

# Association between stress and acne among patients visiting THQ Gujar Khan, Rawalpindi

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## Abstract

**Background** Acne vulgaris characterized by papules, pustules, nodules or comedones, rarely leading to abscess/ cysts is a common and chronic dermatological condition, which typically affects face, upper chest and back. Scarring/ psychological impact regardless of severity or grading of acne are among the complications of acne.<sup>1</sup> Even mild acne may be significantly disabling having social and psychological effects including: lack of self-confidence, lack of social interactions with others, anxiety, even suicidal tendencies and depression. Acne and depression often occur together that's why are correlated. It is often reported that acne flares are often triggered by stress including depression.<sup>2</sup>

**Objective** To find out the prevalence of acne and stress, the association between acne and stress and the effect of stress management in patients with acne visiting THQ Hospital Gujar Khan.

**Methods** Non Probability Sampling Technique “Consecutive Sampling” was used to collect the sample at Dermatology Out Patient Department at THQ Gujar Khan Rawalpindi by selecting individuals who came for their acne treatment who were 15 years/above and those with depression due to other reasons and pregnant or lactating mothers were excluded. The sample size calculated was 280 (JPS. Volume 13 No 1. May 2021). Global Acne Grading System was used to grade acne severity. Data collection was done by using a questionnaire “Perceived Stress Scale”, where Independent variables were: age, gender, educational level, socioeconomic and marital status. Dependent variable was: stress.

**Results** Collected data was analyzed using SPSS version 21.0. After applying the tests, following results were obtained: Acne was more common in females of 18 years. Moderate stress is seen more commonly among patients who were single, went to college/ university, belonged to middle class families and there was significant association between acne and stress.

**Conclusion** Acne and stress are significantly correlated therefore patients with acne should also be assessed for the stress they are facing so that stress can be actively managed along with acne as an effective counseling will help in reducing the stress and number of visits among the sufferers. Psychologist, dermatologist, family members and teachers can provide a helping hand in counseling the sufferers, as proper guidance and management is needed in our society and is the right of each and every patient.

## Key words

Acne, stress, SPSS, depression, Global acne grading system, Consecutive Sampling.

## Introduction

Acne vulgaris characterized by papules, pustules, nodules or comedones, rarely leading to abscess/ cysts is a common and chronic

dermatological condition, which typically affects face, upper chest and back.

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Its pathogenesis is multi factorial, stress is one of the factors among them which can influence several other dermatological conditions.<sup>3,4</sup>

While treating acne vulgaris pathogenic factors should be kept in mind and most appropriate treatment is based on acne grading and its severity.<sup>5</sup>

Long-lasting and detrimental psychosocial and physical effects can be the ultimate results of acne due to depression and anxiety, regardless of disease severity although the psychological effects usually improve with treatment. It can also lead to permanent scarring which may be difficult to get rid off.<sup>6</sup> Overall patients with acne have a good prognosis.

Scarring/ psychological impact regardless of severity or grading of acne are among the complications of acne.<sup>1</sup> Long after the active acne lesions have disappeared, scarring and psychosocial anguish persist and are among the major complications. Acne onset in adolescence may add to the emotional and psychological challenges leading to the developmental issues of body image, socialization, and sexuality.<sup>7-9</sup>

Even mild acne may be significantly disabling having social and psychological effects including: lack of self-confidence, lack of social interactions with others, anxiety, even suicidal tendencies and depression. Acne and depression often occur together that's why are correlated. It is often reported that acne flares are often triggered by stress including depression.<sup>2</sup>

According to website of Canadian Dermatology Association; "A Canadian study of 500 patients with acne published in British Journal of Dermatology found that even mild acne can bring feelings of low self-esteem, depression and suicidal thoughts".<sup>10</sup>

Acne commonly affects during teenage which is

a crucial period, when one's personality is being developed.

In recent years open discussions between doctors and patients has revealed that acne has impact on psyche.<sup>11</sup>

One of the leading causes for visits to dermatologist is acne. 70-80% cases are reported in adolescence but has chance of frequently continuing into adulthood resulting in increased visits to dermatological clinics.<sup>12</sup>

Many researches have been done in order to find out the relationship between stress and acne. The purpose of my research was to find out the relationship between stress and acne at a Government setup so that therapeutic approaches can be adjusted accordingly in future by keeping in mind the specific acne treatment along with behavioral interventions.

Suitable treatments may include:

- Anti-depressants
- Counselling
- Group therapy

Objectives of the study is to find out the prevalence of acne among patients visiting THQ Gujar Khan, find out association between stress and acne among patients visiting THQ Gujar Khan and the effect of stress management in acne.

## **Method**

A cross sectional study was conducted at Tehsil Headquarter Hospital Gujar Khan, the duration of the study was six months after approval from IRB, sample size= 280 (JPS VOL 13 No.1 May 2021), sampling area was selected by 'Simple random sampling', 'Non probability sampling technique' "Consecutive Sampling' was used to

collect the sample, patients with acne above 15 years of age both males and females were included. Pregnant and lactating females and patients with diagnosed depression or anxiety were excluded by history taking. Permission was taken from hospital administration. The researcher tested the questionnaire on first 10 patients who were selected on the basis of convenience approach remarks were noted and the questionnaires were printed out. Ones visiting Derma OPD and satisfying the inclusion criteria were briefed about the research and the ones who wanted to take part were handed over the questionnaires and were asked to fill them.

Questionnaire had different sections; *Section A*: List of socio demographic variables of the respondents including: age, gender, educational level, socioeconomic status, marital status. *Section B*: Questions in the Perceived Stress Scale asking about feelings and thoughts during the last month. According to perceived stress scale: score 0-13 was considered low stress, score 14-26 was considered moderate stress and score 27-40 was considered high perceived stress.<sup>13</sup> This 10 item self-questionnaire widely used in stress research is reliable.<sup>14,15</sup> *Section C*: Patient was examined by Consultant dermatologist for the lesions of acne and acne was graded according to severity on his/her first visit. Severity of acne was again assessed on respondent's follow up visit after 3 weeks. Using the 'Global Acne Grading System' acne was clinically classified. Six body parts (Forehead, right cheek, left cheek, nose, chin, chest and upper back) were taken into account. Severity of acne was then graded accordingly if score was 1 to 18 it was considered mild, if in between 19 to 30 was considered moderate, in between 31 to 38 was considered severe and score more than 38 was labeled as very severe.<sup>16</sup>

Statistical package for Social Sciences "SPSS" was used to analyze the data. The independent

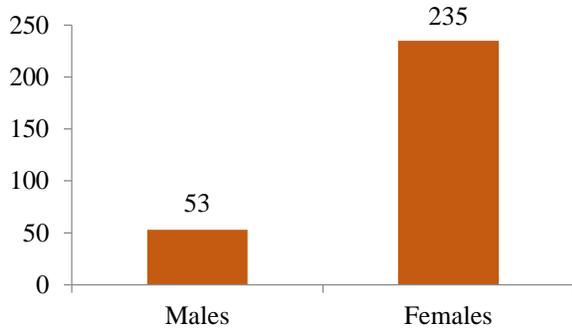
variables were: age, gender, educational level, socioeconomic status and marital status. The dependent variable was: stress. Results were presented in the form of table, variables, graphs, along with value of significant association after data analysis. Descriptive Statistics were; frequencies and percentages (to find out prevalence of acne and effect of stress management), inferential statistic was: Spearman correlation test (to find out the association between stress and acne).

Before commencing the research process an approval letter from the IRB and the hospital was sought. The individuals were briefed about the research process and the ones willing to participate in the research signed a consent form. Confidentiality was maintained. Identities of the participants were not to be revealed. It was clearly stated in the consent form that research study will not monetarily give benefit or harm the individual participating. Data of the research was accessible to authorized personnel only. Data was used only for this research.

## **Results**

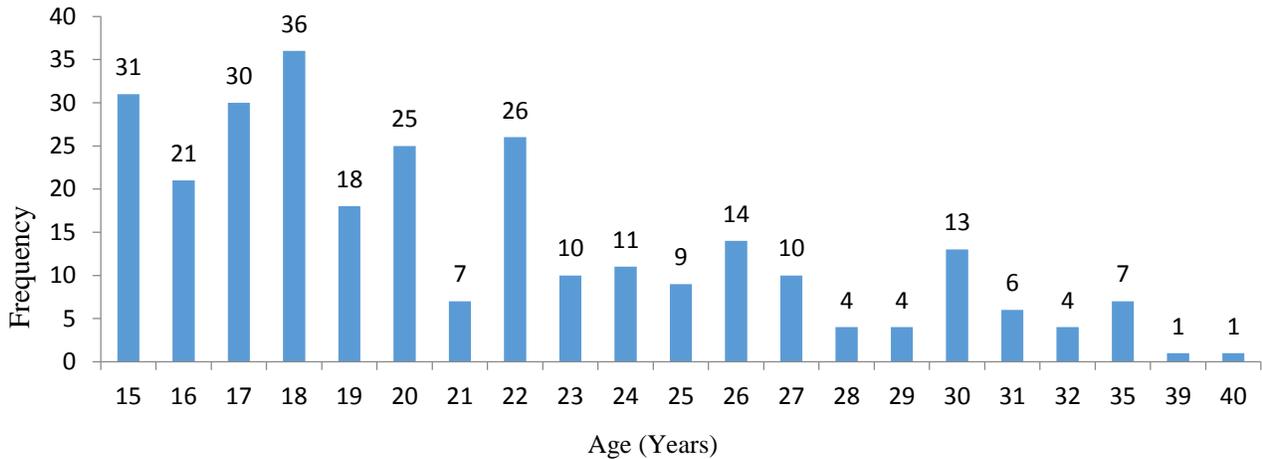
Whenever an individual 15 years or above having acne visited Derma OPD survey was explained, consent was taken and questionnaire was handed over to be filled. Researcher was readily available to answer their queries at each and every second. The ones who were uneducated the researcher marked the questionnaire herself. During the data collection and entry strict privacy was maintained and ethical principles were also kept in mind. 6 individuals refused to participate. 288 individuals participated in the research. The data was entered in SPSS and following results were obtained:

According to collected data 288 individuals who correlation test it can be concluded that there

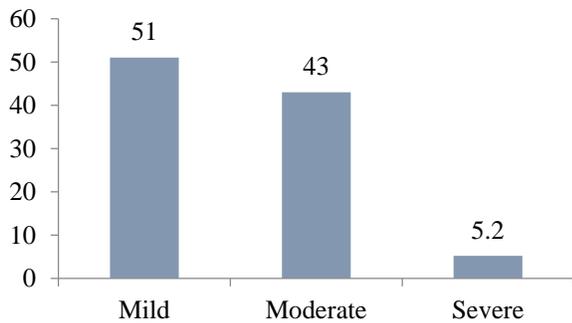


**Figure 1** Prevalence of acne in males and females.

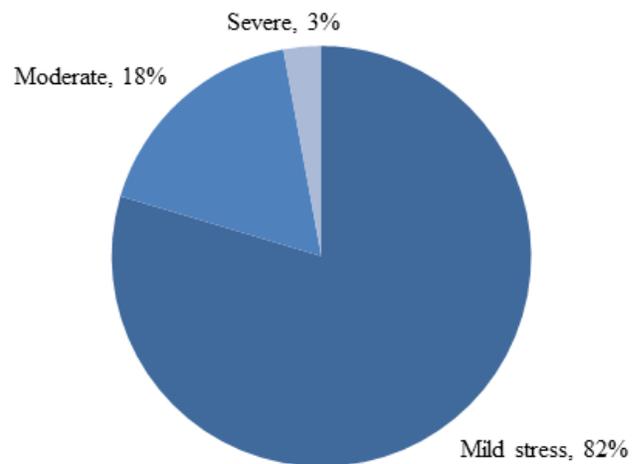
visited Derma OPD among them 235 were females (**Figure 1**), majority were of 18 years of age (**Figure 2**), went to College/ University, were single and belonged to middle class families. On respondents first visit 51% among them had mild, 43% had moderate while only 5% had severe acne (**Figure 3**). According to perceived stress scoring 17% individuals had low, 77.5% had moderate, and 5% had high stress (**Figure 4**). After applying Spearman



**Figure 2** Age of respondents



**Figure 3** Respondents' age according to Global Acne Grading system on first visit.



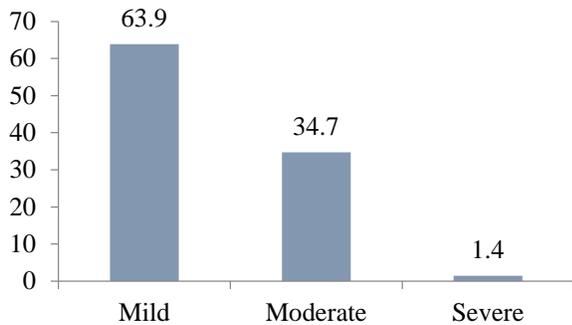
**Figure 4** Perceived stress scale.

was moderate positive correlation observed between stress and acne which was statistically significant.  $r_s(288) = .294, p < 0.01$  (**Table 1**). On follow up 64% among the respondents had mild, 34% had moderate while only 1% had severe acne, showing the effect of effective counselling along with treatment (**Figure 5**).

**Table 1** Descriptive statistics.

		Mean	Std. Deviation	N
Respondent's acne according to Global Acne Grading System on first visit		1.53	.595	288
Perceived stress score of each individual on first visit		18.26	5.348	288
<b>Correlations</b>				
		<i>Perceived stress score of each individual on first visit</i>	<i>Respondent's acne according to Global Acne Grading System on first visit</i>	
Perceived stress score of each individual on first visit	Correlation coefficient	1	.294**	
	Sig. (2-tailed)		.000	
	N	288	288	
Respondent's acne according to Global Acne Grading System on first visit	Correlation coefficient	.294**	1	
	Sig. (2-tailed)	.000		
	N	288	288	

\*\* . Correlation is significant at the 0.01 level (2-tailed).



**Figure 5** Respondents' acne according to Global Acne Grading system on follow up visit 3.

## Discussion

As even mild acne may be significantly disabling having social and psychological effects including: lack of self-confidence, lack of social interactions with others, anxiety, even suicidal tendencies and depression. Acne and depression often occur together that's why are correlated. It is often reported that acne flares are often triggered by stress including depression.<sup>2</sup>

Although many researches have been done in order to find out the relationship between stress and acne, to find out the relationship between stress and acne at a Government setup was the aim of my research, so that therapeutic approaches can be adjusted accordingly in future by keeping in mind the specific acne treatment

along with behavioral interventions.

Among the 288 individuals who visited Derma OPD at THQ Gujar Khan with acne and participated in my research 82% were females 18% were males' majority of them were unmarried, in their teens with moderate stress, going college/ university and belonged to middle class families, significant correlation between acne and stress was also evident. According to perceived stress scale: score from 0-13 was considered low stress, score from 14-26 was considered moderate stress and score from 27-40 was considered high perceived stress.<sup>13</sup>

Patients having stress were counseled to reduce the stress by avoiding stress producing situations where possible (e.g., avoid or minimize time with people who always stress you out, increase your social connections, engaging in activities which you enjoy and give you an outlet for thinking about other things besides your acne will be helpful, get enough sleep to maintain overall wellbeing and healthy glowing skin., avoid looking in mirror, use relaxation techniques like deep breathing, muscle relaxation, visualizing relaxing places or try activities like yoga/ martial arts involving focus and breathing, acne will improve day by day). Patients were again called for a follow up visit

after 3 weeks and a pre post cross sectional analysis was utilized to measure the effect of counseling in reducing their stress by asking them did the counseling help in reducing stress? Using the 'Global Acne Grading System' acne was clinically classified. Six body parts (Forehead, right cheek, left cheek, nose, chin, chest and upper back) were taken into account. Severity of acne was then graded accordingly if score was 1 to 18 it was considered mild, if in between 19 to 30 was considered moderate, in between 31 to 38 was considered severe and score more than 38 was labeled as very severe (16). On follow up there was significant improvement in stress as well as acne. Similar results were reported in previous studies. The ages of the patients ranged from 18 to 40 years with a mean of  $23.37 \pm 4.63$  years. There were 68 (34.0%) male and 132 (66.0%) female patients with a male to female ratio of 1:1.9.<sup>17</sup>

Acne can lead to anxiety, depression and other psychological problems other than a cosmetic irritation, affecting patients' lives in ways comparable to life-threatening or disabling diseases. Acne can cause psychological suffering, can affect social, vocational and academic performance of teenagers. Severe acne can leave scarring and disfigurement which can aggravate the already present psychosocial aspects of acne.<sup>18</sup>

The early onset of acne can result into more stress felt by the students regarding the impairments in interpersonal relations and disturbances in their daily life. In general subjective grade of severity of acne was considerable correlated with self-image, social relationships, and depression.

According to the same study girls are likely to face more psychological difficulties as compared to boys towards a wide range of psychological factors which may include self-perceived stress,

academic goals, relationship with others, peer relations and self-esteem. The gender difference perception is most probably due to the appearance in relation to gender, thus it may exert differential observed in this study was the result of different level of cosmetic concern and psychological strain upon girls.<sup>19</sup>

Therefore due to significant correlation between acne and stress patients with acne should also be assessed for the stress and an effective counseling will be needed to reduce number of visits among the sufferers.

Strengths of the study; This was the first study conducted at THQ Gujar Khan that was conducted to find out prevalence of acne, association between acne and stress and effect of counseling in management of patients with acne. Findings of this study can help design interventions that can significantly decrease the number of visits of the sufferers.

Limitations of the study: Study was carried out only at THQ Gujar Khan. If a similar study would be conducted at other Government setups, it would be possible to have a clearer picture regarding prevalence of acne and its association with stress. Counseling points can be modified. Psychiatrist was not consulted. Family members were not counseled. Comparative study (1. who were counseled 2. who were not counseled) to assess the effects of counseling couldn't be done.

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