Quality of life of Psoriasis patients of a tertiary care centre of Eastern India

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Abstract

Background: Psoriasis is a chronic inflammatory skin disease. Lots of patients are affected by psoriasis. There is a significant effect of the disease on the quality of life (QOL) of the affected patients.

Aim: The aim of the study is to find out the effect of Psoriasis on the quality of life of the affected patients and whether this effect on quality of life has any relation with certain demographic & clinical factors.

Methods: The effect on quality of life of 78 new patients attending the Dermatology OPD and diagnosed as Psoriasis was assessed using the Dermatology Life Quality Index (DLQI) questionnaire.

Results: 31 (39.73%) of all patients had an extremely large or very large effect on quality of life. There was moderate effect on 26 (33.33%) of the patients. Effect on QOL varied according to gender also, female gender was significantly impacted, whereas age of patient showed no association. Duration of disease (r = 0.73) and body surface area involved (r = 0.75) had significant impacts on QOL..

Conclusion: The quality of life was adversely affected by Psoriasis and more so for female patients whereas age of the patients did not have any correlation with it. Duration of disease and body surface area involved had a positive correlation with the effect on one's quality of life. Early detection & proper management of the disease is very important. Awareness about the disease must be increased among the common people.

Key Words: Psoriasis; Quality of life; DLQI

Introduction

Skin is the outermost boundary of our body. So people having skin diseases have to deal with the disease process & also the stigmatization associated with it because of easy visibility of the disease.[1]

Psoriasis is a chronic disfiguring inflammatory skin disease.[2] Psoriasis can be of different types like Chronic Plaque Psoriasis, Scalp Psoriasis, Nail Psoriasis, Flexural Psoriasis, Palmoplantar Psoriasis, Guttate Psoriasis, Annular Psoriasis, Pustular Psoriasis & Psoriatic Erythroderma.[3] The commonest among these is Chronic Plaque Psoriasis.[3] Clinically the lesions are well defined, erythematous, itchy plaques with scaling. The lesions are commonly found on the knees, elbows,scalp, trunk, buttocks etc[4] The lesions can occur at sites of trauma also which is called Koebner's phenomenon.[4] However they can occur anywhere on the body.[3] The pathogenesis of psoriasis includes uncontrolled keratinocyte proliferation and dysfunctional differentiation.[5] The innate immune system is activated by endogenous signals & cytokines. There is also an autoimmune response where T cells play an important role.[5]

Psoriasis is a disease where autoimmune & inflammatory processes overlap.[6] The disease can affect people of all ages & both gender.

WHO has defined Quality Of Life as the "individual's perception of their position in the context of culture & value systems in which they live & in relation to their goals, expectations, standards & concerns".[7] The concept of quality of life includes physical activity, psychological conditions, social relationships etc.[8]

Quality of life can be affected by Psoriasis because the disease is chronic. The visible lesions also are sometimes disfiguring. Psoriasis can adversely affect daily activities like going to work or going to school[9]. Social relations & sexual relations can be affected also. The long term treatment can also have

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a negative impact on the quality of life.[9] Certain demographic & clinical features can have important relation to the effect of Psoriasis on the quality of life of the affected patients.

Lots of people in our country suffer from poverty. They are forced to stay in unhygienic conditions. Their standard of living is low. Under such circumstances the burden of this disease can further reduce their quality of life. On the other hand the disease might not have a significant effect on the quality of life of the common people because of their pre existing low standard of life. The assessment of quality of life is very important for successful treatment and rehabilitation of the patients. The present study was undertaken with the following objectives:

i. To find out the impact of psoriasis on quality of life of affected patients
ii. To assess correlation of QoL of patients with selected clinical and demographic parameters

Materials and Methods

Setting - The study was conducted in the Department of Dermatology, NRS Medical College, Kolkata, India.

Duration- Cases were recorded over a period of three months November 2019 to January 2020. We had included 78 patients in the study.

Type of study - This study is an institution-based cross sectional study.

Sampling methods - Convenience sampling was used and all patients attending the skin OPD within the study period & fulfilling the inclusion criteria were included in the study. In all 78 patients were enrolled for the study.

Inclusion Criteria - All new adult patients presenting with clinical signs of psoriasis and willing to participate in the study through a written informed consent were included in the study.

Exclusion Criteria - Psoriasis patients with any other debilitating disease, psychiatric conditions and other medical problems which may have an impact on quality of life were excluded from the study.

Data Collection Procedure - All new patients at skin OPD during the study period were screened for Psoriasis. Written informed consents were taken from the patients. History and clinical examination findings were recorded in a case record form. Then patients were requested to answer the questions of the DLQI Questionnaire after clearly explaining them the questions in their preferred language. DLQI Scores were calculated. The scores were evaluated at the end of the study.

Operational Definition - Duration (in months) of disease was grouped as follows,--

≤ 2, > 2 to 6, > 6 to 12, > 12 to 24, >24 to 36, > 36

Body Surface Area involvement was calculated using the ' Rule of palm '. Total palmar surface of palm and five digits of the patient was together taken equivalent to 1%.[11]

Body Surface Area (in%) involvement was considered in groups as follows, ≤ 2, 3 to 10, > 10 [12]

Study Tool - The Dermatology Life Quality Index (DLQI)[10], developed by Professor A Y Finlay and colleagues, had been used as the tool for assessing the QOL in Psoriasis patients. The same investigator applied the questionnaire to each patient. It comprised of ten questions eliciting graded degree of perception and was validated widely in India and abroad. It had been translated into local vernacular and retranslated to English to check for validity of translated questionnaire.

The responses to each question was scored as, not at all / not relevant (0), a little (1), a lot – (2) and very much (3). The DLQI was calculated by summing the score of each item with minimum score of 0 and the maximum of 30. Higher scores signified higher impairment in quality of life. The grading of DLQI score was done as below:

- 0–1 -- no effect
- 2–5 -- small effect
- 6–10 -- moderate effect
- 11–20 -- very large effect
- 21–30 -- extremely large effect

Data Analysis: Data were entered in MS Excel 2016 and analysed by appropriate statistical tests like student's t test and chi square. Scatter diagrams with regression lines had been generated by Medcalc v17.6.

Ethical consideration: The study protocol was approved by Institutional Ethics Committee of NRS Medical College, Kolkata. Patient confidentiality was maintained throughout the study. Written informed consent was taken from all eligible patients after explaining them about the study in their local language.

Results

The total number of patients was 78. There were 42 (53.84%) male patients and 36 (46.15%) female patients. QOL was not affected at all in 8 (10.25%) patients. There was a small effect on 13 (16.66%) patients. There was moderate effect on 26 (33.33%) patients. Psoriasis had a very large effect on the QOL

of 27 (34.61%) patients. Combining both genders, majority of patients suffered either moderate or very large effect on QoLs. 4 (5.12%) patients suffered an extremely large effect (Table 1). The difference between effects on QoL between male and female patients are statistically significant.

Table 1: Distribution of patients according to effect on Quality Of Life (QOL) and Gender (n = 78)

Effect on QOL	Male patients	Female patients	All patients
No Effect	7 (16.66%)	1 (2.77%)	8 (10.25%)
Small Effect	9 (21.42%)	4 (11.11%)	13 (16.66%)
Moderate Effect	13 (30.95%)	13 (36.11%)	26 (33.33%)
Very Large Effect	11 (26.19%)	16 (44.44%)	27 (34.61%)
Extremely Large Effect	2 (4.76%)	2 (5.55%)	4 (5.12%)
Chi square = 6.14 ; p = 0.0463 dF = 2 (clubbing upper 2 rows and bottom 2 rows respectively)			

It was evident from the table that female patients had much more impairment in QoL due to psoriasis. 18 (49.9%) of female patients had very large and extremely large effect while 13 (31.1%) of male patients had such high effect. In other way, 16 (38.8%) of male patients experienced none or a small effect, while only 5 (13.9%) of female patients had done so.

Mean DLQI Score among the 78 patients was 9.26 ± 5.70 and the median Score was 9.00. The mean DLQI score among the male patients was 7.95 ± 5.69. The median DLQI Score of the male patients was 8.50. Mean DLQI score among the female patients was 10.78 ± 5.40. The median DLQI score of the female patients was 10.50. The figures indicated that female patients are having higher loss of QoL due to psoriasis. There was significant difference between the mean scores of male and female patients. (Table 2)

TABLE 2: Central tendency and dispersion of DLQI scores according to gender

	Mean ± SD of DLQI score		Median of DLQI score
Male	7.95 ± 5.69	t = 2.24	8.5
Female	10.78 ± 5.40	dF = 76	10.5
All	9.26 ± 5.70	p = 0.0279	9.0

Linear regression also showed that gender and DLQI score was significantly correlated whereas age of patients had no statistically significant correlation with DLQI Score. Details were shown in Table 3. The findings emphasise that adverse effect on QOL due to Psoriasis was more in case of females than in males.

Table 3: Correlation of demographic features with DLQI score

Parameter	Pearson Correlation coefficient	95% confidence interval	P value
Age	-0.203	-0.407 to 0.0202	p=0.0744
Gender (female = 1, male = 2)	-0.249	-0.446 to -0.0277	p=0.0282

Table 4 showed that there is a statistically significant positive correlation between both body surface area involvement and duration of disease with DLQI Score in Psoriasis patients. With increase in body surface area involvement in Psoriasis the DLQI score is increasing which means that quality of life is more impaired. Similarly with increase in duration of Psoriasis the DLQI score is increasing & quality of life is more adversely affected.

Table 4: Correlation of some clinical aspects with DLQI score (n = 78)

Parameter	Pearson Correlation coefficient	95% confidence interval	P value
Body surface area involvement	0.7448	0.6261 to 0.8298	p <0.05
Duration of disease	0.7316	0.6081 to 0.8205	p <0.05

Discussion

Psoriasis is a chronic immune mediated disease that affects the skin, nails & joints.[13] Robert Willan was the first person who gave a detailed description of the clinical features of Psoriasis.[14]

About 2 to 3% of the total population of the world is affected by psoriasis.[15] Psoriasis is not uncommon in India. This can be seen from the experiences

of the dermatologists working in the out patients department.

A study conducted by Kaur et al found that 2.3% of the total dermatology out - door patients had psoriasis. They found that most of the psoriasis patients were males. They also found that plaque type psoriasis was the most common type.[16]

Another study found that 2.8% of the patients attending the dermatology out- door department had psoriasis. They also found that among psoriasis patients there was a male preponderance. They also noted that the disease caused more sufferings to the patients in the winter season.[17]

We have used the Dermatological Life Quality Index (DLQI)[10] for assessment of the effect of psoriasis on the quality of life of the patients. There are several other scales for the measurement of effects of dermatological diseases on the quality of life of the affected patients. The following are some of the examples, - Dermatology Specific Quality of life Instrument[18], Skindex-29[19], Skindex-16[20], Family Dermatology Life Quality Index[21], Dermatology Quality of Life Scales (DQoLS)[22], Psoriasis Disability Index,[23] Freiburg Life Quality Assessment,[24] Cardiff Acne Disability Index.[25]

The Dermatological life quality index (DLQI)[10] has been used to measure the effect on the quality of life of patients affected by many dermatological diseases. DLQI has been used as a tool to assess the quality of life in patients with acne[26], vitiligo[27], hand eczema[28], superficial dermatophytosis infection[29], seborrheic dermatitis[30].

Our study included 78 patients among which 42(53.84%) were males & 36(46.15%) were females. A study conducted in Dehradun, India included 90 patients among which 61 were males & 29 were females.[11] Another study about determinants of quality of life in psoriasis included 50 patients.[2]

We found that psoriasis has an adverse effect on QOL of the patients. The DLQI covers the following aspects for measuring the effect on quality of life,- symptoms, embarrassment, shopping and home care, clothes, social and leisure, sport, work or study, close relationships, sex, treatment.

A study conducted by Sarkar R et al found that psoriasis is associated with social stigmatisation, loss of self-confidence, pain, discomfort, physical disability, and psychological distress.[31] Another study reported that 82.9% of the patients in their study often felt the need to hide their disease and 74.3% of the patients felt that their self-confidence has reduced due to psoriasis[32]. It has been reported by several other studies that psoriasis has an adverse effect on the QOL of the affected patients[2,11,33].

The reason behind this significant adverse effect of psoriasis on the quality of life is because the disease is chronic. The treatment continues for a prolonged period and often throughout the whole life of the patient. The itching and scaling also affects the quality of life. Moreover the presence of the lesions on the visible areas of the body also leads to stigmatisation.

We found that QOL due to psoriasis is more impaired in case of females than in males. Similar findings has been reported by other studies.[11][34] However there are studies which reported that there is no correlation between gender and effect on quality of life.[2,34] A study conducted in Germany interestingly reported that the women patients felt more discrimination at first measurement, however, in long term follow up men felt more stigmatization.[35]

Females have a more adverse effect on the quality of life due to psoriasis because the stigmatization associated with the lesions adds to their existing social and economic sufferings.

We found that there was no correlation between age & the effect on QOL. Similar findings have been reported by other studies.[33]

The present study showed that there is a statistically significant correlation between the duration of disease & the effect on QOL, which is more adversely affected in long standing cases. A positive correlation has been found between duration of the disease and DLQI score ($R = 0.73$, $p<0.05$). Duration of any chronic disease is bound to affect the quality of life of patients, simply because the sufferings continue for a longer period. In case of psoriasis, disturbing symptoms like itching & scaling persists for longer, as well as requirement of repeated and prolonged treatment. Naturally duration of psoriasis has a positive correlation with the DLQI score.

We found in our study that there is a significant positive correlation between the extent of body surface area involved & the impairment in QOL ($R = 0.74$, $p<0.05$) i.e. QOL is more impaired with increasing body surface area involvement. Similar findings were reported by a study from Turkey which found a linear positive correlation between body surface area involved and DLQI but not between Psoriasis Area Severity Index (PASI) and DLQI[36].

The fact that disease severity greatly impacted the QoL documented by DLQI scores has been reported by Nagrani P et al[11] in Dehradun, as well as other studies[34].

More involvement of body surface area in psoriasis means that the extent of disease is more and this leads to more itching and scaling. Along with this more body surface area involvement results in more visible lesions which results in greater stigmatisation. The treatment also gets more prolonged in case of greater body surface area involvement. All these together may cause larger adverse effects on the quality of life of a psoriasis patient.

Conclusion: Several treatment modalities have been developed for Psoriasis which are quite effective. However it is a chronic disease with remissions & exacerbations. The present study showed that majority of patients experienced moderate, very large or extremely large adverse effects on the QOL. Female patients experience more loss of QOL than males and it may be related to difference in body image perception between the sexes. As expected, duration of disease and body surface area involved had a positive correlation with the effect on one's quality of life.

Research must continue to find out methods for early diagnosis & treatment of psoriasis. Awareness regarding the disease must also be increased among the general population. Knowledge regarding the adverse impact of psoriasis on QOL might help increasing patient compliance and boost further efforts to find out overall better management of the affected patients.

References

1. *Meglio D, Villanova P, Nestle FO. Psoriasis. Cold Spring Harb Perspect Med [internet]. 2014 Aug [cited Sep 2020]; 4(8). doi:10.1101/cshperspect.a015354.*
2. *Pakran J, Riyaz N, Nandakumar G. Determinants of quality of life in psoriasis patients: A cluster analysis of 50 patients. Indian J Dermatol. 2011;56(6):689-93*
3. *Kim WB, Jerome D, Yeung J. Diagnosis and management of psoriasis. Can Fam Physician. 2017 Apr;63(4): 278–285*
4. *Langley RG, Krueger GG, Griffiths CE. Psoriasis: epidemiology, clinical features, and quality of life. Ann Rheum Dis. 2005 Feb; 64 (suppl 2): ii18-ii23; DOI: 10.1136/ard.2004.033217*
5. *Rendon, A., Schäkel, K. Psoriasis Pathogenesis and Treatment. Int J Mol Sci.[internet] 2019 Jun [cited Sep 2020];20(6), 1475. https://doi.org/10.3390/ijms20061475*
6. *Liang Y, Sarkar MK, Tsoi LC, Gudjonsson JE. Psoriasis: A mixed autoimmune and autoinflammatory disease. Curr. Opin. Immunol. 2017 Dec;49:1–8.*
7. *WHO QOL Group. Development of the World Health Organization WHO QOL-BREF quality of life assessment. Psychol Med. 1998 May; 28(3):551–8*
8. *Halioua B, Bemmont MG, Lunel F. Quality of life in Dermatology. Int J Dermatol.2000 Dec; 39(12):801-6.*
9. *Vettuparambil A, Asokan N, Narayanan B. Psoriasis can markedly impair the quality of life of patients irrespective of severity: Results of a hospital-based cross-sectional study. Muller J Med Sci Res 2016;7(2):111-4*
10. *Finlay AY, Khan GK. Dermatology Life Quality Index (DLQI): a simple practical measure for routine clinical use. Clin Exp Dermatol 1994;19(3):210-6.*
11. *Nagrani P, Roy S, Jindal R. Quality of life in psoriasis: a clinical study. Int J Res Dermatol. 2019;5(2):319-24.*
12. *Yeung, Howa et al. Psoriasis severity and the prevalence of major medical comorbidity: a population-based study. JAMA dermatology [internet]. 2013 Oct;149(10): 1173-9. [cited Sep 2020] doi:10.1001/jamadermatol.2013.5015.*
13. *Dogra S, Mahajan R. Psoriasis: Epidemiology, clinical features, co-morbidities, and clinical scoring. Indian Dermatol Online J. 2016; 7(6): 471–480.*
14. *Glickman FS. Lepra, psora, psoriasis. J Am Acad Dermatol. 1986;14:863-6.*
15. *Pariser DM, Bagel J, Gelfand JM, Korman NJ, Ritchlin CT, Strober BE, et al. National Psoriasis Foundation Clinical Consensus on Disease Severity. Arch Dermatol. 2007;143:239–24.*
16. *Kaur I, Handa S, Kumar B. Natural history of psoriasis: A study from the Indian subcontinent. J Dermatol. 1997;24: 230–4.*
17. *Bedi TR. Clinical profile of psoriasis in North India. Indian J Dermatol Venereol Leprol. 1995;61:202–5.*
18. *Anderson RT, Rajagopalan R. Development and validation of a quality of life instrument for cutaneous diseases. J Am Acad Dermatol. 1997;37:41–50.*
19. *Chren MM, Lasek RJ, Quinn LM, et al. Skindex, a quality-of-life measure for patients with skin diseases: reliability, validity and responsiveness. Clin Pediatr. 1996;107:707–13.*
20. *Chren MM, Lasek RJ, Sahay AP, Sands LP. Measurement Properties of Skindex-16: A Brief Quality-of-Life Measure for Patients with Skin Diseases J Cutan Med Surg. 2001;5(2):105–10.*
21. *Basra MKA, Sue-Ho R, Finlay AY. The Family Dermatology Life Quality Index: measuring the secondary impact of skin disease. Br J Dermatol. 2007;156(3):528–38.*
22. *Morgan M, McCreedy R, Simpson J, Hay RJ. Dermatology quality of life scales –a measure of the impact of skin diseases. Br J Dermatol. 1997;136(2):202–6.*
23. *Finlay AY, Kelly SE. Psoriasis - an index of disability. Clin Exp Dermatol. 1987;12(1):8–11.*
24. *Augustin M, Lange S, Wenninger K, Seidenglanz K, Amon U, Zschocke I. Validation of a comprehensive Freiburg Life Quality Assessment (FLQA) core questionnaire and development of a threshold system. Eur J Dermatol. 2004;14(2):107–13.*
25. *Y. Motley RJ, Finlay AY. Practical use of a disability index in the routine management of acne. Clin Exp Dermatol. 1992;17(1):1–3.*
26. *Hazarika N, Rajaprabha RK. Assessment of life quality index among patients with acne vulgaris in a suburban population. Indian J Dermatol 2016;61(2):163-8.*
27. *Mishra N, Rastogi MK, Gahalaut P, Agrawal S. Dermatology Specific Quality of Life in Vitiligo Patients and Its Relation with Various Variables: A Hospital Based Cross-sectional Study. J Clin Diagn Res. 2014 Jun;8(6): YC01–YC03.*
28. *Georgieva F. Hand eczema and its impact on wellbeing and quality of life of patients. J of IMAB. 2017 Jan-Mar;23(1):1490-1494.*
29. *Patro N, Panda M, Jena AK. The menace of superficial dermatophytosis on the quality of life of patients attending referral hospital in Eastern India: A cross-sectional observational study. Indian Dermatol Online J. 2019;10(3):262-6.*
30. *Araya M, Kulthanan K, Jiamton S. Clinical characteristics and quality of life of seborrheic dermatitis patients in a tropical country. Indian J Dermatol. 2015;60(5):519.*
31. *Sarkar, R., Chugh, S., & Bansal, S. General measures and quality of life issues in psoriasis. Indian Dermatol Online J. 2016;7(6): 481–488.*
32. *Weiss SC, Kimball AB, Liewehr DJ, Blauvelt A, Turner ML, Emanuel EJ. Quantifying the harmful effects of psoriasis on health related quality of life. J Am Acad Dermatol. 2002;47(4):512–8.*

33. *Manjula VD, Sreekiran S, Saril PS, Sreekanth MP. A study of psoriasis and quality of life in a tertiary care teaching hospital of Kottayam, Kerala. Indian J Dermatol. 2011;56(4):403-6*

34. *Mabuchi T, Yamaoka H, Kojima T, Ikoma N, Akasaka E, Ozawa A. Psoriasis affects patient's quality of life more seriously in female than in male in Japan. Tokai J Exp Clin Med. 2012 Sep 20;37(3):84-8.*

35. *Schmid-Ott G, Künsebeck HW, Jäger B, Sittig U, Hofste N, Ott R, Malewski P, Lamprecht F. Significance of the stigmatization experience of psoriasis patients: a 1-year follow-up of the illness and its psychosocial consequences in men and women. Acta Derm Venereol. 2005;85(1):27-32.*

36. *Çakmur H, Derviş E. The relationship between quality of life and the severity of psoriasis in Turkey. Eur J Dermatol. 2015 Apr;25(2):169-76. doi: 10.1684/ejd.2014.2511.*

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