JEPIBIO
Journal of Epidemiology and Infection Biology

Research Article

Impact of Psoriasis on Quality of Life of Patients in Lahore, Pakistan

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Date of Receiving: 22/03/2025
Date of Acceptance 20/05/2025
Date of Publishing 10/06/2025

ABSTRACT Psoriasis is a common chronic illness caused by the weak immune system that impacts about 2% of everyone globally and greatly lowers quality of life (QoL). This condition does not only cause discomfort but it can also cause depression, lead to isolation, and affect one's performance at work. The study focused on analyzing how psoriasis impacts QoL, depending on illness severity, treatment methods, and related social and emotional issues of patients living in Lahore, Pakistan. A case-only study was conducted at Azra Naheed Hospital and the University of Lahore Teaching Hospital, Lahore. After obtaining consent from the patients, the data were collected using a questionnaire that recorded the age, medical history, treatment received, psychological effects of the disease, and how they cope. To analyze quantitative data, R-statistical language (version 4.3) was used. Associations between where patients experienced affected areas and their QoL were measured using frequencies, correlations, and logistic regression models. In patients 40 years or older, common comorbidities such as psoriatic arthritis (39%) and cardiovascular disease (34%) were more prevalent. Those patients with multiple body parts affected experienced much more emotional distress and physical discomfort. Multivariable analysis revealed that these patients had 2.6 times increased chances of emotional distress and 3.53 times increased chances of physical discomfort ($p<0.001$). Problems at school and in the workplace were the most common kinds of impact. After comparing two groups based on body parts affected, it was clear that patients with multiple body parts affected had lower social confidence and higher emotional stress. Moderate similarity was found in the outcomes of work-related changes and those of changes in social activities. Receiver Operating Characteristic (ROC) curves revealed that social impact was easier to predict than other aspects of quality of life, but none of the models showed strong ability to separate subjects. In conclusion, psoriasis has a major influence on a person's emotional, social, and daily functioning. Greater and deeper involvement of the body by disease negatively impacts a person's QoL. The need for broad evaluation tools and specific treatments that cover both health and social concerns of patients with psoriasis is highlighted in this study.

KEYWORDS Psoriasis, Quality of Life, Psychological Well-Being, Self-Care Behavior, Chronic Skin Disease

Introduction

Psoriasis is a chronic, immune-mediated skin disorder affecting approximately 2% of the global population (Raharja *et al*, 2021). It commonly appears in early adulthood and manifests as red, scaly, and inflamed plaques on various parts of the body, especially the scalp, elbows, and knees (Orzan *et al*, 2025). These plaques can be accompanied by symptoms such as itching, burning, and discomfort (Raharja *et al*, 2021). Psoriasis is often associated with multiple comorbidities including psoriatic arthritis, cardiovascular disease, diabetes, and obesity (Petit *et al*, 2021). The disorder affects both men and women and often runs in families, indicating a genetic predisposition. Despite the availability of treatments, many patients experience poor disease control and frequent relapses. Psoriasis can have systemic effects and may also lead to complications such as erythroderma (Maronese *et al*, 2022; Orzan *et al*, 2025). Emerging therapies have improved

To cite this article: Shamim, N., U. Muzzamil, Rida, Z. Iqbal, J. Sohail, A. Ahtesham, and Umama. (2025). *Impact of Psoriasis on Quality of Life of Patients in Lahore, Pakistan*. Journal of Epidemiology and Infection Biology 2(1):1-8.

outcomes, yet long-term management remains challenging due to variable treatment responses.

Quality of life refers to an individual's overall well-being, encompassing physical health, emotional stability, social functioning, and the ability to perform daily activities (Bhosle *et al*, 2006). In dermatology, QoL is significantly impacted by visible skin diseases such as psoriasis. Patients often report embarrassment, low self-esteem, and anxiety due to the appearance of their skin (Basavaraj *et al*, 2011). Psoriasis can interfere with social relationships, employment, and personal confidence, affecting life satisfaction. Measurement tools like the Dermatology Life Quality Index (DLQI) and SF-36 survey are commonly used to assess these impacts (Nast *et al*, 2023). Psoriasis can be so challenging that in some situations it leads to depression or individuals contemplating suicide (Salle *et al*, 2023). Patients with psoriasis are much more likely to have anxiety and mood disorders than people without the disease. These difficulties are typically missed during clinical care. Because of this, checking QoL helps reveal the full effects of psoriasis on a person.

Several factors can impact the life of psoriasis patients. Such factors include the number, size, and type of skin growths, the amount of body involved, and having itching or pain. Psoriatic arthritis, changes to nails, and psoriasis affecting the scalp tend to cause more difficulty for those affected (Arya *et al*, 2023; Burlando *et al*, 2023; McStay *et al*, 2024; Nielsen *et al*, 2024). Problems with treatment, such as how it affects the body, length, and success rates, impact costs. Emotional stress can become stronger if someone feels bad about themselves, is judged, or lacks support from those around them. A lack of affordable treatments and challenges obtaining them can explain the needed effect. Many psoriasis patients have multiple diseases, which may interfere with treatment decisions and reduce their treatment success (Petit *et al*, 2021; Mohta and Nyati, 2022; Aitkens *et al*, 2023). Gender, age of onset, and personal coping mechanisms further modify the impact on daily life. Identifying and addressing these multifaceted contributors is vital for holistic care.

Psoriasis significantly diminishes patients' quality of life, yet its psychosocial and functional impacts remain under-assessed in routine care. While treatments have advanced, many patients continue to suffer from poor symptom control, psychological strain, and social exclusion. Mortality from cardiovascular and metabolic conditions is also higher in severe psoriasis cases (Campanati *et al*, 2021; Raharja *et al*, 2021). Disparities in care and limited personalized options hinder effective disease management. This study aims to evaluate how disease severity, treatment experiences, psychological well-being, and social factors collectively influence QoL in psoriasis patients. Understanding these relationships can help clinicians tailor interventions that improve both physical and emotional outcomes. This research addresses an urgent need to bridge the gap between clinical management and real-life challenges faced by psoriasis patients.

Materials and Methods

Ethical Considerations

Present study received ethical clearance from the Ethical committee of the University of Central Punjab, Lahore, Pakistan. Participants were clearly informed about the goals and objective of the study, methods used, all the risks involved and the benefits to be derived. Informed consent was obtained and all data were blinded using anonymous questionnaires and secured databases. Participants retained their right to withdraw from the study without any penalty.

Study design and sample size:

The study utilized the case only study design. All the patients were selected from two hospitals i.e. Azra Naheed Hospital and The University of Lahore Teaching Hospital, Lahore, Pakistan. A formal permission was obtained from the board of the mentioned hospitals. The medical profiles of Psoriasis patients were examined thoroughly. Furthermore, the data were gathered from individuals whose family members have been afflicted by the disease.

Data collection

Data were collected using questionnaire from the patients infected with Psoriasis in the hospitals followed by the formal consent. The questionnaire was composed of five sections i.e. Demographic and Medical Background, Disease Characteristics and Symptoms, Treatment Experience, Psychosocial and Quality of Life Impacts, and Coping and Advice. A total of 20 questions were included in the questionnaire. Open-ended and closed-ended questions were both included in the questionnaire. Demographic and medical background questions on age, psoriasis type, and inheritance status were asked in the first segment. In the second segment, questions focused on the subject's perception of the features and severity of his psoriasis. Information about the psoriatic perceived issues in the areas of his life impacted by psoriasis (personal, familial, social, community, economic, and work) was gathered in the third section. The availability, accessibility, and affordability of psoriasis treatments were the topics of inquiry in the fourth segment. In the questionnaire's fifth section, the respondent was asked about their knowledge about psoriatic day treatment clinics and if they would utilize them if they were available. The questionnaire was examined by members of the advisory board, staff, and volunteers to make sure the questions were relevant and answered. Subsequently, Google Forms were created and transformed all the quantitative data collected through these forms.

Data analysis

Statistical analysis was performed using R-statistical language (version 4.3). Frequency and percentage were calculated for categorical variables. Furthermore, univariable analysis was performed using demographic variables and affected body parts with other four sections. Correlation analysis was performed between affected body parts and affected activities. Multivariable logistic regression analysis was performed between affected body parts and activities.

Results

A total of 300 patients were included in the study. All the included cases were agreed and provided consent before filling the questionnaire. Of total, only three questionnaires

were returned incomplete which were excluded from the downstream statistical analyses. All the data collected were cleaned and transformed as required.

Association of age groups with other variables

The association of age groups with other variables including clinical characteristics of psoriasis patients were determined across four age groups: <20, 20–30, 30–40, and above 40 (Table 1). The presence of other medical conditions were significantly higher in older groups, with 76% of patients above 40 reporting such conditions compared to 42% in the <20 group (p = 0.001). Psoriatic arthritis was much more prevalent in the oldest group (39%) than in the youngest (0%), showing a strong age-related trend (p < 0.001). Rapid psoriasis was also more frequent in older groups, affecting 80% of those above 40 versus only 52% under 20. Inherited causes were more common in the oldest group (46%), while adverse drug reactions were highest in the 20–30 group (31%) (p = 0.037). Constant flare-ups were reported by 39% of patients above 40, compared to just 8% in the <20 group (p < 0.001). Arthritis and cardiovascular disorders were notably more common in older patients, particularly those above 40 (24% and 34%, respectively). Depression was highest in the 20–30 group (53%), though also common in other groups. Prior comorbidities were more frequently reported in older individuals, with 80% of the above 40 group affected (p = 0.001). Alopecia followed a similar trend, present in 71% of patients over 40 compared to 46% in the youngest group (p = 0.034).

Characteristic	Levels	<20 (n = 50)	20-30 (n= 144)	30-40 (n = 43)	above 40 (n = 59)	p-value
Any other medical condition	No	29 (58%)	73 (51%)	13 (30%)	14 (24%)	0.001
	Yes	21 (42%)	71 (49%)	30 (70%)	45 (76%)	
Psoriasis type	Arthritis	0 (0%)	17 (12%)	7 (16%)	23 (39%)	<0.001
	Nail	14 (28%)	34 (24%)	9 (21%)	7 (12%)	
	Other	15 (30%)	21 (15%)	2 (4.7%)	12 (20%)	
	Plaque	7 (14%)	10 (6.9%)	9 (21%)	8 (14%)	
	Scalp	14 (28%)	62 (43%)	16 (37%)	9 (15%)	
Rapid Psoriasis	No	24 (48%)	53 (37%)	5 (12%)	12 (20%)	<0.001
	Yes	26 (52%)	91 (63%)	38 (88%)	47 (80%)	
Inherited status	Adverse drug reaction	8 (16%)	44 (31%)	12 (28%)	17 (29%)	0.037
	Due to any other disease condition	14 (28%)	37 (26%)	8 (19%)	6 (10%)	
	Inherited	18 (36%)	33 (23%)	16 (37%)	27 (46%)	
	Other	10 (20%)	30 (21%)	7 (16%)	9 (15%)	
Frequency flare ups	Constantly	4 (8.0%)	11 (7.6%)	7 (16%)	23 (39%)	<0.001
	Frequently	21 (42%)	43 (30%)	15 (35%)	12 (20%)	
	Occasionally	7 (14%)	53 (37%)	14 (33%)	14 (24%)	
	Rarely	18 (36%)	37 (26%)	7 (16%)	10 (17%)	
Developed comorbidity	Arthritis	9 (18%)	11 (7.6%)	10 (23%)	14 (24%)	<0.001
	Cardiovascular disorders	5 (10%)	22 (15%)	7 (16%)	20 (34%)	
	Depression	23 (46%)	77 (53%)	16 (37%)	19 (32%)	
	Metabolic syndrome	4 (8.0%)	16 (11%)	9 (21%)	2 (3.4%)	
	Other condition	9 (18%)	18 (12%)	1 (2.3%)	4 (6.8%)	
Previous comorbidity	No	21 (42%)	66 (46%)	11 (26%)	12 (20%)	0.001
	Yes	29 (58%)	78 (54%)	32 (74%)	47 (80%)	
Alopecia	No	27 (54%)	59 (41%)	13 (30%)	17 (29%)	0.034
	Yes	23 (46%)	85 (59%)	30 (70%)	42 (71%)	

Table 1. Association of age groups of psoriasis patients with other factors included in the study.

Body parts affected and impact of daily activities

The bi-variate comparisons compared the psoriasis patients with single versus multiple affected body parts across various clinical and psychosocial characteristics (Table 2). Cardiovascular disorders were more prevalent in patients with multiple affected areas (31%) compared to those with single areas (16%), though arthritis rates were similar (13% vs. 15%, p = 0.14). Depression was slightly less common in the multiple groups (42%) than in the single group (46%). Social confidence showed a significant difference (p = 0.002); only 31% of patients with multiple affected parts felt "always" confident socially, compared to 57% in the single group. Lifestyle changes were more uncertain in the multiple groups, with 56% selecting “Don’t know” versus 37% in the single group (p = 0.051). Emotional distress was nearly twice as common in the multiple group (48%) compared to the single group (26%, p = 0.002). Physical discomfort was significantly higher in the multiple group (69% vs. 39%, p < 0.001). Social activity was more frequently impacted in patients with multiple lesions (33% vs. 14%, p = 0.002). Work was also affected more in the multiple group (29%) compared to the single group (13%, p = 0.006). Sleep difficulty showed no significant difference between groups (around 50% in both, p = 0.8).

Table 2. Association of affected body parts in psoriasis patients and their daily activities.

Characteristic	Levels	Single (n = 244)	Multiple (n = 52)	p-value
Developed comorbidity	Arthritis	37 (15%)	7 (13%)	0.14
	Cardiovascular disorders	38 (16%)	16 (31%)	
	Depression	113 (46%)	22 (42%)	
	Metabolic syndrome	28 (11%)	3 (5.8%)	
	Other condition	28 (11%)	4 (7.7%)	
Confident Socially	Never	30 (12%)	8 (15%)	0.002
	Always	138 (57%)	16 (31%)	
	Sometimes	76 (31%)	28 (54%)	
Lifestyle changes	Don't know	91 (37%)	29 (56%)	0.051
	No	21 (8.6%)	3 (5.8%)	
	Yes	132 (54%)	20 (38%)	
Affected Difficulty sleeping	No	130 (53%)	26 (50%)	0.8
	Yes	114 (47%)	26 (50%)	
Affected Emotional distress	No	181 (74%)	27 (52%)	0.002
	Yes	63 (26%)	25 (48%)	
Affected Physical discomfort	No	149 (61%)	16 (31%)	<0.001
	Yes	95 (39%)	36 (69%)	
Affected social activity	No	210 (86%)	35 (67%)	0.002
	Yes	34 (14%)	17 (33%)	
Affected work	No	213 (87%)	37 (71%)	0.006
	Yes	31 (13%)	15 (29%)	

Correlation of affected body parts with impact on daily activities

The correlation shows the relationships between affected body parts and various impact outcomes in psoriasis patients (Fig. 1). The strongest positive correlation is between Affected work and Affected social activity (r = 0.35), indicating that limitations in work are closely linked to reduced social activity. Difficulty sleeping has a weak negative correlation with several body areas, such as torso (r = –0.18) and others (r = –0.19), implying some disruption linked to specific lesion sites. Among body parts, hands and scalp show a moderate negative correlation (r = –0.33), possibly reflecting mutually exclusive lesion patterns. Positive but weak correlations are seen between hands and elbow (r = 0.13), and between elbow and feet (r = 0.11), indicating some overlap in lesion sites. Overall, most relationships are weak, suggesting that while some symptoms co-occur, many body part involvements and their psychosocial impacts vary independently.

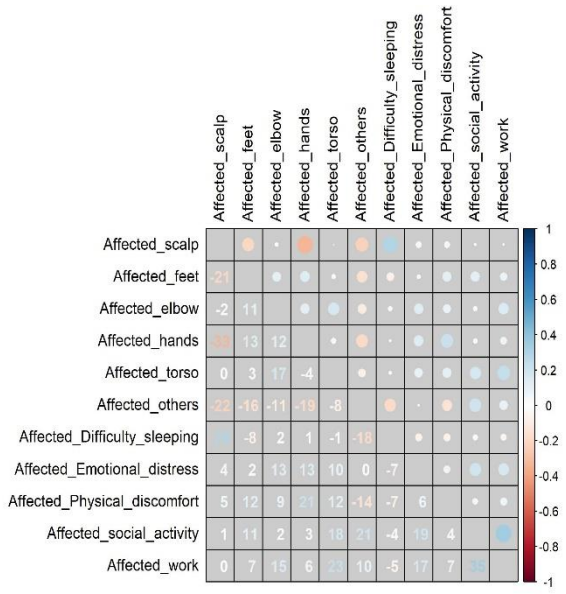

Fig. 1: Correlation analysis between affected body parts and affected activities. Correlation is significant at the 0.05 level (2-tailed). The color and size of circles help visualize both the direction and strength of associations, with blue indicating positive and red indicating negative correlations.

Regression analysis with type of psoriasis

The impact of having multiple body parts affected by psoriasis was compared to affected body area (Table 3). Individuals with multiple affected areas had 2.66 times higher odds of experiencing emotional distress (95% CI: 1.43–4.93, p = 0.002). Similarly, they had 3.53 times higher odds of physical discomfort (95% CI: 1.89–6.87, p < 0.001), indicating a strong association. The odds of affected social activity were also significantly increased (OR = 3.00; 95% CI: 1.49–5.90; p = 0.002). For work-related impact, the odds were 2.79 times higher (95% CI: 1.35–5.60; p = 0.005) in individuals with multiple affected sites. Interestingly, the odds of lifestyle changes were lower in those with multiple affected areas (OR = 0.47; 95% CI: 0.26–0.86; p = 0.015), suggesting a potentially adaptive or resigned lifestyle adjustment. All associations were statistically significant, with p-values less than 0.05. These results highlight that wider spread of psoriasis is associated with more severe emotional, physical, and functional consequences. However, the reduced odds for lifestyle changes could indicate coping strategies or fewer reported changes despite worsening symptoms. Overall, this table emphasizes the increased burden of disease when multiple body areas are affected.

ROC-AUC curve

The ROC curve compares the predictive performance of logistic regression models for five psoriasis impact outcomes: emotional distress, physical discomfort, lifestyle changes, social activity, and work (Fig.2). All curves are close to the diagonal reference line, indicating modest discriminative ability. The Social impact model (green line) shows the best performance, maintaining higher sensitivity across most false positive rates. The Lifestyle model (yellow line) performs the poorest, hugging the diagonal line more closely. Emotional (brown), Physical (blue), and Work (purple) models perform similarly, with moderate sensitivity. No model achieves excellent discrimination (AUC near 1.0), reflecting limited predictive power using the current predictors. These results suggest that logistic regression based on body part involvement can predict social impacts better than lifestyle changes. Still, none of the models exhibit strong predictive accuracy. The curves imply a need for additional predictors or improved modeling strategies for better classification of psoriasis impacts.

Discussion

This study investigated the presence of psoriasis type and clinical patterns of psoriasis within a specific population, with particular emphasis on demographic trends, comorbidities, and treatment responses. The findings align with the multifactorial understanding of psoriasis presented in the literature, reinforcing the notion that genetic predisposition, immune dysregulation, environmental triggers, and psychosocial stressors contribute significantly to disease manifestation and progression (Kaushik *et al*, 2023; Weng *et al*, 2023). The findings in this study are in agreement with the previous studies describing the multifactorial nature of psoriasis.

Consistent with prior studies, the present research highlights a higher prevalence of psoriasis in individuals with a positive family history, supporting the strong genetic component of the disease (Lowes *et al*, 2014; Dand *et al*, 2020). The association of psoriasis with HLA-Cw6 and other genetic loci, particularly those regulating immune pathways such as TNF-α, IL-17, and IL-23, has been well established (Campanati *et al*, 2021; Kong *et al*, 2022). The findings reflect this genetic predisposition, as many patients reported familial occurrence and early disease onset, especially in those with more severe phenotypes.

Clinically, plaque psoriasis emerged as the most prevalent type, mirroring global trends. The predominance of this variant supports the established understanding that it constitutes the majority of psoriasis cases and is frequently associated with chronic and relapsing courses (Burlando *et al*, 2023). Other variants such as guttate and pustular psoriasis were observed less frequently but remained

Table 3: Regression analysis between body parts affected and daily activities.

Characteristic	Levels	Affected Emotional distress		Affected Physical discomfort		Lifestyle changes		Affected social activity		Affected work	
		OR (95% CI)	P value	OR (95% CI)	P value	OR (95% CI)	P value	OR (95% CI)	P value	OR (95% CI)	P value
Body parts affect	Single	—		—		—		—		—	
	Multiple	2.66 (1.43, 4.93)	0.002	3.53 (1.89, 6.87)	<0.001	0.47 (0.26, 0.86)	0.015	3.00 (1.49, 5.90)	0.002	2.79 (1.35, 5.60)	0.005

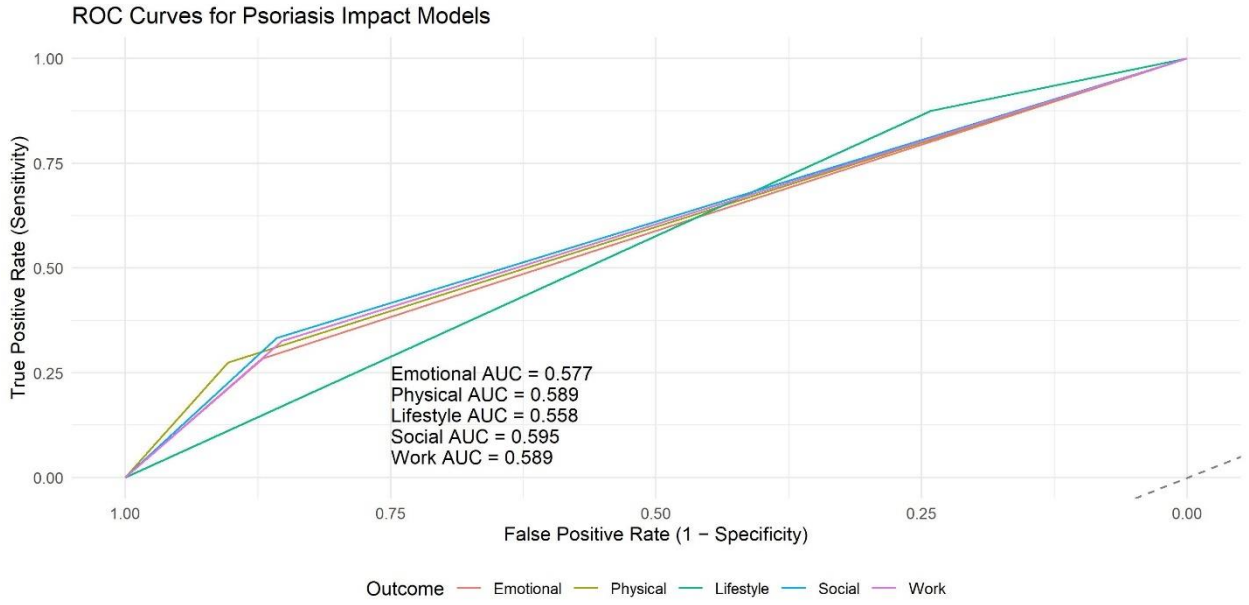

Fig. 1: Correlation analysis between affected body parts and affected activities. Correlation is significant at the 0.05 level (2-tailed). The color and size of circles help visualize both the direction and strength of associations, with blue indicating positive and red indicating negative correlations.

clinically significant, especially in younger individuals and those with a history of infections like streptococcal pharyngitis, echoing existing evidence on environmental triggers (McStay *et al*, 2024).

Immunologically, the clinical presentation and disease severity observed among our patients underscore the critical role of pro-inflammatory cytokines in driving psoriatic pathology (Schon and Erpenbeck, 2018). The good results with biologic drugs against TNF-α, IL-17, and IL-23 in our cohort further prove that these cytokines are very important for disease development and confirm previous findings about their relevance (Tsoi *et al*, 2012). The study found that those on targeted biologics experienced less frequent flare-ups and better results than those using conventional or topical treatments alone.

Diseases in this group also seem to be worsened by problems in the environment and daily lifestyles. Many patients described stress, different infections, smoking, and being overweight often led to more severe symptoms. These factors align with prior studies which highlighted the importance of holistic care in handling both medical and lifestyle elements (Bhosle *et al*, 2006; Raharja *et al*, 2021; Orzan *et al*, 2025). Learning about controllable risk factors and receiving help with psychological problems should be key parts of psoriasis care.

Comorbid conditions such as psoriatic arthritis, metabolic syndrome, and depression were prominent in included study population, reflecting the systemic nature of psoriasis (Hui *et al*, 2023; McStay *et al*, 2024; Nielsen *et al*, 2024). The high prevalence of joint symptoms reinforces the necessity of routine screening for psoriatic arthritis in dermatology

clinics, while the frequent coexistence of mental health issues emphasizes the psychological burden of this chronic disease. These findings support previous reports that psoriasis significantly impairs quality of life and mental well-being, often resulting in social stigma, anxiety, and depression (Aitkens *et al*, 2023; Arya *et al*, 2023; Orzan *et al*, 2025).

It is also clear from this research that new technologies and a comprehensive approach to treatment help improve outcomes for patients with psoriasis. Younger patients welcomed digital health, monitoring their own conditions, and personalized plans, and these tools could greatly improve managing illnesses over time. More work is needed to see how these approaches can be put to use in low-resource situations.

In conclusion, this study highlighted that psoriasis has a major effect on patients' quality of life. Patients with multiple body parts affected experienced more emotional stress, trouble moving comfortably, and less social activity. Arthritis and cardiovascular diseases were the most common additional conditions reported by older patients. Regardless of the treatments, many people with pain still face difficulty controlling their symptoms and feel mental anguish. It is important to address both clinical and social needs because research stresses that patients benefit from this type of care. Regular checks of quality of life should be a part of treating psoriasis. Specially designed supports can positively affect the health of the patient.

Declaration of Competing Interest

The authors declare that they have no competing or conflict of interests.

Author Contributions

NS: Conceptualization, Methodology, formal analysis, Writing—original draft preparation. **UM:** Conceptualization, Methodology. **R:** Methodology, Formal analysis. **ZI:** Methodology, Formal analysis. **JS:** Formal analysis, Writing—review and editing. **AA:** Formal analysis, Writing—review and editing. **U:** Writing—review and editing. All authors have read and agreed to the published version of the manuscript.

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