

# Depression and quality of life in psoriasis and psoriatic arthritis patients

Mahsa Ghajarzadeh, MD<sup>1</sup>  
Shahrbanoo Kheirkhah, SSRC<sup>2</sup>  
Maryam Ghiasi, MD<sup>3</sup>  
Nastaran Hoseini, PHD<sup>4</sup>

1. student scientific research center
2. Students' Scientific Research Center (SSRC), TUMS
3. Assistant professor, Dermatology department, Razi Hospital, Tehran University of Medical Sciences
4. Tehran University of Medical Sciences

Corresponding author:  
Mahsa Ghajarzadeh, MD  
MPH student of Tehran University of Medical Sciences, Students' Scientific Research Center (SSRC)  
Email: mahsa\_blue719@yahoo.com

Conflict of interest : none to declare

Received: June 6, 2011  
Accepted: October 26, 2011

**Background:** Psoriasis is a chronic hyperproliferative disease of the skin, scalp, nails, and joints that affects 2% of the general population. One of the extracutaneous manifestations of psoriasis is psoriatic arthritis which occurs in 25–34% of the psoriasis cases. This type of inflammatory arthritis is characterized by pain, swelling, and tenderness around the joints, and may adversely affect patient's functional abilities and the quality of life.

**Objectives:** To evaluate depression and quality of life in Iranian patients with psoriasis and psoriatic arthritis.

**Materials and methods:** From January 2009 to January 2010, 100 psoriasis patients who were randomly selected (through simple random selection) from the outpatient clinic of Razi Hospital and did not have any other skin or autoimmune diseases were asked to answer valid and reliable instruments such as the Beck Depression Inventory (BDI), SF-36, and DLQI (Dermatology Life Quality Index).

**Results:** Mean scores of the BDI, SF-36, and DLQI of all the patients were  $17.1 \pm 12.3$ ,  $59.8 \pm 19.5$ , and  $12.4 \pm 6.1$ , respectively. The most common type of the disease was the plaque type in eighty eight cases. Thirty-one women and 26 men were depressed ( $P = 0.06$ ), and depressed individuals had higher DLQI scores ( $14.2 \pm 5.5$  vs.  $9.9 \pm 6.2$ ,  $r = 0.3$   $P = 0.001$ ). Patients with arthritis had significantly higher BDI and lower SF-36 scores suggesting more severe depression and quality of life impairment than those without arthritis.

**Conclusions:** Extracutaneous manifestations of psoriasis and mood disorders should be considered in psoriatic patients to address the risk of markedly impaired quality of life.

**keywords:**

Iran J Dermatol 2011; 14: 123-128

## INTRODUCTION

Psoriasis is a chronic hyperproliferative disease of the skin, scalp, nails, and joints that affects 2% of the general population<sup>1</sup>. T lymphocytes, natural killer cells, and pro-inflammatory cytokines are thought to play roles in the pathogenesis of this disorder<sup>2-4</sup>. The physical symptoms of psoriasis include itching, irritation, burning/stinging,

sensitivity, and pain. The disease is classified according to its morphological appearance into plaque, inverse, erythrodermic, pustular, guttate, and nail forms<sup>5</sup>.

Most patients suffer from psychological problems associated with these physical impairments<sup>6,7</sup>. In individuals with visible patches, their appearance may cause stigmatization, being rejected, social withdrawal, impaired personal relationships,

embarrassment, and negative impacts on work and career and unemployment<sup>8-11</sup>. In a study by Kanikowska et al, 50% of Polish psoriasis patients believed that the disease had a great impact on their lives, resulting in physical limitations, suffering, and a disturbed social life<sup>12</sup>. Relatively high rates of depression have been reported in patients with psoriasis. In a previous study by Ermertcan *et al*, patients with psoriasis, especially women, had different sexual dysfunctions as compared to healthy controls as depression in these cases may have a negative impact on sexual function<sup>13</sup>.

Psoriatic arthritis is one of the extracutaneous manifestations of psoriasis which occurs in 25–34% of the cases of psoriasis<sup>14</sup>. This type of inflammatory arthritis is characterized by pain, swelling, and tenderness around the joints, and may affect patient's functional abilities and reduce their quality of life<sup>15</sup>.

In the real world, there is a gap between physicians and psychologists in treating all aspects of psoriasis patients. The present study was performed to evaluate the quality of life and depression in Iranian patients with psoriasis and psoriasis arthritis.

## MATERIALS AND METHODS

From January 2009 to January 2010, a total of 100 psoriasis patients were randomly selected through a table of random numbers from the outpatient clinic of Razi Hospital.

Inclusion criteria were no history of other skin diseases and being at least 18 years old.

The participants were asked to answer valid and reliable instruments including the Beck Depression Inventory (BDI), Medical Outcome Study (MOS) Short-form Health Survey (SF-36), and Dermatology Life Quality Index (DLQI).

The DLQI, which was introduced by Finlay and Khan<sup>16</sup>, is a self-explanatory survey that can be simply answered by patients within 1 or 2 minutes. It consists of 10 questions with six headings: symptoms and feelings (questions 1 and 2), daily activities (questions 3 and 4), leisure (questions 5 and 6), work and school (question 7), personal relationships (questions 8 and 9), and treatment (question 10); scores range from 0 to 30. High scores indicate greater impairment in the quality of life. The Persian version was used to measure

the effect(s) of psoriasis on the quality of life<sup>17</sup>.

The SF-36 questionnaire, which consists of 36 questions addressing eight aspects of health status, is an instrument for measuring the quality of life in the normal population as well as in individuals with various diseases. All questions are scored on a scale of 0 to 100, with 100 representing the highest level of functioning possible. Aggregate scores are compiled as percentages of the total possible score. Higher scores indicate less impairment in quality of life. A valid and reliable Persian version of this questionnaire was applied in our survey<sup>18</sup>.

The BDI consists of 21 questions which are answered by the participants according to their feelings over the last week. Each item is scored from 0 to 3 to determine the participant's degree of depression. Individuals with total scores between 0 and 9 are not recognized as depressed, scores between 10 and 18 are indicative of mild to moderate depression, scores between 19 and 29 indicate moderate to severe depression, and scores between 30 and 63 are defined as severe depression<sup>19</sup>.

SPSS version 13.0 was used for data analysis, and the differences in continuous variables between groups were evaluated using independent sample *t* test and Kruskal-Wallis test. The Pearson  $\chi^2$  test and the Fisher's exact test were applied for categorical variables. The Pearson's correlation was used to examine the association between DLQI and BDI. In all analyses,  $P < 0.05$  was considered to indicate statistical significance.

## RESULTS

One hundred psoriasis patients participated in this cross-sectional study. The mean age of the participants was  $36.2 \pm 13.5$  years, and the mean duration of the disease was  $9.5 \pm 9.6$  years. Seventy-three patients were married, 26 were single, and 1 was divorced. Forty nine were employed, thirty nine were unemployed, and 12 were students. Forty patients were female, and 60 were male (F/M = 0.6). Mean scores of the BDI, SF-36, and DLQI for all patients were  $17.1 \pm 12.3$ ,  $59.8 \pm 19.5$ , and  $12.4 \pm 6.1$ , respectively. The most common type of the disease was the plaque form which was detected in 88 cases. Guttate psoriasis was seen in 9, and nail involvement was observed in three.

All patients with arthritis (nine men and nine women) had plaque-type disease, with a mean

## Depression and quality of life in psoriasis and psoriatic arthritis patients

**Table 1.** distribution of different depression severity levels in different kinds of the disease.

Type of disease	Not depressed	mild to moderate depression	Moderate to severe depression	Severe depressed	P Value
Plaque	5	0	3	1	0.4
Guttate	27	24	19	18	
Nail	1	1	0	1	

**Table 2.** Scores of questionnaires of different types of the disease and mean scores of different aspects of the DLQI questionnaire in different types of the disease.

	Plaque	Guttate	Nail
Number of cases	88	9	3
Mean DLQI score	13.01 ± 6.1	11.1 ± 5.4	13.3 ± 10.01
Mean BDI score	17.5 ± 12.3	13.2 ± 11.5	18.6 ± 19
Mean SF-36 score	58.2 ± 19.4	72.3 ± 15.4	68.4 ± 24.2
Mean score of symptoms and feelings part	3.1 ± 1.5	3.3 ± 1.5	3.6 ± 2.5
Mean score of Daily activities part	2.6 ± 1.5	2.6 ± 1.6	2.3 ± 2
Mean score of leisure part	1.4 ± 1.5	2.6 ± 1.8	1.3 ± 2.3
Mean score of Work and school part	0.4 ± 0.5	0.8 ± 0.8	2 ± 1.7
Mean score of personal relationships	1.8 ± 2.2	2 ± 1.6	2 ± 1.7
Mean score of treatment	4.8 ± 10.6	1.3 ± 0.9	2 ± 1

Only SF-36 score was significantly different between the three patient groups (p=0.04).

**Table 3.** distribution of different depression severity levels in male and female cases.

	Not depressed	mild to moderate depression	Moderate to severe depression	Severe depressed	P Value
Male	24	14	11	11	0.1
Female	9	11	11	9	

**Table 4.** Scores of questionnaires for male and female patients and mean scores of different aspects of DLQI questionnaire in male and female cases.

	Men	Women
DLQI	12.3 ± 6.03	13.6 ± 6.2
BDI	16.01 ± 12.6	18.9 ± 11.9
SF-36	61.4 ± 20.3	57.4 ± 18.3
Mean score of symptoms and feelings part	3.2 ± 1.5	3.5 ± 1.7
Mean score of Daily activities part	2.3 ± 1.5	3.1 ± 1.7
Mean score of leisure part	2.6 ± 1.8	2.4 ± 1.8
Mean score of Work and school part	0.8 ± 0.9	0.8 ± 0.8
Mean score of personal relationships	2 ± 1.6	2.1 ± 1.7
Mean score of treatment	1.8 ± 4.2	1.6 ± 1

Only the score of daily activities was significantly different between the two groups (p=0.03).

**Table 5.** Scores of questionnaires according to marital status and number of patients in different depression severity levels.

	Single	Married	Divorced	P-value
DLQI	12.8 ± 6.3	12.8 ± 6.1	10	0.8
BDI	15.8 ± 10.7	17.6 ± 13	22	0.7
SF-36	63.7 ± 13.9	58.4 ± 21.2	60.4	0.4
Not depressed	8	25	0	0.6
mild to moderate depression	7	18	0	
Moderate to severe depression	8	13	1	
Severely depressed	3	17	0	

**Table 6.** distribution of depression severity levels in cases with and without arthritis.

	Not depressed	mild to moderate depression	Moderate to severe depression	Severe depressed	P Value
With arthritis	1	7	4	6	0.02
Without arthritis	32	18	18	14	

**Table 7.** Questionnaires scores and mean scores of different aspects of DLQI questionnaire in cases with and without arthritis.

	With arthritis	Without arthritis	P-Value
Number of cases	18	82	
BDI	23.5 ± 12.5	15.8 ± 11.9	0.01
DLQI	14.2 ± 5.8	12.5 ± 6.1	0.2
SF-36	35.9 ± 16	65.1 ± 16.1	< 0.001
Mean score of symptoms and feelings part	3.1 ± 1.5	3.4 ± 1.6	0.2
Mean score of Daily activities part	2.7 ± 1.2	2.6 ± 1.7	0.1
Mean score of leisure part	3.4 ± 1.7	2.3 ± 1.7	0.02
Mean score of Work and school part	0.8 ± 0.7	0.8 ± 0.9	0.3
Mean score of personal relationships	2.3 ± 1.5	2 ± 1.5	0.1
Mean score of treatment	1.5 ± 0.9	1.7 ± 3.6	0.2

disease duration of 12.3 ± 10.4 years.

Depressed individuals tended to have higher DLQI scores (14.2 ± 5.5 vs. 9.9 ± 6.2;  $r = 0.3$ ,  $P = 0.001$ ). A significant negative association was found between DLQI and SF-36 ( $r = -0.4$ ,  $P < 0.001$ ).

There was no significant relationship between DLQI and the duration of the disease ( $r = 0.01$ ,  $P = 0.9$ ) or between DLQI and age ( $r = -0.04$ ,  $P = 0.6$ ).

## DISCUSSION

To our knowledge, this is the first study to evaluate the quality of life and depression in Iranian psoriasis and psoriatic arthritis patients simultaneously. Previous studies have suggested that people with psoriasis suffer impaired quality of life when compared to the normal population; the difficulties include body disfigurement, feelings of stigmatization, distress, anxiety, and embarrassment<sup>20,21</sup>.

This survey was performed to determine the effect of psoriasis on the quality of life of a sample of 100 Iranian patients with an overall mean DLQI score of 12.4 ± 6.1.

Ongenaes *et al* reported a mean DLQI score of 6.5 in 162 patients with psoriasis in Belgium<sup>22</sup>, and Meyer *et al* reported a mean DLQI score of 8.5 in patients with severe psoriasis vs. 6.4 in mild psoriasis cases<sup>23</sup>. These observations indicate that disease-related impairment in the quality of life was more profound in our cases as compared to previous studies, although our cases were selected

among outpatients rather than inpatients. These higher scores may be explained by the status of Razi Hospital as a tertiary hospital and a referral center for skin diseases. Another explanation for this finding is perhaps the severity of the disease status and lower adjustment with the disease as a chronic condition in our cases.

One of the most important observations in this study was the impact of different clinical types of psoriasis on mood and quality of life. Although no significant difference was detected in questionnaire scores, our instruments indicated higher levels of depression and disease-related quality of life impairment in patients with nail psoriasis. Augustin *et al.* reported mean DLQI scores of 8.6 in 1511 plaque-type psoriasis patients and 8.9 in 3531 nail-psoriasis patients<sup>24,25</sup>, which were lower than our scores. Sampogna *et al.* reported poorer quality of life as determined by SF-36 in palmoplantar cases than in patients with plaque or guttate types of psoriasis<sup>26</sup>.

It has been reported that 50% of the patients with psoriasis experience depression and anxiety as the consequences of the disease<sup>27</sup>.

The mean BDI of all the patients in the present study was 17.1 ± 12.3, which was higher than that reported by Lee *et al.* (11.47 ± 8.2)<sup>28</sup>. In the present study, women were more depressed and had higher DLQI and lower SF-36 scores than did men, possibly due to the greater stress and shame related to their appearance. We also found a much higher rate of depression in psoriasis patients (57%) as compared to the general population or patients

with other chronic conditions<sup>29</sup>.

Maladaptive coping responses, body image problems, and feelings of shame, stress, and worry have been suggested to cause depression in psoriasis patients. Although there is no evidence of brain involvement in psoriasis, it is suggested that the chronic nature of the disease may be the cause of depression, especially combined with impaired quality of life<sup>26</sup>.

Depression may influence quality of life more than other factors. Our study showed a significant positive association between BDI and DLQI, similar to the findings of Schmitt and Ford who reported depression in 75% of the psoriasis cases with impaired quality of life and suggested that disease severity played a key role in depression and quality of life impairment<sup>30</sup>.

Lack of emotional support in patients with psoriasis, as a result of difficulties in finding a partner, may be responsible for the diminished quality of life<sup>31</sup>. In the present survey, 26% of the patients were single and one was divorced; the divorced individuals had the highest DBI score whereas the lowest SF-36 scores were observed in married patients.

In a study by Lee *et al.*, 20.3% of the patients were single and 9.4% were divorced<sup>28</sup>; in another population study on 265 psoriasis patients, 14% were single, and 20 of the 133 patients with more quality of life impairment were single<sup>30</sup>.

Erosive joint injury occurs in 50% of the patients with early-onset psoriatic arthritis that limits mobility and activity. Effective treatment should reduce pain, swelling, and tenderness to improve the patients' functional abilities and quality of life<sup>32</sup>.

In the present study, patients with arthritis had significantly higher BDI and lower SF-36 scores, indicating greater depression and quality of life impairment as compared to cases without arthritis. These findings support the results of previous studies, indicating that psoriatic patients have functional disabilities and a reduced quality of life when compared to the general population<sup>33</sup>.

These observations indicate that mobility limitations in such cases not only cause physical problems but also affect all aspects of life.

## Conclusions

Quality of life impairment and mood disorders

should be considered in psoriasis and psoriatic arthritis patients. Therefore, effective treatment of psoriasis cases should include multi-facets of disease such as psychological aspects.

## REFERENCES

- Schön MP, Boehncke WH. Psoriasis. *N Engl J Med* 2005;352:1899–912.
- Schmid-Ott G, Jäger B, Boehm T, et al. Different stress-induced membrane molecule profile of circulating lymphocytes in patients with psoriasis and healthy controls. *Psychother Psychos Med Psychol* 2006;56:104.
- Lebwohl M. Psoriasis. *Lancet* 2003;361:1197–204.
- Myers WA, Gottlieb AB, Mease P. Psoriasis and psoriatic arthritis: clinical features and disease mechanisms. *Clin Dermatol* 2006;24:438–47.
- Menter A, Gottlieb A, Feldman SR, et al. Guidelines of care for the management of psoriasis and psoriatic arthritis: Section 1. Overview of psoriasis and guidelines of care for the treatment of psoriasis with biologics. *J Am Acad Dermatol* 2008;58:826–850.
- Schmid-Ott G, Burchard R, Niederauer HH, et al. Stigmatization experience and the quality of life of patients with psoriasis and atopic dermatitis. *Hautarzt* 2003;54:852–857.
- Schmid-Ott G, Kuensebeck HW, Jaeger B, et al. 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;85:27–32.
- Ginsburg IH, Link BG. Feelings of stigmatization in patients with psoriasis. *J Am Acad Dermatol* 1989;20:53–63.
- Richards HL, Fortune DG, Griffiths CEM, Main CJ. The contribution of perception of stigmatization to disability in patients with psoriasis. *J Psych Res* 2001;50:11–15.
- Stern R, Nijsten T, Feldman SR, Margolis DJ, Rolstad T. Psoriasis is common, carries a substantial burden even when not extensive, and is associated with widespread treatment dissatisfaction. *J Invest Dermatol* 2004;9:131–135.
- Heydendael V. The burden of psoriasis is not determined by disease severity only. *J Invest Dermatol* 2004;9:131–135.
- Kanikowska A, Kramer L, Pawlaczyk M. Quality of life in Polish patients with psoriasis. *J EADV* 2009;23:70–110.
- Türel Emertcan A, Temeltaş G, Devenci A, et al. Sexual dysfunction in patients with psoriasis. *J Dermatol* 2006;33:772–778.
- Gladman DD. Psoriatic arthritis. *Dermatol Ther* 2004;17:350–363.
- Zachariae H, Zachariae R, Blomqvist K, et al. Quality of life and prevalence of arthritis reported by 5,795 members of the Nordic Psoriasis Association. Data from the Nordic Quality of Life Study. *Acta Derm Venereol* 2002;82:108–113.



16. Finlay AY, Khan GK. Dermatology Life Quality Index (DLQI)—a simple practical measure for routine clinical use. *Clin Exp Dermatol* 1994;19:210–216.
17. Aghaei S, Sodaifi M, Jafari P, et al. DLQI scores in vitiligo: reliability and validity of the Persian version. *BMC Dermatology* 2004;4:8.
18. Jafari H, Lahsaeizadeh S, Jafari P, et al. Quality of life in thalassemia major: reliability and validity of the Persian version of the SF-36 questionnaire. *JPGM* 2008;54:273–275.
19. Ghassemzadeh H, Mojtabai R, Karamghadiri N, Ebrahimkhani N. Psychometric properties of a Persian-language version of the Beck Depression Inventory—Second edition: BDI-II-PERSIAN. *Depress Anxiety* 2005; 21:185–192.
20. Gupta MA, Gupta AK. Depression and suicidal ideation in dermatology patients with acne, alopecia areata, atopic dermatitis and psoriasis. *Br J Dermatol* 1998;139:846–850.
21. Gupta MA, Schork NJ, Gupta AK, et al. Suicidal ideation in psoriasis. *Int J Dermatol* 1993;32:188–190.
22. Ongenaë K, Van Geel N, De Schepper S, et al. Effect of vitiligo on self-reported health-related quality of life. *British Journal of Dermatology* 2005;152:1165–1172.
23. Meyer N, Paul C, Feneron D, et al. Psoriasis: an epidemiological evaluation of disease burden in 590 patients. *J Eur Acad Dermatol Venereol* 2010;24:1075–1082.
24. Augustin M, Krüger K, Radtke MA, et al. Disease severity, quality of life and health care in plaque-type psoriasis: a multicenter cross-sectional study in Germany. *Dermatology*. 2008;216:366–372.
25. Augustin M, Reich K, Blome C, et al. Nail psoriasis in Germany: epidemiology and burden of disease. *Br J Dermatol* 2010;163:580–585.
26. Sampogna F, Tabolli S, Soderfeldt B, et al. Measuring quality of life of patients with different clinical types of psoriasis using the SF-36. *British Journal of Dermatology* 2006;154:844–849.
27. Fried RG, Friedman S, Paradis C, et al. Trivial or terrible? The psychosocial impact of psoriasis. *Int J Dermatol* 1995;34:101–105.
28. Lee YW, Park EJ, Kwon IH, et al. Impact of psoriasis on quality of life: relationship between clinical response to therapy and change in health-related quality of life. *Ann Dermatol* 2010;22:389–396.
29. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*. 2000; Washington, D: author.
30. Schmitt JM, Ford DE. Role of depression in quality of life for patients with psoriasis. *Dermatol* 2007;215:17–27.
31. Koo J. Population-based epidemiologic study of psoriasis with emphasis on quality of life assessment. *Dermatol Clin* 1996;14:485–496.
32. Gottlieb AB, Dann F. Comorbidities in patients with psoriasis. *The American Journal of Medicine* 2009;122:1150.e1-1150.e9.
33. Husted JA, Gladman DD, Farewell VT, et al. Validating the SF-36 health survey questionnaire in patients with psoriatic arthritis. *J Rheumatol* 1997;24:511–517.