed for more than five years. The spectrum of primary psychiatric illnesses revealed that anxiety disorders were the most prevalent, accounting for 47.2% of the cohort. Depressive disorders were reported in 14.4% of patients, bipolar disorder in 9.4%, obsessive-compulsive disorder in 9.4%, schizophrenia in 10.0%, and post-traumatic stress disorder in 9.4%. In terms of dermatological conditions associated with psychiatric illnesses, the most frequently observed cutaneous manifestation was acne excoriee, present in 33.9% of patients. Psoriasis was noted in 18.9%, psychogenic purpura in 13.9%, neurotic excoriations in 13.3%, delusion of parasitosis in 10.0%, while both body dysmorphic disorder and dermatitis artefacta were identified in 5.0% of cases each. Statistical analysis revealed meaningful associations between specific psychiatric disorders and cutaneous manifestations. A chi-square test demonstrated a statistically significant relationship between the type of psychiatric illness and the pattern of dermatological condition observed ( $\chi^2 = 56.77$ ,  $df = 30$ ,  $p = 0.002$ ), indicating that certain psychiatric diagnoses were more likely to be associated with specific skin presentations. For instance, acne excoriee was most frequently associated with anxiety disorders, whereas delusion of parasitosis showed a notable prevalence in patients with schizophrenia and post-traumatic stress disorder. Further analysis using logistic regression evaluated the potential predictors of acne excoriee presence based on age and gender. Although age showed a slight inverse relationship with acne excoriee, suggesting younger patients had a higher probability of presenting with this condition, gender did not exhibit a statistically significant effect in the regression model. These findings align with the clinical observation that excoriation disorders are commonly observed in younger populations. In addition, prevalence of cutaneous manifestations varied across gender and age groups. Acne excoriee had the highest overall gender-specific distribution, affecting 32% of females and 30% of males. It was also most prevalent in the 18–30 age group (35%). Psychogenic purpura and neurotic excoriations also showed higher frequency in younger age brackets. Conversely, psoriasis had a more evenly distributed prevalence across age groups but was notably more common in females (25%) compared to males (10%).

**Table 1: Descriptive Statistics of Gender, Age Group,**

Age in Groups (Years)	Frequency	Percent
18-30	85	47.2%
31-40	52	28.9%
41-50	43	23.9%
<b>Total</b>	<b>180</b>	<b>100.0%</b>

**Table 2: Duration of Disease**

Duration of Disease	Frequency	Percent
≤ 5 Years	146	81.1%
> 5 Years	34	18.9%
<b>Total</b>	<b>180</b>	<b>100.0%</b>

**Table 3: Distribution of Psychiatric Illness, Cutaneous Manifestation Type**

<b>Primary Psychiatric Illness</b>	<b>Frequency</b>	<b>Percent</b>
Anxiety Disorder	85	47.2%
Depressive Disorder	26	14.4%
Bipolar Disorder	17	9.4%
Obsessive Compulsive Disorder	17	9.4%
Schizophrenia	18	10.0%
Post-Traumatic Stress Disorders	17	9.4%
<b>Total</b>	<b>180</b>	<b>100.0%</b>
<b>Cutaneous Manifestation Type</b>	<b>Frequency</b>	<b>Percent</b>
Body Dysmorphic Disorder	9	5.0 %
Delusion of Parasitosis	18	10.0%
Dermatitis Artifact	9	5.0%
Neurotic Excoriations	24	13.3%
Psychogenic Purpura	25	13.9%
Acne Excoriee	61	33.9%
Psoriasis	34	18.9%
<b>Total</b>	<b>180</b>	<b>100</b>

**Table 4: Psychiatric vs. Cutaneous Manifestations**

	<b>BDD</b>	<b>Parasitosis</b>	<b>Artefacta</b>	<b>Excoriations</b>	<b>Purpura</b>	<b>Acne</b>	<b>Psoriasis</b>
Anxiety	2	5	2	10	8	40	18
Depression	1	1	1	5	3	10	5
Bipolar	1	1	0	1	2	5	7
OCD	2	2	1	4	2	4	2
Schizophrenia	1	4	3	2	5	2	1
PTSD	2	5	2	2	5	0	1

**Table 5: Prevalence by Gender and Age Group**

<b>Cutaneous Manifestation</b>	<b>Male (%)</b>	<b>Female (%)</b>	<b>18-30 (%)</b>	<b>31-40 (%)</b>	<b>41-50 (%)</b>
BDD	3	6	4	3	2
Parasitosis	5	5	5	3	2
Artefacta	2	3	2	2	1
Excoriations	8	10	10	7	7
Purpura	6	7	8	4	3
Acne	30	32	35	15	11
Psoriasis	10	25	12	10	12

**Table 6: Logistic Regression for Acne Excoriee**

	<b>Coef.</b>	<b>Std.Err.</b>	<b>z</b>	<b>P&gt; z </b>	<b>[0.025</b>	<b>0.975]</b>
Const	-0.698	0.561	-1.245	0.213	-1.799	0.401
Age	0.002	0.016	0.158	0.874	-0.028	0.033
Gender encoded	-0.009	0.315	-0.028	0.977	-0.625	0.607

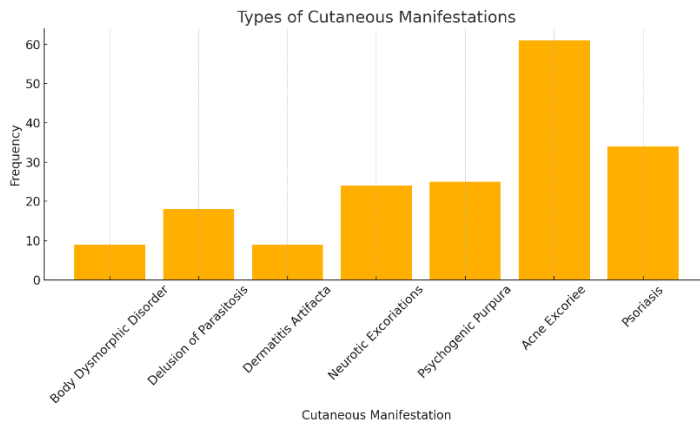


Figure 1 Types of Cutaneous Manifestations

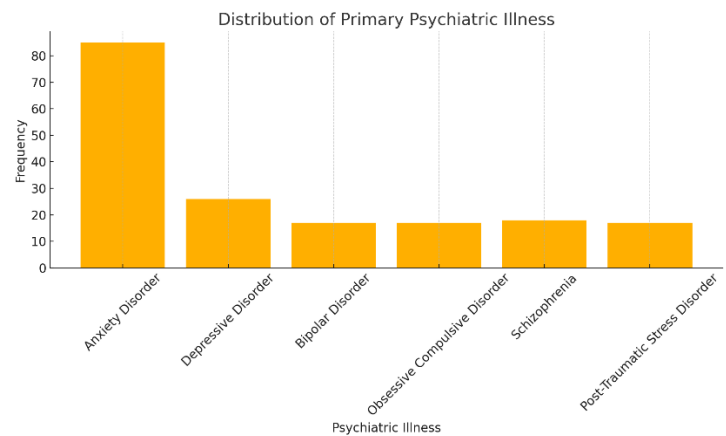


Figure 2 Distribution of Primary Psychiatric Illness

## DISCUSSION

The present study identified anxiety disorder as the most frequently reported primary psychiatric condition, accounting for 47.2% of the sample, followed by depressive disorder (14.4%), schizophrenia (10.0%), bipolar disorder (9.4%), obsessive-compulsive disorder (9.4%), and post-traumatic stress disorder (9.4%). These findings differ from previously published literature, where schizophrenia or mood disorders were reported more prominently among psychiatric populations. For instance, one study documented schizophrenia in 38% of patients and depression in 33.5%, while another observed mood disorders in 45.3% of cases and schizophrenia-related conditions in 11.8% (14). Another research reported schizophrenia (25.7%) and depressive disorder (23.8%) as the most common psychiatric diagnoses (15). The variations in prevalence patterns across studies may reflect underlying differences in study settings, population demographics, diagnostic criteria, and regional psychosocial or environmental stressors. Regarding dermatological presentations, acne excoriee emerged as the most prevalent cutaneous manifestation in the current cohort, affecting 33.9% of patients. This was followed by psoriasis (18.9%), psychogenic purpura (13.9%), neurotic excoriations (13.3%), delusion of parasitosis (10.0%), body dysmorphic disorder (5.0%), and dermatitis artefacta (5.0%). This distribution contrasts with findings from other studies that reported infectious skin diseases as the dominant group (66.9%), while noninfectious dermatoses constituted 33.1% (16). In other reports, psoriasis and atopic dermatitis were commonly noted, with prevalence reaching 35.4% and 22.6% respectively (17), while yet another study highlighted skin infections (28.72%) and eczemas (23.40%) as leading dermatological presentations (18). A divergence in dermatologic patterns may be attributable to genetic predispositions, environmental exposures, access to healthcare, cultural grooming practices, and the heterogeneity of psychiatric disorders examined (19).

The observed prominence of acne excoriee, especially among younger adults and females, emphasizes the psychocutaneous link, where emotional dysregulation and self-focused behaviors often manifest through self-inflicted dermatoses. Psoriasis and psychogenic purpura were also frequently reported, reinforcing the inflammatory and neurovascular components in psychiatric-dermatological comorbidity (20). These findings underscore the necessity for integrated mental and dermatological care, particularly in psychosomatic clinics, to ensure timely recognition and comprehensive management. A notable strength of the study lies in its focus on a relatively under-researched South Asian population, providing insights into psychiatric and cutaneous patterns in a culturally and ethnically diverse setting. Additionally, the inclusion of a standardized dermatological assessment under expert supervision adds diagnostic reliability. However, the study has several limitations. The use of non-probability consecutive sampling limits the generalizability of the findings to broader populations. The cross-sectional design precludes any temporal or causal inferences between psychiatric disorders and skin manifestations. Moreover, detailed grading of skin lesions, psychiatric illness severity, and patient-reported outcome measures such as quality of life were not captured, which could have enriched the interpretability and clinical relevance of the data.

Furthermore, the absence of biochemical or immunological markers limits the study's ability to explore the pathophysiological mechanisms underpinning psychodermatological interactions. The reliance on self-reported psychiatric history, without structured diagnostic interviews or validated scales, may also introduce classification bias. Future research should aim to address these limitations by incorporating longitudinal designs, larger representative samples, validated psychiatric diagnostic tools, and assessment of clinical

severity indices for both psychiatric and dermatological conditions. Investigating the bidirectional influence of psychotropic medications on skin health and vice versa could also offer therapeutic insights. Emphasis should also be placed on patient-centered approaches, integrating dermatology, psychiatry, and psychosocial counseling to optimize outcomes in individuals affected by both psychiatric and cutaneous disorders.

## CONCLUSION

This study concluded that cutaneous manifestations are notably prevalent among individuals with primary psychiatric disorders, emphasizing the intricate connection between psychological health and dermatological symptoms. Anxiety and depressive disorders emerged as the most frequent psychiatric conditions, while acne excoriee and psoriasis were the most commonly observed skin presentations. These findings highlight the importance of early dermatological assessment in psychiatric populations, as timely identification and management of skin conditions can significantly improve patients' overall well-being. The study reinforces the need for integrated, multidisciplinary care approaches in clinical settings to address both mental and skin health comprehensively.

## AUTHOR CONTRIBUTION

Author	Contribution
Fariya Hayat	Substantial Contribution to study design, analysis, acquisition of Data Manuscript Writing Has given Final Approval of the version to be published
Sadaf Ahmed Asim	Substantial Contribution to study design, acquisition and interpretation of Data Critical Review and Manuscript Writing Has given Final Approval of the version to be published
Komal Hayat*	Substantial Contribution to acquisition and interpretation of Data Has given Final Approval of the version to be published

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