

Evaluation of Some Psychological Factors in Psoriatic Patients

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Background: Psoriasis is a disease which may have a direct impact on the psychological and social aspects of the patient, particularly due to its visibility. To date, we are unaware of any study showing a relationship between psoriasis and psychological parameters such as psychological vulnerability and coping strategies .

Objective: The aim of this study was to evaluate the effects of psoriasis on some psychological parameters in an Iranian population .

Methods: Patients having histopathologically confirmed psoriasis for at least 6 months attending the Dermatology Clinic of Razi Hospital were included if they agreed to participate in the study. Patients with history of schizophrenia, major depression or other psychological disorders were excluded. All patients were at least 18 years old. The patients were then referred to the researchers for filling out the appropriate questionnaires under the guidance of an involved psychologist. To evaluate skin involvement, Psoriasis Area Severity Index (PASI) score was calculated and used for all patients. All data were stored in files for further analysis .

Results : There were 101 females and 99 males with the mean age of 43.2(±16.32). The mean PASI Score was 6.58 ± 6.04. Diffuse skin involvement was the commonest form of disease (133 patients, 66.5%). The highest score for Illness perception belonged to those with genitalia involvement (185.2, worst illness perception), and the lowest score for Illness perception belonged to those with nail involvement (168.2). Consistently, the lowest score of facing the problems (CISS: approach strategy to disease) belonged to those with hand involvement (50.5) whereas the highest score belonged to those with genitalia involvement (60.4). There was a significant correlation between psychological vulnerability vs. Illness perception score as well as psychological vulnerability vs. coping strategies score. Surprisingly, PASI score had an insignificant relationship with illness perception, coping strategies or psychological vulnerability score .

Conclusion: PASI score as a representing factor of skin involvement has a limited role in predicting the effect of psoriasis on mental status and illness perception of psoriatic patients. Psychological vulnerability of the patients is the main predicting factor of illness perception and coping strategies (representing patients approach to their disease or their treatment beliefs).

Keywords: *Mental Health, Psoriasis, Psychology, PASI score*

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Psoriasis is a disease which may have a direct impact on the psychological and social aspects of the patient, particularly because of its visibility. Patients with psoriasis have an impaired quality of life, and different mental health disorders are found among them. Some studies have shown the influence of stressful life events on onset, exacerbation and relapse of psoriasis (1). Psoriasis has multiple possible causes, and medical professionals should pay additional attention to recognize all contributing factors of this disease (2, 3). It is shown that the prevalence of psychiatric disorders is higher in

patients with moderate-to-severe psoriasis (4). Suicide and its related death is higher among these patients (5). Pediatric patients with psoriasis have an increased risk of developing psychiatric disorders, including depression and anxiety, compared with psoriasis-free control subjects (6). It is shown that depression was independently associated with an increased risk of psoriasis among American women (7). To date, we are unaware of any study showing the effect of psoriasis on psychological parameters such as psychological vulnerability and coping strategies of patients. In this study, we aimed to evaluate the effect of psoriasis on these parameters in an Iranian population. We aimed to determine the

relationship between psychological vulnerability (8) (SCL-90), coping strategies (CISS) (9) or patients approach to their disease representing treatment beliefs and illness perception (10) (IPQ-R) scores. Also, we used PASI score to evaluate the extension and severity of the disease and tried to assess the effect of the disease on coping strategies and other psychological measurements.

Material and Methods

Participants

This study was conducted from 2010 to 2012. Patients having histopathologically confirmed psoriasis for at least 6 months attending the dermatology clinic of Razi Hospital were randomly included if they agreed to participate in this cross-sectional correlational study. Patients with the history of schizophrenia, major depression, other diagnosed psychological disorders and patients on psychotropic drugs were excluded. All patients were at least 18 years old. The patients were then referred to the researchers for filling out the questionnaires under the guidance of an involved psychologist. All participants gave written consent before participation. The research was carried out according to the principles of the declaration of Helsinki. The local ethics review committee of Tehran University of Medical Sciences approved the study protocol. The medical simultaneous therapy history of the patients was also recorded.

Questionnaires

We used standard psychological questionnaires to gather data about the mental status of the patients. They are as follows.

A: Psychological Vulnerability Questionnaire (SCL-90): The Symptom Checklist 90 (SCL-90) is a psychiatric self-report inventory. The 90 items in the questionnaire are scored on a five-point Likert scale, indicating the rate of occurrence of the symptom during the time reference. This questionnaire is intended to measure symptom intensity on nine different subscales. It has been shown to have a good reliability as its internal consistency is high. The SCL-90 is well-suited for measuring general mental health. This questionnaire was re-standardized according to Iranian population and scores above 45 were considered significant.

B: Coping Inventory for Stressful Situations (CISS): CISS consists of 48 statements about different behaviors typical for people in distress. Subjects have to determine the frequency of a given behavior in stressful and difficult situations on a five-point scale. This score represents the efficacy of coping strategies of subjects use to face the problems. Here, this score reflects having compliance to treat psoriasis (problem-oriented approach to disease vs. avoidance or emotional approach).

C: Illness Perception Questionnaire (IPQ-R): Illness perceptions have a wide variety of applications in the

health psychology area. Illness perceptions have been used to evaluate patients' insight about a particular disorder. For example, an idea that an illness can be cured or controlled is typically associated with short perceived illness duration and relatively minor consequences (lower IPQ-R score). In contrast, the idea that an illness will last a long time and has chronic symptoms, would be associated with more severe consequences as well as higher IPQ-R scores and bad ideas about the cure or control of that disease. The IPQ-R score represents how gloomy patients see their prognosis.

Linear regression analysis was employed to provide predictors of Illness perception in patients with psoriasis. We also used standard PASI score index to achieve practical index about the severity of skin involvement of patients.

Statistical Analysis

The statistical package SPSS 16 for windows (Chicago, Illinois, USA) was used for analysis. Quantitative variables were presented as mean \pm standard deviation (SD). To compare the studied variables between groups, independent sample t test and chi square test were employed. One way ANOVA was employed to compare the variables between age groups.

Results

There were 101 females and 99 males with the mean age of 43.2 ± 16.32 . The mean PASI score was 6.58 ± 6.04 . Of the participants, 31 were illiterate (15.5%), 45 had primary school education (22.5), 39 had middle school education (19.5%), 58 had high school diploma (30%) and 25 were highly educated (12.5%).

The mean score for psychological vulnerability (SCL-90) was 88.3 ± 4.7 while the mean score for coping strategies (CISS) and illness perception (IP) was 54.7 ± 11.3 and 172.5 ± 15.48 , respectively. Table 1 provides an overview of the stratified psychosocial parameters according to the psoriasis involvement sites. As shown, the highest score for illness perception belonged to those with genitalia involvement (worst illness perception), and the lowest score for illness perception belonged to those with nail involvement. Consistently, the lowest score of facing the problems (CISS: approach strategy to disease) belonged to those with hand involvement whereas the highest score belonged to those with genitalia involvement. However, these values were not significantly different.

There was a significant correlation between psychological vulnerability (SCL-90) vs. illness perception (IPQ-R) as well as psychological vulnerability vs. coping strategies (CISS). We did not find a significant correlation between illness perception and coping strategies (Table 2). The importance of these findings is discussed later.

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Table 1: Psychosocial parameters stratified according to the psoriasis involvement sites. As it is shown the highest score for illness perception belongs to those with genitalia involvement and the lowest score for illness perception belong to those with nail involvement. Consistently the lowest value of CISS (facing with the problems) belongs to those with hand involvement and the highest value belongs to those with genitalia involvement. However these values are not significantly different

	location	Number of patients	Score
IPQ-R (Illness Perception)	Nail	6	16.8±11.6
	Hand	11	172.7±11.2
	Head and neck	27	172.3±13.04
	Genitalia	6	185.2±13.9
	Others	91	173.4±15.09
	Two or more sites of lesions	51	173.4±15.09
CISS (Facing with the disasters)	Nail	6	54.4±7.09
	Hand	11	50.55±14.18
	Head and neck	27	56±11.73
	Genitalia	6	60.4±12.17
	Others	91	55.1±10.59
	Two or more sites of lesions	51	52.68±1.71

Table 2: We showed that there is significant correlation between Psychological Vulnerability vs. illness perception as well as Psychological Vulnerability vs. coping strategies. We did not find a significant correlation between illness perception and coping strategies

	Mean	Correlation	Level of significance
Psychological vulnerability	88.3		
Illness perception	172.5	0.27	0.001
Psychological Vulnerability	88.3		
Coping strategies	54.7	0.15	0.03
Illness perception	172.5		
Coping strategies	54.7	-0.03	0.6

Table 3: Coping strategies stratified according to different age groups

	Highest calculated score	Lowest calculated score	Standard deviation of Mean	Mean	Prevalence
10-20	78	36	13.2	59.18	16
21-30	86	30	12.73	58.79	39
31-40	75	36	10.06	54.62	32
41-50	74	30	11.23	54.93	44
51-60	78	34	10.49	52.05	38
61-70	72	33	9.74	49.75	20
>71	58	38	5.89	51.18	11

Differences between patients in different age groups are significant regarding the coping strategies. ($p < 0.05$)

Table 4: Coping strategies and educational levels

	Highest calculated score	Lowest calculated score	Mean*
Illiterate (31)	71	34	47.03
Primary school (45)	78	31	51.73
Middle school (39)	81	30	57.69
High school (57)	86	30	57.84
2 years bachelor (8)	76	43	57.25
Bachelors and higher (15)	75	43	58.2
Masters (2)	58	44	51

*: Coping strategies score (CISS) is related to educational level ($p < 0.001$)

Table 5: different treatment regimens prescribed for patients

Treatment regimen	Frequency (%)
Topical	45 (22.5%)
Oral treatment	134 (67%)
Parental therapy	16 (8%)
Physical therapy	5 (2.5%)
total	200 (100%)

We found that psychological vulnerability score (SCL-90), illness perception (IPQ-R) and coping strategies score (CISS) had no significant relationship with the PASI score.

A linear regression modeling was employed to provide a model of variables predicting illness perception.

As shown, significant differences were found between patients in different age groups with regards to coping strategies (Table 3); this represents age effect on coping strategies (compliance for treatment). Patients in the third decade of life had the highest CISS score and compliance for treatment.

We also found that coping strategies score (CISS) was related to educational level as those with masters had the highest (best) score and the illiterate patients had the lowest (worse) score (Table 4). Also, illness perception significantly differed according to different educational levels.

Table 5 demonstrates different treatment regimens prescribed for the patients.

Discussion

There are limited data providing the evidence of psychological vulnerability, illness perception and coping strategies in patients with psoriasis. The relation between skin and central nervous system has long been known; however, how they would influence each other is not completely known yet. It is hypothesized that the psoriatic inflammatory process may possibly have a direct central nervous system effect (11).

Psoriasis is a chronic dermatologic disorder with heavy social and psychiatric burden in addition to skin problems. The present study focused on some not well-known aspects of this disorder. Our findings from the selected patients with psoriasis showed a significant correlation between psychological vulnerability score (SCL-90) and illness perception score (IPQ-R) as well as psychological vulnerability score (SCL-90) and coping strategies score (CISS). This means that some psoriatic patients have compromised mental health that corresponds with poor perception of their disease and vice versa. Again, psoriatic patients have defective mental health that compromises their coping strategies (problem-oriented approach that represents compliance for treatment) and vice versa.

We showed that while psychological vulnerability (SCL-90) is a significant predictor of illness perception, coping strategies (facing with problems) does not take a significant part in the model.

Interestingly, lower scores of illness perception questionnaire do not consistently reflect compromised coping mechanisms, meaning that considering the chronic nature of the disease, the negative impact of the disorder and often the dissatisfaction with different treatments, psoriatic patients are not hopeless and actively seek other treatment modalities.

We also showed that while psychological vulnerability is a significant predictor of illness perception, coping strategies does not take a significant part in the model.

This finding shows that poor illness perception in psoriatic patients is due to their problematic mental health represented by psychological vulnerability (SCL-90). In other words, we can test psoriatic patients with SCL-90 questionnaire and if they obtained high score (impaired mental health), then they probably have poor perception about their disease, resulting in "growler patient" who seeks "more effective treatment" in every visit.

There is a significant difference between patients in different age groups with regards to coping strategies (CISS) with maximum score in third decade of life. This may be due to the importance of "semblance" in these ages. Patients in this age group have a high score in the illness perception questionnaire (IPQ-R); and again, this emphasizes the independency between CISS and IPQ-R.

We showed that psychological vulnerability, illness perception and coping strategies are not correlated with the PASI score. It seems that PASI score has no place in predicting the impact of psoriasis on mental status and illness perception of patients as well as coping strategies. This justifies why some patients with low PASI scores look for aggressive treatments and vice versa.

Psychological stress adversely affects the immune system and aggravates various skin diseases such as psoriasis; however, the precise underlying mechanisms remain to be elucidated (12). While Anti-Tumor Necrosis Factor (Anti-TNF) therapy is associated with improvement in both physical and mental status in psoriasis patients, the role of this treatment on mental health is not known yet (13, 14). Many studies have shown that psoriasis negatively impacts the quality of life and its co-morbid conditions (15-20). However, our findings have not confirmed these results. Consistent with our data, some studies have shown that the disease severity of psoriasis had no direct reflection upon their quality of life. On the other hand, they have shown that limited psoriasis on a visible area may also have greater impact on mental health (21).

Recently, a study from Sweden showed that early detection of psychological vulnerability when treating patients with psoriasis seems to be of great importance (22).

They showed a significant relationship between early onset disease and greater psychological symptoms and concluded that these traits may be seen as a consequence of psoriasis, and/or as individual traits modulating and impairing clinical course and efforts to cope with psoriasis. We also showed that generally the psychological vulnerability of patients probably determines their illness perception and coping efforts.

The large variability between different studies may be due to the small sample size and cultural differences. The impact of psoriasis on mental health may be lower in the societies in which the body coverage is mandatory for women such as in Islamic countries.

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The principal limitation of the current study was its lack of follow up and control group. However, we took advantage of a relatively large sample size.

Conclusion

Psoriasis as a dermatologic disorder has complex effects on mental health and psychological status of the patient. We recommend using the above-mentioned questionnaires for all psoriatic patients as well as analyzing the results in order to achieve a better perspective from their psychological status. This helps to individualize the treatment for every patient. We also emphasized that PASI score should not be considered a unique evaluating factor in the adjustment of the treatment, and the personal psychological status of the patient (represented by IPQ-R and SCL-90) should also be considered.

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References

1. Sarilar M, Koic E, Dervinja F. Personal experiences of the psoriasis and its relation to the stressful life events. *Coll Antropol* 2011; 35 Suppl 2: 241-243.
2. Kumar S, Kachhawha D, Das Koolwal G, Gehlot S, Awasthi A. Psychiatric morbidity in psoriasis patients: a pilot study. *Indian J Dermatol Venereol Leprol* 2011; 77: 625.
3. Reich A, Hrehorow E, Szepletowski JC. Pruritus is an important factor negatively influencing the well-being of psoriatic patients. *Acta Derm Venereol* 2010; 90: 257-263.
4. Han C, Lofland JH, Zhao N, Schenkel B. Increased prevalence of psychiatric disorders and health care-associated costs among patients with moderate-to-severe psoriasis. *J Drugs Dermatol* 2011; 10: 843-850.
5. Picardi A, Lega I, Tarolla E. Suicide risk in skin disorders. *Clin Dermatol* 2013; 31: 47-56.
6. Kimball AB, Wu EQ, Guerin A, Yu AP, Tsaneva M, Gupta SR, Bao Y, Mulani PM. Risks of developing psychiatric disorders in pediatric patients with psoriasis. *J Am Acad Dermatol* 2012; 67: 651-657.
7. Dominguez PL, Han J, Li T, Ascherio A, et al. Depression and the risk of psoriasis in US women. *J Eur Acad Dermatol Venereol* 2012. (Article first published online: 3 OCT 2012)
8. Derogatis LR, Lipman RS, Covi L. SCL-90: An outpatient psychiatric rating scale, preliminary report. *Psychopharmacol. Bull* 1973; 9: 13-28.
9. Ender NS, Parker, JD. Multidimensional Assessment of Coping: A Critical Evaluation. *Journal of Personality and Social Psychology* 1990; 58: 844-854.
10. Moss-morris R, Weinman J, Petrie K, et al. The revised illness perception questionnaire (IPQ-R). *Psychology and Health* 2002; 17: 1-16.
11. Leibovici V, Canetti L, Yahalomi S, Cooper-Kazaz R, Bonne O, Ingber A, Bachar E. Well being, psychopathology and coping strategies in psoriasis compared with atopic dermatitis: a controlled study. *J Eur Acad Dermatol Venereol* 2010; 24: 897-903.
12. Zhang J, Li L, Lu Q, Xiao R, Wen H, Yan K, Li Y, Zhou Y, Su Y, Zhang G, Li W, Zhou J. Acute stress enhances contact dermatitis by promoting nuclear factor-kappaB DNA-binding activity and interleukin-18 expression in mice. *J Dermatol* 2010; 37: 512-521.
13. Saad AA, Ashcroft DM, Watson KD, Symmons DP, Noyce PR, Hyrich KL. Improvements in quality of life and functional status in patients with psoriatic arthritis receiving anti-tumor necrosis factor therapies. *Arthritis Care Res (Hoboken)* 2010; 62: 345-353.
14. Leung YY, Ho KW, Zhu TY, Tam LS, Kun EW, Li EK. Testing scaling assumptions, reliability and validity of medical outcomes study short-form 36 health survey in psoriatic arthritis. *Rheumatology (Oxford)* 2010; 49: 1495-1501.
15. Kimball AB, Bensimon AG, Guerin A, Yu AP, Wu EQ, Okun MM, Bao Y, Gupta SR, Mulani PM. Efficacy and safety of adalimumab among patients with moderate to severe psoriasis with co-morbidities: Subanalysis of results from a randomized, double-blind, placebo-controlled, phase III trial. *Am J Clin Dermatol* 2011; 12: 51-62.
16. Bohm D, Stock Gissendanner S, Bangemann K, Snitjer I, Werfel T, Weyergraf A, Schulz W, Jager B, Schmid-Ott G. Perceived relationships between severity of psoriasis symptoms, gender, stigmatization and quality of life. *J Eur Acad Dermatol Venereol* 2013; 27: 220-226.
17. Husted JA, Tom BD, Farewell VT, Gladman DD. Longitudinal study of the bidirectional association between pain and depressive symptoms in patients with psoriatic arthritis. *Arthritis Care Res (Hoboken)* 2012; 64: 758-765.
18. Grozdev I, Kast D, Cao L, Carlson D, Pujari P, Schmotzer B, Babineau D, Kern E, McCormick T, Cooper KD, Korman NJ. Physical and mental impact of psoriasis severity as measured by the compact Short Form-12 Health Survey (SF-12) quality of life tool. *J Invest Dermatol* 2012; 132: 1111-1116.
19. Varni JW, Globe DR, Gandra SR, Harrison DJ, Hooper M, Baumgartner S. Health-related quality of life of pediatric patients with moderate to severe plaque psoriasis: comparisons to four common chronic diseases. *Eur J Pediatr* 2012; 171: 485-92.
20. Tang MM, Chang CC, Chan LC, Heng A. Quality of life and cost of illness in patients with psoriasis in Malaysia: a multicenter study. *Int J Dermatol* 2013; 52: 314-322.

21. Shankar V, Ghosh S, Ghosh K, Chaudhuri U. Pasi and pqaol-12 score in psoriasis: is there any correlation? *Indian J Dermatol* 2011; 56: 287-289.
22. Remröd C, Sjöström K, Svensson A. Psychological differences between early- and late-onset psoriasis: a study of personality traits, anxiety and depression in psoriasis. *Br J Dermatol*. 2013; 169: 344-350.