

ORIGINAL ARTICLE

DERMATOLOGY LIFE QUALITY INDEX IN PATIENTS OF PSORIASIS AND ITS CORRELATION WITH SEVERITY OF DISEASE

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Background: Patient suffering from psoriasis can be severely affected in their day to day activities and it may also result in reduced work efficiency and absenteeism from work leading to financial burden on the patient's family. This study was conducted using Dermatology Life Quality Index to assess the quality of life of a patient suffering from psoriasis being treated at a military hospital. **Methods:** This cross-sectional study was conducted in the outpatient unit of Department of Dermatology, Combined Military Hospital Abbottabad from 1st October 2013 to 31st June 2014. The demographic data and Dermatology Life Quality Index of patients of psoriasis were recorded using a standard questionnaire and their final score was calculated to assess the effect of disease on patient's life. Extent/ severity of disease were assessed according to the body surface area involved. The data was analysed using SPSS-18. Mean and SD for numerical variables and frequencies and percentages for categorical were calculated. **Results:** A total of 160 patients fulfilling the inclusion criteria were included in the study. Mean age of the patients was 40.48 years (± 12.58 years) with minimum age of 18 years and maximum of 74 years. 118 patients were males (73.8%) and 42 were females (26.2%). Twenty (12.5%) patients had no effect on their life by the disease while 5 (3.1%) had extremely large effect. Most patients, i.e., 68 (42.5%) had moderate effect on their lives. 69 patients had mild psoriasis as per body surface area involved, 70 had moderate disease and 21 had severe disease. **Conclusion:** Psoriasis affects quality of life of patients not only physically but also psychologically and financially even when patients are under treatment. Psychological aspects also need to be addressed while treating the physical morbidity.

Keywords: Psoriasis; Quality of life; Social; Dermatology Life Quality Index; Body surface area

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INTRODUCTION

Psoriasis is a chronic skin disorder which affects both professional and social aspects of a person's life. The extent of disease varies from mild itch to severely incapacitating illness. Day to day activities are affected in direct proportion to severity of itch, pain, site and extent of lesions. Disease flare ups often cause absence from work and reduced work efficiency resulting in increased financial burden on the family.^{1,2} Personal life is much more affected as Psoriasis causes disfigurement which leads to anxiety, depression and low self-esteem along with marital problems and in severe cases may even generate suicidal thoughts.³ As the disease is chronic, the quality of life decreases with time.⁴

Number of diagnosed patients of psoriasis is increasing as awareness amongst our society is increasing and most cases are referred to dermatologists for management. Managing psoriasis involves a multifaceted approach where factors such as extent and severity of disease, site of involvement, controlling complications of disease and treatment must be kept in mind.⁵ Despite all measures, most of the patients are not satisfied with their treatment.

Furthermore, we still must highlight the psychosocial aspects of this chronic skin disease and divert some part of our resources and energies in minimizing the emotional, psychological and physical handicap associated with psoriasis.^{5,6}

To assess the impact of Psoriasis on the quality of an affected individual, Dermatology Life Quality Index (DLQI) has been used in many international studies.⁷⁻⁹ It is the most commonly used questionnaire to measure health related quality of life (QOL) in patients of psoriasis.¹⁰ DLQI is a questionnaire comprising 10 questions covering the different topics related to skin disease such as symptoms, change in habits, hobbies, clothing style, leisure and social activities etc.¹¹⁻¹³ Different studies have revealed different results with one studying implying that psoriasis had a small effect on patients' life while another study showing that it has a moderate effect on the life of patients.^{6,14} Using DLQI has helped dermatologists measure the negative effects that a chronic skin disorder like psoriasis has on a patient's life particularly the psycho-social aspects. It determines how much of impairment psoriasis had on day to day activities of patients, the impact on work and person to person contact and the

problems that the patients face in their relationships with their spouse, relatives and friends. The impact on their leisure and recreational activities is also established.

A thorough search on electronic data revealed that to date, very limited study has been conducted in Pakistan which highlights this issue.¹⁵ This study was therefore conducted using Dermatology Life Quality Index to assess the quality of life of a patient suffering from psoriasis being treated at a military hospital.

MATERIAL AND METHODS

This cross-sectional study was conducted in the outpatient unit of Department of Dermatology, Combined Military Hospital Abbottabad from 1st October 2013 to 31st June 2014. All patients of either gender and older than 18 years, with clinically diagnosed psoriasis of any severity having more than 6 months duration were included in this study using non-probability consecutive sampling. Patients were informed about the parameters of the study and written consent was taken. The study was approved by the Hospital Ethics Committee. History of the patient was taken; clinical examination and relevant investigations were done to rule out any other concomitant chronic skin or systemic disease. Patients younger than 18 years, patients unwilling to participate in this study or patients having any other skin or systemic disease were not included in this study.

The demographic data of the patients was recorded on a specially designed patient's *pro forma*, which included name, gender and age of the patient along with other details such as hospital medical record number, duration of disease, whether on treatment or not, duration of treatment, occupation, DLQI score and extent of disease.

DLQI was recorded by the researcher himself from the patients on a standard questionnaire.¹²⁻¹⁴ This questionnaire comprises 10 questions in which patients were asked about clinical severity like itching, pain and soreness over last week, difficulty in household functioning and social interactions like sports, work place, shopping and leisure activities. Questionnaire also included queries about social problems such as personal relationship with relatives and friends. The answers to the ten questions included in DLQI were as follows; "Very much" was given a score of 3, "A lot" was scored as 2, "A little" was scored as 1 and "Not at all" was scored 0. Question three to ten also included the option of "Not relevant" with a score of 0.

Question number seven has two parts, the first part has three choices which are; "yes" scored as 3, "No" and "Not relevant" scored as 0. The second

part of question seven is answered if the option in the first part is selected as "No" and it has three choices which are scored as; Score 2 correlating with "A lot", a score of 1 correlating with "A little" or score 0, which would indicate "Not at all". The maximum score of 30 indicates highest possible impairment of quality of life and the minimum score is 0. The final DLQI score is then used to divide the patients into five categories implicating the effect of disease on patient's life (Table-1). Patients getting 0 to 1 score fall into the first category which means that the disease has "no effect at all on patient's life". Score 2 to 5 means "small effect on patient's life". Similarly, score 6 to 10 demonstrates that disease has "moderate effect", score 11 to 20 has "very large effect" and score 21 to 30 has "extremely large effect on patient's life".

Extent / severity of the disease was measured using "rule of 9" for the percentage of the body surface area (BSA) involved, which means head 9%, each upper limb 9%, anterior trunk 18%, posterior trunk 18%, perineum 1% and each lower limb 18%. Based on the percentage of the body area involved, severity of the disease was divided into three categories. Patients with involved skin BSA from 0 to 25% were labelled as "mild", those having skin involvement of 26 to 50% as "moderate" and more than 50% of skin area involvement as "severe" (Table-2).

The data was analysed using SPSS version 18. Mean and SD were calculated for numerical variables such as age. Frequencies and percentages were presented for categorical variables such as gender, extent of disease and DLQI score categories.

RESULTS

A total of 160 patients fulfilling the inclusion criteria were included in the study. Mean age of the patients was 40.48 years (± 12.58 years) with minimum age of 18 years and maximum of 74 years. One hundred and eighteen patients were males were (73.8%) and 42 were females (26.2%). Frequencies of the patients falling into different categories of disease effect on patient's life as per DLQI score are summarized in table-1. Most of the patients (n=68, 42.5%) scored six to ten points falling into the third category i.e. the disease had moderate effect of their life. Severity was measured by extent of disease in terms of BSA involved and the results are summarized in table-2. Correlation between extent/severity of disease and effect on patient's life is summarized in table-3. Out of 69 patients with mild disease (BSA <25%), 20 had no effect of psoriasis on their lives, 35 had small effect, 13 had moderate effect and 1 had very large effect. 70 patients had moderate disease (BSA 26-50%), 17 reported small effect on their lives, 46 reported moderate effect, 6 had large effect

while only 1 patient reported as having extremely large effect. Patients with severe disease (BSA >50%), 9 patients reported psoriasis having moderate effect on their quality of life, 8 reported very large effect and 4 patients reported that psoriasis had an extremely large effect on their quality of life.

Table-1: Frequency of patients affected by disease and its impact on their life according to Dermatology Life Quality Index (DLQI) score

DLQI score range	Category	Frequency	Percentage
0-1	No effect	20	12.5
2-5	Small effect	52	32.5
6-10	Moderate effect	68	42.5
11-20	Very large effect	15	9.4
21-30	Extremely large effect	5	3.1
Total		160	100

Table-2: Frequency of patients showing severity of disease according to the body surface area involved

Extent of disease (% of body surface area involved)	Severity	Frequency	Percentage
0-25%	Mild	69	43.1
26-50%	Moderate	70	43.8
>50%	Severe	21	13.1
Total		160	100

Table-3: Correlation between severity of disease and effect on patient's life

Severity of disease	Effect on patient's life					Total
	No effect	Small effect	Moderate effect	Very large effect	Extremely large effect	
Mild	20	35	13	1	-	69
Moderate	-	17	46	6	1	70
Severe	-	-	9	8	4	21
Total	20	52	68	15	5	160

DISCUSSION

Chronic illnesses like diabetes mellitus, CVA, spinal cord injury have been investigated for their impact on quality of life; similarly, dermatological conditions have also been known to be implicated in impairing quality of life. Quality of life correlation with severity of disease revealed that majority of patients with mild disease had no effect or had small effect on DLQI (Table-3). Patients with moderate disease usually reported small and moderate effect.

Patients with severe disease had mostly moderate and very large effect and few also had extremely large effect. This trend shows that the increase in severity or extent of psoriasis as measured by BSA is directly proportional to the increase in effect of disease on patient's life (DLQI score). In a similar study carried out by Çakmur there was a positive linear correlation between severity of disease (BSA) and effect of disease in patient's life (DLQI score).¹⁶

The study done in our settings demonstrates very clearly that psoriasis and severe psoriasis in particular, has a very significant disease burden on patients. The overall disease impact has many aspects which include physical disability, decrease in Quality of Life, impaired professional performance and increased financial burden on patients.

According to a study done in Europe in 2002, French patients were more inclined to perceive the negative consequences of psoriasis, although no Quality of Life tool was applied in that study. A self-administered questionnaire was used by Dubertret *et al* to assess the impact of psoriasis on European patients. Of the participants in the study, 77% patients considered psoriasis a significant problem in their life. The instrument to assess the impact of psoriasis in that study was The Psoriasis Disability Index. As there is a difference between that instrument and DLQI, the scores of both studies cannot be compared with each other. However, that study showed that the major impact of psoriasis was on daily activities like choice of clothes and sports related activities. These results are similar to the results in our study. Another study done in Germany assessed mean DLQI score of patients. This study demonstrated that the patients with psoriasis had a much higher impairment of Quality of Life with mean DLQI being 10.6. The major areas where patients showed strong impairment were again related to daily activities and treatment related. When we assess all the aspects of disease, the epidemiological studies very clearly demonstrate that patients of psoriasis have a severe reduction in Quality of Life.

Our study also showed comparable results with patients having severe psoriasis attributed the disease to causing gross impairment in their Quality of Life. Patients with mild psoriasis demonstrated moderate impairment in Quality of Life.

Although it may be argued that there would be an obvious correlation between the severity of disease and the Quality of Life, however studies have shown that this correlation is moderate. Schmitt *et al* did a study in 2006 to estimate the correlation between disease severity and its association with health-related Quality of life and the cost of productivity in patients of psoriasis. In the United States of America, the study showed that there was a 7.6% loss of productivity. The overall financial impact was also assessed which amounted to 2571 USD per patient per year due to absenteeism and 2961 USD per patient per year due to presenteeism. A study done by Pearce *et al* enrolled thirty patients of psoriasis in each severity group and assessed the disease impact on workplace. The study showed clear correlation between the severity of disease and negative impact on workplace and productivity. Psoriasis severity

correlated with negative impact on social life, workplace absenteeism, expenditure on medicines and therefore demonstrated a significant financial impact on economic level. Another study conducted in Europe showed that in Netherlands, patients with psoriasis were more prone to absenteeism from workplace amounting to a financial impact of 366 Euros per year. There was also a positive correlation between work productivity and health related Quality of Life.

In Europe, a study conducted in the Netherlands evaluated that the psoriasis-related cost of absenteeism was 366€ /year. A positive correlation was found between the health-related QOL and the work productivity. Most of our patients especially males were retired soldiers or housewives, so we could not consider this factor. Psoriasis is a debilitating chronic illness and affects all aspects of life of not only the affected patient but also of society. It should therefore be managed aggressively and in a multidimensional way to increase the scope of medical care from mere treatment to prevent the chronic states to improve the quality of life of individual patient. The main limitation of our study is that it lacks the assessment of correlation of severity of disease and financial burden on individual and society. As our study was focused on a specific segment of society, it is emphasized that the data cannot be interpreted to the whole population. The patients in the study did not represent the overall population of Pakistan with regards to development status of their home or workplace. Neither did it represent patients from all aspects of social strata.

CONCLUSION

Psoriasis affects quality of life of patients not only physically but also psychologically and financially even when patients are under treatment. Psychological aspects also need to be addressed while treating the physical morbidity.

Conflict of interest: The purpose of the study was research with no conflict of interest.

AUTHORS' CONTRIBUTION

JMK: Original research. MUR: Study design & proof reading. MT: Original research. TA: Study design and proof reading

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