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## To compare both, the 5-d itch scale scores and the DLQI scores in patients with chronic plaque psoriasis with pruritus

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### Abstract

**Background and Method:** 80 patients of chronic plaque Psoriasis were evaluated under the study. Relevant history, clinical examination and necessary investigations along with PASI were done for all the patients. Severity of Pruritus was measured using the 5-D Itch scale. Quality of life of all chronic plaque psoriasis patients was evaluated by using Dermatology Life Quality Index (DLQI) structured questionnaire. It will be a prospective study in which patients will be selected randomly and the patients enrolled will be categorized under these.

**Result:** There is a significantly positive ( $P < 0.05$ ) correlation between 5-D Itch score and DLQI score, 5-D Itch score and PASI score as well as the DLQI and PASI score. The difference levels of DLQI and the 5-D Itch score was  $p > 0.05$  hence non-significant where as that of PASI with 5-D Itch score and DLQI respectively was  $P < 0.05$  hence significant. There is no significant difference in mean age of mild and severe pruritus patients.

**Conclusion:** We concluded, warranted in this context since our findings are not in keeping with previous literature suggesting pruritus affects mental health. Further, we observed that pruritus is associated with determinants to emotional well-being as measured by the DLQI and with detriments to other realms of mental health, including social functioning. Pruritus which may be underestimated & unaddressed in clinical practice at times, is a potentially serious and debilitating symptom that warrants medical attention and treatment, and further research investment.

**Keywords:** DLQI, plaque, psoriasis, pruritus

### Introduction

Psoriasis is universal in occurrence. In United States psoriasis affects about 2% of the population with approximately 150,000 newly diagnosed cases per year. The worldwide incidence varies considerably [1].

Psoriasis is a genetically determined immune-mediated inflammatory disease mediated by T-helper 1 (Th1)/Th17 T cells. With a prevalence of 0.44-2.8 per cent in India, it commonly affects individuals in their third or fourth decade with males being affected two times more common than females. Psoriasis significantly impairs the quality of life of patients and their families resulting in great physical, emotional and social burden [2].

Its prevalence varies from 0.3% or less in Mongoloids and more than 2% in Scandinavia. In both North America and Europe the prevalence has been estimated to be between 1% to 2%. In a recent community based study from U.K., a prevalence of 1.48% was found. The incidence of psoriasis ranges from 0.97% in South America to 1.3% in Germany, 1.6% in Great Britain, 1.7% in Denmark and 2.3% in Sweden [3].

Genetic factors play an important role in the pathogenesis of psoriasis. Based on population studies, the risk of psoriasis in an offspring has been estimated to be 41% if both the parents are affected, 14% if one of the parents is affected, and 6% if one sibling is affected, compared to 2% when no parent or sibling is affected. Concordance for psoriasis in monozygotic twins ranges from 35% to 73% in various studies. Despite multiple genome wide linkage studies, only 1 locus termed psoriasis susceptibility 1 (PSORS1) has been consistently confirmed [4]. PSORS1 is located in the major histocompatibility complex (MHC, chromosome 6p21.3) of HLA gene. Multiple HLA alleles have been associated with psoriasis, particularly HLA-B13, HLA-B37, HLA-B46,

HLA-B57, HLA-Cw1, HLA- Cw6, HLA-DR7 and HLA-DQ9 [5].

**Material and Method**

The study was conducted from June 2019 to May 2020, a total of 80 patients with chronic plaque Psoriasis were evaluated under the study in the Department of Dermatology, Venereology and leprosy, American International Institute of Medical Sciences, Udaipur (Rajasthan)

**Methods**

80 patients of chronic plaque Psoriasis were evaluated under the study. Relevant history, clinical examination and necessary investigations along with PASI were done for all the patients. Severity of Pruritus was measured using the 5-D Itch scale. Quality of life of all chronic plaque psoriasis patients was evaluated by using Dermatology Life Quality Index (DLQI) structured questionnaire. It will be a prospective study in which patients will be selected randomly and the patients enrolled will be categorized under these.

Arm 1: Patients with mild-moderate Pruritus

Arm 2: Patients with moderate-severe Pruritus

**Inclusion criteria**

1. Patients with chronic plaque psoriasis between the age of 16-70yrs.
2. Chronic plaque psoriasis patient of both sexes were to be evaluated.
3. All newly diagnosed cases, as well as old cases of psoriasis with exacerbations were evaluated under study.
4. Chronic plaque psoriasis involving a minimum 5% body surface area.
5. Chronic plaque psoriasis-associated pruritus, defined as at least 2 episodes of itch per week, the itch occurring several times a day, lasting for more than 5 minutes, being bothersome, and had been present for a minimum of 6 weeks.

**Exclusion criteria**

1. All patient of psoriasis below 16 yrs. were excluded from the study.
2. All patients not having a minimum 5% BSA involvement.
3. All patients not having pruritus as an accompanying symptom
4. All psoriasis patients who were handicapped or having other chronic debilitating diseases or other associated chronic skin disorders were excluded from the study.

**Results**

**Table 1:** Correlation matrix in study group

Correlation	5-D ITCH scale R (P-value)	DLQI score R (P-value)	PASI score R (P-value)
5-D Itch Scale	1	.939 (0.0001)	.881 (0.0001)
DLQI Score	.939 (0.0001)	1	.899 (0.0001)
PASI Score	.881(0.0001)	.899 (0.0001)	1
N	80	80	80

There is a significantly positive ( $P<0.05$ ) correlation between 5-D Itch score and DLQI score, 5-D Itch score and

PASI score as well as the DLQI and PASI score.

**Table 2:** Descriptive statistics

	Mean	Standard deviation	N
5-D ITCH Scale	13.45	5.930	80
DLQI Score	10.75	7.641	80
PASI Score	19.85	10.177	80

  

Difference of levels	T-value	P-value
DLQI Score - 5-D Itch Score	-1.95	0.128
PASI - 5-D Itch score	5.20	0.000
PASI - DLQI Score	7.15	0.000

The difference levels of DLQI and the 5-D Itch score was  $p>0.05$  hence non-significant where as that of PASI with 5-D Itch score and DLQI respectively was  $P<0.05$  hence significant.

**Table 3:** Comparison of mean age in mild-moderate and moderate-severe pruritus cases

Age (Years)	Pruritus	N	Mean	Standard deviation
Mean Age	Mild-Moderate	42	44.3	11.1
	Moderate-Severe	38	44.5	11.8

T-value = -0.08, P-value = 0.934

There is no significant difference in mean age of mild and severe pruritus patients

**Discussion**

Out of 80 patients, psoriasis associated pruritus had small effect on quality of life in 37.5% of the patients, moderate effect on 15% of patients and severe effect on 47.5% of patients. So Psoriasis with associated pruritus affected the QOL in 100% of the patients.

In our study significant correlation was found between the 5-D Itch scale score and the DLQI. Increase in the 5-d Itch scale score was associated with increased effect on quality of life.

The mean DLQI score was significantly higher in the moderate-severe pruritus group than in the mild-moderate pruritus group. The mean difference between the two groups remained significant ( $P<0.0001$ ).

Sampogna, Picardi *et al.* [6] in their study compared 25 dermatological conditions and showed that pruritus was one of the four deemed to have greatest effect on HRQL.

The results are in agreement with reported assessments in patients with cholestatic liver disease (Younossi *et al*) [7], chronic venous insufficiency (Duque *et al*) [8], and post renal transplantation (Moloney *et al*) [9]; these studies demonstrated pruritus was significantly associated with poorer HRQL using the SF-36, a modified Skindex-16, and the DLQI, respectively.

**Conclusion**

We concluded, warranted in this context since our findings are not in keeping with previous literature suggesting pruritus affects mental health. Further, we observed that pruritus is associated with determinants to emotional well-being as measured by the DLQI and with detriments to other realms of mental health, including social functioning. Pruritus which may be underestimated & unaddressed in clinical practice at times, is a potentially serious and debilitating symptom that warrants medical attention and treatment, and further research investment.

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