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Original Article

Quality of life assessment in patients of psoriasis

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Abstract

Objective To determine the impact of psoriasis on quality of life (QoL) using Dermatology Life Quality Index (DLQI) in patients of psoriasis presenting in a tertiary care setting.

Methods An observational study was carried out at Department of Dermatology, King Edward Medical University/ Mayo Hospital, Lahore from May 2013 till November 2013. A total of 200 patients compatible with inclusion criteria were enrolled after taking informed consent and were asked to fill DLQI questionnaires.

Results Out of 200 patients, there were 107 males and 93 females. The mean age was 34.89±14.96 years while the mean DLQI score was 11.51±4.81. There were 58 (29%) married and 142 (71%) unmarried patients in the present study. Patients with moderate psoriasis were 184 with PASI score 40-60 and mean DLQI score 11.14±4.55 whereas 16 patients had severe psoriasis with PASI score 60-72 and mean DLQI score 15.8±5.68. The maximum mean DLQI score was highest for question 10 (treatment) followed by question 1 and 2 (symptoms and feelings).

Conclusion Psoriasis is a serious condition and is associated with significantly lower quality of life regardless of age, gender, duration and severity of disease or marital status.

Key words
Quality of life, DLQI, psoriasis, PASI.

Introduction

Psoriasis is a chronic inflammatory disease characterized by red scaly papules and plaques particularly present over the extensor surfaces and scalp. It affects approximately 2-3% of the general population affecting both gender equally.[1] The most common variant is the plaque psoriasis (psoriasis vulgaris) while others are guttate, rupioid, pustular and erythrodermic psoriasis. Etiology and pathogenesis include certain genetic (HLA-Cw6) plus environmental factors like trauma, infection, drugs, sunlight, metabolic conditions and stress. Nails are involved in psoriasis and arthritis is found to be 2.6-7% prevalent.[1] Histopathology of fully developed plaques of psoriasis, shows parakeratosis, orthokeratosis and Munro microabscess formation. There is absence of granular layer, spongiform pustules with epidermal thinning and mononuclear and neutrophilic infiltrate.[1]

Psoriasis can be cosmetically disfiguring[4] and consequently, patients often suffer significant interpersonal and psychological distress.[2,3] They experience many difficulties in social interactions, especially in meeting new individuals. They frequently demonstrate psychological problems including poor self-esteem, frustration, anger, helplessness, anxiety and depression. Unfortunately, some patients

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even develop suicidal ideation.[2] Beyond its psychosocial effects, psoriasis can cause significant physical complaints, such as severe itching, irritation and pain.[4,5]

Quality of life index (QoL) is used to evaluate and address all variables that impact an individual's life, physical, social and psychological well-being. Dermatology life quality index (DLQI), published by Finlay *et al*. is the best known and widely used questionnaire for psoriasis and other dermatologic conditions.[6]

In a study of 230 patients with psoriasis, the total mean DLQI score found was 1.48±0.68. These highest DLQI score was seen in items such as physical symptoms, treatment difficulties and clothing.[7]

With a disease as common as psoriasis combined with its profound physical and psychological effects on patient's life, this information is crucial for resource allocation in health care systems. A local study was carried out in 1998 on this topic on a limited number (50) of patients.[8] So, the present study was conducted on a large number of patients presenting in a tertiary care hospital with an effort to address effect modifies such as severity and duration of disease to get more reliable results.

Methods

It was a questionnaire-based study. The participants in the study were enrolled from the outpatient Department of Dermatology Unit-I, King Edward Medical University/Mayo Hospital, Lahore. The study was conducted on 200 patients with psoriasis during the period from May to November, 2013. A non-probability purposive sampling technique was adopted. The sample size of 200 cases was calculated with 95% confidence level, d=0.15 and taking mean±SD of DLQI score of 1.48±0.68, in patients with psoriasis.

Primary inclusion criteria were, patients of both gender and age 16 years or above with informed written consent, and PASI score >40 with any kind of treatment for psoriasis not less than 6 months duration. The patients having other dermatoses like acne, melasma, nevi, hirsutism, vitiligo and postinflammatory, hyper- and hypopigmentation assessed by history and clinical examination on exposed parts were excluded.

The patients were diagnosed clinically and confirmed by histopathology, if required. Data were collected using DLQI questionnaire from the 200 patients who were compatible with the inclusion criteria. All the cases were instructed to fill questionnaire **(Table 1)** that included ten questions covering six domains of QoL e.g. symptoms and feelings (Q1,2), daily activities (Q3,4), leisure activities (Q5,6), work and schooling (Q7), personal relationships (Q8,9) and treatment of disease (Q10). The response for each item could be 0=not at all, 1=a little, 2=a lot and 3=very much. Total score ranged from 0-30, the higher the score the poorer the quality of life. The filled DLQI questionnaires were then scored on a scale from 0-3 for each of ten items. The DLQI scores were taken on scale as 0-1= no effect at all on patient's life, 2-5= small effect, 6-10= moderate effect, 11-20= very large effect and 21-30= extremely large effect.[9]

The data were analyzed by using SPSS version 21. The study variables included were age, gender and DLQI scores. Descriptive statistics were used for quantitative variables like age and DLQI scores. Mean and standard deviation were calculated and gender of the patients was presented in the form of frequency and percentages. Data was stratified for the severity index where score 40-60 meaning moderate and

Table 1 Questionnaire for Dermatology Life Quality Index (DLQI)

1. Over the last week, how itchy, sore, painful or stinging has your skin been?
2. Over the last week, how embarrassed or self-conscious have you been because of your skin?
3. Over the last week, how much has your skin interfered with you going shopping or looking after your home or garden?
4. Over the last week, how much has your skin influenced the clothes you wear?
5. Over the last week, how much has your skin affected any social or leisure activities?
6. Over the last week, how much has your skin made it difficult for you to do any sport?
7. Over the last week, has your skin prevented you from working or studying? If "No", over the last week how much has your skin been a problem at work or studying?
8. Over the last week, how much has your skin created problems with your partner or any of your close friends or relatives?
9. Over the last week, how much has your skin caused any sexual difficulties?
10. Over the last week, how much of a problem has the treatment for your skin been, for example by making your home messy, or by taking up time?

61-72 meaning severe. *P* value <0.05 was taken to be statistically significant.

Results

A total of 200 patients, 107 males and 93 female, clinically diagnosed as psoriasis were enrolled in the study. The minimum and maximum ages were 16 and 83 years, respectively, with the mean age of 34.89±14.963 years. The majority of patients were affected by psoriasis in the age group 16-25 years. There were 29% married and 71% were unmarried. The duration of disease was 35 years as maximum and 1 year as minimum were noted with mean score of 5.98±6.39 years. Furthermore, the mean score of DLQI calculated was 11.51±4.81 with a minimum score of 3 and maximum score of 27. **Table 2** displays an overview of the DLQI scoring system where no single patient scored between 0-1. This confirms that psoriasis in this population group always had an effect on their lives. Moreover, 12.5% patient’s score lied between 3 and 5 indicating small effect on the lives of patients with psoriasis. In addition, 27.5% patients had score between 6 and 10 showing that psoriasis was moderately affecting their lives. However, 45% patients had score in the range of 11-20 demonstrating a very large effect of psoriasis on their quality of life. Finally, only 5% of patient’s score lied between 21 and 30 indicating an extremely large impact on their life.

Figure 1 provides the mean scores calculated for all the ten questions of DLQI. It is apparent from the figure that question 10 (treatment) had the maximum value in comparison to all the other questions. It is followed by question 1 and 2 (symptoms and feelings) with values 1.78 and 1.55, respectively.

The mean PASI score calculated in this study was 46.98±9.37. 184 patients had moderate psoriasis (PASI score 40-60) and the remaining 16 patients had severe psoriasis (PASI score 61-72). **Table 3** shows the mean DLQI scores of patients with moderate (11.1413±4.55946) and severe psoriasis (15.8125±5.68294). Lastly, the DLQI and PASI with respect to duration of psoriasis of patients were also calculated (**Table 4**); however, no direct correlation was observed between psoriasis severity, its duration and the DLQI in this study.

Table 2 Effect of psoriasis on patients' life in terms of DLQI score (n=200).

DLQI Scores	*Frequency*	*Percentage*
0-1= No effect at all	0	0
2-5 = Small effect on patient's life	25	12.5
6-10 = Moderate effect on patient's life	75	37.5
11-20 = Very large effect on patient's life	90	45
21-30 = Extremely large effect on patient's life	10	5
Total	200	100

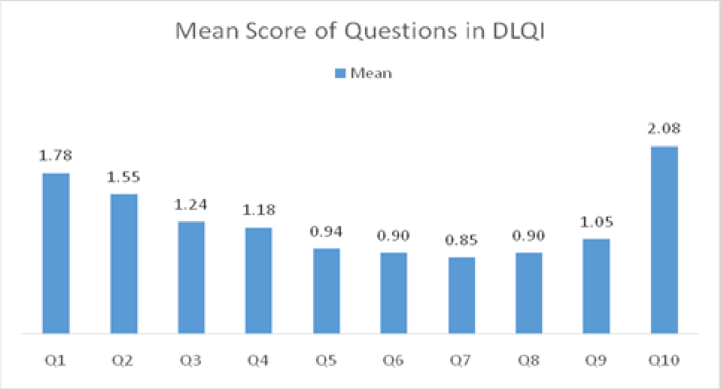

Figure 1 Mean score of individual questions in Dermatology Life Quality Index (n=200).

Table 3 Mean DLQI score with respect to severity of PASI score (n=200).

Severity of PASI Score	*N*	*Mean DLQI Score*
40 - 60 (Moderate)	184	11.1413±4.55946
60 - 72 (Severe)	16	15.8125±5.68294
Total	200	11.5150±4.81307

Table 4 DLQI and PASI scores with respect to duration of disease of patients with psoriasis.

Duration of disease	*N*	*Mean DLQI score*	*Mean PASI score*
1 - 5 Years	134	11.37±4.68	46.72±9.03
6 - 10 Years	30	12±5.10	46.70±8.75
11 - 15 Years	18	10.39±4.51	45.94±10.63
16 - 20 Years	11	12.82±5.95	47.45±10.91
21 - 25 Years	4	10±5.03	55±10
26 - 30 Years	1	16	72
> 30 Years	2	17.5±3.54	47±9.90
Total	200	11.515±4.81307	46.98±9.37652

Discussion

Psoriasis is a common, chronic and disfiguring skin disease with predilection for extensors.[2] Psoriasis of exposed parts leads to severe cosmetic and psychosexual disability. These patients have social phobia, interpersonal fears, shattered confidence, devalued self-worth, depression and hesitance about entering in an intimate relationship due to embarrassment. When asked, patients who have other medical problems too, almost always preferred their psoriasis to be cured in the first instance.[4]

As patients with psoriasis suffer significant mental trauma, this study was planned to detect the impact of psoriasis on quality of life of Pakistani patients. QoL assessment is an important measure of handicap and morbidity of psoriasis and this information is crucial to health care authorities for funding and resource allocation. So, the present study was performed in order to increase the understanding of the negative effect of psoriasis on their QoL in this community. Furthermore, the aim was to address the effect modifies like duration and severity of disease to get more reliable results.

Mean age of patients in our study was 34.89±14.963 years; however, age and gender did not show any relationship to DLQI. These results are similar to those of Finlay et al.1 and Manjula *et al.*[3], but are against those of Pal *et al.*[8], where male were in 4th decade were affected more than females who were in 5th decade of their life.

In our study, 58 (29%) patients were married and 142 (71%) were unmarried. Overall DLQI scores of married patients were not greatly different from unmarried, which suggests that psoriasis equally disrupts quality of life of those into sexual relationships and those who are not. This is against Pal *et al.*[8] study, where 75% of male had faced difficulties in sexual relationships due to psoriasis as compared to females, who did not face any problem regarding sexual relationship due to psoriasis.

Mean DLQI score in our study was 11.5±4.81, which according to DLQI manual shows a very large impact on patients QOL.[9] Minimum score was 3 and maximum score was 27. Our population's DLQI score was higher than Norwegian study of 230 patients where mean DLQI score was 1.48±0.68.[10] Our study population had poorer quality of life and hence high DLQI scores probably because of relatively longer duration of psoriasis, lack of awareness of exacerbating factors of psoriasis of both patients and family, difficult and delayed access and referral to concerned medical specialists, lack of treatment facilities in periphery, problems of affordability and poor compliance of drugs and adjuvant topical therapy due to improper counselling leading to poor motivation in patients who are uneducated or belong to low socio-economic status.

Mean duration of disease of patients in this study was 5.98±6.39 years. In present study, two patients who were having psoriasis for >30 years had the poorest quality of life with mean DLQI score of 17±3.53 followed by DLQI score of 16 in one patient with psoriasis for 26-30 years (**Table 4**). 11 patients with disease duration for 16-20 years had mean DLQI of 12.8±5. Patients with disease duration of 6-10 years again had mean DLQI of 12±5.09 and that of 21-25 years and 6-10 years duration had mean DLQI of 12. Maximum number of patients (134) had disease duration of 1-5 years with mean DLQI of 11.37±4.68. All this statistical data showed no consistent relationship between duration of disease and its effect on quality of life. This entire outcome was probably due to the fact that the DLQI questionnaire addresses the problems faced by patient in the last week only. That's why QoL in chronic disease states cannot be truly predicted. Internationally, much work has not been done on psoriasis of prolonged duration in years probably because of the trend of immediate referral and easy access to medical facilities. Therefore, comparison of this aspect of our study was not possible.

Mean score of DLQI was also calculated with respect to age group of patients. In age group of 16-25 years, mean DLQI score was 11.43±5.256, in age group 26-35 years mean DLQI score was 11.12±4.75, in age group 36-45 mean DLQI score was 11.5±4.53, in age group 46-55 mean DLQI score was 12.90±4.42 and in age group above 55, mean DLQI was 11.27±4.65, respectively. These results suggest that there is no relationship between the age of the patient and his/her quality of life. This is against the study results of Pal *et al.*[8] where 28 patients with duration of psoriasis for more than 6 years had mean DLQI of 13.29±2.54 as compared to those with less than 6 years duration with mean DLQI of 14.5±3.23. But our study indicated that psoriasis was almost equally traumatizing to all age groups.

DLQI scoring system describes the effect on patient's life. In this study, none of the participants scored zero to 1 (0-1), suggesting that every patient had at least some impact of disease on his/her QoL. There were 25 (12.5%) patients whose score lied between 2-5 which shows that psoriasis had a small effect on their life, 75 (37.5%) patients had score between 6-10 showing that psoriasis was moderately affecting the life of patients, 90 (45%) patients had score in the range of 11-20 which is showing a very large effect, and in 10 (5%) patients score was between 21-30 which indicated an extremely large effect of psoriasis on patients life. These results suggest that >90% of our study population had impaired quality of life. These results are close to the study conducted by Manjula *et al.*[3] where 32 patients with mean age 45±17.8, of which >90% had impaired QoL, whereas results are against the National Psoriasis foundation survey where only 50% of patients had their QoL impaired.

Furthermore, mean DLQI scores were highest for question No.10 (treatment), followed closely by question No.1 and 2 (symptoms and feelings) followed by question 7 (personal relationships). These results were different from the study of Manjula *et al.*[3] where daily activities were affected the most. This traumatic aspect of psoriasis on QoL shown by the results of our study were also comparable to study done by Pal *et al.*[8] where QoL of male patients was affected the most, symptomatology remained the top main issue, followed by treatment of psoriasis, as it costed a lot of money and time. For disease relapse is a rule, secondly, patients visiting our hospital are of poor background, this leads to poor compliance, more relapses `and more negative impact on QoL.

In addition, there were 184 (92%) patients who had PASI of (40-60) categorized as moderate psoriasis in this study and the rest 16 (8%) patients had PASI of (61-72) that is severe. Mean DLQI score of patients with moderate psoriasis was 11.14±4.55 and those with severe disease was 15.8±5.68. This shows inverse relationship between severity of psoriasis and QoL; the more severe the disease the more disrupted is QoL. These results are similar to those of Rakhesh *et al.*[4] and Manjula *et al.*[3] which showed 46% and 34.4%, respectively regarding severity of disease and its affect on their quality of life mostly.

This effect on QoL can be markedly reversed by proper counselling, early medical treatment and other measures. In a study by Pal *et al.*[8] PASI and DLQI scores were calculated before and after treatment with cyclosporine in 30 patients. DLQI score dropped strikingly after the therapy and 81% patients had improved QoL more marked in females (90%) as compared to the males (77%). This study concluded that treatment greatly improves the life quality in psoriasis.

In light of above discussion and observations, it is suggested that due to significant physical, psychological, and social morbidity associated with psoriasis, clinicians must have an empathic attitude towards these patients and psychological aspect of disease should never be neglected. Patients strongly require mental support from physicians, family and community members in addition to medical treatment in order to reduce psychological morbidity.

Conclusion

Psoriasis is more than just skin deep and has a very large effect on patient's QoL with marked negative impact on personality, daily activities and interpersonal relationships. Psoriasis impairs QoL regardless of age, gender, duration, severity of disease or marital status. The more it is on the exposed part the more it affects QoL.

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