Original Research Article

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Clinical Patterns and Triggers of Psoriasis in Patients Attending a Tertiary Care Hospital

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Abstract

Background: Psoriasis is a chronic immune-mediated skin disease with variable clinical forms and systemic impact. Flares are often linked to triggers such as stress, infections, trauma, seasonal change, drugs, and smoking, but Bangladeshi data on patterns, severity, and triggers are limited. This study aimed to describe psoriasis subtypes, severity (PASI), affected sites, and common triggers among patients attending a tertiary care hospital in Bangladesh.

Methods: This observational cross-sectional study was conducted in the Dermatology OPD of a tertiary care hospital in Bangladesh from January, 2024 to December, 2024. Consecutive clinically diagnosed psoriasis patients (n = 180) of either sex was enrolled after consent; those refusing consent, with uncertain diagnosis, or severe comorbidity limiting assessment were excluded. Trained physicians recorded socio-demographics, age at onset, duration, family history, clinical subtype, sites involved, nail changes, and joint symptoms using a pre-tested form. Severity was assessed by PASI and categorized as mild (<10), moderate (10–20), or severe (>20). Data were analyzed in SPSS v26 using descriptive statistics.

Results: Among 180 psoriasis patients, most were aged 21–40 years, and 60.0% were male. Plaque psoriasis predominated (76.7%); common sites were lower limbs (75.6%), upper limbs (68.9%), trunk (61.1%), and scalp (53.3%). Nail involvement occurred in 32.2%, and joint symptoms suggestive of PsA in 17.8%. By PASI, 43.3% had mild, 38.9% moderate, and 17.8% severe disease. The most frequently reported triggers were seasonal variation (62.2%) and psychological stress (55.0%), followed by infection (27.8%), trauma/Koebner (25.0%), and smoking (22.2%).

Conclusion: Plaque psoriasis was the predominant subtype, with most patients having mild to moderate disease and frequent limb, trunk, and scalp involvement. Seasonal variation and psychological stress were the leading triggers, and notable nail and joint involvement support routine trigger-focused counseling and early screening for psoriatic arthritis.

Keywords: Psoriasis, clinical patterns, triggering factors, PASI (Psoriasis Area and Severity Index)

Introduction

Psoriasis is a chronic, immune-mediated inflammatory dermatosis with a relapsing course and heterogeneous clinical expression, ranging from limited plaque disease to severe pustular and erythrodermic presentations. Current evidence supports a model in which genetically

susceptible individuals develop dysregulated innate and adaptive immune responses, with prominent IL-23 and Th17 pathway activation driving keratinocyte hyperproliferation and sustained cutaneous inflammation.[1,2] Importantly, psoriasis is increasingly recognized as a systemic inflammatory disease rather than a purely cutaneous disorder, with implications for musculoskeletal involvement, cardiometabolic risk clustering, and measurable impairment in quality of life, productivity, and psychosocial health, especially when disease is visible, extensive, or treatment-resistant.[1,2]

The global epidemiology of psoriasis is variable, and prevalence differs across regions and populations, partly reflecting genetic background, environmental exposures, climate, and health-system detection. A large systematic analysis and modelling study estimated substantial worldwide burden with marked regional heterogeneity, reinforcing psoriasis as a common non-communicable disease with enduring public-health relevance.[3] Complementing prevalence estimates, analyses from the Global Burden of Disease Study highlight that psoriasis contributes meaningfully to years lived with disability across age groups, and that the absolute burden continues to rise in many settings as populations grow and age.[4] Clinical flares are frequently linked to modifiable triggers and aggravating factors, including psychological stress, intercurrent infections, skin trauma, seasonal variation and cold weather, medication exposure (such as β-blockers, NSAIDs, and steroid withdrawal), smoking, and other lifestyle-related exposures.[5–8] Smoking is of particular relevance in South Asian contexts because it is prevalent in adult men, and meta-analytic data support higher psoriasis risk among smokers, alongside evidence that smoking can worsen disease course and treatment response.[6,7] Seasonal worsening, often during colder months, is also reported in systematic reviews, suggesting that climate and behavior may influence flare patterns in routine practice.[8]

In Bangladesh, published evidence remains comparatively sparse, and available estimates suggest psoriasis is not rare, but is under-characterized across community and tertiary-care settings.[9,10] Local hospital-based data indicate plaque psoriasis predominates, and commonly reported aggravating factors include stress, trauma, cold weather, drugs, infections, and smoking, yet standardized documentation of triggers, severity, and pattern-by-pattern distributions is inconsistent.[10] This knowledge gap matters clinically because trigger identification supports counseling and flare prevention, while mapping clinical patterns and severity helps allocate clinic resources, anticipate complications, and tailor management strategies in resource-constrained tertiary hospitals. Therefore, this study aims to describe psoriasis subtypes, severity (PASI), affected sites, and common triggers among patients attending a tertiary care hospital in Bangladesh.

Methods

This observational cross-sectional study was conducted in the Dermatology Outpatient Department of a tertiary care hospital in Bangladesh from January, 2024 to December, 2024. Consecutive patients with clinically diagnosed psoriasis were enrolled until the target sample size of 180 was reached. Inclusion criteria encompassed patients of either sex, while exclusion criteria included unwillingness to provide consent, uncertain diagnosis, or severe concurrent illness that limited assessment.

Following informed written consent, trained physicians collected data using a pre-tested, structured case record form that included socio-demographic variables, age at onset, disease duration, family history, and clinical subtype. Psoriasis was classified as plaque, guttate, pustular, inverse, or erythrodermic according to standard clinical criteria. The anatomical distribution was documented by affected sites, and nail

changes (pitting, onycholysis, subungual hyperkeratosis) as well as joint symptoms indicative of psoriatic arthritis were recorded based on patient history and clinical examination.

Disease severity was evaluated using the Psoriasis Area and Severity Index (PASI) and categorized as mild (PASI <10), moderate (PASI 10–20), or severe (PASI >20). Potential triggering factors during the preceding period were identified through patient interviews and included psychological stress, recent infection, seasonal variation, trauma (Koebner phenomenon), drug exposure, smoking, and alcohol intake. Data were entered into SPSS (version 26.0) and summarized as mean ± standard deviation or median (interquartile range) for continuous variables, and as frequency with percentage for categorical variables.

Results

A total of 180 psoriasis patients were enrolled over one year. The majority were aged 21–30 years (32.2%), followed by 31–40 years (28.9%), with fewer patients aged ≤20 years (10.0%) and >50 years (11.1%). Males constituted 60.0% of the cohort. Urban residents accounted for 55.0% of participants. Homemakers represented the largest occupational group (30.0%), followed by service holders (25.6%) and business professionals (17.8%). Secondary education was the most common educational attainment (33.3%) [Table 1].

Early onset of psoriasis was common, with 45.6% reporting onset at ≤20 years and 35.0% at 21–30 years. Disease duration was less than five years in 57.8% and five years or more in 42.2%. Gradual onset was reported by 71.1%, and 18.9% had a positive family history [Table 2].

Plaque psoriasis was the most prevalent clinical type (76.7%), while guttate (8.9%), pustular (5.6%), inverse (5.6%), and erythrodermic (3.3%) types were less common [Figure 1].

Table 1: Socio-demographic characteristics of the study participants (n = 180)

Variable	Category	n (%)
Age group (years)	≤20	18 (10.0)
	21–30	58 (32.2)
	31–40	52 (28.9)
	41–50	32 (17.8)
	>50	20 (11.1)
Sex	Male	108 (60.0)
	Female	72 (40.0)
Residence	Urban	99 (55.0)
	Rural	81 (45.0)
Occupation	Student	28 (15.6)
	Service	46 (25.6)
	Business	32 (17.8)
	Homemaker	54 (30.0)
	Farmer	12 (6.7)
	Other	8 (4.4)
Education level	No formal education	18 (10.0)
	Primary	36 (20.0)
	Secondary	60 (33.3)
	Higher secondary	38 (21.1)
	Graduate or above	28 (15.6)

Table 2: Clinical characteristics of psoriasis (n = 180)

Clinical variable	Category	n (%)
Age at onset (years)	≤20	82 (45.6)
	21–30	63 (35.0)
	>30	35 (19.4)
Duration of disease	<5 years	104 (57.8)
	≥5 years	76 (42.2)
Mode of onset	Sudden	52 (28.9)
	Gradual	128 (71.1)
Family history	Present	34 (18.9)
	Absent	146 (81.1)

The lower limbs (75.6%) and upper limbs (68.9%) were most frequently affected, followed by the trunk (61.1%) and scalp (53.3%). Flexural involvement was observed in 24.4%, and 15.6% had generalized disease. Nail

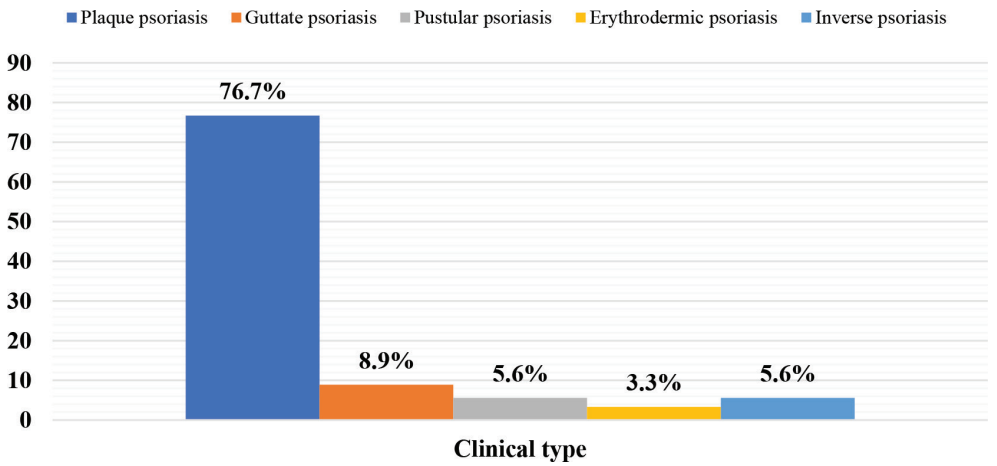

Figure 1: Distribution of primary clinical types of psoriasis (n = 180).

involvement was present in 32.2%, and 17.8% reported joint symptoms suggestive of psoriatic arthritis [Table 3].

According to the PASI score, 43.3% had mild disease, 38.9% had moderate disease, and 17.8% had severe disease [Table 4].

Frequently identified triggering factors included seasonal variation (62.2%) and psychological stress (55.0%). Infection preceded flares in 27.8%, trauma consistent with the Koebner phenomenon in 25.0%, and smoking in 22.2%. Drug exposure prior to flare was reported by 12.2%, and alcohol consumption by 10.0% [Table 5].

Table 3: Anatomical distribution and associated features (n = 180)

Variable	Category	*n* (%)
Site involved	Scalp	96 (53.3)
	Trunk	110 (61.1)
	Upper limbs	124 (68.9)
	Lower limbs	136 (75.6)
	Flexural areas	44 (24.4)
	Generalized	28 (15.6)
Nail involvement	Present	58 (32.2)
	Absent	122 (67.8)
Joint symptoms (suggestive of PsA)	Present	32 (17.8)
	Absent	148 (82.2)

Table 4: Severity of psoriasis based on PASI score (n = 180)

Severity category	PASI score range	*n* (%)
Mild	<10	78 (43.3)
Moderate	10–20	70 (38.9)
Severe	>20	32 (17.8)

Discussion

This tertiary-care, outpatient department-based cohort demonstrates patterns consistent with both South Asian and global clinical data, while also highlighting a trigger profile relevant to Bangladesh for routine counselling. Plaque psoriasis was the predominant subtype (76.7%), consistent with multiple hospital and community reports indicating that chronic plaque disease accounts for the majority of cases, typically exceeding three-quarters, whereas guttate and pustular forms are considerably less common. Comparable plaque predominance has been documented in Bangladesh and in regional studies from Nepal and other South Asian clinics, indicating that classic plaque psoriasis constitutes the primary workload in tertiary dermatology

Table 5: Triggering factors identified among psoriasis patients (n = 180)

Triggering factor	*n* (%)
Psychological stress	99 (55.0)
Infection (recent URTI, sore throat, etc.)	50 (27.8)
Seasonal variation	112 (62.2)
Drug intake prior to flare	22 (12.2)
Trauma (Koebner phenomenon)	45 (25.0)
Smoking	40 (22.2)
Alcohol consumption	18 (10.0)

services throughout the region.[9–12] Variations in the proportions of non-plaque subtypes across studies are anticipated due to differences in referral patterns, recruitment periods, case-mix of treated versus new patients, and subtype classification methods, particularly regarding palmoplantar or scalp-predominant disease.[10,12]

The majority of patients were young to early middle-aged adults, with a predominance of males (60%), a pattern observed in several South Asian outpatient studies. This male predominance may be attributable to health-seeking behaviors, occupational exposures, and differential access to specialist care, despite a more balanced community prevalence.[9–12] Early onset was common, with nearly half of patients reporting disease onset at or before 20 years of age, and 18.9% reporting a family history, which aligns with the established genetic contribution to psoriasis. Variability in reported family history across studies may be influenced by recall bias, family size, and whether the definition encompasses only first-degree relatives or includes extended family members.[9,10,12]

Nail involvement was observed in 32.2% of patients, serving as both an indicator of increased disease burden and a practical prompt for musculoskeletal screening. Clinical studies frequently report nail changes in a significant proportion of adults with plaque psoriasis, and nail-focused investigations indicate that such changes are often overlooked without systematic examination.[13] Observational studies and reviews further demonstrate that nail psoriasis is common throughout the disease course, can impair functional ability, and may be associated with more extensive skin involvement in certain populations.[14–16] Joint symptoms suggestive of psoriatic arthritis were reported by 17.8% of patients, a proportion consistent with findings from dermatology clinics where screening relies on patient history and basic examination rather than formal rheumatologic criteria. Regional studies also emphasize that a notable minority experience inflammatory joint symptom, and nail involvement is consistently highlighted as a critical indicator for psoriatic arthritis screening in routine dermatology practice.[12,13,16]

The majority of participants exhibited mild to moderate psoriasis according to the Psoriasis Area and Severity Index (PASI), with 43.3% classified as mild and 38.9% as moderate, while severe cases accounted for 17.8%. This distribution mirrors findings from Bangladesh tertiary-care centers, where mild disease is prevalent, yet moderate to severe psoriasis continues to impose a significant service burden, likely due to referral patterns and the chronic, relapsing nature of the condition.[17] The trigger profile represents the most clinically actionable aspect of the findings. Seasonal variation (62.2%) and psychological stress (55.0%) were the most frequently reported precipitants, aligning with regional data that document common perceptions of seasonality and stress-induced flares.[9,11] Studies also indicate that seasonal effects are heterogeneous; while many patients report no change, a substantial subgroup experiences improvement during summer and worsening in winter, likely influenced by ultraviolet exposure, humidity, infections, and behavioral factors pertinent to Bangladesh's climate cycle.[8]

Infection (27.8%) and trauma suggestive of the Koebner phenomenon (25.0%) were also common, aligning with synthesis work indicating

Koebnerization in roughly one-quarter to one-third of patients, supporting counselling on skin protection, occupational microtrauma, and minimizing scratching.[18] Smoking (22.2%) emerged as another modifiable exposure, with reviews linking smoking to higher psoriasis risk, greater severity, and poorer outcomes, reinforcing the value of structured cessation advice in routine care.[7] Lower alcohol reporting (10.0%) may reflect cultural patterns or under-reporting, but it remains worth asking non-judgmentally because alcohol use can affect adherence, comorbidity risk, and treatment safety.

Limitations of the Study

The primary limitations of this study are its single-center, outpatient department-based cross-sectional design and the use of consecutive sampling, which may restrict generalizability and preclude causal inference between triggers and flares. Additionally, triggering factors and joint symptoms were self-reported without standardized psoriatic arthritis (PsA) classification or laboratory confirmation, increasing the risk of recall bias and misclassification.

Conclusion

In this tertiary-care cohort, plaque psoriasis predominated, with most patients having mild to moderate disease and frequent involvement of the limbs, trunk, and scalp. Seasonal variation and psychological stress were the leading reported triggers, and a substantial minority had nail involvement and joint symptoms, supporting routine trigger counselling, lifestyle risk reduction, and early screening for psoriatic arthritis in clinical practice.

Recommendations

Implement routine PASI-based severity assessment, systematic nail and joint screening, and brief PsA referral pathways in dermatology OPD. Provide focused counseling on common triggers, especially winter skin care, stress management, infection control, and avoidance of skin trauma, alongside smoking cessation support. Strengthen follow-up and patient education, and conduct larger multicenter studies using validated trigger and PsA screening tools to improve generalizability.

Ethical Approval

The study was approved by the Institutional Ethics Committee.

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