

Assessment of Health-Related Quality of Life in Patients With Psoriasis in Comparison With Normal Subjects in Shiraz, Iran

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Background: Psoriasis is a chronic inflammatory disease, which decreases the health-related quality of life (HRQOL) of the affected patients. There are various determinants related to the patients' HRQOL.

Objectives: The objective of this study was to assess the HRQOL of a group of Iranian psoriatic patients in comparison with healthy adults.

Patients and Methods: This cross-sectional study was conducted in Shiraz, Iran. Ninety-six psoriatic patients and a control group of 200 healthy subjects were participated in the study. SF-36 questionnaire was used for the data collection. HRQOL was analyzed according to some selected variables including gender, age, education level, duration of the disease, and also in comparison with the control group.

Results: Ninety six patients with psoriasis (mean SD age of 35.72 9.95) included 41 males and 55 females. The control group had statistically significant (P-Value < 0.001) higher scores in all 8 scales of HRQOL. Physical and emotional role limitation (RP and RP) scales were significantly different in patient group based on the age. Scores for all the 8 scales and 2 summary measures of mental and physical health increased with increasing educational level.

Conclusions: The negative impact of psoriasis on various aspects of patients' QOL is an undeniable fact. The results of the present study indicate the necessity of appropriate therapeutic, social and psychological interventions in psoriasis patients in order to help them have better life quality.

Keywords: Health; Quality of life; Iran

1. Background

Psoriasis is a chronic inflammatory disease that involves skin and joints. The most common form of the disease, plaque psoriasis, manifests with scaling erythematous plaques mostly on elbows, knees and intergluteal folds or sometimes the skin of the whole body (1, 2). It affects nearly 3% of the world's population (3). In addition, it imposes heavy load of financial problems the affected patients and their family, where the annual psoriasis treatment cost is estimated to be \$1197 to \$27,577 (4). Psoriasis decreases the health-related quality of life (HRQOL) of the patients and their family as well (5). It is important to consider patients' quality of life (QOL) and its improvement in addition to their medical treatment and that is why the measurement of QOL of people with chronic diseases such as psoriasis has attracted much attention. Studies have shown that the extent of reduction of HRQOL by psoriasis is similar to that caused by other chronic diseases such as diabetes, ischemic heart disease and cancers (6). Several studies have been conducted to measure the QOL of patients with psoriasis and its deter-

minants (7-13). A systematic review of psoriatic patients' quality of life (QOL) indicated physical and emotional problems and poor functioning, and negative body and self-image in the affected people. It also indicated that patients with psoriasis suffer difficulties due to the limitations in performing the activities of their daily lives, social contacts and work (14). Also other studies have shown low self-esteem and high levels of anxiety due to emotions like anger and shame in patients with psoriasis resulting from changes in appearance (14, 15). Different studies have found that symptoms' severity and the area of the skin affected can have impact on the QOL (8, 9, 11-13, 16). The more severe the symptoms, the more likely patients are to have working day off and decreased productivity (10, 13). Psoriasis may affect daily activities due to the itching of the lesions and the sense of burning (7). Also, increase in the symptom severity is found to be associated with more physical discomfort and stigmatization (16). Psoriasis patients, experience stigmatization for their skin lesions and this can cause mental

stress and poor social interactions (17). Some variables are known to predict the variations of HRQOL including coping with stress strategies, physical symptoms and its severity, acceptance towards the disease and patients' age (18). Moreover, despite the fact that psoriasis can impair patients' HRQOL; various studies have shown that this be improved by appropriate treatment of the disease (19-22).

2. Objectives

Considering the impact of psoriasis on the patients' physical, mental and social lives through the reduction of their HRQOL we aimed to assess the HRQOL of a group of Iranian psoriatic patients in comparison with healthy adults.

3. Patients and Methods

This cross-sectional study was conducted in the Dermatology Outpatient Clinic of Shahid Faghihi hospital in Shiraz, Iran in 2010. The sample size was calculated based on previous studies and using the following formula:

$$N = \frac{(R+1)^2}{4R} \frac{(Z_{\alpha/2} + Z_{1-\beta})^2 SD^2}{d^2}$$

R = 2, $\alpha = 0.05$, $\beta = 0.2$, SD = 10 and d = 5

The participants consisted of 96 psoriatic patients and a control group of 200 persons without psoriasis was selected from the people who accompanied patients in another general hospital, who were apparently healthy people (without any known disease). Convenient sampling method was used. A two part questionnaire was used for the data collection. First part included questions regarding the demographic information of the participants such as age, gender, education and duration of disease, and the second part aimed at measuring health-related quality of life (HRQOL) was the translation of SF-36 questionnaire into Persian, which has been checked and confirmed for its validity and reliability previously (23). This questionnaire is consisted of eight scales that measure different concepts of health including physical functioning (PF), social functioning (SF), bodily pain (BP), role limitation due to physical problems (RP), role limitation due to emotional problems (RE), general mental health (MH), vitality (VT) and general health perception (GH), while it is also divided into two summary measures of physical and mental quality of life components. Each scale has number of items that are a total of 36. There is also a single measure of health change or transition, which is not included in the scoring. The questionnaires were complete by face to face interview with the participants until we met the predetermined sample size. The same questionnaire was used for the control group, with a single difference, which was the elimination of the item of duration of the disease from the first part. Verbal consent

of the participants was obtained in advance. The inclusion criteria were consent of the people for participation, participants' ability in terms of age and cognitive function to understand the subject of study and to answer the questions and diagnosis of psoriasis except for the control group. Scoring method of the questionnaires was as follows: each question had one point score and then the scores were transformed into a 0-100 scale for each of the 8 concepts of health. Score zero shows the worst and 100 expresses the best HRQOL. The scores were then analyzed according to the protocol of SF-36 scoring system.

HRQOL was determined based on some selected variables including gender, age, education level, duration of the disease, and also in comparison with the control group. Statistical analysis of the collected data was performed by SPSS software version 15 and the statistical tests of Mann Whitney, independent sample t-test, Spearman and Pearson correlation of coefficient, ANOVA and post hoc scheffe were used. The alpha significant level was considered to be 0.05.

4. Results

The 96 patients with psoriasis (mean \pm SD age of 35.72 \pm 9.95) included 41 males and 55 females. Of 200 subjects of the control group, 124 were male and 76 persons were female. The summary of participants' age, gender and education level are shown in Table 1. The minimum and maximum duration of disease in the patient group was one year and 13 years, respectively. Comparing the HRQOL of the control group and patients with psoriasis, the control group had higher scores in all eight scales of health concepts and the two summary measures of physical and mental components. The differences between these two groups were statistically significant (P Value < 0.001) except for the physical limitations (RP) scale. The details and scores of HRQOL of psoriasis patients and control group are shown in Table 2.

The comparison between men and women in both the patients and control group for all eight scales of the SF-36 questionnaire and the two summary measures of physical and mental components was not statistically significant. This means, although men had relevantly higher scores than women but the difference was not significant. Physical and emotional role limitation (RP and RE) scales were significantly different in patients group according to the age (P Value = 0.019 and 0.04, respectively). Thus, there is a significant linear relation between age and physical and emotional problems, in a way that an increase in the age would lead to decreased scores of RP and RE scales. Also, a statistically significant linear relation was found in between age and all the 8 scales in control group (P-Value < 0.001), (see Table 3). In the present study, although, men had greater scores in all eight scales and in both mental and physical health summary measures than women in patient group, but no significant difference were found based on the gender of patients, which was also the case

in the control group. For the analysis of HRQOL according to the education level, the participants in both patient and control group were classified into three categories including below high school education, high school education and academic education. In patients group, scores of all the eight scales and two summary measures of mental and physical health increased with increasing educational level, which was statistically significant regarding the physical functioning and physical role limitation (PF and RP) scales. Moreover, in the control group the increasing of scores with higher education level was statistically significant except for emotional problems' scale and physical

and mental health summary measures. The below high school group had lower scores of PF and RP scales than high school and academic group of patient. The two latter groups had no significant difference in their mean scores. In contrast, academic group had significantly different mean scores in all scales, except role-emotional, in comparison with the two other educational categories in the control group (Table 4). Also, the relation between HRQOL of the patients and the duration of their disease was assessed by Pearson correlation and no significant correlation was seen for all the eight scales and two summary measures of physical and mental health.

Table 1. Frequency Distribution of Participants by Age, Gender and Level of Education

Group of Participants	Gender		Level of Education			Age (y)		
	male	female	Not Finishing High School	High School Graduated	Academic Education	Minimum Age	Maximum Age	Mean Age SD
Patients with psoriasis	41 (42.7%)	55 (57.3%)	14 (14.6%)	42 (43.7%)	40 (41.7%)	16	61	35.72 9.95
Control group	124 (62%)	76 (38%)	42 (21%)	70 (35%)	88 (44%)	15	80	46.58 19.23

Table 2. Comparison of HRQOL's Components in Psoriasis Patients and Control Group

Scales and Measures of HRQOL	Group of Psoriasis Patients	Control Group	P-Value
Physical functioning	80.08 4.50	93.8 11.91	< 0.001
Role-physical	77.08 19.75	84.12 36.24	0.102
Bodily pain	67.05 18.77	80.08 21.08	< 0.001
Vitality	38.90 9.03	57.25 20.6	< 0.001
General health perception	44.15 17.4	69.93 28.03	< 0.001
Social functioning	61.84 13.49	79.50 26.25	< 0.001
Role-emotional	53.47 20.22	89.00 31.00	< 0.001
General mental health	51.83 8.86	73.00 15.00	< 0.001
Summary measure of physical health	52.03 11.81	74.50 20.50	< 0.001
Summary measure of mental health	67.02 12.20	81.50 23.32	< 0.001

Table 3. The Relation between HRQOL and Age in Psoriasis Patients and Control Group

Scales and Measures of HRQOL	Group of Psoriasis Patients		Control Group	
	Pearson Correlation Coefficient	P-value	Pearson Correlation Coefficient	P-Value
Physical functioning	-0.174	0.089	-0.663	< 0.001
Role-physical	-0.239	0.019	-0.564	< 0.001
Bodily pain	-0.064	0.533	-0.569	< 0.001
Vitality	-0.077	0.458	-0.720	< 0.001
General health perception	-0.116	0.260	-0.536	< 0.001
Social functioning	-0.185	0.072	-0.582	< 0.001
Role-emotional	-0.210	0.040	-0.288	< 0.001
General mental health	-0.047	0.647	-0.653	< 0.001
Summary measures of physical health	-0.148	0.225	-0.584	< 0.001
Summary measures of mental health	-0.129	0.304	-0.398	< 0.001

Table 4. The Comparison Between HRQOL of Psoriasis Patients and Control Group Based on the Education Level Divided into 3 Categories Including: Below High School, High School and Academic

Scales and Measures of HRQOL	P-Value For The Difference of HRQOL of Psoriasis patients Based on 3 Levels of Education	P-Value for The Difference of HRQOL of Control Group Based on 3 Levels of Education
Physical functioning	0.041	0.033
Role- physical	0.043	0.035
Bodily pain	0.194	0.036
General health perception	0.240	0.028
Vitality	0.238	0.031
Social functioning	0.313	0.008
Role-emotional	0.247	0.313
General mental health	0.326	0.042
Summary measure of physical health	0.129	0.033
Summary measure of mental health	0.280	0.048

5. Discussion

Measurement of peoples' perception of their health status is considered important due to assessing the utility of medical and health care interventions. In the present study HRQOL of 96 patients affected by psoriasis was measured and compared with the healthy controls. As it was expected that the control group had higher scores in all eight scales and both physical and mental summary measures than the psoriasis group and these differences were statistically significant except one scale of physical problems, which may be due to the small sample size of the patients. The negative effect of psoriasis on various aspects of quality of life has also been found by other studies (6, 9, 10, 13, 24). In both the control and patients group the best status was reported for physical functioning, which may be caused by effectiveness of medical therapy in these patients. Moreover, vitality had the worst status, which means that feeling nervous, depressed, exhausted and lack of energy was frequently reported. The lower score of vitality and mental health and emotional role limitations at the next orders relatively also shows the reduction of daily activities, difficulties in performance and a cut down of time spent for those activities, which is also found by Lewis-Beck et al. (13). In addition, these negative feelings are likely to be due to the impaired psychological status, stigmatization and feeling embarrassed because of the appearance of skin lesions in public. Also the result of some studies have shown that psoriasis can cause psychological problems due to stigmatization, depression, anxiety and social problems which support our findings mentioned above (16, 25-27). In our study, results suggested that RP and RE scales have a significant linear relation with patients' age. The scores of these two scales are decreased with increasing age. Therefore, due to the physical and emotional problems caused by psoriasis and their relation with increasing age, the patients have to more reduce the time spent on their activities, which

leads to limited accomplishments and more difficulties in the performance by ageing. Since psoriasis is a chronic disease and over time, the effect of used drugs and the disease itself on patients may increase, thus a decrease in QOL is expected when patients age to late life. In this regard, some studies have shown that younger age has a negative impact on QOL (9, 11), while other studies have found no relation between age and QOL, which is consistent with our insignificant results (7, 10). It was shown that, there was no significant relation between gender of the patients and their QOL, which is similar to the result of Mahajan et al., Manjula et al. and Lin et al. studies (7, 9, 10), while Mabuchi et al found higher scores of QOL in women than in men (28). In this study, the education level had positive effect on QOL of people in both patients and healthy control groups but it was only significant in two scales of PF and RP for the psoriatic patients. It is plausible that the lack of significant difference in most of scales may be due to the higher expectations of the people with higher education levels from their lives, which is largely limited by their disease but, on the other hand, the higher levels of education lead to more knowledge and a better self-care that may counterbalance the former factor and this knowledge has led to a better QOL in all scales in healthy controls, in the absence of the disease. In a study on Norwegian adults, the educational level was significantly related to two scales of bodily pain and physical functioning, which is consistent with our findings regarding the latter (29). Therefore, one can conclude that we can improve patients' QOL by educating them about their disease and self-care. In our study, the duration of disease was not significantly related to QOL, which implicates that adaptation over time may not have an impact on patients' QOL. This finding of our study is consistent with Mahajan et al. and Gelfand et al. studies (7, 30). The limitations of our study includes: 1) the small

sample size of the study; 2) assessment of other possible determinants and some related variables was not conducted.

The negative impact of psoriasis on various aspects of patients' QOL is a clear fact. The results of the present study indicate the necessity of appropriate therapeutic, social and psychological interventions in psoriasis patients' lives in order to help them have better quality of life. Moreover, implementing training courses about the nature of the disease and its related issues, and enhancement of self-care for the patients can be an effective move.

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Authors' Contributions

All authors report no conflicts of interest relevant to this article.

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