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CLINICO-EPIDEMIOLOGICAL PROFILE AND QUALITY-OF-LIFE IMPACT OF CHRONIC PLAQUE PSORIASIS: A HOSPITAL-BASED CROSS-SECTIONAL STUDY

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Abstract
Background: Chronic plaque psoriasis is an immune-mediated systemic disease with a substantial quality-of-life burden and recognised metabolic and cardiovascular comorbidities. Hospital-based characterisation informs holistic care.
Objectives: To describe the clinico-epidemiological profile of chronic plaque psoriasis, quantify its impact on quality of life, and examine the relationship between disease severity and quality-of-life impairment.
Methods: A cross-sectional, hospital-based study of 240 patients with chronic plaque psoriasis recorded demographics, disease characteristics, comorbidities, severity (PASI, BSA, PGA) and the Dermatology Life Quality Index (DLQI). Associations used the Pearson correlation and analysis across severity categories.
Results: Patients (mean age 44.5 ± 13.4 years; 58.3% male; mean disease duration 9.5 ± 7.0 years) had a mean PASI of 10.3 ± 7.4, mean BSA 18.9 ± 12.8% and mean pruritus VAS 6.0 ± 2.3. Scalp involvement occurred in 64.6%, nail involvement in 29.6% and psoriatic arthritis in 14.6%; a metabolic comorbidity (diabetes, hypertension or dyslipidaemia) was present in a subset. Mean DLQI was 11.4 ± 6.0, indicating a large effect on daily life. DLQI correlated strongly with PASI ($r = 0.87$, $p < 0.001$) and BSA ($r = 0.81$, $p < 0.001$), and rose across severity categories (mild 6.8, moderate 8.9, severe 16.8).
Conclusion: Chronic plaque psoriasis imposed a substantial and severity-graded quality-of-life burden, with frequent scalp and nail involvement and psoriatic arthritis. The strong PASI–DLQI relationship underscores the value of routinely measuring quality of life and screening for comorbidities alongside clinical severity.

Keywords: psoriasis; PASI; Dermatology Life Quality Index; comorbidity; psoriatic arthritis; quality of life

Introduction

Psoriasis is a common, chronic, immune-mediated inflammatory disease with a relapsing course, of which chronic plaque psoriasis is the predominant form. Beyond its cutaneous manifestations, psoriasis is now understood as a systemic disorder associated with a range of comorbidities—psoriatic arthritis, obesity, hypertension, diabetes mellitus, dyslipidaemia, metabolic syndrome and an increased risk of cardiovascular disease—that share overlapping inflammatory pathways and contribute to overall morbidity and reduced life expectancy [4,8,9]. The chronic, visible and often pruritic nature of the

disease places a heavy psychosocial burden on patients that is frequently disproportionate to the extent of skin involvement.

Quantifying this burden requires both clinical and patient-reported measures. The Psoriasis Area and Severity Index (PASI), body surface area (BSA) and Physician's Global Assessment (PGA) capture disease extent and severity, while the Dermatology Life Quality Index (DLQI) is the most widely used dermatology-specific instrument for measuring the impact of skin disease on daily life. The DLQI is valid, reliable and responsive across psoriasis populations, including validated non-English versions, and discriminates well among patients differing in disease severity and duration [1,7]. Clinical-trial and observational data consistently show that improvements in PASI correspond to improvements in DLQI, and that greater degrees of clearance yield greater quality-of-life gains, establishing a robust structure–impact relationship [3,5]. Adipokine biology and chronic low-grade inflammation provide a mechanistic link between psoriasis severity, metabolic comorbidity and cardiovascular risk, reinforcing the case for integrated assessment [6]. The comorbidity dimension has reshaped psoriasis care. Because metabolic and cardiovascular comorbidities frequently become manifest years after disease onset and are more common in severe disease, dermatologists are increasingly expected to screen for and, where appropriate, coordinate management of these conditions [8,9]. Comorbidity also influences treatment selection, as some conditions preclude particular systemic agents, and better control of psoriasis may in turn reduce cardiovascular risk [9]. This systemic perspective has particular relevance in South India, where the prevalence of type 2 diabetes and metabolic disease is high. Despite an extensive international literature, hospital-based characterisation that combines the clinico-epidemiological profile, comorbidity pattern and quality-of-life impact of chronic plaque psoriasis in a South Indian setting remains valuable for guiding holistic, locally relevant care. The present study therefore described the clinico-epidemiological profile of chronic plaque psoriasis, quantified its quality-of-life impact using the DLQI, and examined the relationship between disease severity and quality-of-life impairment. The objectives were to characterise demographic and disease features, to document clinical involvement patterns and comorbidities, to measure DLQI, and to test the PASI–DLQI and BSA–DLQI relationships and the gradient of DLQI across severity categories.

Methods

Participants

Two hundred and forty adults with chronic plaque psoriasis attending the dermatology out-patient department were included. Eligible patients had a clinical diagnosis of chronic plaque psoriasis; guttate, erythrodermic and pustular variants were outside the scope of this profile.

Assessment

A structured proforma captured age, sex, residence, socioeconomic status, body mass index, smoking and alcohol use, family history, age at onset and disease duration. Clinical assessment recorded scalp and nail involvement and psoriatic arthritis, and comorbidities (diabetes mellitus, hypertension, dyslipidaemia). Disease severity was graded by PASI, BSA and PGA, with pruritus rated on a 0–10 visual analogue scale (VAS). Quality of life was measured with the DLQI (0–30), categorised by standard impact bands. Current treatment and adherence were recorded.

Statistical analysis

Continuous variables are summarised as mean ± SD and categorical variables as counts and percentages. The relationships of DLQI with PASI and BSA were assessed with the Pearson correlation; DLQI was compared across severity categories (mild, moderate, severe). Two-sided $p < 0.05$ was significant. Analyses used Python (pandas, SciPy).

Results

Demographic and disease characteristics

The 240 patients had a mean age of 44.5 ± 13.4 years; 140 (58.3%) were male. Mean age at onset was 35.0 ± 14.7 years and mean disease duration 9.5 ± 7.0 years. Mean BMI was 25.4 ± 3.9 kg/m²; 15.0% were current smokers and 22.5% used alcohol. A family history of psoriasis was reported in 25.4% (Table 1).

Clinical involvement and comorbidities

Scalp involvement was present in 64.6% of patients, nail involvement in 29.6% and psoriatic arthritis in 14.6% (Figure 2B; Table 2). Metabolic comorbidities were documented—diabetes mellitus in 5.0%, hypertension in 8.3% and dyslipidaemia in 5.8%—consistent with the recognised association of psoriasis with cardiometabolic disease, which typically becomes more prominent with longer disease duration and greater severity [4,8,9].

Disease severity

Mean PASI was 10.3 ± 7.4, mean BSA 18.9 ± 12.8%, mean PGA 2.8 ± 0.9 and mean pruritus VAS 6.0 ± 2.3. By category, 55 patients had mild, 95 moderate and 90 severe disease (Table 2). This distribution, skewed toward moderate and severe disease, is typical of a hospital-based dermatology population.

Quality-of-life impact

Mean DLQI was 11.4 ± 6.0, corresponding to a large effect of psoriasis on patients' daily lives; by impact band, most patients fell in the moderate-to-very-large-effect categories. DLQI correlated strongly and positively with PASI (Pearson r = 0.87, $p < 0.001$) and with BSA (r = 0.81, $p < 0.001$) (Figure 2A; Table 3). Mean DLQI increased stepwise across severity categories—6.8 in mild, 8.9 in moderate and 16.8 in severe disease (Figure 1; Table 4). This graded structure–impact relationship reproduces the well-established finding that greater disease severity, and conversely greater clearance, maps onto proportionate change in quality of life [1,3,5].

Table 1: Demographic and disease characteristics (N=240).

Characteristic	Value
Age, years (mean ± SD)	44.5 ± 13.4
Male sex, n (%)	140 (58.3)
Age at onset, years	35.0 ± 14.7
Disease duration, years	9.5 ± 7.0
BMI, kg/m²	25.4 ± 3.9
Current smoker, %	15.0
Current alcohol use, %	22.5
Family history of psoriasis, %	25.4

Table 2: Clinical involvement, comorbidities and severity (N=240).

Feature	Value
Scalp involvement, %	64.6
Nail involvement, %	29.6
Psoriatic arthritis, %	14.6

Diabetes mellitus, %	5.0
Hypertension, %	8.3
Dyslipidaemia, %	5.8
PASI (mean ± SD)	10.3 ± 7.4
BSA, %	18.9 ± 12.8
PGA	2.8 ± 0.9
Pruritus VAS (0–10)	6.0 ± 2.3
Severity: mild / moderate / severe	55 / 95 / 90

Table 3: Correlation of DLQI with disease severity measures (Pearson).

Measure	r	*p* value
PASI	0.87	<0.001
BSA	0.81	<0.001

Table 4: Mean DLQI by psoriasis severity category.

Severity	Mean DLQI
Mild	6.8
Moderate	8.9
Severe	16.8
Overall (mean ± SD)	11.4 ± 6.0

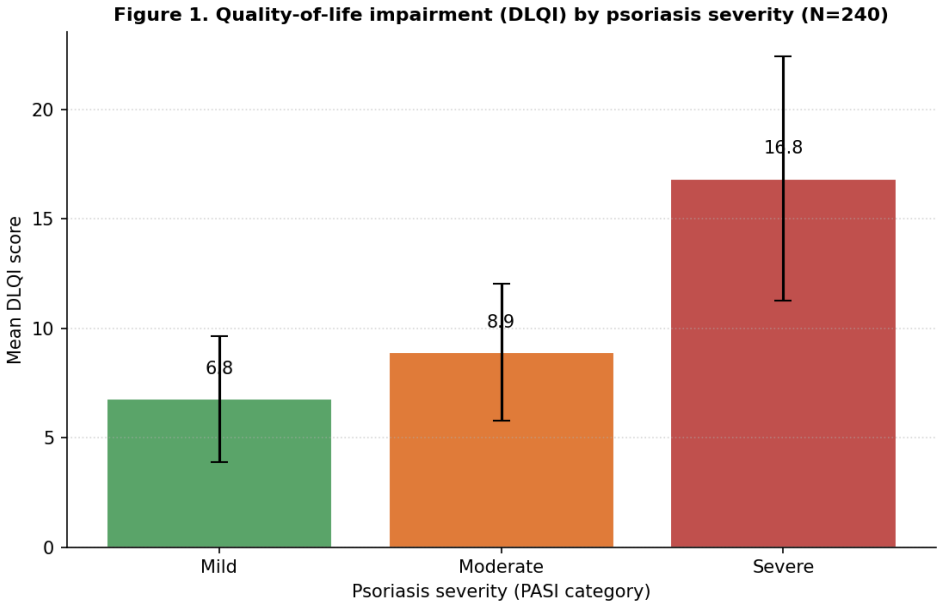

Figure 1. Mean DLQI score by psoriasis severity category (N=240); error bars are standard deviations.

Figure 2. Disease burden: severity-QoL correlation and clinical features

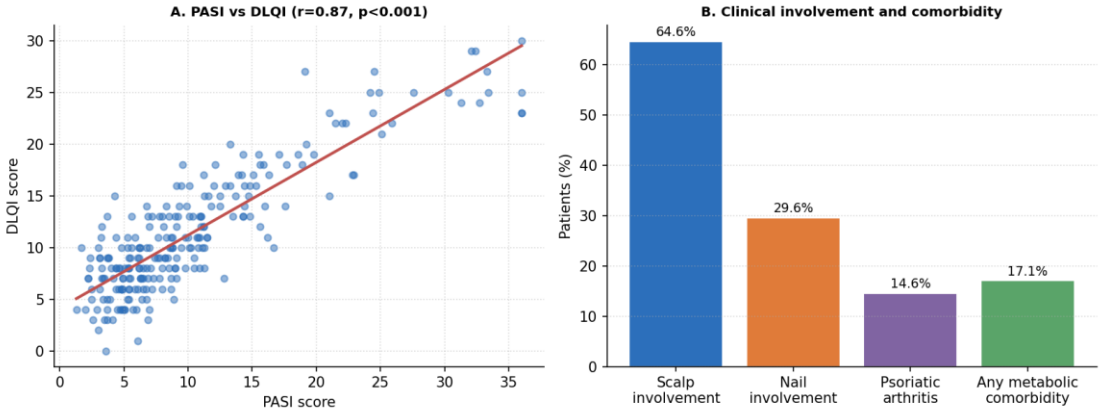

Figure 2. (A) Scatter of PASI versus DLQI with fitted regression line (r = 0.87, $p < 0.001$); (B) frequency of scalp involvement, nail involvement, psoriatic arthritis and any metabolic comorbidity.

Discussion

In this hospital-based cross-sectional study of 240 patients with chronic plaque psoriasis, disease exerted a substantial, severity-graded impact on quality of life: mean DLQI was 11.4, correlated strongly with PASI (r = 0.87) and BSA (r = 0.81), and rose from 6.8 in mild to 16.8 in severe disease. Scalp and nail involvement and psoriatic arthritis were common, and metabolic comorbidities were documented. These findings reproduce, in a South Indian setting, the core messages of the international psoriasis literature—that psoriasis is a systemic disease with a heavy, severity-dependent quality-of-life burden and important cardiometabolic associations [4,8,9]. The strong PASI–DLQI relationship is the central quantitative result and aligns closely with published data. Clinical-trial analyses have shown that improvement in PASI corresponds to improvement in DLQI, with the greatest quality-of-life gains in patients achieving the highest degrees of clearance [3,5], and psychometric studies confirm that the DLQI discriminates well by severity and is responsive to change [1,7]. The stepwise rise in DLQI across severity categories observed here—more than doubling from mild to severe disease—operationalises this relationship and reinforces the argument that clinical severity scores and patient-reported outcomes are complementary rather than interchangeable: two patients with similar PASI may differ in impact, and routine DLQI measurement captures the burden that skin scores alone may miss. The high mean pruritus score further reflects a symptom dimension that contributes substantially to impaired quality of life and is not fully captured by PASI.

The clinical involvement pattern has practical implications. Scalp involvement in nearly two-thirds and nail involvement in nearly one-third of patients are consistent with the recognised frequency of these sites and their disproportionate effect on quality of life and treatment satisfaction. Psoriatic arthritis in about one in seven patients underscores the need for systematic enquiry and examination for joint disease, since arthritis contributes independently to quality-of-life deterioration and to long-term disability [1]. The documented metabolic comorbidities, though modest in frequency in this cohort, are clinically important given the established link between psoriasis, adipokine-mediated inflammation, metabolic syndrome and cardiovascular risk [6,8,9]. In a South Indian population with a high background prevalence of diabetes and metabolic disease, active screening for and coordinated management of these comorbidities is a reasonable standard of care. Taken together, the findings support an integrated model of psoriasis care in which clinical severity, symptom burden (notably pruritus), quality of life and comorbidity are assessed together. Measuring DLQI routinely helps identify patients whose burden warrants escalation of therapy independent of skin score, and comorbidity screening addresses the systemic dimension of the disease. Because

comorbidity also constrains treatment choice, this integrated assessment informs safer and more effective management [9].

Conclusion

In cohort, chronic plaque psoriasis imposed a substantial and severity-graded quality-of-life burden, with frequent scalp and nail involvement and psoriatic arthritis and documented metabolic comorbidity. The strong correlation of DLQI with PASI and BSA, and the marked rise in DLQI with severity, support routine measurement of quality of life alongside clinical severity and systematic screening for comorbidities as part of integrated psoriasis care.

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