



## IMPACT OF PSORIASIS ON THE QUALITY OF LIFE

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## ABSTRACT

**Background:** The Quality of Life of a patient of psoriasis is similar to or worse than a patient of chronic diseases like ischemic heart disease, hypertension, diabetes and cancer, however no assessment of the same was available in Mauritius. Aim was to do a quantitative study of impact of psoriasis on the Quality of Life of the psoriatic.

**Methods:** A cross-sectional study of consecutive 55 patients of psoriasis was carried out at the Skin Outpatient department of a regional hospital in Mauritius. An assessment of impact of psoriasis on the Quality of Life of each patient of psoriasis was carried out using the Psoriasis Disability Index Questionnaire of A Y Finlay.

**Results:** Out of total 55 patients of psoriasis 30 (54.6%) had PDI score  $\geq 20$  and 25 (45.4%) patients  $< 20$ ; 14/19 (73.70%) women had PDI score  $> 20$ . (p value=0.024). The impact of psoriasis on the 'daily activities' of the psoriatic scored highest with (62.3%), followed by 'leisure' (39.2%), 'at work' (33.3%), 'treatment' (29.3%) and 'personal relationships' (8.1%).

**Conclusions:** The majority of the psoriatic had a severe negative impact on their Quality of Life which was most obvious in their 'daily activities' and in women.

**Key words:** Impact, Quality of Life, Psoriasis Disability Index, 'daily activities', women.

## INTRODUCTION

Psoriasis is a disease characterized by systemic chronic inflammation with prominent involvement of skin, joints and the skeletal system. Emerging evidences demonstrate association of psoriasis with obesity, dyslipidaemia, hypertension, Diabetes mellitus Type 2, cardiovascular disease and the stroke.<sup>1-4</sup>

A psoriatic is also at an increased risk of psychiatric illness. National Psoriasis Foundation patient-membership survey of 6,194 patients with severe

psoriasis revealed that 79% considered psoriasis had a negative impact on their quality of life.<sup>5</sup> The severity of the negative impact on QOL can be gauged from another study of 138 patients in which 7.2% reported thoughts of suicidal ideation.<sup>6</sup>

Quality of Life (QOL) is the term used to describe a person's emotional, social and physical well-being.<sup>7</sup> Among psoriatic, QOL is found to be similar to or worse than chronic diseases like ischemic heart disease, hypertension, diabetes and cancer.<sup>8,9</sup> During the past decade, dermatologists have taken much

interest in quantification of Quality of Life among skin patients to the benefit of patients, clinicians and ultimately decision makers.

Psoriasis affects the individual in all spheres of his life. For a psoriatic 'daily activities' like sleeping, walking, sitting and doing household chores or shopping might become difficult.<sup>10,11</sup> A psoriatic may dress differently to conceal the lesions of psoriasis, may change dress and bathe more frequently.<sup>10</sup> A psoriatic may be denied use of public facilities like swimming pools, health clubs and hair salons.<sup>12</sup>

The disabling nature of the disease restricts a psoriatic from practicing sports<sup>10</sup> and in selection of the career.<sup>13</sup> The work life and career of a psoriatic is affected as one has to take leave due to the disease and its treatment; earning capacity and productivity of the individual may also be reduced.<sup>13</sup>

Disease perception by spouse, family members, relatives and friends could make a psoriatic feel embarrassed or humiliated affecting the relationships and this may lead to depression and suicidal ideation.<sup>6,8</sup>

Psoriasis Area and Severity Index, is a measure of severity of psoriasis and is not directly related to the QOL. The Psoriasis Disability Index (PDI) and the Dermatology Life Quality Index Questionnaire are commonly used quantitative measures of impact on QOL of a psoriatic.<sup>14</sup> The PDI has been used in 20 different countries during the past two decades and is composed of 15 questions covering the disability in 'daily activities', 'at work', 'personal relationship', 'leisure' and 'treatment'.<sup>15</sup>

Aim was to make a quantitative study of the impact of psoriasis on Quality of life of the psoriatic.

## METHODS

A cross-sectional study of consecutive 55 patients of psoriasis was carried out at the Skin outpatient department of a Regional Hospital in Mauritius from February 2011 to October 2012. An approval of the Regional director of the hospital and an informed consent of the patient were obtained for the study. A convenience sample of patients of psoriasis attending Skin Outpatient Department was taken as source list of patients in the region was not available.

A clinical diagnosis of 'psoriasis vulgaris' was made on the basis of a typical clinical picture of well circumscribed, erythematous, scaly, chronic plaques on the scalp and the extensors. A diagnosis of the 'guttate psoriasis' was made in case of abrupt eruptions of typical psoriatic lesions of papular type, 'pustular psoriasis' if tiny sterile pustules

were found on the surface of a psoriatic plaque and 'psoriatic erythroderma' if extensive erythema and superficial scaling of more than 90% of the body surface occurred in a known case of psoriasis.<sup>16,17</sup> The clinical data about psoriasis and co-morbidities like obesity, hypertension, diabetes mellitus and cardiovascular diseases were collected.

Patient of psoriasis in remission of skin lesions of psoriasis or with isolated nail psoriasis or the guttate psoriasis found to be serologically positive for VDRL or TPHA test were excluded from the study.

The impact of psoriasis on Quality of Life of the psoriatic was studied using a disease specific 'Psoriasis Disability Index (PDI) Questionnaire' of A.Y.Finlay<sup>15</sup>. A written permission for the use of the said 'Psoriasis Disability Index questionnaire (PDI)' was obtained from Prof. A.Y. Finlay. A tick box system was used in the questionnaire for simplicity and clarity in the scoring.<sup>10,15</sup>

The questionnaire contained a total of fifteen questions, covering difficulty encountered under five different subsections during the previous 4 weeks. The five subsections were: daily activities, at work, personal relationships, leisure activities and treatment. A score from 0 to 3 was given in response to every question. The choice for each question was 'very much' (scored 3), 'a lot' (scored 2), 'a little' (scored 1), 'not at all' or no answer (scored 0).

The 'daily activities' section had 5 questions with a maximum score of 15, 'at work' 3 questions with a maximum score of 9, 'at leisure' 4 questions with a maximum score of 12, 'personal relationship' 2 questions with a maximum score of 6 and 'treatment' 1 question with a maximum score of 3. The maximum score for the whole questionnaire could be 45 and minimum 0. The total PDI scores were put in two categories: patients with total PDI score of < 20 and patients with total PDI score of  $\geq 20$ .

**Data Analysis:** The data obtained was recorded in a comprehensive Case Record Form (CRF) and statistically analysed using SPSS 22 (Statistical Package for the Social Sciences) software. The continuous data was described as mean and standard deviation. The categorical data was expressed as frequencies and percentages. Analysis of contingency tables was done by Fisher's Exact test. The categorical data was analyzed by Chi-squared test. A p value of < 0.05 was considered as statistically significant.

## RESULTS

A total of 55 patients of psoriasis were subjected to the 'Psoriasis Disability Index' Questionnaire. The age of patients of psoriasis ranged from 20 to 76 years and the mean age was 48.85 years,  $\pm$  SD 13.49;

36 (65.5%) patients were men and 19 (34.5%) patients women; 34 (61.8%) married, 11(20%) single, 7 (12.7%) widowed and 3 (5.5%) divorced; 25 (45.5%) employed and 18 (32.7%) patients unemployed. A total of 14 (25.4%) patients had psoriatic arthritis.

The minimum Psoriasis Disability Index (PDI) score recorded was 0 and maximum 39, the mean PDI score was 21.25 ± SD 10.5.

The PDI score was greater than or equal to 20 in 30 (54.6%) patients and less than 20 in 25 (45.4%) patients.

PDI score and the gender were associated significantly. (p value=0.024) Larger percentage of Female patients was seen with greater PDI score.

The highest PDI score (indicating the greatest disability) was recorded in ‘Daily activities’, followed by ‘Leisure activities’, ‘At work’ and ‘Treatment’. “Personal relationship” scored the least. The maximum score in the ‘Daily activities’ subsection in the PDI questionnaire was 15/15 and minimum 0. The mean score was 9.35 with SD 4.4. The maximum score in ‘At work’ subsection was 9/9 and minimum 0. The mean score was 3.95 with SD 3.6. No significant statistical association was found between patients who were unemployed and those who had a job.

**Table 1: PDI\* score and frequency**

PDI score	Patients (%)
<10	8 (14.5)
10 -19	17 (30.9)
20 - 29	14 (25.5)
>=30	16 (29.1)
Total	55 (100)

\*Psoriasis Disability Index

**Table 2: PDI score in male and female.**

Gender	PDI score groups		Total
	< = 20	> 20	
Male	21 (58.30)	15 (41.70)	36 (100)
Female	5 (26.30)	14 (73.70)	19 (100)
Total	26 (47.30)	29 (52.70)	55 (100)

**Table 3: Total score in each subsection of the PDI questionnaire**

PDI score	Patients (%)
Daily activities	62.3
At work	33.3
Personal Relationship	8.1
Leisure	39.2
Treatment	29.3

\*Psoriasis Disability Index

**Table 4: Details of responses to questions pertaining to the impact on ‘Daily activities’, ‘Work’ and ‘Leisure activities’ subsections of the PDI Questionnaire**

	No answer	Very much	A lot	A little	Not at all	Total
<b>Daily Activities</b>						
Work around the house or garden	0 (0)	27 (49.1)	8 (14.5)	6 (10.9)	14 (25.5)	55 (100)
Types or colors of clothes	0 (0)	45 (81.8)	1 (1.8)	4 (7.3)	5 (9.1)	55 (100)
Change or wash clothes	0 (0)	39 (70.9)	3 (5.5)	3 (5.5)	10 (18.2)	55 (100)
Problem at hairdresser	4 (7.3)	18 (32.7)	2 (3.6)	5 (9.1)	26 (47.3)	55 (100)
More Baths	0 (0)	29 (52.7)	4 (7.3)	4 (7.3)	18 (32.7)	55 (100)
<b>At work</b>						
Time off work	0 (0)	22 (40)	4 (7.3)	5 (9.1)	24 (43.6)	55 (100)
Problem at work	0 (0)	24 (43.6)	5 (9.1)	3 (5.5)	23 (41.8)	55 (100)
Career affected	0 (0)	19 (34.5)	2 (3.6)	0 (0)	34 (61.8)	55 (100)
<b>Leisure activities</b>						
Stopped going out socially	1 (1.8)	22 (40)	6 (10.9)	6 (10.9)	20 (36.4)	55 (100)
Difficulty in doing sports	1 (1.8)	14 (25.5)	5 (9.1)	5 (9.1)	30 (54.5)	55 (100)
Stopped using communal facilities	5 (9.1)	28 (50.9)	3 (5.5)	4 (7.3)	15 (27.3)	55 (100)
Smoking and Drinking alcohol	3 (5.5)	7 (12.7)	1 (1.8)	0 (0)	44 (80)	55 (100)

Figure in parenthesis indicate percentage

The maximum score in ‘Leisure activities’ subsection in the PDI questionnaire was 12/12 and minimum 0. The mean score was 4.7 with SD 3.5. Only 8 (22.2%) male patients had reported that they were not at all affected by psoriasis; rest of the male patients and all the female patients were affected (that is answered as either ‘very much’, ‘a lot’ or ‘a little’).

The maximum score in the ‘personal relationships’ subsection in the PDI questionnaire was 6/6 and minimum 0. The mean score was 0.56 with SD 1.1. This subset had the least scores. Only 7% of patient had responded to ‘very much’ for the two questions; 24 % of patient did not respond to the question on sexual difficulties. No statistical significant association could be seen between divorced, single patients with patients who were married.

The maximum score in 'Problem with Treatment' section in the PDI questionnaire was 3/3 and minimum 0. The mean score was 2.25 with SD 1.1; 34 patients (61.8%) were very much affected by the treatments and about 10 patients (18.5%) marked the 'a lot' tick box.

In this study among male patients 20/36 (55.6%) had PDI scores  $\leq 20$ , and among female patients 14/19 (73.6%) had PDI scores  $> 20$ . The association between PDI and gender was statistically significant. ( $p$  value 0.024). The complaint of pruritus was present in 32 (58.2%). No statistically significant association between pruritus and episodes of exacerbation, severity of disease (BSA) and total PDI score could be established.

The most frequent co-morbidities reported were Obesity 28 (54.6%), Diabetes Mellitus Type II 18 (32.7%) followed by Hypertension 14 (25.4%), and Cardiovascular disorders 7 (12.7%). Following diseases were reported in 41 (74.5%) patients. They were Vitiligo, Bronchial asthma, Hepatitis C, Diabetes mellitus Type I, Transient ischaemic accident, Adenocarcinoma of colon and Depression. Limbs and the trunk were the commonest involved body sites. Psoriasis vulgaris was the clinical type observed in 53 (96.4%), guttate psoriasis in 1 (1.8%) and psoriatic arthritis in 14 (40.0%).

## DISCUSSION

The mean PDI (Psoriasis disability index) score of a patient of psoriasis in the study, was  $20.84 \pm SD 10.4$  with a maximum 39. The score in this study was twice than that of an Indian study and a European-survey.<sup>18,19</sup> In a cluster analysis of 50 patients in India, the authors recorded a mean total PDI score of 9.38 with a maximum score of 48.<sup>18</sup> A modified scoring was adopted by the author and the questionnaire had 16 questions with a maximum score of 48.<sup>18</sup>

The impact on QOL in this study, was highest in subset "daily activities" (score 62.3%), followed by "leisure activities", "at work", "treatment" and least in the "personal relationship".

A study in Kerala observed that QOL was most affected in the subset "daily activities" (90.6%), followed by work (84.4%), leisure (71.9%), problems with treatment (68.7%) and the personal relations (62.5%).<sup>20</sup> According to the EUROPSO survey, 48% of reported problems were related to activities of 'daily living' and less disability was reported in employment, personal relationships, and behaviour (smoking or drinking).<sup>19</sup>

Patients paid particular importance to the type and colour of clothing to conceal psoriatic lesions, 81.8% patients had responded as affected "very much" to

this question. Patients reported wearing long sleeved clothes and preferred trousers or long dresses or skirts while going out. The psoriatic patients also reported using pale colours, as the scales were more prominent on dark coloured clothes. Rakhesh et al<sup>21</sup> and the EUROPSO survey<sup>19</sup> also reported a high response rate for the questions on clothes and baths. It was observed that questions pertaining to the impact on choice of clothing and need for frequent change or washing were mostly answered by 'a lot' or 'very much' like other studies and surveys.<sup>11,20,21</sup> Problems at the hair dresser scored least in this study. Patients reported that they usually did not visit the hairdresser but preferred to do the haircut themselves at their home.

The impact on the QOL of the psoriatic in the "daily activities" is unanimously confirmed.<sup>11,18,20,21</sup>

In this study, 45.5% of patients were employed. Nearly half of the patients found psoriasis to be a problem 'at work' and lost time off work, 38% of patient reported their career to be affected. Few patients had to change their jobs due to the disease. They opted for careers where they were not in direct contact with the public; 32.7% of psoriasis patients were unemployed and they related psoriasis as the cause of unemployment, this was statistically not significant. Manjula et al<sup>20</sup> reported that 84.4 % of patients psoriasis were affected 'at work'. The career seemed to be less affected as per Dubertret et al and Rakhesh et al.<sup>19,21</sup>

It should be noted that 24% of patients did not respond to the question on 'sexual difficulties', hence scored 0 for the unanswered question. Cultural reluctance to answer this question or merely the fact that 42.7% of patients were single, widowed or divorced could be the reason for the poor response rate to this question. The survey carried out in European countries has reported that more than a quarter of respondents were significantly affected within sexual relationships.<sup>19</sup>

In the Mauritian context, the communal facilities commonly used are the public beaches. More than half of the patients responded to the question pertaining to it by answering affected "very much". Few reported going to beaches early morning when the visitors would be scarce. More than half of the patients avoided social events; 40% had responded by answering affected "very much" and 10.9% "a lot". Similar findings were noted by Rakhesh et al.<sup>21</sup>

In this study 25.5% of the patients found it "very much" difficult to practice any sports mainly due to pain and disability due to the disease. In contrast, Rakhesh et al reported a much lower impact on sports activities and related their findings to the cultural differences and the life style.<sup>21</sup>

Majority of the patients in the study (61%), found the treatment very messy; consistent with findings by Manjula et al. from Kerala.<sup>20</sup>

## CONCLUSION

Psoriasis caused a severe negative impact on the Quality of Life in majority of the patients. The majority of women had a severe disability unlike men. The negative impact due to psoriasis was greatest on "daily activities", followed by "leisure activities", "at work", and the "personal relationship" of the patient. Majority of the patients of psoriasis had "problems with treatment" as it was "very messy."

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