Internalized Stigma in Patients with Acne Vulgaris, Vitiligo, and Alopecia Areata

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Abstract

Background: Internalized stigma, another aspect of stigma, is the adoption of negative attitudes and stereotypes of the society regarding people's illness. **Aims and Objectives:** The primary aim of this study was to investigate the internalized stigma state of acne vulgaris (AV), vitiligo, and alopecia areata (AA) patients and to identify the factors influencing internalized stigma. **Materials and Methods:** A total of 150 patients (50 AV, 50 vitiligo, and 50 AA) who applied to the outpatient clinic were consecutively enrolled in this study. The sociodemographic characteristics of the patients were recorded. In addition, patients answered the Internalized Stigma Scale (ISS), the Dermatology Life Quality Index, the Perceived Health Status, the General Health Questionnaire, and the Acne Quality of Life Scale. **Results:** In this study, the Cronbach's alpha coefficient for the whole ISS scale was calculated as 0.91 for AV, 0.91 for vitiligo, and 0.93 for AA. **Conclusion:** The present study indicates that patients with AV, AA, and vitiligo internalize the negative stereotype judgment of the society for themselves. High levels of internalized stigma in the studied patients presented a parallel trend to the negative quality of life (QoL). Therefore, internalized stigma may be one of the major factors affecting the QoL in these diseases.

Keywords: Acne, alopecia areata, internalized stigma, vitiligo

INTRODUCTION

Dermatological diseases discriminate an individual from others; in other words, they stigmatize the patient due to the visibility of the skin lesions. The skin is the most important part of our body interacting with the outside world. Diseases located on the areas of the body that can be easily seen during this interaction cause significant psychosocial influences, especially stigmatization. Acne vulgaris (AV), alopecia areata (AA), and vitiligo are among the most important target diseases because their individual lesions are frequently localized on visible areas. These diseases may lead to significant psychosocial influences in the patient: deterioration in the body perception, decrease in self-esteem, and social withdrawal. Furthermore, anxiety and depression are more commonly reported in these patients.[1-8]

Internalized stigma, another aspect of stigma, is the adoption of negative attitudes and stereotypes of the society regarding peoples' illness.[9] The patient presumes that other people have a reaction toward his/her illness and eventually withdraws from the social life, ending up with decreased self-esteem and life satisfaction, increased depression and suicidality, and difficulty in coping with the illness.[10,11] Consequently, patients may face social cohesion problems and unemployment. Furthermore, compliance with treatment may become affected, increasing the risk of treatment failure and poor disease control.[10,12] According to the available current literature, the Internalized Stigma Scale (ISS) has not been applied to patients with vitiligo and AA. The ISS has been first used by our group on

Access this article online

Quick Response Code:

Website:
www.tjdonline.org

DOI:
10.4103/TJD.TJD_14_19

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patients with AV and a high degree of internalized stigma was found.[13] The primary aim of this study was to investigate the internalized stigma state of patients with AV, AA, and vitiligo and to identify the factors influencing internalized stigma state in these three diseases.

MATERIALS AND METHODS

A total of 150 patients (50 AV, 50 vitiligo, and 50 AA) who applied to our dermatology and venereology outpatient clinic have been consecutively enrolled in this study. Informed consent was obtained from all participants, and the study was conducted according to the principles of the Declaration of Helsinki. Local ethics committee's approval for the study was granted (70904504/548). The sociodemographic characteristics of the patients and other parameters which may influence internalized stigma and quality of life (QoL) (age, sex, duration of disease and the age of onset, history of psoriasis in the family, accompanying diseases, level of income, educational level, marital status, smoking, and alcohol consumption) were recorded. Disease severity scores such as Vitiligo European Task Force (VETF) score, Vitiligo Disease Activity (VIDA) score, Severity of Alopecia Tool (SALT) score, and Food and Drug Administration (FDA) Acne Global Grade were used to assess disease severities. In addition, the patients answered the ISS, the Dermatology Life Quality Index (DLQI), the Perceived Health Status (PHS) Questionnaire, the General Health Questionnaire (GHQ), and Acne Quality of Life Scale (AQLS) on the day of enrollment.

Questionnaires
Internalized Stigma Scale
The ISS was developed by Ritsher *et al.*[9] for mental illnesses and has been adapted for many diseases other than psychological disorders. The ISS is a Likert-type scale composed of 29 items measuring the internalization of stigma experienced by the patients. It has five dimensions, namely, alienation (6 items), stereotype endorsements (7 items), perceived discrimination (5 items), social withdrawal (6 items), and stigma resistance (5 items). ISS values range from 4 to 91. High ISS scores mean more severe internalized stigma. Those who score 0–25 points on the ISS are considered as having low stigmatization, those who score 26–39 points are considered

as having moderate stigmatization, and those who score 40 are rated as having high stigmatization.[9]

The Dermatology Life Quality Index
The DLQI is the first quality-of-life scale developed for dermatological disorders. It is composed of ten questions in total and the scores range from 0–30. High values indicate that the disease has a significant influence on daily life, job, school life, leisure time activities, and interpersonal relationships. The Turkish version has been validated by Oztürkcan *et al.*[14]

Perceived Health Status
The PHS is a Likert-type scale examining general health using a single question. In analyses, Likert scorings are classified as 1, 2, and 3 ("worse than good") and 4 and 5 ("good").[15,16]

The General Health Questionnaire-12 scale
The GHQ-12 has been developed by Goldberg and Hillier in order to define mental status in public and primary health-care establishments.[17] Although the GHQ-12 has been developed to distinguish general mental disorders, it contains items questioning basic symptoms of depression including enjoyment, sense of calm, distractibility, and sleeplessness.[18] The validity and reliability of the Turkish version have been evaluated by Kilic *et al.* (Cronbach's alpha = 0.78).[19]

Acne Quality of Life Scale
It is a measure of nine questions developed by Gupta *et al*. It aims to determine the relationship between acne severity and psychological morbidity due to acne. The answers to the questions are scored 1, 2, 3, and 4 according to the degree that the patients have suffered due to their acne. The total score is calculated by summing the points of each problem. A high score indicates more deterioration in the QoL.[20] The questions refer to feelings of restlessness besides others, decrease in socialization, difficulty with girlfriend or boyfriend, difficulties with close friends, difficulty with family relations, feeling isolated, ridiculing, romantic reluctance, and rejection by friends.[20,21] The reliability study of the Turkish version of this scale was performed by Demirçay *et al.*[21]

Disease Severity Scores
Acne vulgaris
Acne severity is assessed in four stages with the FDA Global Score.[22] The four stages are as follows: mild: the closed or

Table 1: Evaluation of Cronbach's alpha value and subscales of the Internalized Stigma Scale in patients with acne vulgaris, vitiligo, and alopecia areata

The ISS subscales	AV (*n*=50)	AA (*n*=50)	Vitiligo (*n*=50)	Psoriasis research (*n*=100)	Turkish form (*n*=203)	Original form (*n*=127)
Alienation	0.88	0.88	0.88	0.83	0.84	0.79
Stereotype endorsement	0.14	0.66	0.48	0.70	0.71	0.72
Perceived discrimination	0.69	0.82	0.65	0.70	0.87	0.75
Social withdrawal	0.90	0.93	0.83	0.84	0.85	0.80
Stigma resistance	0.07	0.64	0.46	0.68	0.63	0.58
Total	0.91	0.93	0.91	0.89	0.93	0.90

AV: Acne vulgaris, AA: Alopecia areata, ISS: Internalized Stigma Scale

Table 2: Main demographic characteristics of patients with acne vulgaris

	n (%)
Sex	
Male	23 (46)
Female	27 (54)
Marital status	
Single	46 (92)
Married	4 (8)
Income level	
High: Income exceeds expenses	7 (14)
Moderate: Income is equal to expenses	37 (74)
Low: Income is less than expenses	6 (12)
Educational status	
Secondary school	4 (8)
High school	22 (44)
Postgraduate	11 (22)
Faculty	13 (26)
Concomitant diseases	
No	50 (100)
Yes	0
Severity of AV (according to the FDA Global Score)	
Mild	18 (36)
Moderate	17 (34)
Severe	14 (28)
Very severe	1 (2)
Progress of disease	
Acute	3 (6)
Chronic intermittent	37 (74)
Chronic persistent	10 (20)
Distribution area	
Face and neck	48 (96)
Mostly on body	1 (2)
Mostly on extremities	1 (2)
PHS	
Very good	7 (14)
Good	27 (54)
Moderate	14 (28)
Bad	2 (4)
Very bad	0

FDA: Food and Drug Administration, AV: Acne vulgaris, PHS: Perceived Health Status Questionnaire

open comedonal lesions and few papules and pustules are visible (usually < 10) and no nodules are found; moderate: inflammatory lesions such as papules and pustules are also evident (10–40 lesions). More comedones are also available. There may be a small number of nodules; severe: there are numerous comedones (40–100) and deep, large inflammatory nodules (up to 5) with common papules and pustules (40–100). In general, widespread involvement such as the face, trunk, and back is present; very severe: severe lesions such as nodulocystic acne or acne conglobata are present. There are numerous large painful pustules and nodular lesions, as well as numerous papules, pustules, and comedones.

Vitiligo
Vitiligo Disease Activity Score
The VIDA is a scoring system that measures vitiligo activity, rated at a maximum of + 4 and a minimum of − 1. The last year of patients' vitiligo assessment is based on the subjective evaluation of the disease activity status. Low VIDA scores indicate that the disease activity is low.[23]

Vitiligo European Task Force Scale
In recent years, the use of the VETF scale has been recommended in assessing the severity of vitiligo and treatment response.[24,25] The VETF scale is a scoring system that assesses the extent of involvement of vitiligo, disease progression, and spread of lesions. The area of occupation is calculated according to the nine rules used in burns. Staging is scored between 0 and 4 according to skin and hair pigmentation status in vitiligo patches. The spread of the lesions is classified as + 1: progressive, 0: constant, and − 1: regression.[24]

Alopecia areata
Disease severity is determined by using the SALT.[26] The SALT scoring system is based on the involvement percentages of AA.

Statistical analysis
In the present study, the reliability of ISS and all subscales of the ISS was examined by calculating the Cronbach's alpha internal consistency coefficients. It was accepted that the minimum acceptable level of these values was 0.70. It was observed that some of the internal consistency coefficients of the ISS were <0.70 in this study. For this reason, to ensure the

Table 3: Correlation between the Internalized Stigma Scale, the Acne Quality of Life Scale, the Dermatology Life Quality Index, the General Health Questionnaire, and the perceived health status

The ISS subscales	Acne FDA Global Score	AQLS	DLQI	GHQ	PHS
Alienation	0.058	<0.001	<0.001	<0.001	0.467
Stereotype endorsement	0.094	0.001	0.002	<0.001	0.534
Perceived discrimination	0.005	0.001	0.002	<0.001	0.269
Social withdrawal	0.552	<0.001	<0.001	<0.001	0.479
Stigma resistance	0.107	0.434	0.716	0.788	0.021
Total	0.059	<0.001	<0.001	<0.001	0.268

AQLS: Acne Quality of Life Scale, DLQI: The Dermatology Life Quality Index, GHQ: The General Health Questionnaire, PHS: Perceived Health Status Questionnaire, FDA: Food and Drug Administration, ISS: Internalized Stigma Scale

Table 4: Main demographic characteristics of patients with vitiligo	
	n (%)
Sex	
Male	26 (52)
Female	24 (48)
Marital status	
Single	26 (52)
Married	21 (42)
Divorced	3 (6)
Income level	
High: Income exceeds expenses	5 (10)
Moderate: Income is equal to expenses	30 (60)
Low: Income is less than expenses	15 (30)
Education	
Primary school	9 (18)
Secondary school	10 (20)
High school	18 (36)
Postgraduate	6 (12)
Faculty	4 (8)
Master's degree	3 (6)
Concomitant diseases*	
No	45 (90)
Yes	5 (10)
Clinical condition	
Localized	12 (24)
Generalized	38 (76)
Nail changes**	
Yes	9 (18)
No	41 (82)
Hair changes (poliosis)	
Yes	3 (6)
No	47 (94)
Progress of vitiligo	
Acute	3 (6)
Chronic intermittent	17 (34)
Chronic persistent	23 (46)
Stable	7 (14)
Family history of vitiligo***	
No	35 (70)
Yes	15 (30)
First-degree relative	8 (16)
Second-degree relative	7 (14)
Concomitant diseases	
Atopy	3 (6)
AA	3 (6)
Connective tissue disease	1 (2)
Thyroid disease	6 (12)
Psychiatric disease	1 (2)
Vitiligo treatment	
No	2 (4)
Yes	48 (96)
PHS	
Very good	4 (8)
Good	29 (58)

Contd...

Table 4: Contd...	
Moderate	12 (24)
Bad	3 (6)
Very bad	2 (4)

*Concomitant diseases: diseases such as diabetes, hypertension, etc.
**Nail findings: Pitting, thickening, discoloration, red lunula, etc.
***First degree relatives: mother, father, brother; 2nd degree relatives: members of the parent family (uncle, uncle, aunt, etc.). AA: Alopecia areata, PHS: Perceived Health Status Questionnaire

validity and reliability of the ISS, further studies are needed to be examined in detail. Data were analyzed using PASW 22 (SPSS/IBM, Chicago, IL, USA). Descriptive statistics such as frequency distribution, mean, and standard deviation were used to describe the sample. The assumption of normal distribution suitability was examined by the Shapiro–Wilk test. In the cases where the parametric test assumptions were used, the "Student's *t*-test" was used to determine the difference between the two independent groups. The "Mann–Whitney U-" test was used for the two groups when the parametric test assumptions were not met. Categorical data were analyzed using "Chi-square significance test" or "Fisher's exact test." A 95% significance level (or $\alpha = 0.05$ error margin) was used to determine the differences in the analyses.

RESULTS

The Cronbach's alpha coefficient for the whole scale was calculated as 0.91 for AV, 0.91 for vitiligo, and 0.93 for AA. Similar results were also observed when the reliability coefficients regarding the subscales of ISS were compared with Cronbach's alpha values obtained from the original reliability validity study[9] and the reliability validity studies of the Turkish version for psychiatric disorders[27] and psoriasis[28] which is the first dermatological disease studied by this scale [Table 1].

Acne vulgaris

The mean age of the patients with AV was 20.58 ± 3.71 years. The major sociodemographic and clinical features of patients with AV participating in the study are summarized in Table 2. The lowest value of the ISS in the five subscales belongs to the subscale of resistance to stigmatization, and the highest value belongs to the subscale of social withdrawal [Table 1]. The mean AQLS of patients with AV was 14.40 ± 6.19, the mean DLQI was 6.78 ± 5.58, the mean ISS was 59.48 ± 15.40, the mean GHQ was 23.60 ± 4.47, and the mean PHS was 3.78 ± 0.73. A statistically significant correlation was found between the ISS and DLQI ($r = 0.596$, $P < 0.001$), the GHQ ($r = 0.594$, $P < 0.001$), and the AQLS ($r = 0.587$, $P < 0.001$). The relationship between ISS and AQLS, DLQI, GHQ, and PHS of patients with AV is summarized in Table 3. To examine the criterion validity of the ISS, the Acne FDA Global Score was used. There was a positive correlation between acne severity and DLQI ($P = 0.024$). The ISS scores ($P = 0.005$) showed a statistically significant increase with the increase of education level. The AQLS scores were statistically significantly higher in males than in females ($P = 0.012$).

Table 5: Correlation between the Internalized Stigma Scale; the Vitiligo European Task Force-area, Vitiligo European Task Force-staging, and Vitiligo European Task Force-spread scales; the Dermatology Life Quality Index; the General Health Questionnaire; and Perceived Health Status Questionnaire

The ISS subscales	VETF-area	VETF-staging	VETF-spread	DLQI	GHQ	PHS	VIDA score
Alienation	0.049	0.469	0.315	<0.001	0.966	0.770	0.566
Stereotype endorsement	0.591	0.661	0.791	0.085	0.894	0.321	0.971
Perceived discrimination	0.671	0.392	0.612	<0.001	0.790	0.774	0.356
Social withdrawal	0.509	0.128	0.726	<0.001	0.842	0.994	0.655
Stigma resistance	0.917	0.436	0.523	0.333	0.277	0.260	0.487
Total	0.243	0.231	0.108	<0.001	0.463	0.368	0.566

DLQI: The Dermatology Life Quality Index, GHQ: The General Health Questionnaire, PHS: Perceived Health Status Questionnaire, VETF: Vitiligo European Task Force, VIDA: Vitiligo Disease Activity Score, ISS: Internalized Stigma Scale

The mean AQLS for married individuals was statistically significantly lower ($P = 0.017$). In married individuals, DLQI and GHQ scores were lower, and the ISS score was higher, although not statistically significant ($P = 0.243$, $P = 0.957$, and $P = 0.680$, respectively).

Vitiligo

The mean age of the patients with vitiligo was 34.28 ± 13.02 years [Table 4]. The mean age at onset of the disease ($P = 0.02$) was lower, and the duration of illness ($P = 0.04$) was longer in women. The mean DLQI of the patients with vitiligo was 4.70 ± 5.33, the mean ISS value was 51.68 ± 14.34, the mean GHQ was 23.18 ± 5.38, and the mean PHS was 3.92 ± 3.03. In patients with vitiligo, the lowest value of the ISS in the five subscales belongs to the subscale of resistance to stigmatization, and the highest value belongs to the subscale of alienation [Table 1]. The mean VETF area-score of the patients was 9.68 ± 8.30, the VETF staging-score was 6.02 ± 3.22, the VETF-spreading score was 0.28 ± 3.01, and the VIDA score was 1.04 ± 1.26. No correlation between disease severity and ISS was observed. A significant correlation was found between vitiligo type and VETF area ($P = 0.001$) and staging score ($P = 0.006$). Patients with generalized vitiligo were found to have higher area and staging scores. This finding confirms the association of patients with generalized body involvement with more severe disease. There was a statistically significant correlation between the ISS and DLQI ($r = 0.540$, $P < 0.001$) in patients with vitiligo. Married individuals had lower GHQ scores ($P = 0.024$). The correlation between the ISS and VETF area–staging–spreading scores, VIDA score, GHQ score, DLQI score, and PHS score is summarized in Table 5.

Alopecia areata

The mean age of the alopecia patients was 30.92 ± 10.92 years [Table 6]. The age of first application to the hospital was statistically significantly higher ($P = 0.025$), and the duration of illness was longer in women ($P = 0.016$). In patients with AA, the lowest value among the five subscales of the ISS belonged to the subscale of resistance to stigmatization and the highest value belonged to the social withdrawal subscale [Table 1]. The mean ISS was determined as 59.46 ± 15.82, the mean DLQI of the patients was 6.64 ± 6.13, the mean GHQ was 24.04 ± 5.73, and the mean PHS was

3.80 ± 0.80. GHQ scores were statistically significantly higher in women ($P = 0.003$). The mean SALT score was 1.96 ± 1.41. A statistically significant correlation was also found between the ISS and DLQI ($r = 0.508$, $P < 0.001$) and GHQ ($r = 0.329$, $P = 0.024$) in patients with AA [Table 7].

Comparison of all diseases

The mean ISS scores of AV (59.48 ± 15.40) and AA (59.46 ± 15.82) were higher than that of vitiligo patients (51.68 ± 14.34). There was no significant correlation between disease severity scores (SALT, FDA Global Acne, VETF, and VIDA scores) and the mean values of the ISS in patients with AV, AA, and vitiligo [Table 8].

DISCUSSION

The mean total ISS scores of AV, vitiligo, and AA in our study were high (>40). They were comparable with those obtained from psychiatric and dermatologic patient populations.[28-33] The ISS subscale with the lowest value among all the three diseases was the subscale of resistance to stigmatization. This result alerts us as it shows how vulnerable the patients are to stigma. When dermatological diseases locate on visible body parts, they cause distress and psychological effects on individuals. Thus, high ISS scores may be explained by this effect. Moreover, some behaviors of health professionals (doctors, nurses, and technicians) may also cause an increase in patients' distress. All practitioners and other health-care providers should be aware of this aspect of dermatological diseases and practitioners should add psychiatric examination or evaluation into their routine practices to improve patients' health. Furthermore, health-care providers need to strengthen patients' stigma resistance abilities.

The mean ISS and DLQI scores of AV and AA were higher than those of vitiligo. This could be due to the disease course of vitiligo as it is usually different from that of AV and AA. Patients with AA and AV often have effective treatment options for short-term therapy. However, these diseases usually relapse and cause more anxiety because of quick changes (improvement and worsening). On the other hand, vitiligo is usually more stable, and changes can only be seen in the long term which can result in patients' acceptance of the situation and coping mechanisms. Furthermore, vitiligo

Table 6: Main demographic characteristics of patients with alopecia areata

	n (%)
Sex	
Male	23 (46)
Female	27 (54)
Marital status	
Single	23 (46)
Married	25 (50)
Divorced	2 (4)
Income level	
High: Income exceeds expenses	13 (26)
Moderate: Income is equal to expenses	28 (56)
Low: Income is less than expenses	9 (18)
Education	
Primary school	2 (4)
Secondary school	6 (12)
High school	21 (42)
Postgraduate	9 (18)
Faculty	9 (18)
Master's degree	3 (6)
Concomitant diseases*	
No	49 (98)
Yes	1 (2)
Clinical condition	
Patchy alopecia	42 (84)
Alopecia totalis	3 (6)
Alopecia universalis	5 (10)
Nail changes**	
Yes	16 (32)
No	34 (68)
Progress of AA	
Acute	13 (26)
Chronic intermittent	28 (56)
Chronic persistent	8 (16)
Stable	1 (2)
Family history of AA***	
No	43 (86)
Yes	7 (14)
First-degree relative	5 (10)
Second-degree relative	2 (4)
Concomitant diseases	
Atopy	4 (8)
Connective tissue diseases	3 (6)
Thyroid diseases	9 (18)
Psychiatric diseases	1 (2)
SALT scale****	
S1	31 (62)
S2	5 (10)
S3	3 (6)
S4	7 (14)
S5	4 (8)

Contd...

Table 6: Contd...

PHS*****	
Bad	16 (32)
Good	34 (68)

*Concomitant diseases: diseases such as diabetes, hypertension, etc. **Nail findings: Pitting, thickening, discoloration, red lunula, etc. ***First degree relatives: mother, father, brother; 2nd degree relatives: members of the parent family (uncle, uncle, aunt, etc.). ****SALT scoring; S1: Hair loss <25%, S2: Hair loss 25-49%, S3: Hair loss 50-74%, S4: Hair loss 75-99%, S5: Hair loss 100% of the scalp. *****Perceived health question; 1, 2, 3 are classified as 1, 2 and 3 ("worse than good"), and 4 and 5 ("good"). AA: Alopecia areata, SALT: Severity of Alopecia Tool, PHS: Perceived Health Status Questionnaire

Table 7: Correlation between the Internalized Stigma Scale, the Severity of Alopecia Tool score, the Dermatology Life Quality Index, the General Health Questionnaire, and Perceived Health Status Questionnaire

The ISS subscales	SALT score	DLQI	GHQ	PHS
Alienation	0.198	0.004	0.005	0.025
Stereotype endorsement	0.706	0.005	0.052	0.001
Perceived discrimination	0.874	0.001	0.022	0.099
Social withdrawal	0.272	0.001	0.039	0.634
Stigma resistance	0.272	0.665	0.159	0.515
Total	0.332	<0.001	0.024	0.057

DLQI: The Dermatology Life Quality Index, GHQ: The General Health Questionnaire, PHS: Perceived Health Status Questionnaire, SALT: Severity of Alopecia Tool, ISS: Internalized Stigma Scale

Table 8: Comparison of Cronbach's alpha values of acne vulgaris, vitiligo, and alopecia areata diseases in terms of the Internalized Stigma Scale, the Dermatology Life Quality Index, and the General Health Questionnaire

Dermatological diseases	Cronbach's alpha values		
	ISS	DLQI	GHQ
AV	0.911	0.812	0.644
Vitiligo	0.919	0.329	0.586
AA	0.933	0.915	0.654

ISS: Internalized Stigma Scale, DLQI: The Dermatology Life Quality Index, GHQ: The General Health Questionnaire, AV: Acne vulgaris, AA: Alopecia areata

can be located on nonvisible body sites. However, AV and AA are almost always located on visible body parts. All these factors could affect the increased ISS levels in AV and AA. We also observed a positive correlation between the mean values of ISS and QoL scores for all the three diseases. This result demonstrates that the significance of internalized stigma is correlated with negative life quality. The dermatological diseases studied in our study are shown to affect the QoL of patients. Thus, by acknowledging this, practitioners may improve the general health of these individuals. Moreover, AV and AA were shown to affect the GHQ in our study, which suggests the detrimental effects of these diseases on general health.

However, there was no significant correlation between disease severity scores (SALT score, Acne FDA Global Score, or VETF and VIDA scores) and the mean values of the ISS in our study. These results show that the presence of the disease affects the ISS independently from the severity of these diseases. On the other hand, it is difficult to fully evaluate the relationship between the severity of the disease and the ISS, as a significant proportion of our patients were under treatment and were using systemic therapeutic options, especially those with severe illnesses. For vitiligo, we used both VETF (assessing disease activity, stage, and spreading) and VIDA (patients assessing the progression of the disease by themselves) scores as this could help us to evaluate both physicians' and patients' perspectives.

Married individuals were shown to have lower AQLS, DLQI, and GHQ scores and higher ISS scores. This finding was consistent with that of the study of Alpsoy *et al*.[10] They suggested that family members and their social environment and responsibilities may cause internalized stigma to be more pronounced in married individuals. Moreover, they put forward the idea of having a regular sexual life in married individuals, which might increase the perception of stigmatization. Education level was another significant factor in terms of ISS and DLQI scores. The ISS and DLQI scores were getting higher directly with the higher educational level. This suggests that patients with higher expectations due to understanding of the disease and/or higher status in the society are usually affected more severely. Although we could not find any relation with internalized stigma and gender, Kötekoğlu *et al*. found that the level of internalized stigma is more pronounced in male patients.[13] They suggested that the appearance of acne lesions may have adversely affected the perception that the opposite sex does not find them attractive enough, which can increase the likelihood of romantic rejection. They also suggested that the decreased internalized stigma in women could be due to the ability of easy camouflage with makeup, which can prevent the negative image of the acne.[13]

In women with vitiligo, scores of ISS and DLQI were found to be high even though they did not reach statistical significance, compared to males. Overall, the results showed that female patients are affected psychologically more severely by the disease, that their general health perceptions are more influenced, and that they experience stigmatization of the society and internalized stigmatization more often.

The strength of our study was comparing internalized stigma, with validated disease severity scores and accepted QoL scales, associated with three types of dermatological diseases in patients who frequently visit dermatology outpatient clinics. However, there were some limitations of our work. The cross-sectional study design led to limitations in revealing causality between illnesses and stigmatization. Furthermore, limited number of patients in each subtype of disease made it difficult for our outcomes to generalize to all individuals. Furthermore, QoL scales are based on individual responses and they only assess the level of impact of individuals accepting participation in the study. Moreover, the low number of

samples in each disease group may have caused the inability to show a significant relationship/s between some variables.

Conclusion

The present study indicates that patients with AV, AA, and vitiligo internalize the negative stereotype judgments of the society for themselves. High levels of internalized stigma in the studied patients presented a parallel trend to the negative QoL. Therefore, internalized stigma may be one of the major factors affecting the QoL in these diseases. A successful psychoeducation program is essential to reduce stigmatization and to raise awareness of the disease. This issue is also crucial in terms of establishing compliance with treatment.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. Aktan Ş, Özmen E, Yavuz Ş, Özkaya N. Psychiatric symptoms in patients with acne vulgaris. Turkderm 1994;28:93-8.
2. Smithard A, Glazebrook C, Williams HC. Acne prevalence, knowledge about acne and psychological morbidity in mid-adolescence: A community-based study. Br J Dermatol 2001;145:274-9.
3. Agarwal G. Vitiligo: An under-estimated problem. Fam Pract 1998;15 Suppl 1:S19-23.
4. Kent G, Al'Abadie M. Psychologic effects of vitiligo: A critical incident analysis. J Am Acad Dermatol 1996;35:895-8.
5. Kostopoulou P, Jouary T, Quintard B, Ezzedine K, Marques S, Boutchnei S, *et al.* Objective vs. Subjective factors in the psychological impact of vitiligo: The experience from a French referral centre. Br J Dermatol 2009;161:128-33.
6. Colón EA, Popkin MK, Callies AL, Dessert NJ, Hordinsky MK. Lifetime prevalence of psychiatric disorders in patients with alopecia areata. Compr Psychiatry 1991;32:245-51.
7. Ruiz-Doblado S, Carrizosa A, García-Hernández MJ. Alopecia areata: Psychiatric comorbidity and adjustment to illness. Int J Dermatol 2003;42:434-7.
8. Bilgiç Ö, Şimşek KK, Akça ÖF, Polat R. Psychiatric Symptoms in Patients with Alopecia Areata. Dermatoz 2011;2:227-9.
9. Ritsher JB, Otilingam PG, Grajales M. Internalized stigma of mental illness: Psychometric properties of a new measure. Psychiatry Res 2003;121:31-49.
10. Alpsoy E, Polat M, FettahlıoGlu-Karaman B, Karadag AS, Kartal-Durmazlar P, YalCın B, *et al.* Internalized stigma in psoriasis: A multicenter study. J Dermatol 2017;44:885-91.
11. Corrigan P. The impact of stigma on severe mental illness. Cogn Behav Pract 1998;5:201-22.
12. Perlick DA, Rosenheck RA, Clarkin JF, Sirey JA, Salahi J, Struening EL, *et al.* Stigma as a barrier to recovery: Adverse effects of perceived stigma on social adaptation of persons diagnosed with bipolar affective disorder. Psychiatr Serv 2001;52:1627-32.
13. Kötekoğlu D, Parlakdağ A, Koramaz FS, Varol G, Aslankoç V, Bozkurt S, *et al.* Internalized stigma in acne vulgaris and its relationship with quality of life, general health, body perception and depression. 26th National Dermatology Congress; Antalya, Turkey; 2016.
14. Oztürkcan S, Ermertcan AT, Eser E, Sahin MT. Cross validation of the Turkish version of dermatology life quality index. Int J Dermatol 2006;45:1300-7.
15. Anatoly & World Health Organization. Regional Office for Europe, de Bruin A, Picavet HS, Nossikov A, editors. Health Interview Surveys: Towards International Harmonization of Methods and Instruments.

Copenhagen: WHO Regional Office for Europe; 1996. Available from: http://www.who.int/iris/handle/10665/107328. [Last accessed on 2019 Aug 20].

16. OECD. Health Statistics 2016 – Definitions, Sources and Methods. Available from: https://www.oecd.org/els/health-systems/Table-of-Content-Metadata-OECD-Health-Statistics-2016.pdf. [Last accessed on 2019 Aug 20].

17. Goldberg DP, Hillier VF. A scaled version of the general health questionnaire. Psychol Med 1979;9:139-45.

18. Ozdemir H, Rezaki M. General health questionnaire-12 for the detection of depression. Turk Psikiyatri Derg 2007;18:13-21.

19. Kilic C, Rezaki M, Rezaki B, Kaplan I, Ozgen G, Sağduyu A, *et al.* General health questionnaire (GHQ12 & GHQ28): Psychometric properties and factor structure of the scales in a Turkish primary care sample. Soc Psychiatry Psychiatr Epidemiol 1997;32:327-31.

20. Gupta MA, Johnson AM, Gupta AK. The development of an acne quality of life scale: Reliability, validity, and relation to subjective acne severity in mild to moderate acne vulgaris. Acta Derm Venereol 1998;78:451-6.

21. Demirçay Z, Şenol A, Seçkin D, Demir F. Reliability of Turkish Version of Acne Quality of Life Scale in Patients with Acne Vulgaris. Türkderm 2006;40:94-7.

22. US Department of Health and Human Services; Food and Drug Administration; Center for Drug Evaluation and Research (CDER). Guidance for Industry; Acne Vulgaris: Developing Drugs for Treatment; 2005.

23. Njoo MD, Das PK, Bos JD, Westerhof W. Association of the Köbner phenomenon with disease activity and therapeutic responsiveness in vitiligo vulgaris. Arch Dermatol 1999;135:407-13.

24. Taïeb A, Picardo M; VETF Members. The definition and assessment of vitiligo: A consensus report of the vitiligo European task force. Pigment Cell Res 2007;20:27-35.

25. Komen L, da Graça V, Wolkerstorfer A, de Rie MA, Terwee CB, van der Veen JP, *et al.* Vitiligo area scoring index and vitiligo European task force assessment: Reliable and responsive instruments to measure the degree of depigmentation in vitiligo. Br J Dermatol 2015;172:437-43.

26. Olsen EA, Hordinsky MK, Price VH, Roberts JL, Shapiro J, Canfield D, *et al.* National alopecia areata foundation: alopecia areata investigational assessment guidelines--Part II. National Alopecia Areata Foundation. J Am Acad Dermatol 2004;51:440-7.

27. Ersoy MA, Varan A. Reliability and Validity of the Turkish Version of the Internalized Stigma of Mental Illness Scale Türk Psikiyatr Derg 2007;18:163-71.

28. Alpsoy E, Şenol Y, Bilgiç Temel A, Baysal GO, Akman Karakaş A. Reliability and validity of internalized stigmatization scale in psoriasis. Turkderm 2015;49:45-9.

29. Farrelly S, Clement S, Gabbidon J, Jeffery D, Dockery L, Lassman F, *et al.* Anticipated and experienced discrimination amongst people with schizophrenia, bipolar disorder and major depressive disorder: A cross sectional study. BMC Psychiatry 2014;14:157.

30. Margetić BA, Jakovljević M, Ivanec D, Margetić B, Tošić G. Relations of internalized stigma with temperament and character in patients with schizophrenia. Compr Psychiatry 2010;51:603-6.

31. Bassirnia A, Briggs J, Kopeykina I, Mednick A, Yaseen Z, Galynker I, *et al.* Relationship between personality traits and perceived internalized stigma in bipolar patients and their treatment partners. Psychiatry Res 2015;230:436-40.

32. Cerit C, Filizer A, Tural Ü, Tufan AE. Stigma: A core factor on predicting functionality in bipolar disorder. Compr Psychiatry 2012;53:484-9.

33. Ociskova M, Prasko J, Kamaradova D, Grambal A, Sigmundova Z. Individual correlates of self-stigma in patients with anxiety disorders with and without comorbidities. Neuropsychiatr Dis Treat 2015;11:1767-79.