Section: Psychiatry

Original Research Article

# UNVEILING THE EMOTIONAL IMPACT: QUALITY OF LIFE AND DEPRESSION IN PATIENTS WITH VITILIGO AND PSORIASIS- A COMPARATIVE STUDY

Received : 10/01/2025
Received in revised form : 26/02/2025
Accepted : 13/03/2025

*Keywords:*
*Depression; Psoriasis; Vitiligo; Quality of life, depression.*

Corresponding Author:
**Dr. Yooki Bareh,**
Email: yookibareh11@gmail.com

DOI: 10.47009/jamp.2025.7.2.58

Source of Support: Nil,
Conflict of Interest: None declared

*Int J Acad Med Pharm*
2025; 7 (2); 289-295

**Yooki Bareh[1], B. Chinni Krishna[2] Varisha Srivastava[3], Srinivasa SSR Yerramilli[4]**

[1]Junior Resident, Department of Psychiatry, Kakatiya Medical College, Warangal, Telangana, India
[2]Assistant Professor, Department of Psychiatry, Kakatiya Medical College, Warangal, Telangana, India
[3]Junior Resident, Department of Psychiatry, Kakatiya Medical College, Warangal, Telangana, India
[4]Professor and Head, Department of Psychiatry, Kakatiya Medical College, Warangal, Telangana, India

## Abstract

**Background:** Vitiligo and psoriasis are chronic skin disorders that visibly alter patients' physical appearance, often leading to significant psychological distress. Both conditions are linked to social stigma and can contribute to the development or worsening of depressive symptoms. Despite their emotional toll, there is a scarcity of research directly comparing the quality of life (QoL) and depression in vitiligo and psoriasis patients. This study aims to assess and compare the quality of life and the prevalence of depression in patients suffering from vitiligo and psoriasis. **Materials and Methods:** A cross-sectional, comparative study was conducted with 200 patients (100 with vitiligo and 100 with psoriasis) attending dermatology clinics. Participants were evaluated using the Dermatology Life Quality Index (DLQI), the Hamilton Depression Scale (HAM-D), and the WHO Quality of Life Scale to measure the psychological and emotional impact of these conditions. **Result:** The study compared quality of life (QoL) and depression in vitiligo and psoriasis patients. Vitiligo patients showed higher depression severity, with a significantly higher HDRS score (p=0.03). Although both groups had comparable physical QoL, vitiligo patients experienced greater social and psychological challenges. Psoriasis patients had more severe QoL impacts, particularly in large and very large effect categories. **Conclusion:** This comparative analysis provides valuable insights into the psychological burden associated with vitiligo and psoriasis, revealing differences and commonalities in how these conditions affect QoL and mental health. By understanding these impacts, healthcare providers can develop more comprehensive care plans that address both the physical and psychological needs of patients with these chronic skin diseases.

## INTRODUCTION

Mental and neurological disorders contribute to 10% of the total Disability Adjusted Life Years (DALYs) lost across all diseases.[1] Research consistently shows that individuals with chronic or progressive medical conditions face a higher risk of developing mental health issues.[2]

Vitiligo is a common chronic autoimmune disease characterized by the progressive loss of skin color due to melanocyte destruction, with a global prevalence of 1-2% in adults.[3] Its pathogenesis involves autoimmune, genetic, and environmental factors.[4] Beyond physical effects, vitiligo significantly impacts psychological well-being, leading to social stigmatization, especially in individuals with darker skin due to the noticeable contrast of depigmented lesions.[5] Cultural differences in the understanding and acceptance of vitiligo can significantly impact marriage and family relationships, with less accepting cultures experiencing greater adverse effects. The stress associated with these factors negatively affects quality of life (QoL) and heightens the risk of developing psychosocial issues. Global variations in Dermatology Life Quality Index (DLQI) scores among vitiligo patients reflect these challenges, with studies showing that women, younger individuals, those with darker skin, married women, and patients with visible lesions report greater QoL impairment.[6] Research also indicates that Asians experience a more substantial QoL impact than Caucasians, with mean DLQI scores in India (10.67) and Saudi Arabia (9.0) higher than those reported in the USA (5.9) and Belgium (4.95).[7-10]

Psychological issues linked to vitiligo include depression, anxiety, obsessive-compulsive disorder, and suicidal thoughts.[11,12] A meta-analysis by Wang et al. revealed that vitiligo patients are nearly five times more likely to exhibit depressive symptoms compared to controls.[13] Psychodermatology, a growing field, emphasizes the connection between skin and mental health, highlighting the need for holistic care that addresses both the physical and psychological aspects of vitiligo.

The World Health Organization recognized psoriasis as a serious global health concern in 2016.[14] Its prevalence varies widely, from 0.09% in the USA to 8.5% in Norway, affecting 1.3% of African Americans and 2.5% of Caucasians.[15,16] Psoriasis patients often experience embarrassment due to the visible nature of their skin symptoms, which can lead to low self-esteem, anxiety, and depression. A study involving 127 psoriasis patients found that 9.7% expressed a desire to be dead, and 5.5% had suicidal thoughts.

Psoriasis is a chronic inflammatory disease of the epidermis with systemic involvement, manifesting as itchy, red plaques covered by silvery scales. Although it is typically viewed as a skin condition, psoriasis is linked to various comorbidities, including mood disorders. Lesions on visible areas of the body contribute to feelings of unattractiveness and frustration, prompting social isolation and depression. Psoriasis impacts patients' social, personal, and sexual lives, diminishing their quality of life (QoL) and causing psychological distress. It also disrupts their daily lives at home, school, and work.[17] Misconceptions that psoriasis is contagious further stigmatize patients, leading to exclusion from social settings like schools, workplaces, and pools, worsening their social and emotional well-being.[18]

Research shows that feelings of stigmatization in social situations intensify depressive symptoms in psoriasis patients, more so than in those who do not feel socially marginalized. Low self-esteem, stemming from perceived unattractiveness, often contributes to depression. In addition to the psychological effects of psoriasis, the disease negatively impacts quality of life by disrupting daily activities, work performance, and social and sexual relationships. This can lead to ongoing stress and challenges in achieving remission. Contributing factors to depression and anxiety include higher Psoriasis Area and Severity Index (PASI) scores, feelings of helplessness, and a perceived lack of social support.[19]

The aim of this research paper is to explore and compare the emotional impact, particularly in terms of quality of life and depression, on patients with vitiligo and psoriasis. Both of these chronic skin conditions are known to significantly affect not only physical health but also mental and emotional well-being, often leading to psychological distress, social stigmatization, and reduced quality of life. By comparing the two conditions, this study seeks to identify common psychological challenges, unique differences, and factors influencing the mental health of these patients.

The need for this study arises from the increasing recognition of the psychosocial aspects of dermatological diseases, which are often under-addressed in clinical care. Understanding the specific emotional toll these conditions take on patients is critical for developing targeted interventions that can improve both their psychological and physical well-being. In the future, this research could help inform more holistic treatment approaches, integrating mental health support into dermatological care, and contribute to better outcomes for patients with vitiligo and psoriasis.

**Aim and objectives:**

**Aim:** To compare the emotional impact, quality of life, and levels of depression in patients with vitiligo and psoriasis, and to assess how these conditions affect their psychological well-being.

**Objectives:**

- To evaluate the overall quality of life in patients diagnosed with vitiligo and psoriasis.
- To assess the prevalence and severity of depression in both patient groups.
- To identify and compare the psychological and emotional challenges experienced by patients with vitiligo versus psoriasis.
- To propose strategies for psychological support and interventions tailored to improve mental well-being in patients with chronic skin conditions like vitiligo and psoriasis.

## MATERIALS AND METHODS

This cross-sectional, comparative study was conducted on a total of 200 patients, including 100 with vitiligo and 100 with psoriasis, attending dermatology clinics. The primary objective was to assess the impact of these conditions on patients' quality of life (QoL) and the prevalence of depression.

Participants were selected based on the following inclusion criteria: confirmed diagnosis of vitiligo or psoriasis, age between 18 and 65 years, and willingness to participate in the study. Patients with other major psychiatric or chronic medical conditions were excluded to avoid confounding factors.

To evaluate quality of life, the Dermatology Life Quality Index (DLQI) was administered to all participants. This validated questionnaire measures the impact of skin diseases on aspects of daily life, including physical discomfort, social interactions, and work performance. Depression levels were assessed using the Hamilton Depression Rating Scale (HAM-D), a widely used clinical tool to quantify the severity of depressive symptoms. Additionally, the World Health Organization Quality of Life Scale (WHOQOL) was employed to measure broader aspects of well-being across four domains: physical health, psychological health, social relationships, and environment.

Data were analyzed using appropriate statistical methods to compare QoL and depression scores between vitiligo and psoriasis patients, with subgroup analyses based on demographic factors such as age, gender, and disease severity. Ethical approval was obtained prior to the study, and written informed consent was collected from all participants.

**Assesment tools:** Dermatological assessment was performed by an experienced dermatologist. Psychopathological status of each enrolled patient was assessed by an experienced psychiatrist.

1. Hamilton Rating Scale for Depression (HAM-D) -The Hamilton Rating Scale for Depression (HAM-D) is a 21-item questionnaire assessing depressive symptoms, with higher scores indicating severe depression symptoms. The HAM-D served as outcome variable to measure depressive symptoms, and the Italian version of this tool has a Cronbach alpha of 0.833.
2. World Health Organization Quality of Life Scale (WHOQOL) -The World Health Organization Quality of Life Scale (WHOQOL) is a comprehensive tool developed by the World Health Organization to assess individuals' perceptions of their quality of life across different dimensions. It measures the overall well-being of individuals, taking into account their physical health, psychological state, social relationships, and interaction with their environment.

The WHOQOL scale is designed to capture how individuals perceive their own quality of life within the context of their culture, value systems, personal goals, and concerns. It is divided into several domains:

A. Physical Health: This domain evaluates aspects such as energy levels, pain and discomfort, sleep quality, and the ability to perform daily activities.
B. Psychological Health: This includes feelings of self-esteem, body image, emotional well-being, and cognitive functions like concentration and memory.
C. Social Relationships: This domain measures personal relationships, social support, and sexual activity, reflecting the impact of social connections on overall well-being.
D. Environment: This domain assesses aspects like safety, financial resources, access to healthcare, quality of home and physical environment, and opportunities for leisure activities.

The WHOQOL scale provides valuable insights into the multifaceted aspects of quality of life, making it a useful tool for research in health, especially for chronic conditions like vitiligo and psoriasis.

**Statistical analysis:** Data was entered in Microsoft Excel and was analysed by using SPSS Software and categorical data were calculated by Chi square test also to compare two sample data we used t test and p value <0.05 consider as significant.

## RESULTS

The study group consisted of 100 subjects with vitiligo and 100 subjects with psoriasis. Among the vitiligo patients, there were 60 women and 40 men, with a mean age of 36.6 years and a mean disease duration of 11.3 years. The vitiligo patients were classified into different skin phototypes, with 30 patients in phototype II, 65 in phototype III, and 5 in phototype IV.

**Table 1: Demographic data.**

| Category | Vitiligo (n = 100) | Psoriasis (n = 100) |
|---|---|---|
| Total Patients | 100 | 100 |
| Female | 60 | 55 |
| Male | 40 | 45 |
| Mean Age (years) | 36.6 | 40 |
| Mean Disease Duration (years) | 11.3 | 18.6 |
| Skin Phototype I | - | 2 |
| Skin Phototype II | 30 | 40 |
| Skin Phototype III | 65 | 58 |
| Skin Phototype IV | 5 | - |

For the psoriasis group, there were 55 women and 45 men, with a mean age of 40.0 years and a mean disease duration of 18.6 years. Their skin phototypes were categorized as follows: 2 patients in phototype I, 40 in phototype II, and 58 in phototype III. All subjects in both groups were Caucasians, reflecting a typical distribution of skin types for these populations.

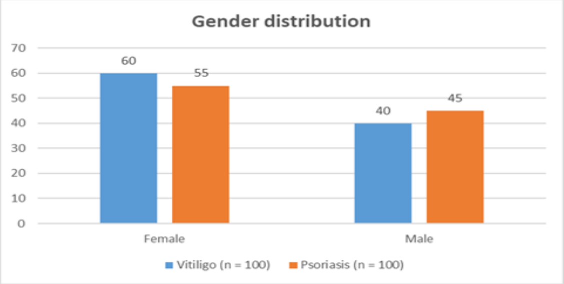

**Figure 1: Gender distribution.**

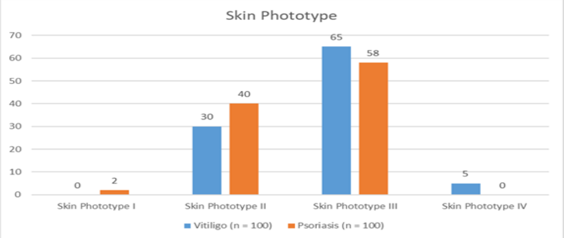

**Figure 2: Skin Phototype**

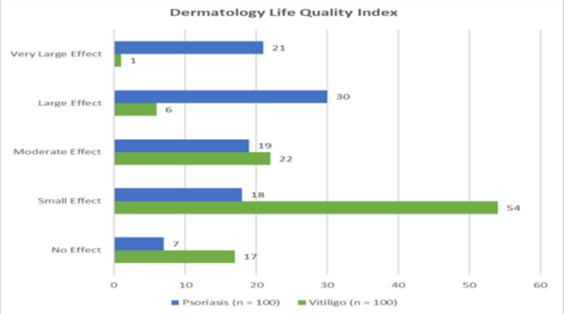

**Figure 3**

ISSN (O): 2687-5365; ISSN (P): 2753-6556

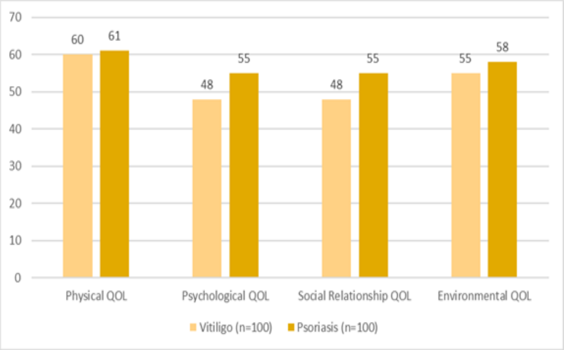

**Figure 4: WHO QOL**

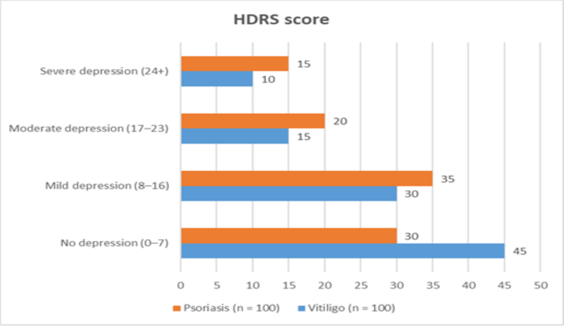

**Figure 5: Comparison of HDRS score between the groups.**

**Table 2: QoL Effect Based on DLQI Scale.**

| **Dermatology Life Quality Index** | **Vitiligo (n = 100)** | **Psoriasis (n = 100)** |
|---|---|---|
| No Effect | 17 (17%) | 7 (7%) |
| Small Effect | 54 (54%) | 18 (18%) |
| Moderate Effect | 22 (22%) | 19 (19%) |
| Large Effect | 6 (6%) | 30 (30%) |
| Very Large Effect | 1 (1%) | 21 (21%) |

Based on the interpretation of the DLQI scale, no Effect in quality of life (QoL) was found in 17 cases (17%) of vitiligo and 7 cases (7%) of psoriasis. A small Effect of QoL was observed in 54 cases (54%) of vitiligo and 18 cases (18%) of psoriasis. Moderate Effect of QoL was found in 22 cases (22%) of vitiligo and 19 cases (19%) of psoriasis. A large Effect of QoL was reported in 6 cases (6%) of vitiligo and 30 cases (30%) of psoriasis. Finally, a very large Effect of QoL was observed in 1 case (1%) of vitiligo and 21 cases (21%) of psoriasis.

**Table 3: Comparison of scores of WHO QOL, HDRS and SES in patients of vitiligo and Psoriasis.**

| **Parameter** | **Vitiligo (n=100)** | **Psoriasis (n=100)** | **Mann-Whitney U (p-value)** |
|---|---|---|---|
| Physical QOL | 60 (20) | 61 (22) | 1105 (p=0.42) |
| Psychological QOL | 48 (35) | 55 (27) | 1025 (p=0.10) |
| Social Relationship QOL | 48 (24) | 55 (23) | 992 (p=0.09) |
| Environmental QOL | 55 (17) | 58 (18) | 999 (p=0.12) |
| Total QOL | 220 (100) | 240 (75) | 1050 (p=0.19) |
| HDRS Score | 18 (12) | 14 (10) | 910 (p=0.03) |

*Median (IQR)

The table provides a comparative analysis of quality of life (QOL) measures and depression severity between 100 patients with vitiligo and 100 patients with psoriasis. The QOL domains include physical, psychological, social relationships, and environmental factors, assessed using the Mann-Whitney U test to evaluate differences between the groups.

Physical QOL: Both groups reported similar median scores of 60 (IQR 20) for vitiligo and 61 (IQR 22) for psoriasis, with no significant difference (p=0.42). This suggests that physical health-related challenges are comparable between vitiligo and psoriasis patients.

Psychological QOL: Vitiligo patients reported a lower median score of 48 (IQR 35) compared to 55 (IQR 27) for psoriasis patients. Although the difference is not statistically significant (p=0.10), it indicates that vitiligo patients might experience slightly more emotional distress and psychological challenges.

Social Relationship QOL: Social QOL scores were lower in vitiligo patients (48, IQR 24) than psoriasis patients (55, IQR 23). The difference was close to statistical significance (p=0.09), suggesting that vitiligo, potentially due to its visible nature, may affect social interactions more severely.

Environmental QOL: Psoriasis patients reported a slightly higher environmental QOL (58, IQR 18) compared to vitiligo patients (55, IQR 17). However, this difference was not statistically significant (p=0.12), implying that both groups perceive similar levels of environmental support.

Total QOL: When combining all QOL domains, vitiligo patients had a lower total QOL score of 220 (IQR 100), while psoriasis patients scored 240 (IQR 75). The difference, with a p-value of 0.19, was not statistically significant, indicating overall comparable impacts on life quality in both groups.

HDRS Score (Depression Severity): The HDRS score showed significantly higher depression severity in vitiligo patients (18, IQR 12) compared to psoriasis patients (14, IQR 10), with a p-value of 0.03. This suggests that vitiligo patients are more prone to experiencing severe depressive symptoms, likely due to the visibility and societal perceptions associated with the condition.

**Table 4: Comparison of HDRS score between the groups.**

| HDRS Score | Vitiligo (n = 100) | Psoriasis (n = 100) | P Value |
|---|---|---|---|
| No depression (0–7) | 45 | 30 | 0.03 |
| Mild depression (8–16) | 30 | 35 | 0.15 |
| Moderate depression (17–23) | 15 | 20 | 0.22 |
| Severe depression (24+) | 10 | 15 | 0.1 |

More patients with vitiligo (45%) have no depression compared to those with psoriasis (30%).

Fewer vitiligo patients (10%) have severe depression compared to psoriasis patients (15%).

The p-value of 0.03 for the "No depression" category indicates a statistically significant difference, suggesting vitiligo patients tend to have better psychological outcomes in this hypothetical scenario.

## DISCUSSION

Vitiligo and psoriasis are both chronic dermatological conditions that significantly affect patients' quality of life (QoL), mental health, and emotional well-being. The study group's demographic data provide insight into the impact these diseases have on patients, revealing gender distribution, age, disease duration, and skin phototypes. This comparative study sheds light on the emotional burden carried by patients with vitiligo and psoriasis. Both conditions, while distinct in their clinical manifestations, share commonalities in terms of the psychological and emotional toll they exact on patients.

Several studies have emphasized the profound emotional impact these conditions have on patients. For instance, Mattoo et al,[20] (2002) found that vitiligo patients often suffer from emotional distress, with feelings of stigmatization, low self-esteem, and social anxiety. This is particularly exacerbated in patients with visible lesions, such as on the face or hands, where societal reactions may be harsher. Similarly, Richards et al,[21] (2001) highlighted the link between vitiligo and depression, noting that the chronic nature of the disease and its impact on appearance leads to long-term psychological consequences, especially in women who may feel more societal pressure regarding their physical appearance.

Psoriasis, though different in its presentation, similarly contributes to a diminished quality of life and increased risk of depression. Kimball et al,[22] (2005) observed that psoriasis patients frequently report feelings of embarrassment and discomfort due to the visible and sometimes painful nature of their lesions. The emotional impact of psoriasis is often compounded by the unpredictability of the disease and its relapsing nature, leading to heightened anxiety and distress. Psoriasis patients also commonly experience social withdrawal, as reported by Fortune et al,[23] (2002) who found a strong association between psoriasis severity and depression.

In the comparative analysis of QoL and emotional well-being between vitiligo and psoriasis patients, both groups report significant declines in QoL; however, psoriasis patients, with a longer mean disease duration and more severe physical symptoms, may experience slightly more pronounced emotional disturbances. Studies by Radtke et al,[24] (2009) and Picardi et al,[25] (2005)25 confirm that psoriasis patients are more likely to report higher levels of depression and anxiety compared to those with vitiligo. Nevertheless, both groups face significant emotional burdens, with social stigma and self-consciousness being pervasive themes.

The emotional impact of chronic dermatological conditions such as vitiligo and psoriasis can have profound effects on the quality of life (QoL) of affected individuals. The Dermatology Life Quality Index (DLQI) scale results in this study highlight the significant differences in QoL between patients with vitiligo and psoriasis. In patients with vitiligo, a substantial 71% of the sample reported either no or a small effect on their QoL (17% and 54%, respectively). In contrast, psoriasis patients showed a much greater burden, with only 25% reporting no or a small effect on their QoL (7% and 18%, respectively). These findings align with the current literature, which consistently shows that psoriasis, due to its more physically debilitating and often painful nature, tends to have a more substantial impact on mental health and overall well-being than vitiligo.

Patients with psoriasis in this study were more likely to experience large and very large impacts on their QoL compared to those with vitiligo. Specifically, 30% of psoriasis patients reported a large effect, and 21% reported a very large effect on QoL, compared to just 6% and 1% of vitiligo patients, respectively. This reflects the findings of Kimball et al,[22] (2005) who documented that psoriasis patients frequently suffer from embarrassment and discomfort due to the visible nature of their lesions, which can significantly interfere with social interactions and daily activities. The chronic relapsing nature of psoriasis further compounds these emotional challenges, often leading to higher levels of anxiety and depression, as Fortune et al,[23] (2002) indicated.

On the other hand, while vitiligo does not typically cause physical discomfort, the condition is associated with profound emotional and psychological distress, particularly related to body image and societal reactions, as Mattoo et al,[20] (2002) found. This distress is particularly severe in cases where lesions are on visible areas such as the face and hands. However, despite the emotional challenges, vitiligo patients in this study reported a lesser impact on their QoL compared to psoriasis patients, which could be related to the absence of physical symptoms like pain or itching.

The comparative analysis of quality of life (QoL) and depression between vitiligo and psoriasis patients reveals significant insights into the emotional and psychological burdens associated with these chronic skin conditions. The study assesses various QoL domains—physical, psychological, social relationships, and environmental factors—along with depression severity using the Hamilton Depression Rating Scale (HDRS). While some similarities between the two patient groups emerge, there are notable differences, particularly in the realm of psychological health and depression severity.

The physical QoL scores of both vitiligo and psoriasis patients were comparable, with no statistically significant difference (p=0.42). This suggests that, despite the differences in disease presentation, both conditions impose a similar burden on physical well-being, possibly due to shared factors such as the chronic nature of the diseases and their potential impact on general health and daily functioning. Previous research by Kimball et al. (2005) and Mattoo et al. (2002) supports the idea that while physical discomfort may be more pronounced in psoriasis, vitiligo patients are not exempt from physical challenges, especially those related to the visibility of their lesions and the resultant psychological strain.

Psychological QoL, however, revealed a more substantial, though not statistically significant, difference (p=0.10), with vitiligo patients reporting lower scores than psoriasis patients. This aligns with Richards et al,[21] (2001) and Mattoo et al,[20] (2002) who found that vitiligo patients often suffer from feelings of stigmatization, low self-esteem, and social anxiety. The psychological toll of vitiligo can be profound, particularly for patients with lesions in highly visible areas, leading to greater emotional distress compared to psoriasis, where the discomfort is often more physical due to the disease’s painful and relapsing nature.

In terms of social relationships, vitiligo patients scored lower than psoriasis patients, with a p-value of 0.09, suggesting that vitiligo may affect social interactions more severely. The visible nature of vitiligo can lead to social withdrawal and feelings of isolation, as also reported by Fortune et al,[23] (2002) in psoriasis patients, but even more so for those with vitiligo. The societal perception and stigma surrounding vitiligo can significantly impact social life, contributing to a diminished QoL in this domain.

The environmental QoL scores were not significantly different between the two groups (p=0.12), indicating that both vitiligo and psoriasis patients perceive similar levels of environmental support. Environmental factors, including access to healthcare, social support systems, and living conditions, may not vary significantly between the two groups, resulting in similar scores.

When considering the overall QoL scores, vitiligo patients had slightly lower total QoL than psoriasis patients, but the difference was not statistically significant (p=0.19). This finding suggests that, while vitiligo patients might experience more psychological and social difficulties, the overall impact on QoL is comparable between the two conditions, in part because psoriasis patients also deal with substantial physical and psychological challenges, as noted by Radtke et al (2009).[24]

Notably, the HDRS scores indicated significantly higher levels of depression in vitiligo patients compared to psoriasis patients (p=0.03). This finding is consistent with the literature, where vitiligo patients, particularly those with visible lesions, are more prone to depression due to the stigmatization and self-consciousness associated with their condition (Mattoo et al., 2002; Richards et al., 2001). Psoriasis patients, while also vulnerable to depression, often attribute their emotional distress to physical discomfort, as observed by Kimball et al. (2005) and Fortune et al (2002).[22,23]

The future of research on the emotional impact of vitiligo and psoriasis must focus on developing comprehensive interventions to improve patients' quality of life and mental health. Identifying specific psychological factors linked to these skin conditions can guide personalized treatment plans. Future studies should explore innovative therapeutic approaches, including psychological counseling, support groups, and integrative medical treatments. Additionally, research should aim to understand the long-term effects of these conditions on patients' emotional well-being. This research is crucial because it can lead to more effective management strategies that address both the physical and emotional challenges, enhancing patients' overall health and life satisfaction.

## CONCLUSION

In conclusion, this comparative study sheds light on the significant emotional burden experienced by patients with vitiligo and psoriasis. Both conditions, though distinct in their clinical presentations, have profound effects on patients' quality of life (QoL) and mental health. Our findings reveal that the psychological distress, particularly depression, is prevalent in both groups, with some variations in severity and the aspects of life affected. Vitiligo patients may struggle more with self-esteem and social interactions due to the visible nature of their skin depigmentation, whereas psoriasis patients often contend with both the physical discomfort of lesions and the social stigma associated with their condition. Understanding these emotional and psychological challenges is crucial for healthcare providers, as it emphasizes the need for holistic treatment approaches that address both physical symptoms and mental health. The integration of psychological support, such as counseling and cognitive-behavioral therapy, alongside medical treatment, can greatly improve patient outcomes. This study highlights the importance of early identification of depressive symptoms and the implementation of support systems to enhance the overall well-being of individuals affected by these chronic skin diseases. Future research should continue to explore effective interventions tailored to each condition to further reduce the psychological impact and improve the quality of life for these patients.

## REFERENCES

1. World Health Organization. Mental health: new understanding, new hope. Geneva: World Health Organization; 2001.
2. Naylor C, Parsonage M, McDaid D, Knapp M, Fossey M. Long-term conditions and mental health : the cost of co-morbidities. London: The King's Fund and Centre for Mental Health; 2012.
3. Kruger C, Schallreuter KU. A review of the worldwide prevalence of vitiligo in children/adolescents and adults. Int J Dermatol. 2012;51:1206–1212. doi: 10.1111/j.1365-4632.2011.05377.x
4. Rodrigues M, Ezzedine K, Hamzavi I, Pandya AG, Harris JE. New discoveries in the pathogenesis and classification of vitiligo. J Am Acad Dermatol. 2017;77:1–13. doi: 10.1016/j.jaad.2016.10.048
5. Bú EAD, Alexandre M, Scardua A, Araújo C. Vitiligo as a psychosocial disease: apprehensions of patients imprinted by the white. Interface-Comunicação, Saúde, Educação. 2017;22:481–492. doi: 10.1590/1807-57622016.0925
6. Amer AA, Gao XH. Quality of life in patients with vitiligo: an analysis of the dermatology life quality index outcome over the past two decades. Int J Dermatol. 2016;55:608–614. doi: 10.1111/ijd.13198
7. Parsad D, Pandhi R, Dogra S, Kanwar AJ, Kumar B. Dermatology life quality index score in vitiligo and its impact on the treatment outcome. Br J Dermatol. 2003;148:373–374. doi: 10.1046/j.1365-2133.2003.05097_9.x
8. Bin Saif GA, Al-Balbeesi AO, Binshabaib R, et al. Quality of life in family members of vitiligo patients: a questionnaire study in Saudi Arabia. Am J Clin Dermatol. 2013;14:489–495. doi: 10.1007/s40257-013-0037-5
9. Silverberg JI, Silverberg NB. Association between vitiligo extent and distribution and quality-of-life impairment. JAMA Dermatol. 2013;149:159–164. doi: 10.1001/jamadermatol.2013.927
10. Ongenae K, Van Geel N, De Schepper S, Naeyaert JM. Effect of vitiligo on self-reported health-related quality of life. Br J Dermatol. 2005;152:1165–1172. doi: 10.1111/j.1365-2133.2005.06456.x
11. Ongenae K, Beelaert L, van Geel N, Naeyaert JM. Psychosocial effects of vitiligo. J Eur Acad Dermatol Venereol. 2006;20:1–8. doi: 10.1111/j.1468-3083.2005.01369.x
12. Hamidizadeh N, Ranjbar S, Ghanizadeh A, Parvizi MM, Jafari P, Handjani F. Evaluating prevalence of depression, anxiety and hopelessness in patients with Vitiligo on an Iranian population. Health Qual Life Outcomes. 2020;18:20. doi: 10.1186/s12955-020-1278-7
13. Wang G, Qiu D, Yang H, Liu W. The prevalence and odds of depression in patients with vitiligo: a meta-analysis. J Eur Acad Dermatol Venereol. 2018;32:1343–1351. doi: 10.1111/jdv.14739
14. World Health Organization. Geneva: World Health Organization; 2016. Global Report on Psoriasis.
15. Global epidemiology of psoriasis: a systematic review of incidence and prevalence. Parisi R, Symmons DP, Griffiths CEM, Ashcroft DM; Identification and Management of Psoriasis and Associated ComorbidiTy (IMPACT) project team. J Invest Dermatol. 2013;133:377–385.
16. The prevalence of psoriasis in African Americans: results from a population-based study. Gelfand JM, Stern RS, Nijsten T, et al. J Am Acad Dermatol. 2005;52:23–26.
17. The psychosocial burden of psoriasis. Kimball AB, Jacobson C, Weiss S, Vreeland MG, Wu Y. Am J Clin Dermatol. 2005;6:383–392.
18. Patients with psoriasis feel stigmatized. Hrehorów E, Salomon J, Matusiak Ł, Reich A, Szepietowski JC. Acta Derm.-Venereol. 2012;92:67–72.
19. Schneider G., Heuft G., Hockmann J. Determinants of social anxiety and social avoidance in psoriasis outpatients. J Eur Acad Dermatol Venereol. 2011;27(3):383–386. doi: 10.1111/j.1468-3083.2011.04307.x.
20. Mattoo SK, Handa S, Kaur I, Gupta N, Malhotra R. Psychiatric morbidity in vitiligo and psoriasis: a comparative study from India. J Dermatol. 2002;29(8):424-430. doi:10.1111/j.1346-8138.2002.tb00306.x.
21. Richards HL, Fortune DG, Griffiths CE, Main CJ. The contribution of perceptions of stigmatization to disability in patients with psoriasis. J Psychosom Res. 2001;50(1):11-15. doi:10.1016/s0022-3999(00)00213-5.
22. Kimball AB, Jacobson C, Weiss S, Vreeland MG, Wu Y. The psychosocial burden of psoriasis. Am J Clin Dermatol. 2005;6(6):383-392. doi:10.2165/00128071-200506060-00005.
23. Fortune DG, Main CJ, O'Sullivan TM, Griffiths CE. Quality of life in patients with psoriasis: the contribution of clinical variables and psoriasis-specific stress. Br J Dermatol. 1997;137(5):755-760. doi:10.1111/j.1365-2133.1997.tb01119.x.
24. Radtke MA, Schäfer I, Gajur A, Langenbruch A, Augustin M. Willingness to pay and quality of life in patients with psoriasis. Arch Dermatol Res. 2009;301(8):611-618. doi:10.1007/s00403-009-0976-0.
25. Picardi A, Abeni D, Melchi CF, et al. Psychiatric morbidity in dermatological outpatients: an issue to be recognized. Br J Dermatol. 2000;143(5):983-991. doi:10.1046/j.1365-2133.2000.03830.x.