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Internalized stigma in patients with acne vulgaris and psoriasis vulgaris: A comparative study

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Abstract

Aim: Acne vulgaris and psoriasis vulgaris have a negative psychosocial impacts on patients' lives and cause external and internal stigma. This study aims to compare the levels of internalized stigma in acne vulgaris patients with those of psoriasis patients and evaluate the effect of sociodemographic and clinical features on internalized stigma.

Materials and Methods: This cross-sectional and observational study included consecutive adult patients diagnosed with acne vulgaris or psoriasis vulgaris in dermatology outpatient clinics. Sociodemographic and clinical characteristics were recorded. The internalized stigma scale (ISS) was applied to participants. Total ISS scores and five subscales of the ISS were analyzed.

Results: A total of 154 patients, 114 with acne vulgaris and 40 with psoriasis vulgaris, were included in the study. The mean ISS score in acne vulgaris patients was 28.1±13.8, and the mean ISS score in psoriasis vulgaris patients was 32.0±13.7. There was no significant difference in total ISS scores between acne vulgaris and psoriasis vulgaris patients. The social withdrawal subscale score in psoriasis vulgaris patients was significantly higher, but stigma resistance subscale scores were significantly lower than in acne vulgaris patients (p=0.042 and p=0.047, consecutively). Psoriasis vulgaris patients with visible lesions had higher total mean ISS scores than those without (p=0.034). The duration of psoriasis was significantly correlated with total ISS scores (rho= 0.333, p=0.036).

Conclusion: Patients with acne vulgaris and psoriasis vulgaris have similar total internalized stigma scores. Psoriasis vulgaris patients exclude themselves from society more than acne vulgaris patients, while acne vulgaris patients can overcome the stigma more than psoriasis patients. The visibility and duration of the dermatologic disorder may be important factors in experiencing internalized stigma.

Introduction

Stigma is the discrediting, humiliation, and vilification of a person in a way that distinguishes them from others based on characteristics such as disease, disability, or different appearance [1]. Stigmatization is frequently encountered in patients with skin diseases such as psoriasis, vitiligo, and atopic dermatitis, usually due to visible skin lesions. Insufficient knowledge and misbeliefs about skin diseases may cause discrimination and exclusion of patients from society, leading to negative psychological impacts on patients suffering from skin diseases [2]. There are several dimensions of stigmatization, such as external and self-stigma. Internalized stigmatization is a type of self-stigma and refers to the individual's acceptance of negative opinions or social stereotypes for herself/himself. As a result, the person withdraws herself/himself from society with negative feelings such as shame, worthlessness, helplessness, anger, and alienation [1].

Psoriasis vulgaris is a chronic and inflammatory skin disease presenting as well-demarcated, scaly, erythematous plaques located primarily on extensor surfaces of the body, scalp, and lumbosacral region [3]. Psoriasis prevalence is up to 3% of the population worldwide. The disease affects all age groups but is seen as more common in adults [4]. Patients with psoriasis often experience stigmatization, causing social and psychological challenges in their social lives [5]. Internalized stigma has been studied in patients with psoriasis, and it has been shown that psoriasis patients have high levels of internalized stigma as well as external stigma [6].

Acne vulgaris is a common skin disease of the pilosebaceous unit and is seen in approximately 85% of adolescents and young adults. Acne affects approximately 10% of the

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population, but prevalence decreases with increasing age [7]. Acne vulgaris is most commonly located on the face, the body's most visible part. Even though acne vulgaris is accepted as a self-limited and not a chronic disorder [7], some cases may persist during adulthood or leave scars resulting in high psychological distress, low self-esteem, depression, and anxiety [8]. In addition, acne patients are frequently exposed to external stigma, bullying, and discrimination by their peers because the age of onset coincides with adolescence [9]. Internalized stigma has also been studied in patients with acne vulgaris and concluded as one of the major factors responsible for the psychosocial burden of the disease [10].

Acne vulgaris and psoriasis vulgaris both have a negative psychosocial impact on patients. High levels of internalized stigma have been shown in these skin diseases [6,10]. However, these two diseases have specific differences epidemiologically and clinically, such as prevalence, affected population, and prognosis [4,7]. Therefore, the primary aim of this study was to compare the levels of internalized stigma in acne vulgaris patients, a more common dermatologic disorder, with those of psoriasis patients. In addition, sociodemographic and clinical features possibly associated with internalized stigma in acne vulgaris and psoriasis vulgaris patients were examined.

Materials and Methods

Study design, participants, and measures

This cross-sectional observational study was conducted at the dermatology outpatient clinics in Usak University Training and Research Hospital between November 2022 and December 2022. Probability sampling was used and all consecutive adult patients (> 18 years old) diagnosed with acne vulgaris or psoriasis vulgaris in outpatient dermatology clinic were invited to participate in the study. Usak University Non-interventional Clinical Researches Ethics Committee approved the study (10.11.2022/12-12-12). The study was performed following the ethical principles of the Helsinki Declaration.

Adult patients older than 18 years who could read and understand the informed consent form and internalized stigma scale and who had disease duration longer than one month were included in the study. Patients with a comorbid psychiatric diagnosis were excluded from the study. For sample size determination, 10 patients were enrolled into the both acne vulgaris and psoriasis vulgaris group and their total internalized stigma scores were recorded. The effect size of the stigma scores was 0.573 for the initial sample. With $\alpha = 0.05$, power = 0.90, and an allocation ratio of 2:1, the total sample size was calculated as 120 (80 for acne vulgaris and 40 for psoriasis vulgaris group) by using G*Power software (latest ver. 3.1.9.7; Heinrich-Heine-Universität Düsseldorf, Düsseldorf, Germany).

After obtaining written informed consent, patients were evaluated by the dermatologist regarding sociodemographic and clinical characteristics. Sociodemographic characteristics such as age, sex, marital status, educational level, and working status and clinical characteristics such as smoking status, alcohol consumption, disease duration, previous treatments, comorbidities, disease severity, and visibility of the lesions were recorded. According to the physician's global assessment, the severity of acne or psoriasis was assessed as mild, moderate, severe, or very severe.

The Internalized Stigma Scale (ISS) was given to patients who fulfilled the inclusion criteria. The scale is a Likert-type 29-item self-administered questionnaire measuring five dimensions of internalized stigma, including alienation (six items), endorsement of stereotypes (seven items), feeling of discrimination (five items), social withdrawal (six items), and resistance to stigma (five items). Patients rate each item with a 4-point rating scale (strongly disagree-1, disagree-2, agree-3, and strongly agree-4). The items of resistance to stigma are coded reversely, and the total ISS scores range between 4-91. A high total ISS score refers to more severe internalized stigmatization. Ritsher et al. developed the ISS for mental illnesses first [11]. The validity and reliability study of the Turkish version of the scale for mental illnesses was performed by Ersoy et al. [12]. The scale was adapted for many diseases other than psychiatric disorders. The reliability and validity study of the Turkish version of ISS for dermatologic disorders was carried out by Alpsoy et al. and shown to be a valid and reliable instrument in psoriasis patients (Cronbach's alpha=0.89) [13].

Statistical analysis

The data were analyzed with the IBM SPSS Advanced Statistic 29.0 (5725-A54) statistical package program. Descriptive categorical data were presented as frequencies and percentages. Continuous data were presented as mean (standard deviation), mean ± standard deviation, or median (range). The distribution of the continuous data was analyzed with the Shapiro-Wilk test for normality. Independent samples t-test or one-way ANOVA was used to analyze normally distributed data, while Mann-Whitney U Test or Kruskal-Wallis test was used to compare non-normally distributed data to test associations of patients' sociodemographic and clinical characteristics with ISS total scores and to compare total ISS scores and subscale scores of acne vulgaris and psoriasis vulgaris patients. Pearson's Chi-square test or Fisher's exact test was performed to compare categorical variables such as sociodemographic and clinical characteristics of acne vulgaris and psoriasis vulgaris patients. The Bonferroni correction was applied to correct multiple comparisons. Spearman's correlation was calculated to evaluate the correlation between ISS scores, age, and disease duration. Cronbach's alpha was used to assess the internal consistency of ISS items for whole subjects, acne vulgaris, and psoriasis vulgaris separately. P-values below 0.05 were considered statistically significant.

Results

A total of 154 patients, 114 with acne vulgaris and 40 with psoriasis vulgaris, were included in the study. The two patient groups were significantly different regarding age, disease duration, sex, marital status, education level, comorbidities, and visible lesions. The main sociodemographic and clinical characteristics of the patients are shown in Table 1.

Table 1. Sociodemographic and clinical characteristics of acne vulgaris and psoriasis vulgaris patients.

	Total n=154	Acne vulgaris n=114	Psoriasis vulgaris n=40	p value
Age, median (range)	22 (18-58)	21 (18-38)	38.5 (18-58)	**<0.001**[a]
Duration, months, median (range)	48 (1-420)	36 (1-200)	132 (3-420)	**<0.001**[a]
Sex, n (%)				**0.015**[b]
Female	121 (78.6)	95 (83.3)	26 (65)	
Male	33 (21.4)	19 (16.7)	14 (35)	
Marital status, n (%)				**<0.001**[b]
Single	108 (70.1)	99 (86.8)	9 (22.5)	
Married	44 (28.6)	15 (13.2)	29 (72.5)	
Divorced	2 (1.3)	0 (0)	2 (5)	
Education level, n (%)				**<0.001**[b]
Literate	1 (0.6)	0 (0)	1 (2.5)	
Primary school	3 (1.9)	0 (0)	3 (7.5)	
Secondary school	17 (11)	7 (6.1)	10 (25)	
High school	94 (61)	77 (67.5)	17 (42.5)	
Junior college	8 (5.2)	7 (6.1)	1 (2.5)	
University	30 (19.5)	22 (19.3)	8 (20)	
Doctorate	1 (0.6)	1 (0.9)	0 (0)	
Working status, n (%)				0.091[b]
Yes	42 (27.3)	27 (23.7)	15 (37.5)	
No	112 (72.7)	87 (76.3)	25 (62.5)	
Smoking status, n (%)				0.220[b]
Yes	46 (29.9)	31 (27.2)	15 (37.5)	
No	108 (70.1)	83 (72.8)	25 (62.5)	
Alcohol consumption, n (%)				0.853[b]
Yes	18 (11.7)	13 (11.4)	5 (12.5)	
No	136 (88.3)	101 (88.6)	35 (87.5)	
Previous treatment, n (%)				0.145[b]
Yes	127 (82.5)	91 (79.8)	36 (90)	
No	27 (17.5)	23 (20.2)	4 (10)	
Comorbitidy, n (%)				**0.002**[b]
Yes	54 (35.1)	32 (28.1)	22 (55)	
No	100 (64.9)	82 (71.9)	18 (45)	
Severity of the disease, n (%)				0.016[b]
Mild	43 (27.9)	34 (29.8)	9 (22.5)	
Moderate	76 (49.4)	60 (52.6)	16 (40)	
Severe	33 (21.4)	20 (17.5)	13 (32.5)	
Very severe	2 (1.3)	0	2 (5)	
Visible lesion, n (%)				**0.003**[b]
Yes	144 (93.5)	111 (97.4)	33 (82.5)	
No	10 (6.5)	3 (2.6)	7 (17.5)	

Significant p-values were marked in bold. [a] Independent samples Mann-Whitney U test; [b] Pearson Chi-square test.

The mean ISS score in acne vulgaris patients was 28.1±13.8, and the median ISS total score was 25 (6-71). The mean ISS score in psoriasis vulgaris patients was 32.0±13.7, and the median ISS total score was 33 (10-65). There was no significant difference in total ISS scores between acne vulgaris and psoriasis vulgaris patients. The social withdrawal subscale score in psoriasis vulgaris patients was significantly higher than in acne vulgaris patients (p=0.042). There was a significant difference in stigma resistance subscale scores between acne vulgaris and psoriasis vulgaris patients (p=0.047). The ISS total and subscale scores of acne vulgaris and psoriasis vulgaris patients are shown in Table 2. The internal consistency coefficient for the whole scale was 0.894. The reliability coefficients of subscales for acne vulgaris and psoriasis vulgaris are shown in Table 3.

ISS total and subscale scores in patients with acne vulgaris were not significantly correlated with age and disease duration. However, there were significant correlations between ISS total score, ISS subscale scores with age, and disease

Table 2. Internalized stigma scale subscales in acne vulgaris and psoriasis vulgaris patients.

	Acne vulgaris (n=114)	Psoriasis vulgaris (n=40)	p value
Total ISS score, median (range)	25 (6-71)	33 (10-65)	0.113[a]
Alienation, median (range)	12 (6-24)	12 (6-21)	0.475[a]
Stereotype endorsement, median (range)	11 (7-20)	11(7-20)	0.756[a]
Perceived discrimination, median (range)	8 (5-17)	9 (5-16)	0.069[a]
Social withdrawal, median (range)	9 (6-24)	12 (6-21)	**0.042[a]**
Stigma resistance, median (range)	14 (5-19)	13 (6-20)	**0.047[a]**

Significant p-values were marked in bold. ISS: Internalized sitgma scale; aIndependent samples Mann-Whitney U test.

Table 3. Reliability coefficient for acne vulgaris and psoriasis vulgaris (Cronbach alpha).

	Acne vulgaris (n=114)	Acne vulgaris [10] (n=77)	Psoriasis vulgaris (n=40)	Psoriasis vulgaris [13] (n=100)	Original form[12] (n=127)
Total ISS	0.90	0.93	0.88	0.89	0.90
Alienation	0.85	0.88	0.82	0.83	0.79
Stereotype endorsement	0.72	0.70	0.82	0.70	0.72
Perceived discrimination	0.78	0.81	0.76	0.70	0.75
Social withdrawal	0.87	0.87	0.87	0.84	0.80
Stigma resistance	0.47	0.58	0.42	0.68	0.58

Table 4. Correlation coefficient between ISS total score, ISS subscale scores, age, and the disease duration in psoriasis vulgaris patients.

	Age	The disease duration
Total ISS		
Spearman's rho	0.333	0.333
p value	**0.036**	**0.036**
Alienation		
Spearman's rho	0.154	0.134
p value	0.344	0.409
Stereotype endorsement		
Spearman's rho	0.497	0.367
p value	**0.001**	**0.020**
Perceived discrimination		
Spearman's rho	0.367	0.392
p value	**0.020**	**0.012**
Social withdrawal		
Spearman's rho	0.247	0.227
p value	0.124	.160
Stigma resistance		
Spearman's rho	-0.378	-0.343
p value	**0.016**	**0.030**

ISS: Internalized stigma scale.

duration in psoriasis vulgaris patients. These correlations are shown in Table 4.

No significant associations were found between ISS total and subscale scores and sociodemographic and clinical characteristics of the acne vulgaris patients. There was no significant association between ISS total scores and sociodemographic and clinical characteristics of the psoriasis vulgaris patients except visibility of the lesions. Associations of patients' characteristics with ISS total scores in acne vulgaris patients and ISS total scores in psoriasis vulgaris patients are shown in Table 5. Psoriasis vulgaris patients with visible lesions had higher total mean ISS scores than those without (34.1±13.4 vs. 22.1±11.3, p=0.034). There was a significant difference in the mean values of stereotype endorsement subscale scores between the psoriasis vulgaris patients treated previously and those who had not (12.1±3.6 vs. 8.3±1.9, p=0.045). In addition, the previously treated psoriasis vulgaris patients had higher mean perceived discrimination scores than those who did not (9.6±2.8 vs. 6.5±1.9, p=0.035). There was a significant difference in the mean values of alienation subscale scores between the psoriasis patients with visible lesions and those without (13.0±4.0 vs. 9.6±2.9, p=0.035).

Discussion

In the present study, internalized stigma levels of patients with acne vulgaris and psoriasis vulgaris were evaluated to determine the influence of these two different dermatologic disorders on patients' acceptance of social stereotypes and attitudes toward themselves, social exclusion, alienation, feelings of discrimination and resistance to stigma. The results showed that the two patient groups had similar total ISS scores. However, the social withdrawal subscale scores were significantly higher in psoriasis patients than in acne patients. In contrast, acne patients were significantly more resistant to stigma according to the resistance to stigma subscale.

Internalized stigmatization levels in acne vulgaris have been previously compared with alopecia areata and vitiligo, chronic immune-mediated dermatologic disorders. It has been shown that acne vulgaris and alopecia areata patients experience more internalized stigma than vitiligo patients [14]. To the best of our knowledge, internalized stigma has not been compared in acne vulgaris and psoriasis vulgaris patients before. Psoriasis and acne are two

utterly different skin diseases in terms of their prevalence in the community, the affected age group, the chronicity of the disease, the accompanying comorbidities, and the location of the lesions [3,4,7]. Although these two diseases are different in many respects, both negatively impact patients' quality of life and psychosocial status, causing anxiety, depression, and suicidal ideation [8,15]. However, psoriasis has been shown to negatively affect the quality of life more than acne patients, possibly due to its chronic course and accompanying comorbidities [16]. In addition, psoriasis patients have been exposed to stigma due to insufficient information about the disease and the misbelief that psoriasis is contagious [17]. Acne vulgaris is a much more common skin disease than psoriasis, but still with poor knowledge of society [18]. Especially the affected age, the adolescent period, is a vital factor for the deterioration of body image in acne vulgaris patients and may result in low self-esteem and adverse effects on social functioning [7,18]. In the present study, the social withdrawal subscale scores were significantly higher in psoriasis patients than in acne patients. The chronic course and long disease duration of psoriasis may have caused psoriasis patients to isolate themselves from society. In contrast, acne patients have been shown to be more able to cope with stigma according to the resistance to stigma subscale. The younger age group, shorter disease duration, and absence of comorbidities in acne vulgaris patients may result in higher resistance to stigma in acne patients. Even though the two subscales of the ISS, social withdrawal and stigma resistance, showed significant difference levels between acne vulgaris and psoriasis vulgaris patients, total internalized stigma levels of patients with acne vulgaris and psoriasis vulgaris were similar. Therefore, it can be concluded that internalized stigma may be an essential factor contributing to the psychosocial burden of skin diseases.

Internalized stigma in psoriasis patients was evaluated in a multi-center study including 1485 patients from Turkey. The mean ISS score in the study was 60.1±15.1. The study has shown that internalized stigma positively correlates with deteriorated life quality, disease severity, and duration. Mean ISS scores were significantly higher in patients with the involvement of visible body parts [6]. The present study found the mean ISS score as 32.0±13.7. Total ISS scores were positively correlated with the age and duration of the disease but not with the severity of the disease. Age and disease duration was positively correlated with stereotype endorsement and perceived discrimination while negatively correlated with stigma resistance. Patients with visible psoriasis lesions had higher internalized stigma in accordance with the previous study. Further, patients with visible lesions had higher scores in the alienation subscale. Previous treatment experience was associated with higher scores in stereotype endorsement and perceived discrimination. These results suggest that psoriasis patients with longer disease duration and having visible lesions experience higher levels of internalized stigma. The history of previous treatment for psoriasis leads patients to approve stereotypes for themselves and to feel discriminated against.

Acne vulgaris has been subjected to internalized stigma studies due to its localization on the face, the most visible part of the body. In a study involving 50 acne patients, the mean ISS score was found to be 59.48±15.40 and positively correlated with the acne severity and education level [14]. In another study of 77 acne vulgaris patients, the mean ISS score was 53.68±13.6 and demonstrated higher internalized stigma in males than in females [10]. In the present study, the mean ISS score of 114 acne vulgaris patients was 28.1±13.8, but there was no statistically significant relationship with the sociodemographic and clinical characteristics of the patients. The difference between the total mean ISS scores between the previous two studies and the present study could be attributed to the different sociodemographic and clinical characteristics of the patients involved in these studies. For example, one of those studies included acne vulgaris patients in a group of university students [10]. However, the present study enrolled consecutive patients from outpatient dermatology clinics with different education levels. The male gender was found to be the second most important factor affecting internalized stigma in acne vulgaris following the quality of life [10]. In the present study, 83% of the patients were female, without a significant difference in total ISS scores between males and females. Moreover, internalized stigma may differ according to the sociocultural characteristics of the geographic regions in which the patient lives [19]. Therefore, more research is required on sociodemographic and sociocultural factors that may be effective on internalized stigma in acne vulgaris patients.

There are several limitations of the present study. First, the study's cross-sectional and observational nature prevents causality evaluation. The single-center design and the likely impact of sociocultural factors on internalized stigma may limit the generalization of the results. Finally, the usage of a self-administered questionnaire, the ISS, might have caused response bias.

Conclusion

In conclusion, acne vulgaris and psoriasis vulgaris are two particular dermatologic disorders, but patients with acne vulgaris and psoriasis vulgaris have similar total internalized stigma scores. According to ISS social withdrawal subscale, psoriasis vulgaris patients exclude themselves from society more than acne vulgaris patients. Acne vulgaris patients have higher ISS resistance to stigma subscale scores and are more able to overcome the stigma. The visibility and duration of the dermatologic disorder may be important factors in experiencing higher internalized stigma. High stigma in patients with dermatologic disorders may be reduced by increasing knowledge about skin diseases and their impact on patients' lives among society and supporting patients to improve their coping skills to overcome stigmatization.

Ethical approval

Usak University Non-interventional Clinical Researches Ethics Committee approved the study (10.11.2022/12-12-12). The study was performed following the ethical principles of the Helsinki Declaration.

Conflict of interest statement

The author has no conflicts of interest to declare.

Consent to participate and publish

Written informed consent to participate and publish was obtained from all individual participants included in the study.

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Availability of data and materials

Data available on request from the authors.

Authors contributions

NDÖ: Conceptualization; Data curation; Formal analysis; Investigation; Methodology; Validation; Visualization; Writing-original draft, review, and editing.

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