

## Body Image, Self-Esteem and Quality of Life in Vitiligo Patients

Feride Çoban Gül<sup>1</sup>, Halil Kara<sup>2</sup>, Hülya Nazik<sup>3</sup>, Deniz Öztürk Kara<sup>4</sup>, Betül Karaca<sup>5</sup>

<sup>1</sup>Department of Dermatology, Elazığ Training and Research Hospital, Elazığ, Turkey

<sup>2</sup>Department of Child and Adolescent Psychiatry, Aksaray University Training and Research Hospital, Aksaray, Turkey

<sup>3</sup>Department of Dermatology, Bingöl State Hospital, Bingöl, Turkey

<sup>4</sup>Department of Dermatology, Aksaray University Training and Research Hospital, Aksaray, Turkey

<sup>5</sup>Department of Dermatology, Firat University Hospital, Elazığ, Turkey

### Corresponding Author

Dr. Halil Kara

<sup>2</sup>Department of Child and Adolescent Psychiatry, Aksaray University Training and Research Hospital, Aksaray, Turkey  
E-mail: drhalilkara85@gmail.com

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### ABSTRACT

**Objective:** The present study aims to investigate the effects of vitiligo on quality of life (QoL), self-esteem (SE), and body image (BI).

**Patients and Methods:** This study included 64 patients diagnosed with vitiligo, and 87 age- and sex-matched control subjects. Sociodemographic characteristics of the participants were collected and hypopigmented lesion involvement regions were recorded to identify clinical severity of vitiligo. The Dermatology Quality of Life Index (DQoLI), Body Image Scale (BIS), and Rosenberg Self-Esteem Scale (RSES) were completed.

**Results:** Comparison of DQoLI, SE, and BI between vitiligo and control groups demonstrated that vitiligo patients had a statistically significantly lower QoL ( $P < 0.01$ ), a lower SE ( $P < 0.01$ ), and a worse BI ( $P < 0.01$ ). Localization of lesions at one or multiple sites did not show a statistically significant impact on DQoLI, SE, or BI ( $P > 0.05$ ). The DQoLI, BIS, and RSES scores and the levels of QoL, SE, and BI were similar between the patients with vitiligo for  $\leq 5$  and  $> 5$  years ( $P > 0.05$ ).

**Conclusion:** Vitiligo can negatively affect the QoL, SE, and BI of patients, thereby, resulting in psychosocial problems. It can be concluded that the unfavorable skin appearance of the disease is not only a factor affecting the patients' QoL, SE, and BI; however, its relation with neurobiological mechanisms should be further investigated. This study emphasizes that body image and self-esteem is affected independently of the location of vitiligo lesions, and consequently neurobiological mechanisms may be important.

**Keywords:** Vitiligo, self-esteem, body image, quality of life.

### INTRODUCTION

Vitiligo is a common pigmentation disorder that progresses with the loss of melanocytes and is clinically characterized by depigmented macular lesions. Although the exact etiological pathogenesis of vitiligo has not been completely understood yet, the roles of autoimmune processes have been elaborated. Vitiligo usually has a progressive course and it markedly affects the patients' quality of life (QoL), resulting in low self-confidence and disturbances in social relationships, work life and marriage. Treatment is challenging in a considerably large number of cases [1]. Medical history of the majority of vitiligo patients includes a significant event (i.e., physical and emotional trauma, sunburn,

pregnancy, or a severe disease) experienced immediately before the disease onset [2]. Vitiligo lesions may occur at visible sites and may be accompanied by itching. Therefore, patients may suffer from the disease every day and face numerous psychosocial problems.

The QoL assessments, evaluating topics such as interpersonal relations, disease limitations, daily activities, occupational function and sexuality, reflect the problems patients experience [3,4]. Other factors affecting the self-esteem (SE) and QoL are psychiatric disorders. The skin and central nervous system both originate from the ectoderm stem cells. It is, thus, possible that an inflammatory skin disorder may be accompanied by a psychiatric disorder. Similar hormone and neurotransmitter links have also

been demonstrated [5]. Although not incorporated into the diagnostic classification systems such as the Diagnostic and Statistical Manual of Mental Disorders (DSM-V) or International Classification of Diseases-10 (ICD-10), cognitive scope of the cases can be based on their fundamental beliefs that nurture negative schemes such as unworthiness, inadequacy, or not being loved, and direct them into a pattern of inappropriate behavior and negative emotional status. These behaviors and emotions can have an impact on the QoL [6].

Personality is a broad concept, which depends on how an individual describes himself/herself based on one's own character and disposition. Hartman [7] suggested that the term "personality" is to be used to describe the conflicts in mental tract, while the term "self" is to be used to describe an individual's inner life. Kohut's self-concept is also consistent with this definition: self is the receiver of perceptions and center of the action [7]. Hence, "self" as described herein refers the self-definition conceptualized by Hartman [8]. In this article, SE refers to the individual's self-perception. A positive SE is the situation where the individual is aware of his or her positive attributes such as being valuable, sufficient, diligent, effective, and successful. In the cognitive area, the positive beliefs that underlie the positive interpretations of an event lead to appearance of optimistic emotions in the individual and a behavioral harmony. This is a subjective position, which is achieved by a realistic evaluation of one's own [9]. The body image (BI) is a concept which implies an individual's subjective perception created by his or her lifelong changing thoughts about his or her own body. As vitiligo is a disease which can be noticed by others, it may result in subjective changes in an individual's BI [10,11].

In the present study, we aimed to demonstrate the effects of vitiligo on QoL, SE, and BI.

## PATIENTS AND METHODS

The study comprised 64 patients who were at least 18 years old and diagnosed with **vitiligo** either clinically or histopathologically, and age- and sex-matched 87 healthy individuals who did not have any known dermatological, psychiatric, or systemic disease served as the control group. The cross-sectional study was conducted between October 2014 and September 2015. An approval of the Ethics Committee was obtained. Participation was voluntary and a written informed consent was obtained from each participant. The study was conducted in accordance with the principles of the Declaration of Helsinki.

Patients who could not read or write in Turkish, who had an additional systemic or psychiatric disease, were pregnant, and who refused to complete the questionnaire were excluded. The control group was selected from healthy volunteers. The volunteers had their weights and heights measured, and their body mass index (BMI) were calculated. Those with a BMI value of  $\geq 30$  kg/m<sup>2</sup> were classified as obese and were not included in the study. The sociodemographic characteristics of the contributors were

recorded, and areas of involvement evaluated. All participants were administered the Dermatology Life Quality Index (DLQI), The Body Image Scale (BIS), and Rosenberg Self-Esteem Scale (RSES).

The original DLQI is in English and is a simple, brief, understandable, and specific scale for dermatology, composed of 10 questions with four possible answers relating to the symptoms of the disease in the previous week, the feelings of the patient, daily and leisure time activities, professional and educational-life relationships and relationships with other individuals, and treatment [12]. The lowest score for each question is 0, and the highest is 3; the maximal total score is 30, and the minimal is 0. 0–1 indicates no effect at all on patient's life, 2–5 indicates mild effects on patient's life, 6–10 indicates moderate effects on patient's life, 11–20 indicates considerable effects on patient's life, and 21–30 indicates severe effects on patient's life. A high score indicates an impaired QoL. Its Turkish version was formulated by Ozturkcan *et al.* [13].

Secord and Jourard developed the BIS in 1953, while its validity and reliability studies were conducted by Hovardaoglu [14,15]. The scale includes 40 statements. Each statement is related to an organ or a part of the body (i.e., arms, legs, or face), or its functions (i.e., level of sexual activity). Each statement is scored between 1 and 5 (1 point: I never like; 5 points: I extremely like). A single score is the sum of the scale. The lowest score that can be received is 40, the highest 200; a high score indicates an increase in the positive evaluation. Those with scale scores below 135 are defined in the group with low BI, and those with scores of  $\geq 135$  are defined in the group of high BI.

The RSES was developed by Rosenberg in 1965 (16). Its validity and reliability studies in Turkish were conducted by Cuhadaroglu [17] in 1986, and the validity coefficient was found to be 0.71. The test-retest reliability analysis revealed a reliability coefficient of 0.75. The scale includes a total of 63 multiple-choice questions involving 12 subscales. Within the purpose of the study, the first 10 statements on the scale are used to evaluate SE. Each item is answered on a 4-point scale, as follows: strongly agree, agree, disagree, and strongly disagree. According to the evaluation guide of the scale, SE was considered to be high, when the total score received from the first 10 questions ranged from 0 to 1, SE was considered to be moderate when this score ranged from 2 to 4, and it was considered to be low when the score ranged from 5 to 6.

## RESULTS

A total number of 151 individuals were included in this study. The mean age of the study population was  $33.34 \pm 12.19$  (range: 18 to 73) years, and 55.0% (n=83) were men and 45.0% (n=68) were women. The mean BMI was  $23.56 \pm 3.18$  (range: 15.76 to 29.92) kg/m<sup>2</sup>. Of 151 participants, 64 (42.4%) received a diagnosis of vitiligo and they were referred to as the patient group. The remaining 87 (57.6%) individuals were completely healthy and

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they constituted the control group. The mean age, sex distribution, and mean BMI were similar between the patient and control groups ( $P>0.05$ ) (Table 1).

The mean duration of vitiligo among the patients was  $6.61 \pm 4.88$  (range: 1 to 25) years and of all patients, 53.1% ( $n=34$ ) had the disease for  $\leq 5$  years, while the remaining 46.9% ( $n=30$ ) had vitiligo for  $>5$  years. In terms of lesion localization, 76.6% ( $n=49$ ) of the vitiligo patients had lower extremity lesions, 70.3% ( $n=45$ ) had trunk lesions and 67.2% ( $n=43$ ) had involvement of the head-neck region. When the patients were classified into two groups as those having single-site or multiple-site lesions, 76.6% ( $n=49$ ) were found to have multiple-site lesions and the remaining 23.4% ( $n=15$ ) had lesions at a single site only (Table 2).

The DQoLI, BIS, and RSES scores were significantly different between the patient and control groups ( $P<0.001$ ,  $P<0.001$ , and  $P<0.001$ , respectively). Vitiligo patients had statistically significantly higher DQoLI, and RSES scores, and statistically significantly lower BIS scores than the healthy controls (Table 3).

**Table 1.** Certain descriptive characteristics between study groups

	Patients (n=64)	Controls (n=87)	P
<b>Age (years)</b>	32 (22.25-48.00)	32 (25-35)	0.487
<b>Sex</b>			
Men	40 (62.5)	43 (49.4)	0.153
Women	24 (37.5)	44 (50.6)	
<b>BMI (kg/m<sup>2</sup>)</b>	23.98 (20.32-26.85)	23.66 (21.05-25.39)	0.445

Continuous variables were presented as "means (25%-75%)", and categorical variables were shown as "numbers (column percentages)". BMI: Body mass index

**Table 2.** Duration of illness (e.g. average disease duration) and lesion localization in vitiligo patients

<b>Duration of illness (years) (n=64)</b>	5 (3.25-8.75)
$\leq 5$ years	34 (53.1)
$>5$ years	30 (46.9)
<b>Lesion Localization Site # (n=64)</b>	
Head-Neck	43 (67.2)
Extremity	49 (76.6)
Trunk	45 (70.3)
<b>Groups based on Lesion Localization (n=64)</b>	
Single-site	15 (23.4)
Multiple-site	49 (76.6)

Disease duration was presented as "mean (25%-75%)", and lesion localization site was shown as "number (column percentage)"; \*Lesions were localized at more than one site, percentage of total patient number was calculated.

**Table 3.** Distribution of scale scores according to study groups

	Patients (n=64)	Controls (n=87)	P
<b>DQoLI</b>	8.5 (6.25-14.00)	0 (0-1)	<b>&lt;0.001</b>
No effect	8 (12.5)	67 (77.0)	<b>&lt;0.001</b>
Mild effect	6 (9.4)	15 (17.3)	
Moderate effect	30 (56.9)	4 (4.6)	
High effect	22 (31.2)	1 (1.1)	
<b>BIS</b>	130.5 (107-151)	157 (140-181)	<b>&lt;0.001</b>
Low body image	38 (59.4)	18 (20.7)	<b>&lt;0.001</b>
High body image	26 (40.6)	69 (79.3)	
<b>RSES</b>	1.83 (0.85-2.54)	1.00 (0.83-1.42)	<b>&lt;0.001</b>
Moderate Self-Esteem	24 (37.5)	7 (8.0)	<b>&lt;0.001</b>
High Self-Esteem	40 (62.5)	80 (92.0)	

Continuous variables were presented as "means (25%-75%)", and categorical variables were shown as "numbers (column percentages)"; DQoLI: Dermatology Quality of Life Index; BIS: Body Image Scale; RSES: Rosenberg Self Esteem Scale

Comparison of the QoL, SE, and BI levels between patient and control groups showed that QoL was not affected in 12.5% ( $n=8$ ) of the vitiligo patients, while 9.4% ( $n=6$ ) had mild, 56.9% ( $n=30$ ) had moderate, and 32.2% ( $n=22$ ) had severe QoL impairment. In the control group, 77.0% ( $n=67$ ) of the individuals had normal QoL, while 17.3% ( $n=15$ ) had mild, 4.6% ( $n=4$ ) had moderate and 1.1% ( $n=1$ ) had severe QoL impairment. The QoL was significantly different between the study groups ( $P<0.001$ ). Of the patients with vitiligo, 59.4% ( $n=38$ ) had low and 40.6% ( $n=26$ ) had high BI. In the control group, these rates were 20.7% (18.0%) and 79.3% ( $n=69$ ), respectively. BI level was statistically significantly different between the patient and control groups ( $P<0.001$ ). The rate of individuals with a low BI was higher in the vitiligo patient group, compared to the control group. On the other hand, 37.5% ( $n=24$ ) and 62.5% ( $n=40$ ) of vitiligo patients had moderate and high SE, respectively. In the control group, 8.0% ( $n=7$ ) had moderate and 92.0% ( $n=80$ ) had high SE. SE was statistically significantly different between the study groups ( $P<0.001$ ). The rate of individuals with a high SE was significantly higher in the control group compared to the vitiligo group (Table 3).

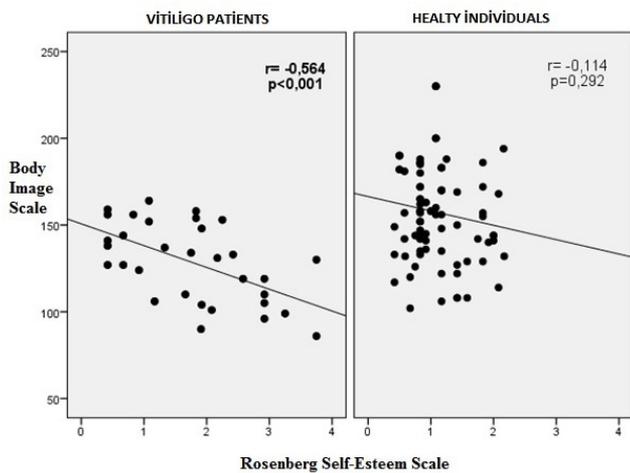
On the other hand, we found no statistically significant correlation between the DQoLI scores and RSES or BIS scores of vitiligo patients ( $P>0.05$ ). In the control group, there was a negative, moderate ( $r = -0.458$ ), and statistically significant correlation between DQoLI and BIS scores ( $P<0.05$ ), although we found no statistically significant correlation between the DQoLI and RSES scores ( $P>0.05$ ) (Table 3).

In addition, a negative, moderate ( $r = -0.564$ ), and statistically significant correlation was found between the BIS and RSES scores of vitiligo patients ( $P<0.05$ ); however, no significant correlation was found between the BIS and DQoLI scores ( $P>0.05$ ). In the control group, a negative, moderate ( $r = -0.458$ ), and statistically significant correlation was found between the BIS

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and DQoLI scores ( $P < 0.05$ ), but not between the BIS and RSES scores ( $P > 0.05$ ). A negative, moderate ( $r = -0.564$ ) and statistically significant correlation was also found between the RSES and BIS scores of vitiligo patients ( $P < 0.05$ ), although we found no significant correlation between the RSES and DQoLI scores ( $P > 0.05$ ). In the control group, there was no significant correlation between the RSES scores and DQoLI or BIS scores ( $p > 0.05$ ) (Table 4, Figure 1).

In the patient group with vitiligo, DQoLI, BIS, or RSES scores were not statistically significantly different between the patients with or without head-neck, extremity and trunk lesions, and also between the patients with single-site or multiple-site lesions ( $P > 0.05$ ) (Table 5). The patients with vitiligo for  $\leq 5$  years or  $> 5$  years had similar DQoLI, BIS, and RSES scores and comparable levels of QoL, SE, and BI ( $P > 0.05$ ) (Table 6).



**Figure 1.** Correlations between body image scale and Rosenberg self-esteem scale scores according to study groups

**Table 4.** The correlations between age, body mass index, dermatology quality of life index, body image scale and Rosenberg self-esteem scale scores in the patient and control groups

		DQoLI	BIS	RSES
<b>Patients (n=64)</b>	<b>DQoLI</b>	1.000	-0.058	-0.102
	<b>BIS</b>	-0.058	1.000	-0.564**
	<b>RSES</b>	-0.102	-0.564**	1.000
<b>Controls (n=87)</b>	<b>DQoLI</b>	1.000	-0.458**	0.195
	<b>BIS</b>	-0.458**	1.000	-0.114
	<b>RSES</b>	0.195	-0.114	1.000

\* $p < 0.05$ , \*\* $p < 0.01$

BMI: Body Mass Index; DQoLI: Dermatology Quality of Life Index; BIS: Body Image Scale; RSES: Rosenberg Self-Esteem Scale

**Table 5.** Distribution of dermatology quality of life index, body image scale and Rosenberg self-esteem scale scores according to lesion localization in vitiligo patients

	n	DQoLI Median (25%-75%)	BIS Median (25%-75%)	RSES Median (25%-75%)
<b>Head-Neck</b>				
Absent	21	8 (5-15)	138 (121-156)	1,08 (0,54-2,08)
Present	43	9 (7-14)	127 (105-144)	1,92 (1-08-2,92)
<b>P</b>		0,998	0,061	0,066
<b>Extremity</b>				
Absent	15	8 (3-14)	127 (106-138)	1,83 (0,83-2,92)
Present	49	9 (6,5-14,0)	133 (108-152)	1,83 (0,88-2,50)
<b>P</b>		0,811	0,466	0,899
<b>Trunk</b>				
Absent	19	9 (7-14)	131 (110-148)	1,75 (0,42-2,42)
Present	45	8 (6-14)	130 (105,5-152,0)	1,83 (1,0-2,75)
<b>P</b>		0,836	0,659	0,376
<b>Lesion Site</b>				
Single-site	15	9 (3-15)	127 (106-138)	1,83 (0,67-2,58)
Multiple-site	49	8 (6,5-12,5)	133 (108,0-152,5)	1,83 (0,88-2,50)
<b>P</b>		0,588	0,495	0,886

DQoLI: Dermatology Quality of Life Index; BIS: Body Image Scale; RSES: Rosenberg Self-Esteem Scale

**Table 6.** Distribution of dermatology quality of life index, body image scale and Rosenberg self-esteem scale scores according to disease duration in vitiligo patients

	Duration of illness		<b>P</b>
	$\leq 5$ years (n=34)	$> 5$ years (n=30)	
<b>DQoLI</b>	9 (3.75-14.25)	8 (7-14)	0.797
No effect	6 (17.6)	2 (6.7)	0.624
Mild effect	3 (8.8)	3 (10.0)	
Moderate effect	15 (44.1)	15 (50.0)	
High effect	10 (29.4)	10 (33.3)	
<b>BIS</b>	123 (105.7-152.2)	132 (122.7-149.0)	0.686
Low body image	19 (55.9)	19 (63.3)	0.545
High body image	15 (44.1)	11 (36.7)	
<b>RSES</b>	1.83 (1.08-2.66)	1.83 (0.67-2.42)	0.676
Moderate Self-Esteem	12 (35.3)	12 (40.0)	0.698
High Self-Esteem	22 (64,7)	18 (60,0)	

Continuous variables were presented as "means (25%-75%)", and categorical variables were shown as "numbers (column percentages)".

DQoLI: Dermatology Quality of Life Index; BIS: Body Image Scale; RSES: Rosenberg Self-Esteem Scale

## DISCUSSION

The present study compared vitiligo patients and healthy controls in terms of psychosocial factors such as SE, BI, and QoL, and evaluated how vitiligo affects the individuals as a psychosocial stressor. The skin is particularly important in psychiatry, as it can respond to emotional stimuli and express emotions such as anger, fear and shame (18). It plays an important role on the development of SE and ego integrity (19). Psychodermatological disorders can be classified into three major types depending on the relation between skin diseases and psychiatric disorders: 1) Psychophysiological (psychosomatic) disorders (such as acne, alopecia areata, atopic dermatitis, psoriasis, psychogenic purpura, rosacea, seborrheic dermatitis, and urticaria); 2) Conditions where the primary disorder is a psychiatric one, and the individual himself/herself is the cause of the skin disease (such as delusional parasitosis, dysmorphophobia, artificial dermatitis, neurotic itching, and trichotillomania); and 3) Psychiatric disorders secondary to the deformations caused by a dermatological disease (such as alopecia areata, cystic acne, hemangioma, ichthyosis, psoriasis, and vitiligo) (20). In this study, we investigated the effects of vitiligo, which belongs to class three in this classification, on the QoL and self-concept.

The mean age of the study population was  $33.34 \pm 12.19$  years, which is a significant finding showing that the individuals had already overcome the identity crisis associated with puberty and established a social identity. In addition, the mean age was not significantly different between the patient and control groups. In consistent with the literature, sex distribution was not significantly different in the vitiligo group ( $p > 0.05$ ). Vitiligo patients had statistically significantly higher DQoLI and RSES scores and lower BIS scores than healthy individuals, which can imply that the vitiligo patients had a negative cognition of body perception and this affects their QoL. Previous studies also reported that vitiligo patients had statistically significantly higher levels of social anxiety and higher anxiety and depression scores than the control groups, they had a lower than normal sexual life quality, and a reduced SE (20). As it is a disorder changing how an individual looks, vitiligo negatively affects social perception and is open to stigmatization. A previous study assessing DQoLI and RSES in 644 vitiligo patients reported reduced SE and QoL among vitiligo patients (21). In another study including 145 patients with vitiligo, regular psychiatric follow-up was shown to reduce the patients' depressive symptoms and improve their SE and QoL (22).

The skin is an important organ aiding in the communication with the outer world for perception of feelings, sexuality and social interactions. Hence, skin disorders can affect SE and BI (23). SE can be considered as the individual's perception of self as being valuable, sufficient, diligent, effective and successful (24). In the study of Khattri et al., mean SE score was found to be decreased among the patients with vitiligo (25). Similarly in the present study, RSES scores were statistically significantly lower in the patient group compared to the controls.

The BI is a collection of the individual's thoughts and feelings about his or her own body and it is interconnected with the self-concept. BI starts developing at early childhood and gains importance during puberty. Individuals' experiences and decisions about their body may change over time (10). The BI was previously evaluated in patients with head, neck or breast cancer, in the colostomized patients and in obese patients; all of these conditions were shown to negatively affect the BI (26-28).

Thus, it can be argued that the BI is negatively affected not only in the presence of skin disorders but also during the course of several chronic diseases. In this study, BI scores were statistically significantly lower in the patient group. To identify whether disease duration had additive effects on QoL, SE, and BI, the patients were also evaluated in two groups as those having the disease for  $\leq 5$  and  $> 5$  years. Patients with vitiligo for  $\leq 5$  years or  $> 5$  years had similar DQoLI, BIS and RSES scores and comparable levels of QoL, SE, and BI ( $p > 0.05$ ). These findings show that the effects of the disease on DQoLI, BIS and RSES scores are already prominent before the 5<sup>th</sup> year after diagnosis. Thus, it can be anticipated that providing psychiatric support to the patients at the time of diagnosis can potentially minimize the negative effects that the disease progression has on QoL, SE, and BI.

In this study, lesion localization was evaluated as a potential factor to explain the significantly higher DQoLI, BIS and RSES scores observed in the patient group compared to the controls. However, in the patient group with vitiligo, DQoLI, BIS or RSES scores were not statistically significantly different between the patients with or without head-neck, extremity and trunk lesions, and also between the patients with single-site or multiple-site lesions. This finding suggests that further investigations on the effects of the disease on BI, SE, and QoL should focus more on the neurobiological effects of the disease, rather than the negative cognitions and themes reinforced by environmental stimuli.

In conclusion, vitiligo is a chronic skin disorder that may have a negative impact on the patients' QoL, SE, and BI and can ultimately result in psychosocial problems. Our study results show that psychiatric support must be provided as a part of patient management at the time of vitiligo diagnosis (at least within the first 5 years). It can be, therefore, concluded that the unfavorable skin appearance of the disease is not only a factor affecting the patients' QoL, SE, and BI; however, its relation with neurobiological mechanisms must be further investigated. Additional studies are required to gain a better understanding of this aspect of vitiligo.

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