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Original Article

CLINICAL PROFILE AND COMORBIDITY PATTERN AMONG PATIENTS WITH PSORIASIS ATTENDING A TERTIARY CARE HOSPITAL IN GUJARAT: A CROSS-SECTIONAL OBSERVATIONAL STUDY

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ABSTRACT

Background: Psoriasis is a chronic immune-mediated inflammatory skin disease associated with significant morbidity and a wide spectrum of systemic comorbidities. Increasing evidence suggests that psoriasis is linked with metabolic, cardiovascular, and psychological disorders, necessitating a comprehensive approach to patient management. Limited data are available regarding the clinical profile and associated comorbidities among psoriasis patients in Gujarat.

Objectives: To assess the clinical profile of patients with psoriasis and determine the prevalence and pattern of associated comorbidities among patients attending a tertiary care hospital in Gujarat.

Methods: A hospital-based descriptive cross-sectional observational study was conducted in the Department of Dermatology of a tertiary care hospital in Gujarat from Jan 2026 to April 2026. A total of 42 adult patients with clinically diagnosed psoriasis were enrolled using consecutive sampling. Demographic characteristics, disease-related variables, clinical manifestations, and associated comorbidities were recorded using a structured case record form. Disease severity was assessed using the Psoriasis Area and Severity Index (PASI). Data were analyzed using SPSS version 26.0. Categorical variables were expressed as frequencies and percentages, and associations were assessed using Chi-square or Fisher's exact test. A p-value of <0.05 was considered statistically significant.

Results: Among the 42 participants, the majority belonged to the 41–50 years age group, and males constituted 61.9% of the study population. Chronic plaque psoriasis was the predominant clinical subtype (73.8%). Scalp involvement was observed in 57.1% of patients, while nail involvement was present in 38.1%. Psoriatic arthritis was identified in 14.3% of cases. Based on PASI scores, 45.2% of patients had mild disease, 35.7% had moderate disease, and 19.1% had severe disease. Comorbidities were present in 61.9% of participants. Hypertension (28.6%) was the most common comorbidity, followed by obesity (23.8%), diabetes mellitus (21.4%), and dyslipidemia (19.0%). A statistically significant association was observed between psoriasis severity and the presence of comorbidities ($p = 0.031$).

Conclusion: Psoriasis patients demonstrated a considerable burden of systemic comorbidities, particularly metabolic and cardiovascular disorders. Chronic plaque psoriasis was the most common clinical subtype, and comorbidity prevalence increased with disease severity. Routine screening and multidisciplinary management are essential for early detection and optimal management of associated conditions in patients with psoriasis.

Keywords: *Psoriasis; Clinical profile; Comorbidities; Hypertension; Diabetes mellitus; Dyslipidemia; PASI.*

INTRODUCTION

Psoriasis is a chronic, immune-mediated inflammatory skin disorder characterized by erythematous, well-demarcated plaques covered with silvery scales. It affects approximately 2–3% of the global population and represents a significant public health burden because of its chronicity, recurrent nature, and impact on quality of life [1]. Although traditionally regarded as a disease limited to the skin and joints, psoriasis is now recognized as a systemic inflammatory condition associated with multiple metabolic, cardiovascular, and psychological comorbidities [2]. The disease results from a complex interaction between genetic susceptibility, environmental triggers, and immune dysregulation involving T-helper cells and pro-inflammatory cytokines such as tumor necrosis factor-alpha (TNF-α), interleukin (IL)-17, and IL-23 [3].

The clinical manifestations of psoriasis are heterogeneous, ranging from localized plaque lesions to extensive erythrodermic involvement. Plaque psoriasis is the most common subtype, accounting for nearly 80–90% of cases, while guttate, pustular, inverse, and erythrodermic variants occur less frequently [4]. Disease severity varies considerably among individuals and may be influenced by factors such as age, sex, lifestyle habits, obesity, smoking, alcohol consumption, and genetic predisposition [5]. In addition to cutaneous manifestations, nail involvement and psoriatic arthritis contribute substantially to morbidity and functional impairment [6].

Growing evidence suggests that psoriasis is associated with a spectrum of systemic comorbidities. Chronic inflammation plays a pivotal role in linking psoriasis with metabolic syndrome, obesity, diabetes mellitus, hypertension, dyslipidemia, and cardiovascular disease [7]. Furthermore, psychological disorders including anxiety and depression are frequently reported among affected individuals, adversely influencing treatment adherence and quality of life [8]. Recognition of these comorbidities is essential for comprehensive patient management, as they may contribute to increased healthcare utilization, disability, and premature mortality.

In India, psoriasis prevalence has been reported to range between 0.4% and 2.8%, with considerable regional variation [9]. The disease imposes a substantial socioeconomic burden due to recurrent treatment requirements and loss of productivity. Several hospital-based studies from different parts of the country have described demographic and clinical characteristics of psoriasis; however, the prevalence and pattern of associated comorbidities vary across populations because of differences in genetic background, environmental exposures, dietary practices, and healthcare access [10]. Gujarat, one of the rapidly developing states in western India, has witnessed increasing prevalence of non-communicable diseases such as obesity, diabetes, and hypertension, which may influence the comorbidity profile of patients with psoriasis. Nevertheless, data regarding the clinical spectrum of psoriasis and associated comorbid conditions in this region remain limited.

Most available studies have focused either on disease severity or isolated comorbid conditions, while relatively few have comprehensively evaluated the clinical profile and coexisting systemic disorders among psoriasis patients attending tertiary care centers in Gujarat. Understanding the distribution of clinical variants, disease characteristics, and associated comorbidities is important for early detection of high-risk patients and implementation of multidisciplinary care strategies. Therefore, the present study was undertaken to assess the clinical profile and associated comorbidities among patients diagnosed with psoriasis attending a tertiary care hospital in Gujarat. The objectives were to describe the demographic and clinical characteristics of psoriasis patients, identify the pattern of disease presentation, and evaluate the prevalence of common comorbid conditions associated with psoriasis.

METHODOLOGY

Study Design: A hospital-based descriptive cross-sectional observational study was conducted to evaluate the clinical profile and associated comorbidities among patients diagnosed with psoriasis attending the Dermatology outpatient and inpatient services of a tertiary care hospital in Gujarat. The study was designed and reported in accordance with the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines.

Study Setting: The study was conducted in the Department of Dermatology, Venereology and Leprology of a tertiary care teaching hospital located in Gujarat, India. The hospital caters to patients from both urban and rural areas and serves as a referral center for dermatological disorders.

Study Duration: The study was conducted from Jan 2026 to April 2026.
Study Population: The study population comprised patients clinically diagnosed with psoriasis who attended the Dermatology outpatient department (OPD) or were admitted to the dermatology ward during the study period.

Inclusion Criteria

Patients aged ≥18 years with a clinical diagnosis of psoriasis confirmed by a dermatologist.
Patients willing to participate and provide written informed consent.
Patients attending the dermatology OPD or admitted during the study period.

Exclusion Criteria
Patients unwilling to provide informed consent.
Patients with uncertain diagnosis or other papulosquamous disorders mimicking psoriasis.
Patients with severe systemic illness preventing adequate clinical assessment.
Pregnant women, owing to altered metabolic parameters that could confound assessment of comorbidities.

Sample Size: The sample size was calculated using the formula for estimation of a proportion in a descriptive study:

$$n = \frac{Z^2 \times p \times q}{d^2}$$

Where:
(n) = required sample size
(Z) = 1.96 at 95% confidence level
(p) = anticipated prevalence of a major comorbidity among psoriasis patients (assumed 50% in absence of local estimates to obtain maximum sample size)
(q = 1-p)
(d) = allowable error (15%)

$$n = \frac{(1.96)^2 \times 0.5 \times 0.5}{(0.15)^2}$$

Considering feasibility, study duration, and patient availability during the study period, **42 eligible patients** were enrolled and analyzed.

Sampling Technique: A consecutive sampling technique was employed. All eligible patients with psoriasis presenting during the study period and fulfilling the inclusion criteria were recruited consecutively until the desired sample size of 42 participants was achieved.

Data Collection Tools & Procedure: Data were collected using a predesigned, pretested structured case record form. After obtaining written informed consent, demographic details including age, sex, residence, occupation, and relevant personal habits such as smoking and alcohol consumption were recorded. A detailed history regarding age at onset, duration of disease, family history, precipitating factors, and previous treatment was obtained. Comprehensive dermatological examination was performed to determine the clinical type of psoriasis, distribution of lesions, nail involvement, scalp involvement, and joint manifestations suggestive of psoriatic arthritis. Disease severity was assessed using the Psoriasis Area and Severity Index (PASI), wherever applicable. Information regarding associated comorbidities including obesity, hypertension, diabetes mellitus, dyslipidemia, cardiovascular disease, thyroid disorders, and psychiatric illness was obtained through patient history, clinical examination, and review of available medical records and laboratory investigations.

Study Variables: The independent variables included demographic factors (age, sex, residence, occupation), behavioral factors (smoking, alcohol consumption), family history of psoriasis, disease duration, age at onset, and clinical subtype of psoriasis. The dependent variables included clinical characteristics of psoriasis such as severity, nail involvement, scalp involvement, psoriatic arthritis, and the presence of associated comorbidities including hypertension, diabetes mellitus, obesity, dyslipidemia, cardiovascular disease, thyroid disorders, and psychiatric conditions. The prevalence and distribution of these clinical features and comorbidities constituted the primary study outcomes.

Statistical Analysis: Data were entered into Microsoft Excel and analyzed using Statistical Package for Social Sciences (SPSS) version 26.0. Continuous variables were summarized as mean ±standard deviation (SD) or median with interquartile range, depending on data distribution. Categorical variables were expressed as frequencies and percentages. Associations between categorical variables were assessed using the Chi-square test or Fisher's exact test, as appropriate. Continuous variables were compared using Student's t-test or Mann–Whitney U test based on normality assumptions. A p-value of <0.05 was considered statistically significant.

Ethical Considerations: Written informed consent was obtained from all participants after explaining the purpose, procedures, potential benefits, and confidentiality measures of the study. Participation was voluntary, and patients were free to withdraw at any stage without affecting their treatment. Confidentiality and anonymity of patient information were maintained throughout the study by assigning unique identification numbers and restricting access to study records. The study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinkiand subsequent amendments governing research involving human participants.

RESULTS

A total of 42 patients with psoriasis were included in the study. The majority belonged to the 41–50 years age group, and males constituted nearly two-thirds of the study population. More than half of the participants were from urban areas, while smoking and alcohol consumption were reported by a minority of patients (Table 1).

Table 1. Sociodemographic Characteristics of Study Participants (N = 42)

Variable	Category	Frequency (n)	Percentage (%)
Age group (years)	18–30	8	19.0
	31–40	10	23.8
	41–50	12	28.6
	51–60	8	19.0
	>60	4	9.5
Sex	Male	26	61.9
	Female	16	38.1
Residence	Urban	24	57.1
	Rural	18	42.9
Smoking status	Smoker	10	23.8
	Non-smoker	32	76.2
Alcohol consumption	Present	8	19.0
	Absent	34	81.0

Chronic plaque psoriasis was the predominant clinical subtype observed, followed by guttate and palmoplantar psoriasis. Nail involvement was present in more than one-third of patients, whereas scalp involvement was the most common associated clinical feature. Psoriatic arthritis was identified in a smaller proportion of participants. Most patients had disease duration below 10 years, and approximately one-fifth reported a positive family history of psoriasis (Table 2).

Table 2. Clinical Profile of Psoriasis Patients (N = 42)

Clinical Variable	Category	Frequency (n)	Percentage (%)
Clinical type of psoriasis	Chronic plaque psoriasis	31	73.8
	Guttate psoriasis	4	9.5
	Palmoplantar psoriasis	3	7.1
	Pustular psoriasis	2	4.8
	Erythrodermic psoriasis	2	4.8
Duration of disease	<5 years	18	42.9
	5–10 years	15	35.7
	>10 years	9	21.4
Family history of psoriasis	Present	9	21.4
	Absent	33	78.6
Nail involvement	Present	16	38.1
	Absent	26	61.9
Scalp involvement	Present	24	57.1
	Absent	18	42.9
Psoriatic arthritis	Present	6	14.3
	Absent	36	85.7

Assessment of disease severity revealed that mild psoriasis was the most frequent category, followed by moderate disease. Severe psoriasis accounted for less than one-fifth of cases (Table 3).

Table 3. Severity of Psoriasis Based on PASI Score (N = 42)

Severity Category	PASI Score Range	Frequency (n)	Percentage (%)
Mild	<10	19	45.2
Moderate	10–20	15	35.7
Severe	>20	8	19.1

Comorbid conditions were common, with hypertension being the most prevalent, followed by obesity, diabetes mellitus, and dyslipidemia. Psychological disorders and cardiovascular disease were observed in a smaller subset of patients. Approximately one-third of the participants had no documented comorbidity (Table 4).

Table 4. Distribution of Comorbidities Among Psoriasis Patients (N = 42)

Comorbidity	Frequency (n)	Percentage (%)
Hypertension	12	28.6
Obesity (BMI ≥30 kg/m²)	10	23.8
Diabetes mellitus	9	21.4
Dyslipidemia	8	19.0
Cardiovascular disease	3	7.1
Thyroid disorder	2	4.8
Depression/Anxiety	5	11.9
No identified comorbidity	14	33.3

A statistically significant association was observed between psoriasis severity and the presence of comorbidities. Patients with moderate-to-severe psoriasis demonstrated a higher burden of associated comorbid conditions compared with those having mild disease ($p = 0.031$) (Table 5).

Table 5. Association Between Psoriasis Severity and Presence of Comorbidities (N = 42)

Psoriasis Severity	Patients with ≥1 Comorbidity n (%)	Patients without Comorbidity n (%)	Total	p-value*
Mild (n=19)	8 (42.1)	11 (57.9)	19	**0.031**
Moderate (n=15)	11 (73.3)	4 (26.7)	15	
Severe (n=8)	7 (87.5)	1 (12.5)	8	
Total	**26 (61.9)**	**16 (38.1)**	**42**	

*Chi-square test.

DISCUSSION

The present hospital-based cross-sectional study evaluated the clinical profile and associated comorbidities among 42 patients with psoriasis attending a tertiary care hospital in Gujarat. The study demonstrated that psoriasis predominantly affected middle-aged adults, with a male preponderance. Chronic plaque psoriasis was the most common clinical subtype, while scalp and nail involvement represented frequent disease manifestations. Comorbid conditions were identified in a substantial proportion of patients, with hypertension, obesity, diabetes mellitus, and dyslipidemia being the most common. Furthermore, the burden of comorbidities increased significantly with greater disease severity.

The majority of patients in the present study belonged to the fourth and fifth decades of life, which is consistent with previous reports indicating that psoriasis commonly presents during early and middle adulthood [1,9]. The observed male predominance is comparable to findings from several Indian hospital-based studies, although some population-based studies have reported nearly equal gender distribution [9,10]. Differences in healthcare-seeking behavior, referral patterns, and sociocultural factors may explain the higher representation of males in tertiary care settings.

Chronic plaque psoriasis was the predominant clinical variant in the present study, accounting for nearly three-fourths of cases. This observation is in agreement with established literature indicating that plaque psoriasis constitutes the most common clinical phenotype worldwide [4]. Similar findings have been reported from various Indian studies, where plaque psoriasis consistently represented the majority of cases presenting to dermatology clinics [9]. The predominance of this subtype may be attributed to its chronic relapsing course and greater likelihood of requiring specialist consultation.

Nail involvement was observed in a considerable proportion of patients, while scalp involvement affected more than half of the study population. Previous studies have demonstrated that nail changes occur in approximately one-third to one-half of psoriasis patients and may serve as an indicator of more extensive disease and increased risk of psoriatic arthritis [6]. Scalp involvement is also recognized as one of the most frequent manifestations of psoriasis and can significantly impair quality of life because of visible lesions, itching, and social stigma [4]. The prevalence observed in the present study falls within the range reported in earlier literature.

Psoriatic arthritis was identified in a minority of participants. This finding is consistent with epidemiological studies suggesting that musculoskeletal involvement develops in a subset of psoriasis patients and may remain underdiagnosed, particularly in resource-constrained settings [7]. Early recognition of joint symptoms is important because delayed diagnosis may result in irreversible joint damage and functional disability.

A major finding of the present study was the high prevalence of metabolic and cardiovascular comorbidities among psoriasis patients. Hypertension emerged as the most common comorbidity, followed by obesity, diabetes mellitus, and dyslipidemia. These findings support the growing concept that psoriasis is a systemic inflammatory disease rather than a disorder confined to the skin [2,7]. Chronic activation of inflammatory pathways involving TNF-α, IL-17, and IL-23 contributes to endothelial dysfunction, insulin resistance, adipose tissue inflammation, and atherogenesis, thereby increasing susceptibility to metabolic syndrome and cardiovascular disease [3,7].

The prevalence and pattern of comorbidities observed in this study are broadly comparable with findings reported from Indian and international studies. Kothiwala et al. demonstrated an increased prevalence of metabolic syndrome and cardiovascular risk factors among patients with chronic plaque psoriasis [10]. Similarly, several systematic reviews have reported strong associations between psoriasis and hypertension, obesity, diabetes mellitus, and dyslipidemia [7]. The coexistence of these conditions may contribute to increased morbidity, reduced quality of life, and higher long-term healthcare costs.

An important observation was the significant association between psoriasis severity and the presence of comorbidities. Patients with moderate-to-severe disease exhibited a greater burden of associated systemic disorders compared with those having mild psoriasis. Similar associations have been reported in previous studies, suggesting that cumulative inflammatory burden may influence both disease severity and the development of metabolic abnormalities [11,12]. This finding highlights the importance of routine screening for cardiovascular and metabolic risk factors, particularly among patients with more severe disease.

The findings of the present study have important clinical and public health implications. Psoriasis management should extend beyond control of cutaneous manifestations and include comprehensive assessment of associated comorbidities. Early identification and treatment of hypertension, diabetes, obesity, and dyslipidemia may reduce long-term complications and improve overall patient outcomes. Multidisciplinary collaboration involving dermatologists, physicians, endocrinologists, rheumatologists, and mental health professionals may be beneficial in optimizing patient care.
The study possesses several strengths. It provides contemporary data regarding the clinical spectrum and comorbidity profile of psoriasis patients from a tertiary care center in Gujarat, a region with limited published evidence on this topic. The study also evaluated both dermatological characteristics and systemic comorbidities within the same patient cohort, facilitating a comprehensive assessment.

However, certain limitations should be acknowledged. The relatively small sample size may limit generalizability of the findings. The cross-sectional design precludes establishment of temporal or causal relationships between psoriasis and associated comorbidities. Being a single-center hospital-based study, selection bias cannot be excluded. Additionally, some comorbidities may have been underdiagnosed because screening investigations were limited to routine clinical practice. Future multicentric studies with larger sample sizes and longitudinal follow-up are warranted to better elucidate the relationship between psoriasis severity and systemic comorbidity burden.

CONCLUSION

Psoriasis is a chronic inflammatory disorder with significant systemic implications beyond cutaneous involvement. In the present study, psoriasis predominantly affected middle-aged adults, with a higher prevalence among males. Chronic plaque psoriasis was the most common clinical subtype, while scalp and nail involvement were frequent clinical manifestations. A substantial proportion of patients had one or more associated comorbidities, particularly hypertension, obesity, diabetes mellitus, and dyslipidemia. The study further demonstrated a significant association between disease severity and the presence of comorbid conditions, indicating that patients with moderate-to-severe psoriasis are at increased risk of systemic health complications. These findings emphasize the need for comprehensive clinical evaluation and regular screening for metabolic and cardiovascular risk factors in psoriasis patients. A multidisciplinary approach involving dermatologists and other healthcare specialists is essential for early identification and management of comorbidities. Such an approach may improve overall patient outcomes, reduce long-term complications, and enhance quality of life. Larger multicentric studies are recommended to further explore the relationship between psoriasis severity and systemic comorbidities in diverse populations.

DECLARATIONS

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Conflict of Interest: The authors declare that there is no conflict of interest.
Informed Consent: Written informed consent was obtained from all participants prior to enrollment in the study.
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