

## QUALITY OF LIFE MEASUREMENT IN PATIENTS WITH PSORIASIS AT A TERTIARY CARE TEACHING HOSPITAL OF SURAT, GUJARAT

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### ABSTRACT

#### BACKGROUND

Psoriasis is a chronic, inflammatory dermatosis characterized by erythematous, scaly lesions covering extensive areas of the skin with prevalence of 2-3% in the general population. Psoriasis do not affect survival often, but has major negative effects on quality of life of patients.

Aims- Assessment of the quality of life and psychological distress in patients diagnosed with psoriasis.

#### MATERIALS AND METHODS

100 consecutive consenting patients with psoriasis of age more than 16 years and of both sexes were assessed. The study subjects attended dermatology outpatient department of a tertiary care centre. Clinical severity of disease was measured using psoriasis area severity index (PASI) and psoriasis disability index (PDI). Psychological distress was measured by hospital anxiety and depression scale (HADS). Statistical analysis was performed using chi-square analysis and Pearson's correlation coefficients.

#### RESULTS

44% of the patients were diagnosed with anxiety and 21% with depression. Significant correlation was noted between the PASI score, PDI and HADS. Among the two groups of patients based on their PASI scores; group I (PASI < 18); group II (PASI > 18) the mean of the PDI and its subdivisions in each of the clinical severity groups were compared. Results revealed that the total PDI and all its subdivisions (except questions relating to leisure and treatment) were significantly higher in group II (PASI > 18).

#### CONCLUSION

This study suggests that severely affected psoriasis patients require a holistic approach for treatment where both medical and psychological measures should be taken into consideration.

#### KEYWORDS

Disability, psoriasis, quality of life, depression, correlation analysis.

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#### BACKGROUND

Psoriasis is a chronic, inflammatory dermatosis characterized by erythematous, scaly lesions covering extensive areas of the skin with prevalence of 2-3% in the general population.<sup>1</sup> Psoriasis ravages the quality of life (QOL) of affected individuals, particularly because of its visibility.<sup>2</sup> The embarrassment, stigma and social anxiety caused by the illness often leads to emotional distancing, isolation, anxiety and depression affecting the quality of Life.<sup>3,4</sup> Anxiety and depression remain the most common psychiatric disorders in patients with chronic dermatological disorders especially Psoriasis.<sup>5,6</sup> Thus assessment by a health professional of the extent of apparent disease in terms of the clinical severity

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alone may not suffice, and a more holistic approach to the quality of life is mandatory.<sup>7</sup> Data on physical, psychological, and social functioning of patients with psoriasis have been presented in many studies. The introduction of quality-of-life questionnaires has made it possible to systematically compare these data across studies.<sup>8</sup>

However there are not many studies supporting the observation. Hence more prospective clinico-epidemiological studies using appropriate psychometric instrument for assessing quality of life are required for better understanding of disease burden of patients. Thus the purpose of this study was to evaluate the quality of life of patients with psoriasis, to verify whether there is a correlation between quality of life and clinical improvement, to assess psychology of patients, so as to provide early psychological intervention in adjunct to dermatological treatment for good outcomes. Additionally, data will be presented in relation between demographic and clinical variables and quality of life.



**MATERIALS AND METHODS**

The study was conducted over a period of 18 months from May 2010 to October 2011, in the department of dermatology, new civil hospital, Government Medical College, Surat. A total of 100 patients with Psoriasis were evaluated under the study. Inclusion Criteria for the patients was patients with all types of Psoriasis (newly diagnosed cases as well as old cases of psoriasis with exacerbations) above age of 16yr of both sexes were evaluated. Excluded were the patients of psoriasis below 16yrs and who were handicapped (mentally and physically) or having other chronic debilitating diseases or other associated chronic skin disorders.

Relevant history, clinical examination and necessary investigations along with PASI were done for all the 100 patients. Quality of life of all psoriasis patients was evaluated by using PDI structured questionnaire. Screening for anxiety and depression in all the above patients was done using Hospital Anxiety and Depression Scale (HADS). Copy right permission for the use of PDI scale in our study was taken by Dr. A. Y. Finlay, Professor and HOD Department Of Dermatology, University of medicine Cardiff, Wales, U.K. The original PDI is a 15-item standardized questionnaire designed to quantify the functional disability in aspects of daily activities, employment, personal relationships, leisure, and treatment effects in psoriasis patients. The scoring of each question is answered by the patients on a series of four answers; not at all (scores 0), a little (scores 1), a lot (scores

2), very much (scores 3). The resulting score ranged from 0 to 45. The higher the score, the more the quality of life is impaired. The PDI can also be expressed as a percentage of maximum possible score of 45.<sup>9,10</sup> The question base was 4 weeks. Clinical severity was measured using psoriasis area severity index (PASI). PASI combines the assessment of the severity of lesions and the area affected into a single score in the range 0 (no disease) to 72 (maximal disease). For calculation of PASI, body is divided into four sections head (H) (10% of a person's skin); arms (A) (20%); trunk (T) (30%); legs (L) (40%). Each of these areas is scored by itself, and then the four scores are combined into the final PASI. For each section, the percent of area of skin involved, is estimated and then transformed into a grade from 0 to 6: 0% of involved area: grade 0, < 10% of involved area: grade 1, 10-29% of involved area: grade2, 30-49% of involved area: grade3, 50-69% of involved area: grade 4, 70-89% of involved area: grade 5, 90-100% of involved area: grade 6. Within each area, the severity is estimated by three clinical signs: Erythema (redness), Induration (thickness) and Desquamation (scaling). Severity parameters are measured on a scale of 0 to 4, from none to maximum. The sum of all three severity parameters is than calculated for each section of skin, multiplied by the area score for that area and multiplied by weight of respective section (0.1 for head, 0.2 for arms, 0.3 for body and 0.4 for legs).<sup>11</sup>

Formula:  

$$PASI = 0.1 \cdot (E_H + I_H + D_H) \cdot A_H + 0.2 \cdot (E_A + I_A + D_A) \cdot A_A + 0.3 \cdot (E_T + I_T + D_T) \cdot A_T + 0.4 \cdot (E_L + I_L + D_L) \cdot A_L$$

A PASI score of more than 18 delineated a subgroup of patients with higher overall physical disability and higher stress rating. Aspects of daily activities, employment, and personal relationships were the most affected in this subgroup with higher clinical severity. Thus, a cut off point for PASI (PASI > 18), which was earlier reported<sup>11</sup> as an indication for starting systemic therapy, also served to delineate a subgroup of people with more or less physical disability and psychological-stress.

About Hospital anxiety and depression scale, it is a self-administered scale usually used in research purpose to screen the patients for anxiety and depression. Interpretation of HADS scale is like questions 2, 4, 6, 8, 11, 12, 14 evaluates anxiety and questions 1, 3, 5, 7, 9, 10, 13 evaluates Depression. Scoring is done like 3, 2, 1, 0 (for question 7 and 10 the scoring is reversed). Score 0 to 7 is graded as non-case, 8 to 10 is border line case and for 11 + is a Case.

Analysis was done using SPSS Software (statistical package).

**RESULTS**

| Patient Demographics (n=100) | Male (65) | Female (75) | Total | P-value |
|------------------------------|-----------|-------------|-------|---------|
| <b>Age (yrs.)</b>            |           |             |       | 0.361   |
| 16-20                        | 4         | 4           | 8     |         |
| 21-30                        | 13        | 12          | 25    |         |
| 31-40                        | 18        | 8           | 26    |         |
| 41-50                        | 19        | 5           | 24    |         |
| 51-60                        | 9         | 4           | 13    |         |
| 61-70                        | 2         | 2           | 4     |         |
| <b>Marital Status</b>        |           |             |       | 0.464   |
| Married                      | 49        | 24          | 73    |         |
| Unmarried                    | 16        | 11          | 27    |         |

**Table 1. Distribution of Patient's Demographics**

| Associated Factors                   | Male | Female | Total | p-Value |
|--------------------------------------|------|--------|-------|---------|
| <b>Pruritus</b>                      |      |        |       |         |
| Absent                               | 13   | 1      | 14    | 0.134   |
| Present                              | 52   | 34     | 86    |         |
| <b>Anxiety</b>                       |      |        |       |         |
| Non-case                             | 25   | 10     | 35    | 0.142   |
| Borderline                           | 28   | 22     | 50    |         |
| Case                                 | 12   | 3      | 15    |         |
| <b>Depression</b>                    |      |        |       |         |
| Non-case                             | 53   | 26     | 79    | 0.850   |
| Borderline                           | 11   | 7      | 18    |         |
| Case                                 | 1    | 2      | 3     |         |
| <b>Duration of Disease in Months</b> |      |        |       |         |
| 0-12                                 | 19   | 9      | 28    | 0.290   |
| 13-60                                | 30   | 14     | 44    |         |
| 61-120                               | 13   | 5      | 18    |         |
| 121-180                              | 1    | 3      | 4     |         |
| 181-240                              | 1    | 2      | 3     |         |
| 241-360                              | 1    | 2      | 3     |         |
| <b>PASI score</b>                    |      |        |       |         |
| <18                                  | 40   | 19     | 59    | 0.482   |
| >18                                  | 25   | 16     | 41    |         |

**Table 2. Distribution of Study Subject According to Factors Associated with Psoriasis**

$\chi^2$  test, df=1, \*p value < 0.05 (significant)

| Score                | r (Correlation) | P-Value    |
|----------------------|-----------------|------------|
| Anxiety & Depression | .648            | <0.001(HS) |
| Anxiety & PDI        | .725            | <0.001(HS) |
| Anxiety & PASI       | .817            | <0.001(HS) |
| Depression & PDI     | .456            | <0.001(HS) |
| Depression & PASI    | .565            | <0.001(HS) |
| PDI & PASI           | .891            | <0.001(HS) |

**Table 3. Correlation Matrix Showing the Relationship Between Mean PASI, PDI and Anxiety and Depression**

Significant correlation (Pearson’s correlation) was found between PASI and PDI. Mean PDI score is 20.05 and Mean PASI score is 15.95. Increase in the PASI score was associated with increased affection on Quality of life. Similar correlation is found between anxiety and depression with PASI and PDI. Thus increase in anxiety and depression was associated with increased values of PASI and PDI and thus increased affection on Quality of life.

| PDI Subdivisions   | PASI    |         |
|--------------------|---------|---------|
|                    | r-value | p-value |
| Daily activities   | 0.836   | 0.000   |
| Employment         | 0.863   | 0.000   |
| Personal relations | 0.778   | 0.000   |
| Leisure            | 0.458   | 0.001   |
| Treatment          | 0.297   | 0.003   |

**Table 4. Pearson’s Correlation Coefficient for Relation Between Total PASI Scores and Subdivisions of PDI**

The clinical severity measurement (PASI) is correlated significantly with the overall physical disability (PDI) and individual aspects of the PDI.

| QOL Indices           | PASI<18 | PASI>18 | P-VALUE    |
|-----------------------|---------|---------|------------|
| Daily activities      | 5.37    | 11.49   | <0.001(HS) |
| Employment related    | 1.93    | 6.85    | <0.001(HS) |
| Personal relationship | 1.20    | 3.56    | <0.001(HS) |
| Leisure               | 5.36    | 6.07    | .089 (NS)  |
| Treatment related     | 0.29    | 0.44    | .154 (NS)  |
| Total PDI             | 14.17   | 28.51   | <0.001(HS) |

**Table 5. Association Between the Mean Scores of Total PDI and the Two Clinical Severity Groups of PASI. Group I, PASI < 18; and Group II, PASI > 18**

**DISCUSSION**

Maximum patients (26%) were between the age group of 30-40yrs with 65% males and 35% females. In the present study 28% of pts reported duration of illness below 1yr, 72% of pts had psoriasis for more than 1yrs. The prolonged duration of the disease reveals the chronicity of the disease with frequent remissions and exacerbations. In the present study 79% of patients attributed the initiation or worsening of the disease due to stress. In this study 86% of pts complained of pruritus. Changs S E<sup>12</sup> et al and Krueger G<sup>13</sup> et al in their studies reported that 73.7% and 50% of their psoriasis patients complained of pruritus. There is increased incidence of pruritus associated with psoriasis in our study. The increased incidence and degree of pruritus in patients with psoriasis is strongly correlated to anxious and depressive psychopathology. Out of 100 patients who screened for anxiety and depression using HADS scale, 33% of the pts were borderline cases of anxiety and 11% of the pts were a case of anxiety. In total 44% of the pts were diagnosed as probable case of anxiety. Also, in our study 21% of the patients were diagnosed to be probable case of depression, of whom 18% were a borderline case of depression and 3% are the case of depression. Jowett and Ryan<sup>14</sup> found that 24% of the patients had depression and 58% suffered from anxiety. In a study,<sup>15</sup> at a tertiary clinic for Psoriasis, 43% of the patients satisfied the criteria for anxiety disorder according to HADS scale. Sharma N, Koranne RV, Singh RK<sup>16</sup> reported 23.3% and 10% depression in psoriasis. Thus the findings in our study is very much similar to the outcomes in the above mentioned studies.

*Quality of life in Psoriasis Patients*

Out of 100 psoriasis patients examined almost 99% patients shows affection on quality of life. The mean PDI score is 20.05 and the mean PASI score is 15.95. Gladys Aires Martins et al in their study reported that psoriasis affected the quality of life in 99% of patients with age varying from 20 and 70 yrs.<sup>17</sup> In a survey by the national psoriasis foundation almost 75% of patients believed that psoriasis

had moderate to large negative impact on their quality of life, with alterations in their daily activities.<sup>13</sup>

#### *Correlation b/w PASI and PDI scores*

In our study significant correlation was found between the PASI score and PDI. Increase in the PASI score was associated with increased affection on quality of life. In our study, a PASI score of more than 18 delineated a subgroup of patients with higher overall physical disability and higher stress rating. Thus, a cut off point for PASI (PASI > 18), which was earlier reported<sup>11</sup> as an indication for starting systemic therapy, also served to delineate a subgroup of people with more physical disability and psychological stress. Aspects of daily activities, employment, and personal relationships of PDI scale were the most affected in this subgroup with higher clinical severity i.e. with PASI > 18 while aspects related to Leisure and Treatment are not affected much by increase and decrease of PASI score (p value > 0.005). (Table 3 correlation analysis).

The absence of any significant association between the clinical severity and treatment-related activities (which included a question relating to treatment which made their home messy or untidy) points towards the fact that subject with more clinical disease would actually be admitted in hospital wards and thus treatment would hardly make their home messy and when similar questions were asked to subject with less clinical disease treatment hardly made their home messy.

The absence of any significant association between the clinical severity and Leisure activities (which included a question relating to attending social functions, sports, using communal bathing or changing facilities and increased smoking or drinking habits due to psoriasis) points towards the fact that most of our subjects were of low socio-economic class. Females being housewives and most of the men were manual labourers as the study place was 'service free' government hospital. Thus a subject with a more severe clinical disease if belong to lower socio-economic status would hardly attend any functions or get involved in sports and vice-versa a subject with a less severe clinical disease if belong to higher socio-economic status would get affected more in leisure aspect of his life even with his low psoriasis illness. Secondly area getting involved in patients with psoriasis affects the Leisure aspect of PDI scale in many ways. Patient with disease on exposed parts affect this component of PDI more than disease on unexposed parts in psoriasis patients and thus explains the absence of clinical severity association with the Leisure component.

Our findings were in concordance with those of other investigators like Finlay,<sup>18</sup> Aschroft<sup>19</sup> and Gelfand<sup>20</sup> who also found moderate correlation between PASI scores and PDI scores. Yang et al<sup>21</sup> and Fortune et al, however, did not find any significant correlation between PASI scores and PDI scores. On closer examination of Fortune's study, we noted that most of his patients had low clinical severity scores (mean PASI = 8.8) as compared to our study (mean PASI = 15.95). Koo et al had demonstrated earlier that PDI is a more reliable instrument for people with severe psoriasis, who

have more physical disability and limitations related to life styles. Hence the extensive clinical involvement in most of our patients causing physical disability and imposing limitations on their life styles, explains the highly significant correlation between PASI and PDI in this study. This is in contrast to Fortune's patients, who had milder disease so as not to interfere with their life styles. Recently, the psychometric properties of PDI have been analyzed, leading to the conclusion that PDI is not well targeted to measuring disease impact among patients with low levels of disability.<sup>22</sup>

#### **CONCLUSION**

To conclude, our study has highlighted the importance of adopting a multidimensional assessment of quality of life in psoriasis. Study suggested that psoriasis patients have a significant negative impact on Quality of life affecting physical, psychological and emotional wellbeing. Therefore, a complete evaluation of quality of life of psoriasis patients is important which also encompass clinical and psychological measures and just not the clinical severity to make therapeutic decisions. Many more studies are needed in large group of patients with psoriasis to evolve comprehensive treatment guidelines involving the treatment of psychiatric morbidity associated with psoriasis in the overall successful management of psoriasis.

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