

# Psychological impact on the quality-of-life in patients of psoriasis vulgaris: A systemic review



Aniruddha Ghosh<sup>1</sup>, Ambarish Ghosh<sup>2</sup>, Maidul Islam SK<sup>3</sup>, Raghav Oza<sup>4</sup>

<sup>1</sup>Associate Professor, Department of Dermatology, <sup>2,3,4</sup>Associate Professor, Department of Psychiatry, Jagannath Gupta Institute of Medical Sciences and Hospital, Kolkata, West Bengal, India

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## ABSTRACT

Living with a chronic condition like psoriasis can significantly affect the individual involved. Psoriasis patients have difficulties with their physical, psychological, occupational, and social functioning. These impairments can result in psychiatric morbidity depression and anxiety disorders. This systematic review (SR) assessed the impact of psychological factors in life of psoriasis patients. The literature search comprised Medline through PubMed, Web of Science, the Cochrane Library, Wiley Online Library, and additional sources such as Google Scholar, spanning the period from 2014 to 2023. Thorough examination of the most important electronic databases was conducted. Various study designs, including observational studies, trials, and commentaries, were incorporated to ensure a comprehensive examination of the research topic. The risk of bias was evaluated using established methodology. This SR comprised 13 studies, with the Cochrane Risk of Bias Tool employed to assess biases in randomized trials across five domains. The majority of the studies demonstrated a low risk (57.69%), indicating their reliability while those categorized as unclear (37.17%) exhibited some ambiguity without compromising the validity of results. Studies categorized as high risk (5.12%) suggested significant bias and potential errors. The findings indicate an association between psoriasis and various psychological factors, including depression, anxiety, suicidal ideation, impaired emotional functioning, negative body image, and self-perception. The significant impact of depression and anxiety on individuals with psoriasis underscores the need for greater awareness of its psychological aspects. Incorporating psychological interventions into care and management strategies is crucial for addressing this chronic condition and enhancing overall well-being, thus improving quality of life.

**Key words:** Psoriasis; psychological comorbidities; Depression; Anxiety; Assessment tool; Quality of life

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## INTRODUCTION

Psoriasis is a persistent, non-curable, recurring immune-mediated skin disorder associated with various comorbidities such as dyslipidemia, hypertension, diabetes, Crohn's disease, and cerebrovascular disease.<sup>1</sup> It affects both men and women equally and can manifest at any age, although the majority of patients develop the condition before the age of 35.<sup>2</sup> The prevalence of psoriasis is about 2–3%.<sup>3</sup> The prevalence of psoriasis shows regional variation, with rates of 2.11% in the European Union, 0.22% in the African Union, and

0.56% in China according to Global Burden Disease<sup>4</sup> and the prevalence in India varies from 0.44% to 2.8%. Psoriasis is associated with numerous genetic and environmental factors.<sup>5</sup> The pathogenesis of psoriasis is complex. However, immunological investigations have underscored the vital role of cytokines particularly interleukin (IL)-17 and IL-23, in the excessive proliferation of the epidermis. Furthermore, the roles of T helper cells type 17, tumor necrosis factor  $\alpha$ , and interferons have been identified in this process.<sup>6</sup> The predominant clinical manifestation of psoriasis vulgaris is chronic plaque psoriasis, characterized

### Address for Correspondence:

Dr. Aniruddha Ghosh, Associate Professor, Department of Dermatology, Jagannath Gupta Institute of Medical Sciences and Hospital, Kolkata, West Bengal, India. **Mobile:** +91-8697354467. **E-mail:** dr.ani.ghosh@gmail.com

by prominent reddish scaly bumps on the scalp, elbows, knees, and presacral area.<sup>7</sup> It is accompanied by itching, discomfort, and scaling, significantly impacting the health-related quality of life (QoL) and work productivity of individuals, depending on the severity of the condition.<sup>8</sup>

Psoriasis, primarily presenting as a skin condition, requires comprehensive management beyond addressing physical symptoms alone to effectively address associated comorbidities and mitigate their psychosocial impact.<sup>9</sup> The condition significantly diminishes the QoL for individuals affected by it. Psychosocial comorbidities strongly linked with psoriasis include substance abuse, anxiety, depression, and suicidality.<sup>10</sup> Individuals with psoriasis have a higher risk of experiencing depressive and anxiety symptoms.<sup>8</sup> Numerous studies have consistently shown elevated rates of depression among psoriatic patients, irrespective of the severity of their psoriasis.<sup>11</sup> In addition, psoriasis is associated with social interaction anxiety, audience-related anxiety, poor sleep quality, increasing levels of anger, and mood swings, particularly observed in young adults.<sup>12</sup> In addition, the physical appearance of psoriasis lesions, primarily over-exposed areas, affecting both the skin and nails, negatively impacts patients' self-esteem. This can lead to feelings of being stigmatized, embarrassed, and professionally disabled, ultimately compromising their overall QoL.<sup>13</sup>

QoL is considered a multidimensional aspect that encompasses elements such as good health and satisfaction. For individuals dealing with chronic dermatoses like psoriasis, the progression of skin lesions or the lack of responsiveness to medications can have significant implications. The critical location of these lesions adds to the challenges faced by patients, especially when mental health issues and social relationships hinder personal development, autonomy, self-acceptance, positive relationships, and environmental adaptation.<sup>14</sup> Although many studies are done on the new modalities of treatment for psoriasis, and the etiology of the disease, the social impact on the lives of these patients has largely been neglected. Most of the patients complain about how they feel awkward in crowded areas and public places where people stare at their lesions, avoiding shaking hands with them, even avoiding food from their hands. Until recently, studies on the psychological impact of the QoL in psoriasis patients were restricted to Western countries. This systematic review (SR) tries to confirm how psoriasis patients should be treated not only by a dermatologist but also by a psychiatrist considering the severity of psychological distress seen in most of the patients.

### Aims and objectives

To study psychological impact on quality of life in patients of psoriasis vulgaris. To assess previous literature to

determine the prevalence and severity of psychological comorbidities such as depression, anxiety and stress among patients with psoriasis and its impact on their quality of life.

## MATERIALS AND METHODS

The protocol for this study was formulated in accordance with the approved reporting guidelines for SR. PRISMA-P declaration and all modifications were recorded. The Cochrane Handbook guided the conduct of the review, while the PRISMA statement was adhered to for reporting purposes. Although the review was not registered, our literature search encompassed MEDLINE through PubMed, Google Scholar, the Cochrane Library, Web of Science, Wiley Online Library, Scopus, and other computerized databases. The search strategy for studies involved the use of related keywords: Psoriasis, depression, anxiety, self-esteem, mental health in psoriasis patients, psychological well-being, and psychological comorbidities were used with limitation to publications in English.

### Inclusion criteria

1. Publications authored in English
2. Literature published between 2014 and 2024
3. Documents containing information about the psychological effects of psoriasis on QoL
4. Human clinical studies
5. Full-text articles, including original, SR, etc.

### Exclusion criteria

1. Literature not written in English
2. Animal studies, case reports, reviews of existing literature, or abstracts
3. Insufficient data
4. Studies exclusively focused on psoriasis treatment by dermatologists only
5. Duplicate articles.

### Data analysis

After extracting the articles from the databases, the articles were grouped on an Excel sheet, where the duplicates were eliminated. Then, each article's abstract was independently assessed, and paper selection was conducted according to the established protocol. The complete texts of the chosen papers were then thoroughly reviewed, resulting in the final selection of relevant research.

Quality assessment of individual studies: Using the RevMan software, we evaluated the risk of bias for randomized control trials using the Cochrane-associated tool. The risk assessment domains were categorized with either a high, indeterminate, or low risk based on criteria such as selection bias (random sequence generation), performance

bias (blinding of patients and personnel), attrition bias (incomplete outcome data), selective reporting (reporting bias), and other potential biases.

### Statistical analysis

In this review, 13 studies were included. Microsoft Office Excel 2013 (Microsoft Corporation, USA) was used for the piloting data extraction, and RevMan software version 5.4 was utilized. The risk of bias was evaluated separately by two review authors. The Risk of Bias Tool for randomized controlled trials (RCTs) was employed to evaluate the included trials, categorizing them as high risk (+), unclear risk (?), or low risk (-). Various domains were evaluated.

## RESULTS

The present SR consists of 625 articles. After removing duplicates<sup>8</sup> and records out of scope,<sup>27</sup> we screened the

remaining publications (n=588). On detail screening, an additional (n=377) was excluded due to some reasons. 211 published studies were assessed for eligibility. On detail screening, 92 articles were irrelevant to the present review (Figure 1). An additional 13 articles were letter to the editor which were removed. Following the pre-defined inclusion criteria, full-text articles underwent evaluation for the review. Incomplete, irrelevant data, as well as case reports and case studies, were excluded. After thorough screening and data analysis, a total of 13 met the criteria for inclusion in the SR. The articles spanned from 2014 to 2023.

This SR used the Cochrane “Risk of Bias tool,” designed specifically for randomized trials. For RCTs, the Cochrane collaboration tool was employed to evaluate bias across five domains (Figure 2):

- The method of randomization
- Deviations from intended interventions

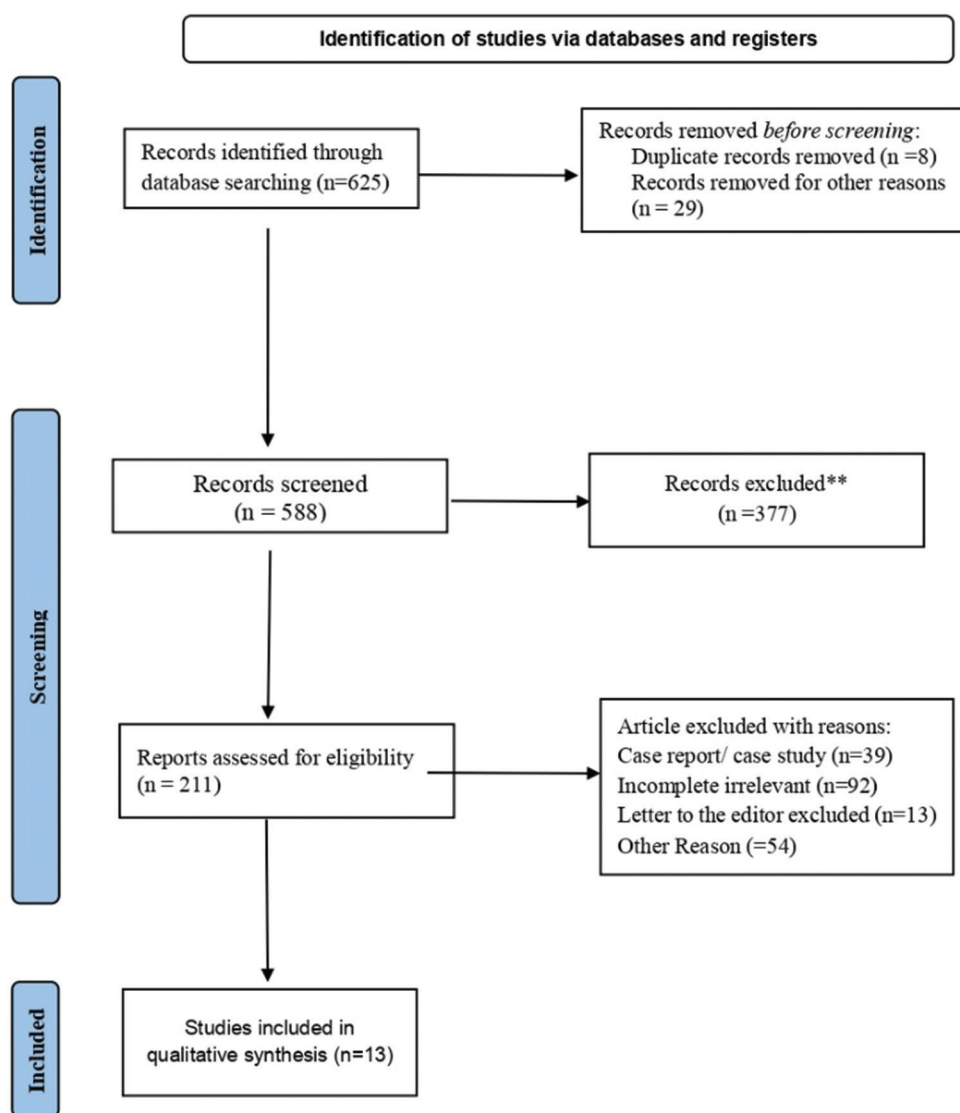
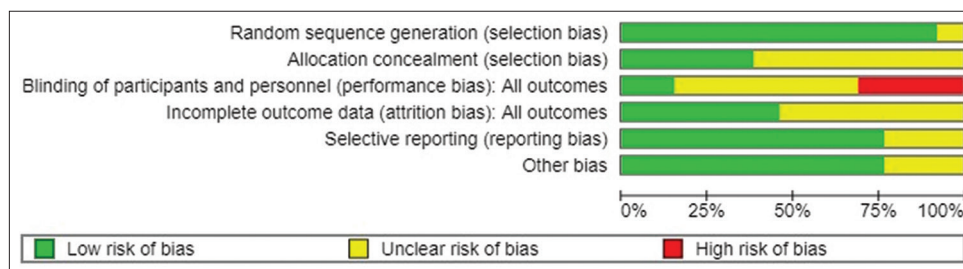


Figure 1: Illustrates the PRISMA flow diagram as well as the article’s specified relevant database



**Figure 2:** The author's assessment of each bias risk item is represented as percentages across all included articles in the bias risk graph

- Missing outcome data
- Assessment of risk
- Bias in the selection of the reported result.

The majority of articles<sup>16,17,19-22,26</sup> received a low-risk rating (57.69%) based on the overall bias assessment for each selected work. A “low-risk” study utilized a reliable method to assign patients to different treatment courses, ensuring the reliability of the findings. An “unclear” study (37.17%) may have had some bias, but it was likely not sufficient to affect the accuracy of the results, possibly due to incomplete data. A “high-risk” study (5.12%) indicated a significant level of bias, potentially leading to erroneous findings, often due to knowledge gaps or reporting inconsistencies (Figure 3).

Several methods can be employed to assess the impact of psoriasis on individuals, including the PSS, WHOQOL-Bref, PHQ-9, and the generalized anxiety disorder-7 (GAD-7). The results obtained through these assessments can provide insights into the severity of psoriasis and its psychological ramifications, aiding in the identification of rates of depression, anxiety, stress, and substance abuse (Table 1).

### Depression among patients with psoriasis

The prevalence of depression exhibited significant variation, attributable to differences in study design and settings. The Hospital Anxiety and Depression Scale (HADS) emerged as a reliable tool for screening psychological distress or mood disorders featuring seven questions in each sub-scale. Scores ranging from 0 to 7 are considered “negative for,” 8 to 10 as “doubtful for,” and 11 to 21 as indicative of a “case of” anxiety and/or depression. Tee et al., found that the HADS was the most commonly utilized tool for measuring depression in studies.<sup>16,23,26</sup> In addition, the Beck depression inventory and the Patient Health Questionnaire were employed in various studies due to their recognized effectiveness<sup>7,17</sup> Table 1.

The occurrence of mood disorders among individuals with psoriasis ranges from 8.5% in a cross-sectional study conducted in the city of Alor Setar by Bakar et al.,<sup>23</sup> to

89.1% in a study conducted in Indonesia by Rahmayanti et al.,<sup>21</sup> in Table 1.

### Anxiety among patients with psoriasis

The 7-item GADs scale is an assessment tool for assessing anxiety levels. Through data from Table 1, the prevalence of anxiety varied widely, ranging from 13.1% to 76.7% in cross-sectional studies.<sup>16-18</sup> The HADS and Hamilton Anxiety Scale were used in studies.<sup>22-24</sup>

### QoL index

Dermatology life quality index (DLQI) was shown to be the most widely used assessment tool for evaluating QoL in five studies.<sup>7,17,20,23,24</sup> Comprising 10 items, the DLQI is validated to measure the impact and disability associated with skin diseases. The DLQI is self-reported questionnaire specifically designed to evaluate patients' perceptions of how psoriasis affects their QoL.<sup>28</sup> Factors such as depression, anxiety, and other physical comorbidities were associated with QoL, with psoriasis patients experiencing comorbid anxiety/depression exhibiting lower QoL scores.<sup>20,21,23</sup> In addition, the 36-item Short Form Survey (SF-36) was utilized in one study<sup>26</sup> and the Skindex-61 questionnaire in another.<sup>19</sup> Most studies indicated a deterioration in the overall well-being and daily functioning of psoriasis patients.

## DISCUSSION

Psoriasis, an immune-mediated skin illness, causes chronic inflammation of the skin, joints, or both. It is chronic, incurable imposes a unique burden notably in terms of poor body image and social perception, due to the condition's increased frequency and visible skin discoloration.<sup>29</sup> Patients with psoriasis have impaired physical, psychological, occupational, and social functioning due to disease-related stress, cosmetic deformity, and social stigma. This, in turn, can lead to psychological illnesses including anxiety and depression and other related comorbidities. As a result, teamwork among dermatologists, psychiatrists, and psychologists is essential for tackling this problem. The objective of this SR was to analyze the influence of psoriasis, a chronic skin disorder, on patients' psychological

**Table 1: Psychological factors associated with psoriasis patients**

S. No.	Author	Study design	Sample size	Mean age	Assessment scale	QoL	Psychology factors and percentage of cases	Outcomes
1.	Kumar et al., 2023 <sup>15</sup>	Cross-sectional	90	NS	M.I.N.I.; version 5.0	NS	Depression Sign- 54.5% Anxiety disorder- 23.6%	Psychiatric morbidities in individuals with psoriasis result in a lower QoL.
2.	Soliman, 2021 <sup>16</sup>	Cross sectional	223	34.8±10.6	The PHQ-9 measures depression, the GAD-7 assesses anxiety, and the DASS-21 stress subscale evaluates stress.	sa-SPI-p assessed the psychological and social effects of skin conditions.	Depressive-47.1%; suicidal ideation-18.4%, Anxiety 32.7%, Stress symptoms-59.6.	The presence of both anxiety and depression was strongly associated with lower QoL
3.	Lamb et al., 2017 <sup>17</sup>	Cross-sectional study	607	NS	GAD-7 assesses anxiety, and PHQ-9 measures depression.	DLQI	Depressive disorder-9.9%, suicidal ideation- 3.5% anxiety disorder-13.1%, Among, anxiety disorder, 46% had DLQI was <10	Patients with prior history of psychiatric morbidity showed increased risk of experiencing anxiety and depression.
4.	Lakshmy et al., 2015 <sup>18</sup>	Cross-sectional study	90	41.91	GAD assessed anxiety severity, while the PSS evaluated stress levels.	WHOQOL-BREF	Depression sign- 78.9%, Anxiety sign- 76.7%, Perceived stress sign-56.7%, QoL- 16.6% showed poor QoL	The QoL declined in psoriasis patients who were associated with comorbid anxiety/ depression.
5.	Sarkar et al., 2014 <sup>19</sup>	Case-control study	48	42.92	SRQ-24	Skindex-61 questionnaire	Depression-43.75%, Fear sign -47.91%	Psoriasis has a high degree of psychiatric morbidity.
6.	Ahmed et al., 2016 <sup>20</sup>	Cross-sectional	254	NS	DASS-21 scale is used to measure depression, anxiety, and stress levels.	DLQI	Depression-12.6%, anxiety- 22.1%, Stress-7.5%	A significant association was between depression and poor QoL.
7.	Rahmayanti et al., 2020 <sup>21</sup>	Cross-sectional, observational study	37	44.3±14.12	HDRS and RSE	QoL using DLQI	Depression-89.1%, QoL-97.2%	Positive association between psoriasis severity with depression and QoL
8.	Pompli, 2017 <sup>22</sup>	Observational	242	50.7	Anxiety symptoms and suicidal ideation were assessed using HARS and CSSRS.	NS	Anxiety disorders 9.9%, suicidal ideation 14.9%,	Patients show higher risk of psychiatric comorbidities and increased suicidal ideation compared to other dermatological disorders.
9.	Bakar et al., 2017 <sup>23</sup>	Cross-sectional study	174	46.4	HADS	DLQI is used to assess the impact of skin condition on QoL.	Depressive- 8.5% , anxiety-6.9% DLQI- 44.9%	Depression, anxiety symptoms have been found to correlate with a poor QoL.
10.	Sampogna et al., 2017 <sup>24</sup>	Cross-sectional study	3,485	56.8	HADS evaluates both depression and anxiety.	DLQI for evaluating sexual life	Among individuals experiencing depression, 24.3% reported sexual difficulties, 20.7% of those with anxiety reported similar challenges.	Sexual impairment was strongly associated with depression, anxiety.
11.	Bulat et al., 2020 <sup>7</sup>	Open prospective study	51	40	BDI and STAI	DSQL	Distress- 88%, QoL 3.14 less than general.	It was demonstrated that psoriasis affects the QoL.

(Contd...)

**Table 1: (Continued)**

S. No.	Author	Study design	Sample size	Mean age	Assessment scale	QoL	Psychology factors and percentage of cases	Outcomes
12.	Zhong et al., 2021 <sup>25</sup>	Qualitative Study	22	42.6±12.9	PASI	NS	Anxious Sign: (21.6), Depressed Sign: 15.7%, Embrassed Sign: 5.9% and Suicidal Sign: 5.9%	Psoriasis has negative effects on various aspects of patients' lives and leads to a decreased QoL.
13.	Tee et al., 2016 <sup>26</sup>	prospective cross-sectional	100	43.1	HADS tool for anxiety and depression	Short form-36 Health Survey (SF-36)	Anxious Sign- 17% showed scores≥11 and Depressive- 15% had score≥11. SF-36 was significantly correlated with both anxiety and depression scores.	Anxiety and depression affect a significant proportion of patients with psoriasis.

M.I.N.I.: Mini international neuropsychiatric interview scale, PHQ-9: Patient health questionnaire-9, GAD-7: Generalized anxiety disorder-7, HARS: Hamilton anxiety rating scale, C-SSRS: Columbia-Suicide Severity Rating Scale, HADS: Hospital anxiety and depression scale, BDI: Beck depression inventory, STAI: State-Trait Anxiety Inventory, QoL: Quality of life, DLQI: Dermatology life quality index, SF-36: Short form 36 health survey, WHOQOL-BREF: World Health Organization quality of life brief version, sa-SPI-p: Psychosocial Impact component of the skin appearance satisfaction scale, DSQI: Dermatology-specific quality of life

well-being. The primary findings of this review showed that individuals with psoriasis had elevated levels of stress, anxiety, and depression, along with an increased incidence of suicidal ideation.

The occurrence and rate of depression varied, primarily due to heterogeneity in study design. Most investigation on patients with psoriasis showed prevalence of depression varying from 8.5% to 89.1%. These studies showed the coexistence of both depressive and anxiety condition in individuals with psoriasis.<sup>15-18,21</sup>

Lamb et al.,<sup>17</sup> conducted a cross-sectional study involving 607 patients with psoriasis and found that 9.9% of them had a depressive disorder. A cross-sectional study conducted by Rahmayanti et al.,<sup>21</sup> depression was assessed using the Hamilton rating scale, outcomes showed the prevalence of 89.1%.

This investigation conducted by Lakshmy et al.,<sup>18</sup> in India a cross-sectional, reported a higher prevalence of depression at 78.9% and anxiety at 76.7% among patients with psoriasis. This study observed that the rates of depression were significantly higher among patients residing in rural areas. In addition, it showed no association between age and anxiety and depression. In a study conducted by Tian et al.,<sup>27</sup> involving 208 Chinese patients with psoriasis vulgaris, the most common type of psoriasis utilized the PHQ and GAD-7 for assessment. The results from the 208 psoriasis patients indicated that 13.9% exhibited moderate-to-severe depression (PHQ-9 ≥ 10), and 10.6% showed symptoms of anxiety (GAD-7≥10). The outcomes suggested that the prevalence of depression and anxiety symptoms was higher in India than those in China.

The mean age of onset for psoriasis patients ranged from 34 to 56 years, according to the data shown in Table 1. This was consistent with a study conducted by Sriramoju et al.,<sup>30</sup> which reported that the onset of psoriasis in the age group of 40–49 years. Conversely, Queiro et al.,<sup>31</sup> noted that psoriasis exhibits two peaks of onset, with the first occurring between the ages of 20 and 30 years and the second between 50 and 60 years.

Pompili et al.,<sup>22</sup> conducted a study involving 42 dermatological patients, among whom 112 individuals had psoriasis, 77 were diagnosed with melanoma, and 53 were diagnosed with chronic allergic diseases. Assessments, including the MINI International, HDRS, Hamilton anxiety rating scale, and Columbia-suicide severity rating scale, were administered. Results indicated that patients with psoriasis were at a heightened risk of psychiatric comorbidities and suicidal ideation compared to those with other dermatological disorders. While, another

	Random sequence generation (selection bias)	Allocation concealment (selection bias)	Blinding of participants and personnel (performance bias): All outcomes	Incomplete outcome data (attrition bias): All outcomes	Selective reporting (reporting bias)	Other bias
Ahmed AE, 2016	+	+	?	+	+	+
Bakar RS et al., 2017	+	?	?	+	+	+
Bulat V et al., 2020	+	?	-	?	?	?
Hua Zhong et al., 2021	+	+	-	?	?	+
Kumar A et al., 2023	+	?	-	?	?	?
Lakshmy S et al., 2015	+	+	?	?	+	+
Lamb RC et al., 2017	+	+	?	?	+	+
Pompili, 2017	?	?	+	+	+	+
Rahmayanti ND, 2020	+	?	-	+	+	?
Sampogna F, 2017	+	?	?	?	+	+
Sarkar S et al., 2014	+	+	?	+	+	+
Soliman MM. et al., 2021	+	?	+	?	+	+
Tee, S.I. et al., 2016	+	?	?	+	+	+

**Figure 3:** Reviews the author's evaluation of each risk of bias item is represented as percentages through all involved articles in the risk of bias graph

study conducted by Egeberg et al.,<sup>32</sup> with individuals with psoriasis failed to find out increased risk of suicidal ideation. Individuals with other skin disorder were patients served as a control group, raising doubts about the validity of the comparison with psoriasis. Despite these concerns,

the study concluded that the rate of suicidal thoughts or suicide attempts was indeed greater in psoriasis individuals. According to Ahmed et al.,<sup>20</sup> the presence of depression was associated with various emotional, psychiatric, and physical comorbidities leading to a poor QOL. Top of form The results, consistent with the research conducted by Zhang, et al.,<sup>33</sup> 96.76% of individuals with psoriasis reported a poor in their QOL based on their DLQI scores. An examination of the variables influencing QOL in individuals with psoriasis identified anxiety/depression-affected skin surface, disturbances in sleep patterns, and adaptation to psychosocial challenges as the primary factors influencing their well-being.

On the other hand, Zięciak et al.,<sup>34</sup> discussed the relationship between feelings of stigmatization, depressive symptoms among patients with psoriasis, factors such as gender, and the visibility of skin lesions. The study a total of 54 men and women diagnosed with psoriasis, who were asked to complete a feeling of stigmatization questionnaire and the BDS. Golpour et al.,<sup>35</sup> conducted a study, a study involving 100 individuals with psoriasis and 100 healthy dermatological controls to investigate the presence of depression and anxiety disorders. The findings revealed that patients with this disease exhibited higher scores for both depression and anxiety compared to the control group.

This SR demonstrates that depression and anxiety impose a significant burden on individuals with psoriasis. The findings emphasize the necessity of awareness about the correlation between psoriasis and psychological factors. Recognizing and understanding this association can lead to improved quality of care and management.

The literature reviewed in this article is limited to studies involving human participants and conducted in the English language. Many of the studies referenced in the article had small sample sizes. Limited data exist regarding strategies to mitigate the risk of depression and anxiety in psoriasis despite the fact that data have highlighted the bidirectional association between the two conditions. Most studies were cross-sectional studies.

## CONCLUSION

Psoriasis is an incurable chronic inflammatory condition that affects a significant proportion of the world's population. It harms psychological well-being, thus affecting QOL. To enhance the QOL for patients suffering from psoriasis, it is essential to address factors such as anxiety and depression, the extent of skin lesions, sleep disturbances, and psychosocial adaptation. This SR assessed the psychological aspects of psoriasis patients, highlighting the association

between psoriasis and mental health conditions, including anxiety and depression. Psychological interventions, such as cognitive-behavioral therapy or mindfulness-based stress reduction specifically helpful for individuals with psoriasis. Investigate novel pharmacological treatments targeting both the inflammatory pathways associated with psoriasis and the neurobiological pathways involved in depression and anxiety. To the best of our knowledge, we suggest that health professionals, including dermatologists, psychologists, and psychiatrists, collaborate in efforts that will be crucial in implementing comprehensive, multidisciplinary approaches to psoriasis care that addresses both the physical and psychological aspects of the disease.

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**Authors Contribution:**

**AnG-** Conceptualized and designed the study, literature search, prepared first draft of the manuscript, critical revision of the manuscript; **AmG-** Conceptualized the study, Interpretation, critical revision of the manuscript; **MISK-** Concept of the study, literature search, review of the study; **RO-** Literature search, review of the study.

**Work attributed to:**

Jagannath Gupta - Institute of Medical Sciences and Hospital, Kolkata, West Bengal, India.

**Orcid ID:**

Ambarish Ghosh - <https://orcid.org/0000-0003-4475-5125>

Maidul Islam SK - <https://orcid.org/0009-0000-2432-3654>

Raghav Oza - <https://orcid.org/0009-0002-2694-6585>

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