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Impact of acne vulgaris on psychosocial status

Sevil Alan

Akdeniz University School of Medicine Department of Dermatology and Venereology, Antalya/TURKEY

ABSTRACT

Background: Most previous research has focused on acne vulgaris characteristics and their association with psychological disorders, such as anxiety and depression. **Objective:** In the present study, we aimed to show whether acne characteristics are associated with several aspects of psychological well-being namely self-esteem, body satisfaction, anxiety-depression and dermatological life quality. **Methods:** This was a study of 200 patient with acne and190 healthy controls that was carried out in Antalya, Turkey. Main outcome measures were the Rosenberg's Self-Esteem Scale, Body Image Concern Inventory (BICI), hospital anxiety and depression scale (HAD) and dermatological life quality index (DLQI). Also we recorded global acne grading score (GAGS) of acne patients. **Results:** The findings of statistical analysis indicated that patients with acne had lower levels of self-esteem, high depression and HAD score compared with healthy controls (respectively $p=0.01$, $p<0.01$, $p=0.01$). Also the DLQI scores of severe and very severe group had higher than mild and moderate group ($p= 0.013$) **Conclusion:** The emotional well-being of the patients presenting with the acne needs to be recognized more fully, particularly in relation to the low self-esteem, high depression score. The psychosocial impact of acne vulgaris should be valued in the management of patients with this condition. The results of this study raise implications for clinical practice and suggest that a multidisciplinary approach to the management of patient with acne.

***Correspondence to Author:**
Sevil Alan
Akdeniz University School of Medicine Department of Dermatology and Venereology, Antalya/TURKEY

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INTRODUCTION

The skin is the most visible organ of the body and determines, to a large extent, our appearance, with a wide function in social and sexual communication [1]. The physical appearance of humans, in particular those aspects crucial for physical attractiveness, is believed to significantly influence self image, self-esteem, development of personality, and social interaction [2]. Acne vulgaris, which is one of the most prevalent skin disorders, is frequently seen in adolescents. The prevalence of acne is between 30%~85% in adolescents and young adults [3]. Although acne is not a life-threatening disease, it could be distressing and cause adverse psychosocial consequences such as poor self-esteem, and social phobia in the patients [4].

It has been reported that psychosomatic findings are more frequent in patients with acne [3]. More severe acne has been associated with symptoms of anxiety and depression. These persons generally experience social anxiety and, as a result, depression and suicidal thoughts may occur [3].

Acne vulgaris was found to have a more direct effect on self-confidence and identity, especially in girls. The Cutaneous Body Image Scale is presented as an easy and reliable tool to evaluate a patient's mental perception of the appearance of their skin in literature [5].

Also acne has been well documented in the literature to have significant negative effects on quality of life [6]. However, the relationship between severity of acne and emotional distress, as well as the relationship between the severity of acne and quality of life are poorly understood and rather controversial [7].

The impact of acne on psychological parameters are not fully understood. The aims of this study were: (i) to determine the overall impact of acne vulgaris on self esteem, symptoms of anxiety and depression, self-confidence and identity, quality of life of acne patients in Turkey, (ii) to assess the relationship between self-esteem, anxiety-depression, cutaneous body image, quality of life and severity of acne.

MATERIAL AND METHODS

Study population

Between January 2014 and september 2015, patients suffering from acne who were referred to Akdeniz University Dermatology outpatient clinic were examined and 200 patients with acne vulgaris and 190 healthy controls were enrolled in this prospective study. The acne severity was measured according to “Global Acne Grading Scale” [8,9]. Exclusion criteria were: age <16 or >50 years, documented history of mood disorders and patients under treatment of psychologic drugs. Demographic data were also recorded. The female patients were also questionared and examined to determine of hirsutismus, menstrual irregularity and infertility. excluded those patients who had hirsutismus, menstrual irregularity and infertility. because these disorders can affect the patient's mood.

Ethical Considerations

This study was approved by the ethics committee of Antalya Education and Research Hospital and conducted according to the ethical standards of the Helsinki Declaration of 2000. All subjects signed a written informed consent.

Measurements Instruments

Socio-demographic status: Demographic information of the subjects, disease characteristics, family history, and previous treatments were recorded. The study used years of formal education as a measure of socioeconomic status and it was categorized into five levels: no education, first level (1-5 years), second level (6-9 years), third level (10-12 years) and fourth level (more than 12 years).

Body image: We used the Body Image Concern Inventory (BICI) to examine body image in our study. It contains 19 items related to dissatisfaction and concern about appearance, reassurance seeking, social concerns and avoidance related to appearance. For each item, respondents were asked to rate how often they had the described feeling or performed the described behavior on a Likert scale anchored by 1= ‘‘never’’ and 5=‘‘always’’. The total score on the scale range from 19-95. The higher scores indicate higher dissatisfaction of body. Psychometric properties of the BICI in Turkish populati-

on have been verified [5,10].

***Self-esteem*:** Rosenberg's Self Esteem Scale (RSES) has been used worldwide since it was developed by Rosenberg in 1965 and revised by Hutz in 2011 as a one-dimensional tool capable of classifying the self-esteem level in low, medium and high [11]. The original scale was developed for teenagers and has ten closed sentences, with five evaluating positive feelings and five evaluating negative feelings of the individual about himself. The possible interval of this scale is 10 to 40. Respondents rate a series of 10 statements about themselves from 'almost always true' to 'never true'. High scores indicate high self-esteem [11]. Psychometric properties of the questionnaire in Turkish population have been verified [12].

Dermatological Quality of life: The DLQI, a simple, practical and self-administered questionnaire was designed to assess limitations caused by the impact of skin disease. Responses on the DLQI were scored according to the guidelines of Finlay and Khan [13]. The DLQI was calculated by summing the scores of all questions, with total scores ranging from 0–30, where a lower score indicates a lower quality of life (QoL). (Table I)

Table I. Demographic and characteristic in acne patients and healthy controls

	Acne patients (n=200)	**Control group (n=190)**	***P* value**
Age(years)*	21.2±8.3	22.3±6.8	0.724
Education**			
The first level	22 (11%)	27 (14.2%)	0.669
The second level	26 (13%)	33 (17.3%)	
The third level	106 (53%)	110 (57.8%)	
The fourth level	46 (23%)	30 (15.7%)	
Gender			
Male	72 (36%)	47 (36.1%)	0.891
Female	128 (64%)	83 (63.8%)	
Acne score*	10.54 ± 7.26		
Mild	102 (51%)	-	NA*
Moderate	72 (36%)	-	
Severe and very severe	26 (13%)	-	
Age first had acne (years)	15.08± 6.2	-	NA*
Duration of active acne (month)	91.3 ± 18.7	-	NA*
Family history of acne	142 (71%)	34 (26.1%)	<0.001
At least one treatment previously	138 (69%)	-	NA*

*NA= Not applicable

DLQI is an easy and efficient instrument for assessing the quality of life in patients with dermatological problems and offers good reliability and validity [14].

DLQI questionnaire [14]

No. Question

1. Over the last week, how have you been affected by acne?
2. Over the last week, how embarrassed, frustrated or self conscious have you been because of your acne?
3. Over the last week, how much has your acne interfered with your shopping or other outdoor activities?
4. Over the last week, how much has your acne influenced your make-up or style? Do you need to cover with concealer the affected area in your face?
5. Over the last week, how much has your acne affected any social or leisure activities?
6. Over the last week, how much has your acne made it difficult for you to do any sport or hobbies?
7. Over the last week, has your acne prevented you from working or studying?
8. Over the last week, how much has your acne created problems with your partner or any of your close friends or relatives?
9. Over the last week, how much has your acne caused any sexual difficulties?
10. Over the last week, how much of a problem has the treatment for your acne been, for example by making your home messy or taking up time?

1 and 2, symptoms and feelings; 3 and 4, daily activities; 5 and 6, leisure; 7, work and school; 8 and 9, personal relationships; 10, treatment.

Depression and anxiety: We used hospital anxiety and depression scale [HAD-Hospital Anxiety and Depression Scale] is four-point Likert-type scale: patient to determine the risk for anxiety and depression, in order to measure the intensity level which developed by AS Zigmond and Snaith PR [15]. It contains 14 questions and odd numbers are measures of anxİety, even numbers are measures of depression. The form of the Turkish validity and reliability studying made by Aydemir (1997), in which the scale of the disease was determined to be safe for the physical symptoms of depression and anxiety screening. It is composed of two sub-scales including anxiety [HAD-A] and depression [HAD-D]. Cut-off scores for anxiety subscale results 10/11, 7/8 for the depression subscale was found in studies in Turkey. Accordingly, they are considered at risk areas on these points. The lowest score of the patients can receive both subscales from 0, the highest score is 21 [16].

All the psychiatric aspects of the study were performed under the supervision of an expert psychiatrist. Informed consent was obtained from each patient and the study was approved by a local ethics committee.

Clinical and individual status: Acne was determined by the Global Acne Grading System (GAGS). The GAGS considers six locations on the face and chest or upper back, with a factor for each location based toughly on surface area, distribution, and density of pilosebaceous units [8].

The limits on the face are delineated by the hairline, jaw line, and ears. Each of the six locations is graded separately on 0-to-4 scale, with the *most* severe lesion within that location determining the local score. The global score is a summation of all local scores [8, 9].

Statistical Analysis

The results are expressed as mean ± SD. Statistical analysis was performed using SPSS version 20.0.0 (SPSS Inc., Chicago, IL, U.S.A.). The statistical differences between the proportions were determined by $\chi 2$ analysis. Normality of data was tested using the Kolmogorov Smirnov test by $p = 0.05$ threshold for the rejection of normality. Numerical data were evaluated using paired t test and analysis of variance. P value < 0.05 was considered as significant.

RESULTS

The sample consisted of 200 patients with acne vulgaris and 190 age and gender matched healthy controls enrolled in our study. The patients' acne was located on the face for 102 patients, on the back for 24 patients, and scattered across the face, neck, back, and chest for 74 patients. The patient and control groups were similar in terms of demographic data. The mean ages of patient and control groups were

21.2±8.3 years and 22.3±6.8 years, respectively. There were no statistically significant differences between patient groups and their control groups in terms of age, sex, or socioeconomic status (Table 1). Also the mean age of different severity groups of acne was similar (p=0.58)

The mean duration of disease was 91.3 ± 18.7 months in acne patients. The mean disease severity scores were 10.54 ± 7.26 in acne groups. According to disease severity scores 13 % of acne patients had severe or very severe disease. All patients had at least one treatment previously. The majority of patients had received topical treatments (Table 1).

The mean HADS-Total scores were15.80±5.74 and 12.74±5.15 acne and control groups, respectively. The mean self-esteem score, HADS-Total and HADS-Depression scores were significantly higher in patient groups than controls (respectively p=0.001, p<0.001, p= 0.001) (Table 2).

There were no significant differences between acne patients and control group with regard to HADS-anxiety scores and body image scores (respectively p=0.53, p=0.65) (Table 2).

Table II. Comparisons of scores of acne patients and healthy controls

	Acne patients (n=200)	Control (n= 190)	*P* value
Self-esteem	18.63±7.54	30.98±8.72	**0.01**
Anxiety score	9.35±4.12	9.01±3.92	0.76
Depression score	6.45±3.25	3.73±2.33	**<0.01**
HAD total score	15.80±5.74	12.74±5.15	**0.01**
Anxiety*	62 (31%)	60 (31.5)	0.72
Depression*	56 (28%)	49 (25.7)	0.68
DLQI	6.79±3.43	-	NA
Body image	37.54±11.64	35.23±10.23	0.65

In the acne group, no statistical differences between the Self-esteem, HAD, Anxiety, Depression and Body image scores and different severity groups. The DLQI scores of severe and very severe group had higher than mild and moderate group (p= **0.013**) (Table 3).

Table III. Scores of different severity groups of acne

	Self-esteem	HAD	Anxiety	Depression	DLQI	Body image
Acne						
Mild	30.01 ± 4.77	14.01±4.75	9.12±4.03	6.47±3.08	2.5	39.16 ± 12.35
Moderate	29.32 ± 3.82	17.20 ±5.97	8.96±5.21	6.02±3.21	5.7	38.85 ± 12.17
Severe	31.98 ± 4.02	16.18±6.03	10.01±6.13	6.50 ±3.32	12.05	34.61 ± 10.76
P value	0.45	0.56	0.68	0.87	**0.013**	0.69

DISCUSSION

The relationship between the skin and the emotions has long been established. From their embryological ‘prehistory’ to the end of their cell life, skin and nervous tissue never stop interacting, for better or for worse. The relationship be-

tween the skin and emotions/nerves is showed in certain skin diseases [17]. Skin diseases such as psoriasis, atopic eczema and acne can interfere substantially with social and occupational functioning and result in impairment of quality of life. The social and psychological morbidity that occurs in patients with common conditions of the skin can be ignored or not properly addressed, and thus underestimated by healthcare professionals [18].

Acne is a common skin disease with a high prevalence in adolescents and young adults. In addition to physical effects such as permanent scarring and disfigurement, acne has long-lasting psychosocial effects that affect the patient's emotions, body image and quality of life. Social isolation, depression and anxiety are frequent comorbidities of acne that should not be neglectşed in the therapy of acne patients [19].

The literature confirms that acne patients feel pressure to meet the socially perceived image of attractiveness, and as a result acne can be responsible for anxiety and mood disorders, and can even impact on self-esteem [20] Despite being considered a cosmetic and temporary problem, the sequelae of acne can lead to serious consequences, such as major depression and suicide.

Several studies of depression and anxiety evaluation have been conducted in patients with acne. Clinically, acne can be associated with significant depression, anxiety and suicidal thought, which would require psychiatric evaluation. Gupta et al. [21] and Fried et al. [22] showed both depression and suicidal tendencies in patients with acne. Kellett et al. [23] and Ozcan et al. [24] could not show any statisticfdally significant association between acne and depression-anxiety, when compared with the control groups. Loney et al. also reported that acne-related social anxiety is negatively associated with intention to participate in sport, self-esteem, and dermatological quality of life [25].

Uhlenhake et al conducted a retrospective examination of patient information from a medical claims database. Clinical depression was show in 8.8 percent of acne patients; this was 3 to 4 times greater than the prevalence of depression in the general population. For that reason it may have underestimated the total prevalence of acne and associated depression in the general population [26].

In our study, similar to some of the previous studies, we showed that depression scores were significantly higher and self-esteem scores were poorer among patients than the control group.

Magin P et al showed that acne caused immediate psychological consequences of negative self esteem, poor self image, self consciousness and embarrassment and had long-term effects on personality [27]. Similarly Dalgard F et al. reported that acne correlated with poor self-attitude in boys and poor self-worth in girls independently of body mass index and depressive symptoms [28].

Several studies analysed the effect of acne on quality of life. Some researchs showed that quality of life does not correlate with the physician's assessment of acne severity. Even in mild forms, acne has a detrimental psychological effect on patients [29]. Similarly we found that quality of life correlate with the physician's assessment of acne severity. We could not find that any correlation between the level of anxiety and depression and severity of acne. Also in this study we could not find that any correlation between the BICI score and severity of acne.

A dermatologist must be able to evaluate whether a patient suffers from anxiety disorders and/or depression, poorer self-esteem and poorer DLQI. We suggest that more data in this area are required.

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