Social Appearance Anxiety in Adult Patients with Acne: A Cross-Sectional Study

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ABSTRACT The severity of acne may not directly reflect the psychological state of a patient. The aim of the present study was to evaluate the social appearance anxiety with overall morbidity in patients with acne. One hundred adult patients with acne and 67 age and sex-matched healthy controls were enrolled in the study. The patients and controls were asked to complete the Social Appearance Anxiety Scale (SAAS) and the General Health Questionnaire-12 (GHQ-12). Acne severity was evaluated objectively by the Global Acne Grading System (GAGS) and subjectively by the Visual Analogue Scale (VAS). The mean score on SAAS (37.69±13.53; mean ± Standard deviation) was significantly higher than in the control group (32.48±9.34) (p=0.05). No significant difference was observed between the GHQ-12 scores of the acne (2.19±2.64) and the control group (1.63±2.2) (p=0.152). There was no correlation between the GAGS and the VAS (p=0.417). The SAAS scores of the patients with acne were correlated with the GAGS scores (p=0.05) but not correlated with VAS (p=0.481). The GHQ-12 scores were not correlated with GAGS (p=0.96) or with VAS (p=507). No statistical correlation was established between sex and the GAGS scores (p=0.385), SAAS scores (p=0.611), and GHQ-12 scores (p=0.196). The duration of acne was not correlated with SAAS scores (p=0.814) or with GHQ-12 scores (p=0.24). Social appearance anxiety is significant in adult patients with acne and it is correlated with objective acne severity. However, acne does not seem to be associated with substantial psychological distress or formal psychiatric disorder in adults.

KEY WORDS: acne, adults, social appearance anxiety

INTRODUCTION

Acne vulgaris is a chronic inflammatory disease of the pilosebaceous glands (1). It is a common distressing disease that can affect all aspects of an individual's health-related quality of life (HRQoL), in particular feelings and emotions, personal relationships, sports, social life, and employment opportunities (2). Over their lifetime, a person is more likely to have acne than any other disease (3). Both women and men find the effects of acne on appearance to be the most bothersome aspect of the disease, and

the negative effects of acne occur in both older and younger patients (4).

Social appearance anxiety refers to social anxiety concerning the overall appearance, including body shape and fear of negative evaluation by others (5). There are only a few studies on social anxiety levels in patients with acne (6-8). Studies focusing on how appearance concerns impact social anxiety are particularly lacking. The Social Appearance Scale (SAAS) was designed to measure anxiety levels related to being negatively evaluated by others because of one's overall appearance, including body shape, facial features, and complexion, predicting social anxiety levels above and beyond negative body image indicators (9).

The social and psychological morbidity that occurs in patients with common conditions of the skin is sometimes ignored or not properly addressed (10). The current study aimed to investigate social appearance anxiety in adult patients with acne compared with healthy controls to simultaneously evaluate the overall psychiatric morbidity.

PATIENTS AND METHODS

Study design
Descriptive cross-sectional study.

Subjects

Patients with acne attending the Department of Dermatology, Ataturk Research and Training Hospital, Izmir, Turkey from January 2013 to June 2014 were invited to take part in the study. The inclusion criteria for the study were a clinical diagnosis of acne, age >18 years, at least a primary school degree, and no diagnoses of another skin disease and/or mental and/or systemic disease. A healthy control group of age and sex-matched controls who had at least a primary school degree and denied acne, another skin disease, and mental and/or systemic disease were included in the study. The patients and controls who met the inclusion criteria were asked to fill the questionnaires.

Ethical aspects of the study

The required written permissions were granted by the hospital ethical committee and the participants.

Assessment instruments

Data were collected using a socio-demographic information form, the Social Appearance Anxiety Scale (SAAS), and General Health Questionnaire-12 items (GHQ-12) from both the study and control groups. The severity of acne was assessed using the Global Acne Grading System (GAGS) and Visual Analogue Scale (VAS) in the study group.

The sociodemographic information form included name, age, sex, time and date of data collection, and data on acne lesions (distribution, duration, family history, present treatment).

A VAS from 0=no acne to 10=severe acne was used for subjective assessment of the severity of acne by the patients.

Acne lesions were scored using the GAGS (11). GAGS considers six locations on the face and chest/upper back: the forehead, right cheek, left cheek, nose, chin, and torso (chest and upper back combined). A factor of 1, 2, or 3 is assigned to each area based on size. Each of the six locations is graded separately on a 0-to-4 scale as no lesions=0, comedones=1, papules=2, pustules=3, and nodules=4. The local score for each anatomic area was determined by multiplying the score of the most severe lesion by the area factor, and the global score is the sum of all local scores. The severity was graded as mild if the score was 1-18, as moderate for scores from 19 to 30, severe with scores from 31 to 38, and very severe if the score was above 38.

SAAS was used to calculate the amount of emotional, cognitive, and behavioral concerns of the patients with acne and controls about their appearances. It is a self-report scale developed by Hart *et al.* consisting of 16 items (9). Each item is rated on a five-point scale ranging from 1 (not at all) to 5 (extremely). The first item on the scale is inversely coded. Higher scores on this scale indicate higher anxiety about appearance. The reliability and validity of the Turkish version of the scale were established by Dogan (12).

GHQ-12 was applied to both the acne and the control groups to assess psychological stress. GHQ-12 is a brief, simple, easy-to-complete tool for measuring current and primary mental health that asks the subjects whether they have recently experienced a particular symptom of psychological distress. Each of the 12 items has four options (1=never, 2=as usual, 3=more frequently than usual, 4=very frequent). The first two options for each item are coded with "0" and the last two options are coded with "1" (0-0-1-1). This gives scores ranging from 0 to 12. Higher scores indicate a greater degree of psychological distress. Scores of 4 or more in the scale were evaluated as "moderate" and scores less than 2 were evaluated as "low" scores. The validity and reliability of the Turkish version of the GHQ-12 was assessed by Kilic *et al.* (13).

Statistical analysis

Descriptive statistics were used to summarize the demographic and clinical characteristics of the patient and control groups. The significance of

Table 1. Age, sex, and disease duration in the patients with acne and the control group.

Characteristics	Acne patients	Control group
	Mean ± SD or n	Mean ± SD or n
Age	22.98±3.57	20.94±3.76
Sex		
Men	26	13
Women	74	54
Disease duration (months)	69.7±48.43	

SD: standard deviation

Table 2. GAGS (Global Acne Grading System) and VAS (Visual Analogue Scale) in patients with acne

Rating	Mean ± SD or n
GAGS	24.28±9.73
Mild (1-18 points)	34
Moderate (19-30 points)	40
Severe (31-38 points)	11
Very severe (≥ 39 points)	15
VAS	6.56±2.08

SD: standard deviation

differences between the two groups was assessed by the independent-sample t-test. The Pearson correlation test was set to measure correlations between variables. Statistical analysis was performed using the statistical package SPSS version 15.0 (SPSS Inc, Chicago, IL), and the level of statistical significance was set at $p<0.05$.

RESULTS

A total of 100 patients with acne (26 men and 74 women) with 67 controls matched for sex and age (13 men and 54 women) were included in the study. The mean age of the study group was 22.92±3.57 (mean ± Standard Deviation) (ranging from 18 to 35) and the mean age of the control group was 20.94±3.76 (ranging from 18 to 35). The mean duration of acne was 69.7±48.43 months with a range between 1 and 240 months (Table 1).

The mean score value of VAS was 6.56±2.08 (ranging from 2 to 10) in patients with acne, and the average score of GAGS was 24.28±9.73 for the severity of acne. Thirty-four patients (34%) had mild acne, 40 (40%) had moderate acne, 11 (11%) had severe acne, and 15 (15%) had very severe acne (Table 2).

The mean score on SAAS in patients with acne was 37.69±13.53 and was found to be statistically significant when compared with the mean score of the control group (32.48±9.34) ($p<0.05$). The mean scores of GHQ-12 were 2.19±2.64 in the acne group and 1.63±2.2 in the control group. The difference between the two groups was not statistically significant for GHQ-12 (P=0.152) (Table 3).

In the acne group, no significant correlation was found between GAGS scores and VAS (p=0.417), but the correlation between the GAGS score and the SAAS score was statistically significant (p<0.05). There was no correlation between the SAAS score and VAS (p=0.481). The GHQ-12 scores were not correlated with VAS (p=0.507) and GAGS scores (p=0.96) (Table 4).

There was no significant correlation between sex and GAGS scores (p=0.385), sex and SAAS scores (p=0.611), and sex and GHQ-12 scores (p=0.196). The duration of the disease in the acne group was not statistically correlated with the SAAS scores (p=0.814) or with the GHQ-12 scores (p=0.24). The duration of the disease in the acne group was not statistically correlated with the GAGS scores, either (p=0.968) (Table 5).

DISCUSSION

Skin appearance is important for the individual's self-image and social interaction (14). Although acne does not cause direct physical impairment, it can produce a significant psychosocial burden (15). It has been suggested that patients with moderate-to-severe acne suffer from poor body image, low self-esteem, and experience social isolation and constriction of activities (16,17).

Patients with real and perceived imperfections in important body image areas, such as the face, scalp, hands, and genital area, are prone to distress (18,19). As dermal diseases are often associated with remarkable changes in the patient's appearance, they may cause the patients to develop a negative image of his/her body (20,21). In a study on acne, the psycho-

Table 3. Comparison of SAAS (Social Appearance Anxiety Scale) and GHQ-12 (General Health Questionnaire-12) in patients with acne and the control group

Scale/Questionnaire	Acne patients (*n*=100) Mean ± SD	Control group (*n*=67) Mean ± SD	p-value
SAAS	37.69±13.53	32.48±9.34	<0.05
GHQ-12	2.19±2.64	1.63±2.2	0.152

SD: standard deviation

Table 4. Correlation of SAAS (Social Appearance Anxiety Scale) with GAGS (Global Acne Grading System) and VAS (Visual Analogue Scale), and correlation of GHQ-12 (General Health Questionnaire-12) with GAGS and VAS in patients with acne

	GHQ-12	GAGS	VAS
SAAS			0.481[a]
GAGS	0.96[a]	0.002[a]	0.417[a]
VAS	0.507[a]		

[a]Correlation considered significant at p=0.05

Table 5. Correlation of sex and duration of disease with GHQ-12 (General Health Questionnaire-12), and correlation of SAAS (Social Appearance Anxiety Scale) with GAGS (Global Acne Grading System) in patients with acne

	GHQ-12	SAAS	GAGS
Sex	0.196[a]	0.611[a]	0.385[a]
Duration of disease	0.24[a]	0.814[a]	0.968[a]

[a]Correlation considered significant at p=0.05

logical sequela was attributed to the effects of facial acne on appearance (22).

The standard psychometric instruments used in the field of mental health may be inappropriate in assessing the psychosocial effects of acne, and assessing the effect of acne on a particular individual is often difficult in a clinical situation (23,24). Specifically, SAAS focuses on anxiety related to the evaluation of one's appearance by other people, rather than personal attitudes (5). In patients participating in this study, the mean SAAS score was higher than the control group, which is suggestive of low-esteem.

On the other hand, GHQ-12 seems to be a practical tool to improve the identification of patients with substantial psychological distress or formal psychiatric disorders in order to provide more comprehensive and appropriate intervention (25). However, the overall psychiatric morbidity might not be associated with clinical severity of acne (26). There was discrepancy in GHQ-12 with both subjective and objective evaluations of acne severity in this study, suggesting that acne does not cause a significant psychiatric morbidity or indicate worse health in patients.

Grading is an estimate of severity and is thus subjective. It based on observing the dominant lesions, evaluating the presence or absence of inflammation, and estimating the extent of involvement (27). The Global Acne Grading System (GAGS) has been found to be accurate and have minimal inter- and intra-rater variability (28). The degree of anxiety and extent of self-image impairment was found to be directly related to acne severity (29). In the present study, the correlation between the GAGS score and the SAAS score was significant, indicating that social appearance anxiety is related to acne severity.

The psychological effect of acne is unique for each patient, and patients should be asked how much they are bothered by their acne regardless of how severe they appear to physicians (30). Patients may evaluate the severity level of acne, especially when localized on the face, more highly than clinicians (31). In a study on acne, it was reported that patient self-evaluations of acne and evaluations by a dermatologist were only 60% compatible (29). Similarly, no significant correlation was found between the GAGS scores and patients' assessment of disease severity in patients with acne in this study. However, a correlation was found between the GAGS scores and the SAAS scores. The absence of correlation between the GAGS scores and the patients' assessment and the existence of a correlation between the GAGS scores and SAAS scores at the same time suggest that the objective severity of the acne lesions is not less important than the patients' subjective impression. Furthermore, no correlation was established between the SAAS scores and VAS in the patient group. Similarly, in another study of acne, the degree of anxiety and extent of self-image impairment was found to be directly related to acne severity (29).

It has been reported that the most severe forms of acne occur more frequently in men (32), but we found no sex differences in acne severity. On the other hand, it has been found that female patients with acne were more likely to express better general health than men (33). However, neither social appearance anxiety nor overall morbidity were sex related in this study.

The impact of acne duration on quality of life was evaluated, and duration of acne was found to have an association with quality of life (34). When we evaluated the duration of disease in patients with acne, it was correlated neither with social appearance anxiety nor with the overall morbidity which was interpreted by GHQ-12. These results also suggest that acne may cause immediate anxiety in patients in early disease stages but that the patients may also be unaffected psychologically even if they have acne lesions for a long time.

A cosmetically disfiguring skin disorder may exacerbate an underlying social phobia (35). Longitudinal evaluation of psychometric outcomes has

demonstrated that the effective treatment of acne is accompanied by an improvement in self-esteem, affect, obsessive-compulsiveness, body image, social assertiveness, and self-confidence (36). Intervention should be focused on the development of an appropriate, realistic self-image (37).

The limitation of this study was its cross-sectional design, due to which we may not draw conclusions about the direction of causality. As studies focusing on the relation of acne and social appearance anxiety are lacking, these data warrant further replication studies.

CONCLUSION

Social appearance anxiety seems to be higher in adult patients with acne when compared with the healthy controls and is correlated with acne severity as evaluated by dermatologists. However, acne was not found to be associated with substantial psychological distress or formal psychiatric disorders in adults.

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