Emotional Disturbances and Socio-Demographic Characteristics in Patients with Acne Vulgaris

Brizida Refatllari[1*], Loreta Kuneshka[2], Albana Lufi[3] and Ferdinand Canaj[4]

[1]*Department of Clinical Disciplines, Faculty of Technical Medical Sciences, Tirana, Albania.*
[2]*Department of Biostatistics and Epidemiology, Faculty of Medicine, Tirana, Albania.*
[3]*Clinic of Dermatology and Venerology, Military Hospital Tirana, Albania.*
[4]*Department of Organization and Management, Sports University of Tirana, Albania.*

Authors' contributions

This study was carried out in collaboration between all authors. Author BR designed the study, managed the literature searches and wrote the first draft of the manuscript. Author LK performed the statistical analysis. Author AL helped in data collection and report. Author FC managed to select and instructed the standardized data collection instruments and managed interpretation of study data. All authors have read and approved the final manuscript

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ABSTRACT

Background: A great degree of frustration, embarrassment, anger, stress, anxiety and depression occur among patients with acne due to visible facial disfiguring. The role of demographic features like age, gender, education, occupation, or marital status in the causation of these symptoms remains under study in Albanian patients.
Aims: We assessed the frequency of symptoms of depression, anxiety and stress among patients with acne in relation to their demographic characteristics for possible identification of higher-risk patients exhibiting these symptoms.
Methods: 382 patients of both genders, aged 18-40 years were studied during January 2012 to December 2013. Depression Anxiety Stress Scale (DASS) was used to assess the presence of three emotional states – depression, anxiety and stress in patients with acne vulgaris.

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Corresponding author: Email: fbrizida@yahoo.com;

Results: These 382 (F:M 229:153) patients were between the age groups of 18-25 (297 patients) and 26-40 years (85 patients). Symptoms/signs of depression, anxiety and stress were observed in 105 (27%), 227 (60%) and 238 (62%) cases respectively. Statistical analysis showed that the frequency of these symptoms is not attributable to their gender, age, education, occupation and marital status (p> 0.05).
Conclusion: Demographic features like age, gender, education, occupation, or marital status do not seem to influence occurrence of depression, anxiety and stress in Albanian patients with acne. Thus, each patient should be individually assessed and treated for these symptoms irrespective of gender, age, education, marital status or occupation.

ABBREVIATION

DASS: Depression Anxiety Stress Scales.

1. INTRODUCTION

Acne vulgaris is a common inflammatory disorder affecting the pilosebaceous unit with a variable clinical presentations and include non-inflammatory (open and closed comedones) and inflammatory (papules, pustules, nodules) lesions. These lesions are usually localized over areas of greatest sebaceous gland activity (face, upper back, chest and shoulders) and may heal with various degrees of scarring/hyperpigmentation leading to significant cosmetic morbidity and impact on quality of life [1]. Acne is the most common dermatosis in adolescents affecting approximately 85% of teenagers. Acne prevalence after adolescence decreases with increasing age but disease burden in young adults is still considerably high [2]. It is not uncommon for adult women to experience a resurgence or new onset of acne [3,4].

The pathogenesis is multifactorial and key factors are changes in the keratinisation pattern in pilosebaceous units leading to comedone formation, increased sebum production under the influence of androgens and/or increased androgen receptor sensitivity, and their colonization by *Propionibacterium acnes* [5]. Complex interaction between androgens, sebum and bacterial (*P. acnes*) lipase converts lipids into fatty acids and produce proinflammatory mediators (IL-1, TNF- α) leading to inflammatory reaction in the pilosebaceous unit and the adjoining skin.

A great degree of frustration, embarrassment, anger, stress, anxiety and depression is experienced by patients with acne due to visible disfiguring of face. Adolescents are at the highest

risk for mental disturbances from acne. Studies have shown that 30% to 50% of adolescents have psychiatric disturbances related to their acne [6]. Not surprisingly, psychiatric symptoms are more common among them particularly in the later stages of puberty. Lasek and Chren [7] found that adults with acne are more severely affected with emotional symptoms than are adolescents. The psychiatric effects of acne can also be influenced by clinical variables of acne like severity, localization, duration and socio-demographic characteristics such as patient's age, gender, marital status, education and occupation.

Due to lack of studies to show the relationship of acne with depression, anxiety and stress in acne patients from Albania, the current study was aimed to assess the frequency of these symptoms amongst patients with acne in relation to their demographic characteristics and to identify higher-risk patients exhibiting these symptoms.

2. SUBJECTS AND METHODS

This cross sectional study included 382 patients aged between 18 and 40 (mean 22.62±4.55) years presenting during January 2012 to December 2013.

Diagnosis of acne included the presence of non-inflammatory open and closed comedones, inflammatory papules, pustules, and nodules. Acne patients who had other chronic dermatoses, psychiatric disorders and somatic diseases that can lead to symptoms of depression, anxiety and stress were excluded from the study. Patients were classified according to socio-demographic features: sex (female, male); age- 18-25 years old and 26-40 years old; occupation- students, employed, unemployed; education (low, middle, high) and marital status (unmarried, married).

Various questionnaires have been used to determine the psychological effects of acne. We used DASS questionnaire (Table 1) for the study and all patients were asked to complete it after informed consent. Depression Anxiety Stress Scale (DASS) is based on a scoring system for each of the sub-scales of stress, anxiety and depression and is a 42-item self-administered questionnaire designed to measure the magnitude of these negative emotional states [8]. The depression scale assesses dysphoria, lack of interest/initiative, hopelessness, inability to experience pleasure in anything and inactivity, devaluation of life and self- deprecation. The anxiety scale assesses autonomic arousal, skeletal muscle effects, situational anxiety and subjective experience of anxious affect. The stress scale assesses nervous arousal, being easily upset, irritable, impatient and difficulty in relaxing. A DASS score of 10 or above was considered indicative of depression, a score of 8 or above of anxiety, while a score of 15 or more was considered suggestive of stress.

The data was analysed after completion of study period for socio-demographic features and patients were grouped according to the presence or lack of psychological symptoms. Chi square test was used for statistical analysis and P-values below or equal to 0.05 were considered statistically significant. All the statistical analyses were conducted using SPSS version 15.0.

3. RESULTS

The study included 229 (60%) females and 153 (40%) males. Their socio-demographic characteristics are shown in Table 2. The majority, 297 (77.8%) were aged between 18-25 years, 252 (66%) were unmarried and 276 (72.3%) had high-level education. Occupationally, 205 (53.7%) were students and comprised the majority.

Symptoms/signs of depression, anxiety and stress were observed in 105 (27%), 227 (60%) and 238 (62%) cases respectively. Table 3 depicts the distribution of depression, anxiety and stress according to socio-demographic characteristics of patients. Among 297 patients of younger age group (18-25 years), 91 (24%) patients had depression, 177 (46%) patients had anxiety and 184 (48 %) patients had stress. Depression was present in 14 (3%), anxiety in 50 (13%) and stress in 54 (14%) cases respectively among 85 patients in the other group aged between 25 and 40 years. According to the

gender, out of 229 females, depression, anxiety and stress was noted in 63 (16 %), 132 (34%) and 149 (39%) patients respectively. On the other hand, among 153 males 42 (11%) had depression, 95 (25%) had anxiety and 89 (23%) had stress in order of frequency. However, difference in results for both age groups and genders was not statistically significant (*p* >0.05). There was statistically no significant difference between groups on the basis of other parameters like marital status, education, and occupation (*p*>0.05). No important significant changes in OR were demonstrated in analyses between demographic date (gender, age groups, marital status, education, and occupation) and depression, anxiety, stress (Table 4).

4. DISCUSSION

The demographics characteristics of our study group showed that the majority of adult patients with acne were females. According to the literature it is well known that adult acne is more common in women. It is well known that acne regresses by the age of 20–25 years but may persist until the fourth or fifth decade of life. The majority of our patients (297 or 77.8%) were aged between 18-25 years and only 85 (22%) were 26-40 years old.

More than being a cosmetic nuisance, acne can produce psychological problems that affect patients' lives. The present study assessed depression, anxiety and stress in relation to demographics characteristics of acne patients. Among the three negative emotional states, stress and anxiety were the most frequent, where more than half of patients had these symptoms, suggesting that acne patients in our country are prone to develop psychological problems. The influence of acne vulgaris on psychological symptoms has shown distinctive pattern between male and female patients and results have been variable across studies. Studies suggest that female patients are more sensitive to negative psychological effects of acne [7,9,10] than male patients, while Kellet and Gawkrodger [11] have reported a higher frequency of anxiety and depression among male patients with acne. However, no differences between the genders of patients and respective psychological symptoms have also been recorded [12,13,14]. We also did not observe any significant difference in depression, anxiety and stress among both genders in this study. Similarly, we did not observe significant difference on psychological

Table 1. Depression anxiety stress scale (DASS)

1.	I found myself getting upset by quite trivial things	0	1	2	3
2.	I was aware of dryness of my mouth	0	1	2	3
3.	I couldn't seem to experience any positive feeling at all	0	1	2	3
4.	I experienced breathing difficulty	0	1	2	3
5.	I just couldn't seem to get going	0	1	2	3
6.	I tended to over-react to situations	0	1	2	3
7.	I had a feeling of shakiness (eg, legs going to give way)	0	1	2	3
8.	I found it difficult to relax	0	1	2	3
9.	I found myself in situations that made me so anxious I was most relieved when they ended	0	1	2	3
10.	I felt that I had nothing to look forward to	0	1	2	3
11.	I found myself getting upset rather easily	0	1	2	3
12.	I felt that I was using a lot of nervous energy	0	1	2	3
13.	I felt sad and depressed	0	1	2	3
14.	I found myself getting impatient when I was delayed in any way	0	1	2	3
15.	I had a feeling of faintness	0	1	2	3
16.	I felt that I had lost interest in just about everything	0	1	2	3
17.	I felt I wasn't worth much as a person	0	1	2	3
18.	I felt that I was rather touchy	0	1	2	3
19.	I perspired noticeably in the absence of high temperatures or physical exertion	0	1	2	3
20.	I felt scared without any good reason	0	1	2	3
21.	I felt that life wasn't worthwhile	0	1	2	3
22.	I found it hard to wind down	0	1	2	3
23.	I had difficulty in swallowing	0	1	2	3
24.	I couldn't seem to get any enjoyment out of the things I did	0	1	2	3
25.	I was aware of the action of my heart in the absence of physical exertion	0	1	2	3
26.	I felt down-hearted and blue	0	1	2	3
27.	I found that I was very irritable	0	1	2	3
28.	I felt I was close to panic	0	1	2	3
29.	I found it hard to calm down after something upset me	0	1	2	3
30.	I feared that I would be "thrown" by some trivial but unfamiliar task	0	1	2	3
31.	I was unable to become enthusiastic about anything	0	1	2	3
32.	I found it difficult to tolerate interruptions to what I was Doing	0	1	2	3
33.	I was in a state of nervous tension	0	1	2	3
34.	I felt I was pretty worthless	0	1	2	3
34.	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
36.	I felt terrified	0	1	2	3
37.	I could see nothing in the future to be hopeful about	0	1	2	3
38.	I felt that life was meaningless	0	1	2	3
39.	I found myself getting agitated	0	1	2	3
40.	I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
41.	I experienced trembling (eg, in the hands)	0	1	2	3
42.	I found it difficult to work up the initiative to do things	0	1	2	3

symptoms between both age groups (below and above 25 years) studied suggesting that the age of patients does not play a significant role in predicting the frequency of depression, anxiety and stress in these patients. Similar observations have been made previously by Golchai et al. [15]. They also observed no significant difference in incidence of psychological symptoms between

the two groups of under or above 20 years of age in patients with acne aged between 18 to 30 years. Contrarily, Assad et al. [13] did notice a higher frequency of anxiety or depression in patients aged less than 20 years as compared to those above 20 years.

The present study also did not find any correlation between psychological symptoms and other socio-demographic factors (education, occupation, marital status) of the patients with acne. Studies have shown that dermatological patients with a higher level of education exhibit fewer psychological symptoms due to a realistic perception of their disease. Lack of knowledge about acne vulgaris can lead to a wrong perception of the disease. It may be considered as an infectious disease by some patients affecting the level of their psyche [12,16]. However, we did not find statistically significant differences between specific categories of patients by education level (low, middle, high) in relation to depression, anxiety and stress. Similarly, marital status also appears to have no significant influence on the psychological symptoms of patients with acne. However some studies report a higher frequency of psychiatric disorders among married dermatological patients as compared to unmarried ones [12,16,17], while in other study the frequency of psychological symptoms was higher among the unmarried

patients [18]. Our study also tends to be in agreement with Golchai et al. [15] who observed no significant difference in incidence of anxiety and depression between married people and

Table 2. Demographic characteristics of patients

Demographic characteristics	Frequency *n* = 382
Sex	
Female	229 (60%)
Male	153 (40%)
Age group	
18–25	297 (78%)
26–40	85 (22%)
Marital status	
Unmarried	252 (66%)
Married	130 (34%)
Education	
Low	14 (4%)
Middle	92 (24%)
High	276 (72%)
Occupation	
Student	205 (54%)
Employed	78 (20%)
Unemployed	99 (26%)

Source: Compiled by authors

Table 3. Distribution of depression, anxiety and stress (DASS) according to demographic characteristics of patients

	Depression	Anxiety	Stress
Characteristics	**n=105 (27 %)**	**n=227 (59 %)**	**n=238 (62 %)**
Sex			
Female	63 (16 %)	132 (34 %)	149 (39 %)
Male	42 (11 %)	95 (25 %)	89 (23 %)
Age group			
18–25	91 (24 %)	177 (46 %)	184 (48 %)
26–40	14 (3 %)	50 (13 %)	54 (14 %)
Marital status			
Unmarried	69 (18 %)	145 (38 %)	151 (39 %)
Married	36 (9 %)	82 (21 %)	87 (23 %)
Education			
Low	3 (1 %)	7 (2 %)	7 (2 %)
Middle	22 (5 %)	58 (15 %)	61(16 %)
High	80 (21 %)	162 (42 %)	170 (44 %)
Occupation			
Student	64 (17 %)	117 (31 %)	127 (33 %)
Employed	13 (3 %)	47 (12 %)	45 (12 %)
Unemployed	28 (7 %)	63 (16 %)	66 (17 %)

Table 4. Associations in OR between demographic variables and depression, anxiety, stress

Variables	Depression		Anxiety		Stress	
	OR (95%) CI	*p*	OR (95%) CI	*P*	OR (95%) CI	*P*
Sex						
Female	1.00 (reference)	-	1.00 (reference)	-	1.00 (reference)	-
Male	1.10 (0.77-1.55)	0.58	1.08 (0.80-1.47)	0.59	1.25 (0.92-1.70)	0.14
Age group						
18–25	1.00 (reference)	-	1.00 (reference)	-	1.00 (reference)	-
26–40	1.51 (0.97-2.37)	0.06	0.83 (0.57-1.20)	0.32	0.92 (0.63-1.33)	0.65
Marital status						
Unmarried	1.00 (reference)	-	1.00 (reference)	-	1.00 (reference)	-
Married	0.87 (0.53-1.40)	0.57	1.17 (0.82-1.67)	0.36	0.85 (0.59-1.22)	0.38
Education						
Low	1.00 (reference)	-	1.00 (reference)	-	1.00 (reference)	-
Middle	0.85 (0.50-1.44)	0.54	1.16 (0.60-3.84)	0.45	0.49 (0.51-1.10)	0.21
High	1.18 (0.34-4.12)	0.78	1.31 (0.54-3.16)	0.54	0.65 (0.21-1.97)	0.45
Occupation						
Student	1.00 (reference)	-	1.00 (reference)	-	1.00 (reference)	-
Employed	1.32 (1.26-4.02)	0.09	1.04 (0.53-1.26)	0.84	1.52 (1.15-3.21)	0.07
Unemployed	0.67 (0.40-1.13)	0.13	0.78 (0.53-1.16)	0.23	0.55 (0.37-0.81)	0.32

Source: Compiled by authors

single ones. This study also did not show any statistically significant difference between specific demographic parameters of occupational status (student, unemployment and employment) in relation to depression, anxiety and stress in contrast to another study in which the employment status had an influence on the level of occurrence of psychological symptoms in patients with acne [18].

5. CONCLUSION

Symptoms of stress followed by symptoms of anxiety were more frequent in patients with acne vulgaris as compared to the symptoms of depression in Albanian patients with acne. However, the frequency of these symptoms is not related to their gender, age, education, occupation and marital status. Each patient, thus, should be individually assessed and treated for these symptoms irrespective of gender, age, education, marital status or occupation. Longitudinal studies are recommended to investigate the relationship of these socio-demographic factors with psychological symptoms, taking into consideration the clinical features of acne as well.

6. LIMITATION

The study dealt only with the demographic factors and how they affect the frequency of

psychological symptoms in patients with acne vulgaris. We have not studied these factors in relation to clinical features of the disease and how they all together affect the frequency of psychological symptoms.

CONSENT

All participants signed an informed consent form before data collection.

ETHICAL CONSIDERATION

Standards of ethics for studies conducted in Albania were respected.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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