

## Original Article



# Psychiatric problems in psoriasis: A descriptive case series study

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## Abstract

**Introduction:** Previous studies have emphasized the relation between psoriasis and psychological disorders. This study was conducted to investigate the frequency of psychiatric disorders in patients with Psoriasis in the region of Azerbaijan.**Methods:** In a descriptive cross-sectional study, all patients with a confirmed diagnosis of Psoriasis were examined by a dermatologist recorded each patient's Psoriasis type, disease status (local-general), site of involvement (in cases with local psoriasis), and disease severity based on Psoriasis Area and Severity Index (PASI), disease duration, and demographic information. Data was statistically analyzed by SPSS/Ver 22 software.**Results:** Fifty-four patients were enrolled in the study with a mean age of  $41.76 \pm 16.17$  years. The mean PASI index was  $13.8 \pm 16.8$ . Twenty-seven patients (50%) were normal in psychiatric examinations. Among people with psychiatric disorders (50%), the most common was Generalized Anxiety Disorder (GAD) which was seen in 13 patients (24.1%). There was no statistically significant relationship between types of psychiatric disorders and gender ( $P=0.515$ ), age ( $P=0.506$ ), and duration of disease ( $P=0.471$ ). Nevertheless, there was a significant difference between patients with co-morbidity of psychiatric disorders and PASI rate ( $P=0.020$ ).**Conclusion:** Half of the Psoriasis patients generally had a psychiatric disorder. The most frequent was GAD. There was no significant relationship between psychiatric disorders in Psoriasis patients and gender, age, and duration of disease. However, the rate of psychiatric disorders increased with the severity of Psoriasis skin lesions.

## Introduction

The skin serves as a bridge between the internal and external environments, making it a key area for studying the mind-body connection. Stress can significantly impact the skin, with physical and psychosocial factors playing a role in the development of skin diseases. Research dating back to 1946 has focused on the relationship between psychological stress and conditions like psoriasis.<sup>1</sup> Psoriasis is considered a skin disease influenced by psychosocial factors, with stress playing a role in exacerbating symptoms.<sup>2</sup> The connection between psoriasis and psychological stress involves various pathways in the body, including the nervous system, hormonal systems, and immune responses.<sup>3,4</sup> Despite ongoing research, the exact mechanisms are still being

investigated. Individuals with psoriasis often experience high rates of mental health disorders, with studies showing a significant prevalence of psychiatric comorbidities among patients. Psoriasis is more strongly linked to psychiatric conditions compared to other skin diseases, and patients may exhibit psychological symptoms that are not proportional to their skin condition. These patients also report a decrease in quality of life similar to those with serious medical conditions like cancer or cardiovascular diseases.<sup>5</sup> Understanding the relationship between psychiatric comorbidities and psoriasis can provide valuable insights into both conditions and their treatments.<sup>6</sup>

Skin conditions are a significant contributor to the overall burden of nonfatal diseases, with psoriasis being

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a prominent dermatological disorder linked to emotional distress.<sup>7</sup> Research indicates that individuals with psoriasis are at a higher risk of experiencing psychiatric comorbidities and thoughts of suicide compared to those with other skin conditions like melanoma and allergies.<sup>8,9</sup> Additionally, the quality of life for individuals with psoriasis is often comparable to that of individuals with serious medical conditions such as cardiovascular disease or cancer.<sup>10</sup> Psoriasis patients commonly report feelings of stigma, depression, and anxiety, with sexual dysfunction being more prevalent in those with severe symptoms.<sup>11</sup> Furthermore, alcoholism is more common among individuals with psoriasis compared to the general population. Studies have also shown a connection between psoriatic arthritis, depression, and suicidal tendencies.<sup>12</sup> Regarding the results of various studies on the relation between psoriasis and psychiatric disorders, further research is needed to explore these connections and develop comprehensive approaches to managing these patients. Therefore, in this study, we aimed to explore the relationship between psychiatric problems in psoriasis Azerbaijan's patients in northwest of Iran.

## Materials and Methods

The present study was cross-sectional descriptive research. All patients with a definitive diagnosis of psoriasis entered the study by consensus and consecutive methods with informed consent. These patients were referred to the dermatology clinic of Sina Hospital in Tabriz for 12 months, from December 1, 2017, to December 1, 2018. The previous studies indicate that 50 patients with psoriasis were evaluated for anxiety disorders as the minimum sample size.

Existence of physical illnesses or joint symptoms, consciousness disorder, history of psychiatric hospitalization or background of taking antipsychotic drugs, being over 60 years and having substance abuse were our exclusion criteria.

## Tool introduction

The Persian version of the DASS-21 questionnaire was used to evaluate the presence of anxiety disorders and depression. DASS-21 scale can recognize and screen anxiety, depression, and stress symptoms. The questions are in the form of 21 questions with four options, completed in the form of self-assessment. The range of responses differs from "never" to "always."

Lovibond and Lovibond wrote the 21-item DASS after inventing 42 questions. In a sample of 1771 participants, Crawford and Henry reported its validity and reliability as 95% depression, 90% anxiety, 0.93 stress, and 97% total scores. In addition, Asghari has reported that the validity and reliability of the Persian version in Iran are favorable.<sup>13,14</sup>

The initial history and exclusion of patients with exclusion scales were presented, such as the history of

antipsychotic and intermediate drug use (in cases of the wide distribution of data with a standard deviation greater than average).

## Statistical analysis

Despite descriptive statistics, data analysis was used to investigate the relationship between anxiety disorder and the mentioned parameters according to the needs and conditions of t-tests for independent statistical groups such as Mann-Whitney U test, Pearson or Spearman correlation, chi-square, or Fisher's exact test. In addition, a logistic regression test was used to investigate the effect of confounding variables if necessary. Kolmogorov-Smirnov test or Shapiro test was used to investigate Quantitative data distribution. Statistically, the results were significant if they had  $P < 0.05$ .

## Results

Fifty-four patients were studied according to the inclusion and exclusion criteria. Twenty-eight patients (51.9%) were female, and 26 (48.1%) were male. The average age was  $41.76 \pm 16.17$  years, ranging from seven to 81 years ( $42.57 \pm 15.78$  for males, and  $41.03 \pm 16.51$  for females). The type of psoriasis in patients was mostly plaque type ( $n=47;87\%$ ) and two patients had generalized postural type (3.7%). In terms of the distribution of affected areas in skin, more than two areas were involved (29.6%) in most of the patients, and four different areas were involved in seven patients (13%). Patients were treated with narrowband ultraviolet B (NBUBV), psoralen ultraviolet A (PUVA), methotrexate (MTX), cyclosporin, Neotigason, and adalimumab and the most common was with Neotigason with 26.1% (Table 1).

Twenty-seven patients (50%) did not have a serious psychiatric disorder in examinations. The most common disorder among people with psychological disorders (50%) was generalized anxiety disorder (GAD). It was seen in 13 patients (24.1%). The lowest cases were cluster A personality, paranoia, obsessive-compulsive disorder (OCD), and cyclothymia (Table 2).

According to the results, the rate of GAD in female patients was higher than in males. Statistically, there was no significant difference between the types of psychiatric disorders in psoriasis patients by gender ( $P=0.515$ ) (Table 3).

Psoriasis patients with social phobia and paranoia had a higher average of psychological examination results by age. Statistically, there was not a significant difference between the age of patients and the type of disorder ( $P=0.506$ ). Approximately half of the patients had a university degree and were psychologically normal and patients with GAD according to the examination of results based on level of education (Table 4).

The Psoriasis Area and Severity Index (PASI) was  $12 \pm 13$  among psoriasis patients without psychological disorders. The highest PASI score was related to the patient with

**Table 1.** Results of psoriasis type, affected areas, and treatment used methods

	Number	Percentage of patients
Type of psoriasis		
Plaque	47	87
Generalized postural	2	3.7
Plaque + palmoplantar	1	19
Plaque + reverse	3	5.6
Plaque + drops	1	1.9
Total	54	100
Areas affected by psoriasis		
Total body	15	27.8
5	1	1.9
4	7	13
3	9	16.7
2	16	29.6
1	5	11.1
Total	54	100
Treatment method		
NBUVB	4	7.4
PUVA	3	5.6
MTX	4	7.4
Cyclosporin	4	7.4
Neotigason	6	11.1
Adalimumab	2	3.7
Indefinite	31	57.4
Total	54	100

cluster A personality (PASI=41). The lowest PASI rate was related to patients with OCD and NOS anxiety. There was also a significant difference in the analysis of the PASI index among psoriasis patients with the results of various psychological examinations ( $P=0.020$ ) (Table 5).

Based on the duration of illness to referral and the results of psychological examinations in patients with psoriasis, the average years of infection in patients without psychological disorders was  $14 \pm 22$  years. The longest duration of illness was seen in patients with paranoia among patients with psychological disorders (35 years). The shortest duration was related to the psoriasis patient with cyclothymia (Table 6). There was no significant difference between patients with the results of different psychological examinations ( $P=0.471$ ) in the analysis of the disease duration among patients with psoriasis.

## Discussion

The results of this study provide valuable insights into the relationship between psoriasis and psychiatric disorders among a cohort of 54 patients who met the inclusion and exclusion criteria. The demographic characteristics of the study population revealed an even gender distribution,

**Table 2.** Results of patients' psychological examinations

Examination results	Number	Percentage
Normal	27	50
Anxiety NOS	5	9.3
GAD	13	24.1
Cluster A personality	1	1.9
Paranoia	1	1.9
Depression	3	5.6
Social phobia	2	3.7
OCD	1	1.9
Cyclothymia	1	1.9
Total	54	100

GAD, generalized anxiety disorder; OCD, obsessive-compulsive disorder; NOS, not otherwise specified.

**Table 3.** Results of psychological examinations of patients by gender

Examination results	Female (n)	Male (n)
Normal	14	13
Anxiety NOS	2	3
GAD	9	4
Cluster A personality	1	0
Paranoia	0	1
Depression	1	2
Social phobia	0	2
OCD	1	0
Cyclothymia	0	1
Total	28	26

GAD, generalized anxiety disorder; OCD, obsessive-compulsive disorder; NOS, not otherwise specified.

with a slightly higher proportion of female patients. The average age of the patients was in the fourth decade of life, with a wide range spanning from childhood to older adulthood. The majority of patients had plaque-type psoriasis, consistent with the most common form of the disease. In terms of psychiatric comorbidities, half of the patients did not have a serious psychiatric disorder, while the other half exhibited various psychological disorders. GAD emerged as the most prevalent psychiatric disorder among those with psychological issues, affecting nearly a quarter of the patients. Interestingly, no significant gender differences were observed in the types of psychiatric disorders present in psoriasis patients, highlighting the importance of considering mental health aspects across all patient populations. The analysis also revealed interesting trends related to age, education level, and disease severity among psoriasis patients with psychiatric comorbidities. Patients with social phobia and paranoia tended to have higher average psychological examination results at older ages, suggesting a potential impact of age on the manifestation of certain psychiatric disorders in psoriasis patients. Additionally, approximately half of the patients with a university degree were psychologically

**Table 4.** Results of patients’ psychological examinations by education

Examination results	Illiterate (n)	Primary (n)	Middle (n)	High school (n)	Academic (n)	Total (n)
Normal	3	7	3	3	11	27
Anxiety NOS	0	1	0	3	1	5
GAD	1	0	2	0	10	13
Cluster A personality	0	0	0	0	1	1
Paranoia	0	0	0	0	1	1
Depression	0	1	0	1	1	3
Social phobia	0	2	0	0	0	2
OCD	0	0	0	0	1	1
Cyclothymia	0	1	0	0	0	1
Total	4	12	5	7	26	54

GAD, generalized anxiety disorder; OCD, obsessive-compulsive disorder; NOS, not otherwise specified.

**Table 5.** The PASI index in different studies groups

Examination results	Mean	Minimum	Maximum
Normal	12	1	42
Anxiety NOS	11	6	16
GAD	16	4	37
Cluster A personality	41	41	41
Paranoia	37	37	37
depression	39	37	42
Social phobia	37	37	37
OCD	11	11	11
Cyclothymia	37	37	37

GAD, generalized anxiety disorder; OCD, obsessive-compulsive disorder.

normal, indicating a potential association between education level and mental health outcomes in this population. Furthermore, the study found significant differences in the PASI scores among patients with different psychiatric disorders, with the highest score observed in patients with cluster A personality. This highlights the potential influence of specific psychiatric conditions on disease severity in psoriasis patients. However, no significant differences were noted in disease duration based on the results of various psychological examinations, suggesting that disease duration may not be strongly associated with specific psychiatric disorders in this study. According to a systematic evaluation of eighty-two observational studies, the frequency and incidence of depression varied greatly, primarily because of study design heterogeneity. However, among individuals (whether healthy controls or those with other chronic conditions) with psoriasis compared to those without, depression was substantially more common.<sup>15</sup> In a cross-sectional investigation of 118 psoriasis patients from South Korea, the prevalence of depression was 74.6%. While in a large retrospective cohort analysis of 169 909 people with psoriasis in Taiwan it was 0.2%. Despite being low, the Taiwanese study’s stated prevalence

**Table 6.** Results of psychological examinations of patients by duration of disease (year)

Examination results	Mean	Minimum	Maximum
Normal	22	1	60
Anxiety NOS	25	2	62
GAD	17	1	51
Cluster A personality	17	17	17
Paranoia	35	35	35
Depression	33	26	40
Social phobia	33	25	41
OCD	31	31	31
Cyclothymia	9	9	9

GAD, generalized anxiety disorder; OCD, obsessive-compulsive disorder; NOS, not otherwise specified.

was much greater than the 0.13% observed for non-psoriatic controls who were age and sex-matched.<sup>16,17</sup> Two of the nine studies that used the Hospital Anxiety and Depression Scale (HADS) to describe depression outcomes compared their findings to a control group.<sup>18,19</sup> Patients with psoriasis had a considerably higher mean score in both studies. When the nine-item Patient Health Questionnaire (PHQ-9) was used to gauge the degree of depression, similar findings were noted.<sup>20</sup> The most widely used instruments for assessing depression burden in the studies that made up this review were the Beck Depression Inventory (BDI), HADS, and PHQ, which are also frequently used in clinical settings.<sup>21,22</sup> Female sex and more severe psoriasis were risk factors linked to depression in psoriasis patients. In every study that reported data on the prevalence of depression in psoriasis by gender, with the exception of one, women with the condition reported a higher overall prevalence of depression than male patients. Still, males with psoriasis had higher prevalence than their non-psoriatic counterparts in studies comparing psoriasis patients of both sexes against a control group of patients without psoriasis. This indicates that depression is more common in psoriasis sufferers of all genders, while there may be a higher risk for females.

Suicidal thoughts and attempts were more common in patients with psoriasis than in those without, although the frequency varied greatly. Patients with psoriasis are substantially more likely than those without psoriasis to experience suicidal ideation, according to all but one study comparing the prevalence of suicidal ideation in psoriasis with controls. Patients with other dermatological conditions were employed as a reference group in the one study<sup>23</sup> that did not detect an elevated incidence of present suicidal thoughts in patients with psoriasis, suggesting that the comparison with psoriasis was not entirely reliable. These findings imply that psoriasis sufferers tend to have suicide thoughts more frequently than the overall population. Patients with psoriasis had a considerably higher risk of suicide than those without the condition when compared to controls. There are numerous more emotional, psychological, and physical comorbidities linked to depression in psoriasis. These include obesity,<sup>18</sup> cardiovascular comorbidity,<sup>23,24</sup> sleep issues,<sup>25</sup> and type D personality<sup>21,26</sup> (propensity for negative affect such as concern, anger, and melancholy associated with social restraint, shyness, and lack of self-assurance<sup>22</sup>). Sleep issues,<sup>25</sup> subjective well-being,<sup>27</sup> and sexual dysfunction were linked to comorbid depression in psoriasis.<sup>25,28</sup> The results of this mentioned systematic review indicate a possible correlation between depression and a lower quality of life in psoriasis patients.<sup>15</sup> Depression was found to be substantially correlated with poorer levels of body satisfaction and self-esteem, according to one study.<sup>29</sup> Another study discovered that psoriasis patients' physical condition, as determined by the 12-item Short Form, may be adversely affected by the existence and severity of depression.<sup>18</sup> The results indicate that depression has a negative impact on physical health, which further decreases quality of life. A recent systematic review and meta-analysis also report that patients with psoriasis or psoriatic arthritis have a higher risk of depression when compared to non-psoriasis controls.<sup>30</sup> The burden of psoriasis has been disregarded or undervalued by medical professionals. A greater understanding of the correlation between psoriasis patients and depression would allow for improved care and management that includes psychosocial therapies to lessen depressive symptoms and overall patient burden. Several evidence gaps about the prevalence of depression in psoriasis patients have been found by this research. Numerous investigations were carried out mostly in Europe and Asia, indicating regional differences in the understanding and treatment of psoriasis's psychological effects. Evidence from patients in these regions is also underrepresented, with only one study undertaken in each of the Americas (the United States and Canada) and Africa (Egypt). As a result, the data from patients in these areas is not as strong.<sup>15</sup> Only one of these studies reported incidence by age and sex, and none of them evaluated the incidence of suicidal ideation/suicide attempts based on the severity of

psoriasis. The variability in depression assessments, cutoff points, and data collection techniques (such as patient surveys, administrative claims databases, and health records) among research is one of the review's limitations. Second, there were insufficient data on depression based on the severity of the illness and the psoriasis subtype. The psoriasis severity assessment measure and cutoff point were not disclosed in numerous trials. Lastly, factors that might influence the association between psoriasis and depression were not always taken into account when estimating the frequency and incidence of depression. Many studies presented adjusted data, although it was frequently unclear which factors were included in various regression models.

The current study has some limitations. The study sample size of 54 patients may not be representative of the broader population of individuals with psoriasis and psychiatric disorders. A larger sample size would provide more robust and generalizable results. Moreover, the study did not consider potential confounding variables such as socioeconomic status, family history of psychiatric disorders, or access to mental health care, which could impact the relationship between psoriasis and psychiatric comorbidities. Future research should aim to include a larger and more diverse sample of patients with psoriasis to enhance the generalizability of the findings. For this purpose, longitudinal studies could be conducted to explore the causal relationship between psoriasis and psychiatric disorders, as well as the impact of different treatment modalities on mental health outcomes. Investigating the role of potential confounding factors such as socioeconomic status, family history, and access to mental health care in the association between psoriasis and psychiatric disorders would provide a more comprehensive understanding of this relationship.

## Conclusion

Overall, these findings showed that the most common psychiatric disorder observed was GAD. Gender differences were noted, with a higher prevalence of GAD in female psoriasis patients. The analysis also revealed that patients with social phobia and paranoia tended to have higher average psychological examination results by age. underscore the complex interplay between psoriasis and psychiatric comorbidities, emphasizing the need for comprehensive assessment and management strategies that address both physical and mental health aspects in patients with psoriasis. These findings highlight the complex interplay between psoriasis and psychiatric comorbidities, emphasizing the importance of considering both physical and mental health aspects in the management of patients with psoriasis. Further research with larger sample sizes and consideration of confounding variables is warranted to better understand



## Study Highlights

### What is current knowledge?

- Psoriasis is a chronic and relapsing immune-mediated skin disease associated with a variety of comorbidities.
- Previous research has established a link between psoriasis and psychological disorders.
- This study aimed to investigate the prevalence of psychiatric disorders among psoriasis patients in Azerbaijan.

### What is new here?

- This study found that approximately half of the psoriasis patients in Azerbaijan had a psychiatric disorder.
- Generalized Anxiety Disorder (GAD) was the most common psychiatric disorder among the patients.
- The study revealed a significant correlation between the severity of psoriasis skin lesions and the prevalence of psychiatric disorders.

this relationship and optimize patient care.

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## Authors' Contribution

**Conceptualization:** Hamideh Herizchi, Sepideh Herizchi

**Data curation:** Mahla Kari

**Formal analysis:** Hamideh Herizchi, Sepideh Herizchi

**Investigation:** Hamideh Herizchi, Sepideh Herizchi

**Methodology:** Hamideh Herizchi, Sepideh Herizchi

**Project administration:** Hamideh Herizchi, Sepideh Herizchi

**Resources:** Mahla Kari

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**Writing—original draft:** Hanieh Salehi-Pourmehr

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## Competing Interests

The authors declare that they have no competing interests.

## Data Availability Statement

All data generated or analysed during this study are included in this article. Further inquiries can be directed to the corresponding author.

## Ethical Approval

This study was evaluated and approved by the ethics committee of Tabriz University of Medical Sciences (IR.TBZMED.REC.1396.838). All cases were interested in participating study and had signed informed consent.

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