

## Original Article

# Effect of vitiligo on self reported quality of life in Southern part of Iran

Soodabeh Zandi, Saeideh Farajzadeh, Narjes Saberi

Department of Dermatology, Kerman Leishmaniasis Research Center, Kerman University of Medical Sciences, Kerman, Iran

**Abstract** *Background* Vitiligo is a chronic pigmentary disorder of the skin. Although not life threatening, it has considerable effects on the psychological well-being of patients. It has been suggested that vitiligo patients suffer from low self-esteem and poor body image which may cause a lower level of quality of life.

*Objective* To evaluate the effect of vitiligo on the self reported quality of life among inhabitants of south part of Iran.

*Patients and methods* One hundred and twenty four patients, above 16 years of age, from dermatology clinics and phototherapy centers were included in the study from 2008 to 2009. A valid translated version of the self-reported Dermatology Life Quality Index (DLQI) with 10 questions was completed by the subjects. The questionnaire scored the subjects from 0 to 30. Demographic variables such as age, gender, and disease related characteristics were recorded in the data sheet forms.

*Results* On average, patients were  $27.8 \pm 10.9$  years old. Around 55% were females. The overall mean DLQI score was  $9.09 \pm 6.18$ . The DLQI mean score was 8.78 and 9.46 in women and men, respectively ( $p=0.54$ ). DLQI score did not significantly vary among different types of disease, age and marital status groups. Although the relationship between the duration of disease was not significantly related with DLQI ( $r=0.03$ ,  $p=0.74$ ), the percentage of body affected by vitiligo was related with DLQI significantly ( $r=0.19$ ,  $p=0.03$ ). The highest individual mean scores were found for Q2 (feeling), Q8 (interpersonal relationship) and Q5 (social life and leisure activities).

*Conclusion* This study indicates that vitiligo can impair a patient's quality of life and have a marked psychological impact. On an average, the quality of life decreased around 70% (score 9 out of 30) in such patients. The only significant predictor for quality score was the percentage of body affected by vitiligo. Surprisingly, both men and women express comparable level of quality of life.

### **Key words**

Vitiligo, quality of life, Iran

## **Introduction**

Vitiligo is an acquired depigmentation disorder affecting 1-4% of the world population. The

highest age-specific prevalence of vitiligo was seen among people 20-30 years old<sup>1</sup> with symmetrical incidence rates in men and women.<sup>2</sup> Children of probands are found to be afflicted about 1.7 times more commonly than other first-degree relatives. The relative risk for vitiligo is about seven for parents, 12 for siblings, and 36

---

### **Address for correspondence**

Dr. Soodabeh Zandi  
Afzalipour Hospital, Imam Blvd,  
Kerman, Iran. Postal Code: 76169-14111  
E-mail: szandi@kmu.ac.ir

for children<sup>3</sup> which indicates a familial aggregation of vitiligo.

A healthy normal skin is essential for a person's physical and mental wellbeing and any pathological malformation can have substantial psychological consequences.<sup>4</sup> The sense of being stigmatized or being different from others is a common reaction and may affect the person's interpersonal and social behavior, which may increase the risk of depression and other psychosocial disorders.<sup>5</sup> Salzer *et al.*<sup>6</sup> reported that 75% of vitiligo patients found their disfigurement intolerable.

The chronic nature of disease, long term treatment, lack of uniform effective therapy and unpredictable prognosis of disease/therapy make the patients suffer more from the disease.<sup>7</sup> Moreover, the costs of disease for patients are considerable.<sup>8</sup>

The etiologies of vitiligo are still under investigation. A possible relationship between stress and the development of vitiligo is hypothesized by some authors. Al-Abadie *et al.*<sup>9</sup> indicate that psychological stress increases the level of neuroendocrine hormones. These hormones activate the immune system and increase the level of neuropeptides subsequently. Such physiopathological changes may be the initiating or exacerbating factors for pathogenesis of vitiligo.

In some studies the nature and extent of the social and psychological aspect of the disease was investigated using dermatology life quality index (DLQI). The results clearly demonstrated that patients with vitiligo prone to have a lower level of quality of life which could interfere with their therapeutic outcome.<sup>10,11</sup> Papadopoulos *et al.*<sup>12</sup> have shown that psychological counseling not only helps improve body image, self-esteem

and quality of life of patients with vitiligo, but also provides better control of disease.

Quality of life (QL) is a multidimensional index of the different social, behavior and cultural factors. Different tools were created for measuring QL focusing on different conditions and diseases. Regarding dermatological disorders, DLQI was proposed by Finlay *et al.*<sup>10</sup> in 1994. This questionnaire was applied in many studies.<sup>7,11,13,14</sup> The validity and reliability of the Persian version was approved in Shiraz.<sup>15</sup> A valid translated version of this questionnaire is applied in our study to determine the quality of life of vitiligo patients in the biggest province of south part of Iran.

## **Patients and methods**

We conducted a cross-sectional survey of 124 adults above 16 years of age, referred to private dermatology clinics, phototherapy center and dermatology clinic in Kerman Afzalipour hospital during 2008 to 2009.

All the patients were examined by well-trained physicians. The entire demographic variable including sex, age, marital status, duration of disease and positive family history were registered in specific forms. The location and type of disease (localized, generalized, segmental, universal, acrofacial, and epithelial) were diagnosed by standard physical examination. The percentage of disease lesions were calculated by the 9-9 rule.

Next, patients were asked to fill the DLQI questionnaire<sup>12</sup> after having their informed consent signed. It was a valid translated questionnaire including 10 items on patient's feelings and many aspects of the disease in the last week. The questions included 'symptoms of vitiligo' (itching, pain, and irritation), 'feeling'

(embarrassment, distressed, and anger) 'routine activities' (shopping and house works), 'kind of clothes', 'social or leisure activities', 'physical exercise', 'educational activities', 'sexual activities', 'interpersonal relationships' (with wife, friends, relatives) and 'treatment options'.

Each item was scored on a three-point scale (3=very much, 2=a lot, 1=a little, 0=not at all). Subsequently, the maximum and minimum scores for the questionnaire were 0-30 points. We categorized the acquired score to 0-1 indicate "no effects on QL", 2-5 "a little effects on QL", 6-10 as "medium effects on QL", 11-20 as "Severe effect on QL", and 21-30 as "very sever effect on QL" of patients.

All data were analyzed using the statistical package for social sciences; version 11.5 SPSS. DLQI scores were assessed using T test with  $p < 0.05$  considered as significant level. The relationship between DLQI score and other numerical variables was calculated by Pearson correlation coefficient. The categorized DLQI score relationship with different categorical variables was examined by Chi square test.

## Results

The data of 124 patients were analyzed. Their age varied from 16 to 60 with the average of  $27.8 \pm 10.9$  years. The patients included 68 (54.8%) women. Totally, 66 (53.2%) were single and 35 (28.8%) had positive familial history of vitiligo.

The mean duration of disease was 6.28 (SD 6.37), with body involvement of 12.8% (SD 15.93). The maximum and minimum per cent for the body involvement were 1% to 85%. Leukotrichia and Kobner phenomenon were diagnosed in 33.1% and 33.9% of patients, respectively.

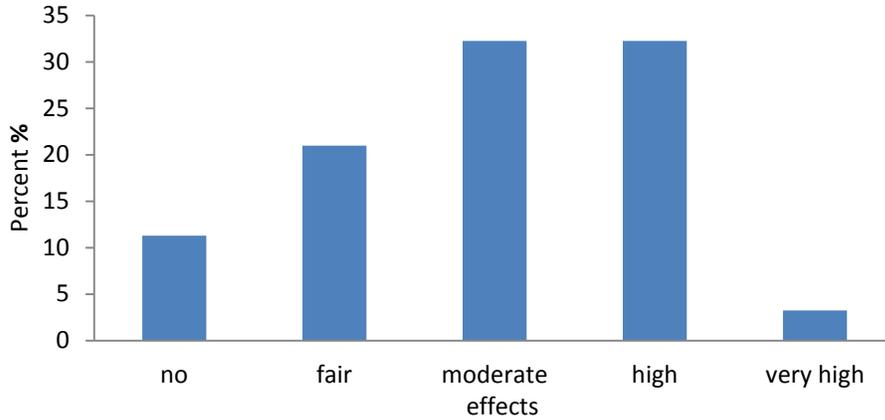
The total average of DLQI score was  $9.09 \pm 6.2$ . Most of the patients (64.5%) scored as the medium to high negative effect of disease on quality of life (**Figure 1**).

The item analysis of the questionnaire is presented in **Figure 2**. The highest effects of disease on QL were found for feeling (item2), interpersonal relationship (item 8), and social and leisure activities (item 5), respectively. The least effects of vitiligo on QL were reported for sexual activities (item 9) and physical exercise (item 7B).

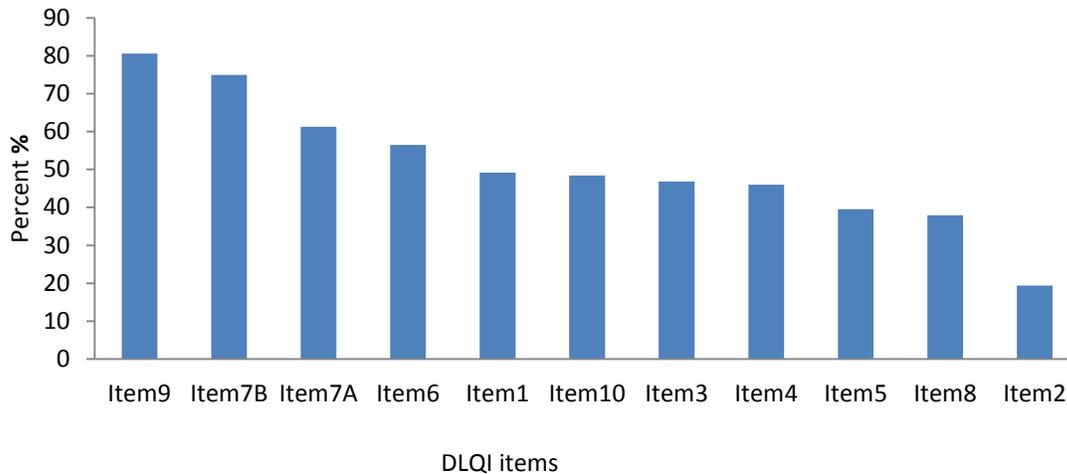
The mean DLQI in male ( $9.46 \pm 6.64$ ) and female ( $8.78 \pm 5.81$ ) had no statistical differences ( $p = 0.54$ ). The difference between single ( $8.74 \pm 5.97$ ) and married ( $9.48 \pm 6.44$ ) regarding DLQI mean score was not significant, too ( $p = 0.38$ ), whereas single patients had better quality of life. The quality of life was more affected by disease in younger than older patients but the relationship was not statistically significant ( $r = -0.08$ ,  $p = 0.33$ ). In comparison to other, patients with Kobner phenomenon ( $p = 0.688$ ) and leukotrichia ( $p = 0.323$ ) had the same score of quality of life.

Patients with higher percentage of body involvement experienced lower levels of quality of life, but the relationship was statistically significant ( $r = 0.19$ ,  $p = 0.03$ ). In contrast, the relationship between the duration of disease and DLQI score was not significant ( $r = 0.03$ ,  $p = 0.74$ ).

**Table 1** demonstrates the DLQI mean score regarding location of lesions and type of vitiligo. The highest score of DLQI was seen for facial, neck, acral involvements. Patients with more than five different sites involvements had lower quality of life in compare to others ( $p = 0.02$ ).



**Figure 1** Effect of vitiligo on the quality of life.



**Figure 2** Analysis of the questionnaire items

**Discussion**

The findings indicate that vitiligo had a severe effect on the quality of life in 67.11% of studies patients. Such findings were supported by others studies when reporting the mean score of DLQI from a minimum of 4.82 to maximum 10.67.<sup>13,15,17</sup> The DLQI mean score in our study was 9.09 which indicated a middle level among the other studies.

This study showed that vitiligo influences many aspects of a patient’s life. Most of the patients feel embarrassment and anger of their condition.

Also, it affects all daily, occupational, educational and leisure time activities. The most negative effect of disease on quality of life were found in feelings, emotions, interpersonal relationships, social and leisure time activities related items. These findings are comparable with reports from Ongenae *et al* and Holme *et al*.<sup>16,17</sup>

Although many studies reported that women with vitiligo experienced significantly more quality of life impairment than did men,<sup>14,16</sup> there are some other studies which expressed no relationship between gender and quality of

**Table 1** The frequency of different types of vitiligo, site of involvement with the DLQI mean score.

<i>Vitiligo features</i>	<i>N (%)</i>	<i>DLQI mean score</i>
<i>Clinical type</i>		
Localized	53 (42.7%)	10.21
Generalized	41 (33.06%)	8.9
Segmental	6 (4.83%)	9.16
Universal	6 (4.83%)	8.66
Acrofacial	17 (13.7%)	11.48
Mucosal	1 (0.8%)	15
Total	124 (100%)	9.09
<i>Site of involvement</i>		
Head, face, neck	67 (35.5%)	9.092
Trunk	80 (64.3%)	7.40
Limbs	67 (53.5%)	8.11
Acral	39 (31.2%)	9.45
Mucosal	23 (19.2%)	8.4
<i>Number of involved sites</i>		
Less than 2 sites	39 (31.4%)	8.71
2 to 4 sites	75 (61.4%)	7.33
More than 5 sites	9 (7.2%)	10.72

life.<sup>7,11</sup> In our study, both men and women had almost the same scores. Special clothing of Muslim women, covering most parts of the skin and hid the lesions, could make the women adapt more easily to the disease than women in other countries.<sup>14</sup>

We found that age did not significantly relate with the quality of life in patients suffered from vitiligo. Other studies did not identify such relationship, too.<sup>11,15,16</sup> Due to cultural beliefs in Iran, the vitiligo patients were prone to more stigmatization. It acts as a barrier for entering in interpersonal relationships such as marriage or employment of adults as compared to young ones who were not seeking jobs or marriage.

Holms *et al.*<sup>17</sup> showed that the quality of life improved by cosmetic intervention on vitiligo patients from 5.5 at the baseline to 8.6 after the intervention. It means that the impairment of quality of life in such patients could be improved by implementing effective therapies. Some studies compared vitiligo to other skin diseases such as psoriasis regarding the quality

of life.<sup>16</sup> The authors indicated that QL score in vitiligo group was about 4.9 lower than the psoriasis group. They concluded that even in comparison with psoriasis, a generalized skin disease with severe and painful manifestation, the effect of vitiligo on quality of life is considerable.<sup>16</sup> Such an explanation is supported by the findings as we detected an inverse significant relationship between the percentage of body affected by vitiligo and QL.

We acknowledge the limitation of our study - we had no external control group, consisting of healthy individuals to compare the quality of life and it makes it hard to estimate the pure effects of vitiligo on QL. We used DLQI and it is a specific questionnaire designed to measure the quality of life affected by skin disorders. Although it is a valid measurement tool for patients with skin disorders, its applicability in healthy individuals is not confirmed yet. However, designing studies with control group is highly recommended.

In conclusion, vitiligo has profound effects on the quality of life of patients. The spread of the lesions is the most prominent factor affecting the quality of life. Feelings, interpersonal relationships and social life and leisure activities are the most impaired aspects of a qualified life affected by disease. Psychosocial and mental supports, especially in such impaired fields, accompanied by effective therapies of skin lesions in patients with vitiligo could be applied as a strategy for improving the reported low level of quality of life in such patients.

## References

1. Mason CP, Gawkrödger DJ. Vitiligo presentation in adults. *Clin Exp Dermatol* 2005; 30: 344-5.

2. Martis J, Bhat R, Nandakishore B, Shetty JN. A clinical study of vitiligo. *Indian J Dermatol Venereol Leprol* 2002; **68**: 92-3.
3. Majumder PP, Nordlund JJ, Nath SK. Pattern of familial aggregation of vitiligo. *Arch Dermatol* 1993; **129**: 994-8.
4. Savin JA. The hidden face of dermatology. *Clin Exp Dermatol* 1993; **18**: 393-5.
5. Mattoo SK, Handa S, Kaur I *et al.* Psychiatric morbidity in vitiligo: prevalence and correlates in India. *J Eur Acad Dermatol Venereol* 2002; **16**: 573-8.
6. Salzer BA, Schallreuter KU. Investigation of the personality structure in patients with vitiligo and a possible association with impaired catecholamine metabolism. *Dermatology* 1995; **190**: 109-15.
7. Kent G, al-Abadie M. Factors affecting responses on dermatology life quality index items among vitiligo sufferers. *Clin Exp Dermatol* 1996; **21**: 330-3.
8. Hill-Beuf A, Porter JD. Children coping with impaired appearance: social and psychologic influences. *Gen Hosp Psychiatry* 1984; **6**: 294-301.
9. Al'Abadie MS, Kent GG, Gawkrödger DJ. The relationship between stress and the onset and exacerbation of psoriasis and other skin conditions. *Br J Dermatol* 1994; **130**: 199-203.
10. Finlay AY, Khan GK. Dermatology Life Quality Index (DLQI)--a simple practical measure for routine clinical use. *Clin Exp Dermatol* 1994; **19**: 210-6.
11. Parsad D, Dogra S, Kanwar AJ. Quality of life in patients with vitiligo. *Health Qual Life Outcomes* 2003; **1**: 58.
12. Papadopoulos L, Bor R, Legg C. Coping with the disfiguring effects of vitiligo: a preliminary investigation into the effects of cognitive-behavioural therapy. *Br J Med Psychol* 1999; **72**: 385-96.
13. Parsad D, Pandhi R, Dogra S *et al.* Dermatology life quality index score in vitiligo and its impact on the treatment outcome. *Br J Dermatol* 2003; **148**: 373-4.
14. Borimnejad L, Parsa Yekta Z, Nikbakht-Nasrabadi A, Firooz A. Quality of life with vitiligo: comparison of male and female muslim patients in Iran. *Gend Med* 2006; **3**: 124-30.
15. Aghaei S, Sodaifi M, Jafari P *et al.* DLQI scores in vitiligo: reliability and validity of the Persian version. *BMC Dermatol* 2004; **4**: 8.
16. Ongenae K, Van Geel N, De Schepper S, Naeyaert JM. Effect of vitiligo on self-reported health-related quality of life. *Br J Dermatol* 2005; **152**: 1165-72.
17. Holme SA, Beattie PE, Fleming CJ. Cosmetic camouflage advice improves quality of life. *Br J Dermatol* 2002; **147**: 946-9.