

Prevalence and Psychosocial Effect of Acne Among Female University Students in Madinah, Saudi Arabia

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ABSTRACT

Objective: The aim of this study is to determine the prevalence of acne, assess its severity and to evaluate its psychosocial effects among university female students at Taibah University, Medinah, Saudi Arabia.

Methods: A cross-sectional study was conducted at the faculty of medicine at Taibah University, Saudi Arabia. A self-administered questionnaire consisted of three parts included the demographic data of participants, the characteristics of acne and factors affecting it, and The Cardiff Acne Disability Index (CADi). Data were entered and analyzed by using SPSS version 21 statistical package software.

Results: A total 297 university female students were included. The prevalence of acne among them was 84.8%. 58% of study population was in the age group of > 20 years. As regarding the degree of severity of cases, most of cases (58.3%) were classified as moderate. It was observed that the most of cases recorded as medium grade of Cardiff Acne Disability Index 45.6%, followed by high grade 42.5 and low 11.9%.

Conclusions: Our data confirmed that the prevalence of acne is high among late adolescents and young adults. And there is

a clear association between the severity of acne and dietary factors as chocolate, spicy food, potato chips fried and fast food. Also, the CADi is significantly associated with severity of acne and with its duration.

Therefore, we recommend that limit the consumption of these dietary factor which has a direct effect on the acne severity.


Keywords: Acne, Prevalence, Severity, Psychological Effect.

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INTRODUCTION

Acne is a common skin disease with various prevalence reaching up to 80% in late adolescents and young adults.¹⁻³ It usually appears at puberty when the high level of androgen stimulates production of large amount of sebum and abnormal follicular keratinization and may get infected by bacteria which will lead to local inflammation.⁴

Acne has several psychological issues such as dissatisfaction with appearance, anxiety, depression, embarrassment, lack of self-confidence, and social dysfunction such as reduced/avoidance of social interactions with peers and opposite gender.^{5,6}

Acne scarring and disfigurement can exacerbate the already present psychosocial problems of this condition, even lead to suicidal ideation which is reported to be around 6-7% in acne patient.⁷

So the aim of this study is to determine the prevalence of acne, assess its severity and to evaluate its psychosocial effects among university female students in Taibah University, Medinah, Saudi Arabia.

SUBJECTS AND METHODS

Study Design and Setting

A cross sectional study was carried out at female section of Taibahu University, Madinah, Saudi Arabia.

Study Population and Study Period

Undergraduate female students in Taibah University during their study period from (February-April) in the academic year 2017.

Sampling Technique and Size

All the undergraduate female students of age group 17-28 years in Taibah University, Madinah where invited to participate in the study.

Data Collection Tools and Instruments

The data was collected by using self-administered semi-structured questionnaire which includes three parts:

Part I: questions on socio-demographic information as age, residence, marital status, BMI.

Part II: questions focusing on acne (The characteristics of acne and factors affecting it)

Part III: The Cardiff Acne Disability Index (CADI) (Motley and Finlay, 1992) which is a short 5 items questionnaire derived from the longer Acne Disability Index which is available in Arabic also. It is a detailed questionnaire designed to assess disability caused by acne.⁵

It consists of five questions, each with four graded alternative responses (0-3). First four questions were related to the feelings of aggression, frustration, interference with social life, avoidance of public changing facilities and appearance of skin. Fifth question gave indication of how bad the acne.

Answers to each of the five questions in the CADI were scored and a total score for the index was calculated. CADI scores were graded as low (0-4), medium (5-9) and high (10-15). Higher the cumulative CADI score, greater was the level of disability experienced by the student.

Pilot Study

Before the start of the study, the semi-structured questionnaires were pre-tested on 10 students to explore if there is any ambiguity

or items leading to misunderstanding in the questionnaire in order to reach to its current final form. These 10 students were not included in the main survey.

Validity and Reliability of the Questionnaire

The items in the questionnaire were obtained from numbers of validated questionnaires and validity was completed by reviewing it by 3 experts. The questionnaires were re-administered after a week to the same sample of the pilot study to check test-retest reliability

Data Management

Statistical Analysis was used. Data was coded, entered, and analyzed using the Statistical Package for Social Science (SPSS) version 21.0 (SPSS, Chicago, IL, USA).

Ethical Considerations

Official permissions were obtained from the scientific ethical committee of the college. Informed consent was obtained from all the participants after describing the aim of the study. Privacy and confidentiality were assured.

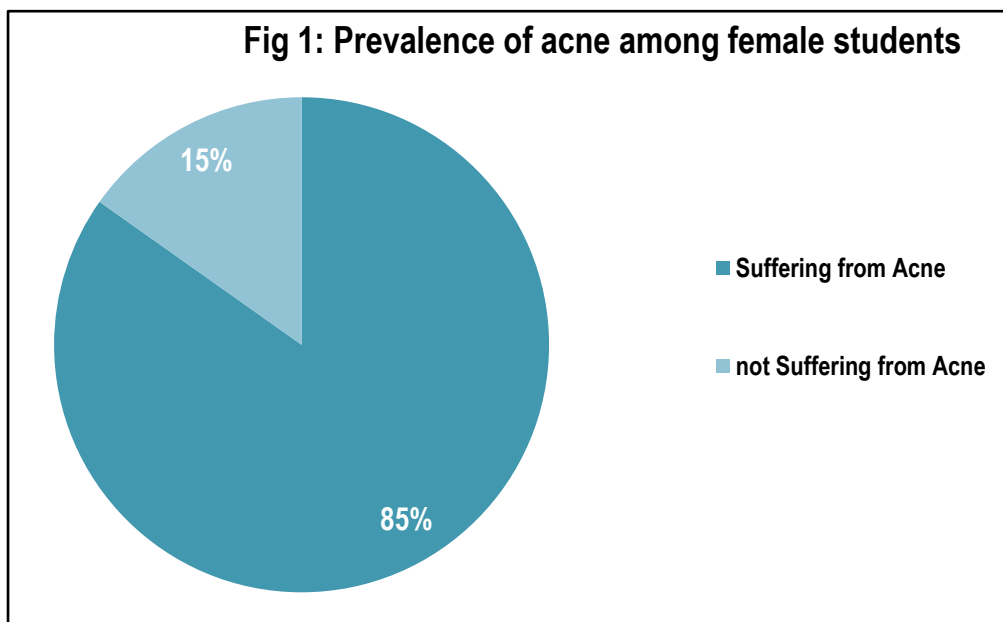


Table 1: Epidemiology data of study population.

Sociodemographic data		Frequency	Percent
1-Age (mean ± SD)	≤ 20 years	123	41.4%
	> 20 years	174	58.6%
2-Marital status:	Married	22	7.4%
	Not married	275	92.6%
3-Nationality	Saudi	290	97.6%
	Non Saudi	7	2.4%
4-Monthly income	Satisfied	167	65.2%
	Not satisfied	130	43.8%
5-Residence	Inside the medina	271	91.2%
	Outside the medina	26	8.8%
6-Body mass index	Underweight	55	18.5%
	Avergewicht	143	48.1%
	Overweight	64	21.5%
	Obesity	35	11.8%

Table 2: Illustrates the characteristics of acne.

Acne characteristics		N	%
1- Severity	Mild	91	36.1%
	Moderate	147	58.3%
	Sever	14	5.6%
2- Most common site for the acne	Forehead	43	17%
	Cheeks	81	32.1%
	Nose	10	4%
	Chin	16	6.3%
	Chest and upper back	13	5.2%
	More than one area	89	35.3%
	3- How long do you have acne	Less than 6 th months	33
From 6 th months to one year		40	15.9%
More than one year		179	71%

Table 3: Illustrates factor affecting acne:

Factor affecting acne		N	%
1- Skin type	Dry	25	9.9%
	Oily	92	36.5%
	Mixed	135	53.6%
2- Family Hx	Yes	188	74.6%
	No	64	25.4%
3- Suffer from stress	Yes	201	79.8%
	No	51	20.2%
4- Daily facial wash use	Yes	182	72.2%
	No	70	27.8%
5- Is it related to menstrual cycle	Yes	154	61.1%
	No	98	38.9%
6- Usual sun exposure	Yes	161	63.9%
	No	91	36.1%
7- Sunscreen use	Yes	93	36.9%
	No	159	63.1%

Table 4: illustrates dietary factor affecting acne:

Dietary Factor affecting acne		N	%
1- Eat large amount of potato chips fried and fast food	Yes	135	53.6%
	No	117	46.4%
2- Eat large amount of fruit and vegetables	Yes	75	29.8%
	No	177	70.2%
3- Eat large amount of spicy food	Yes	101	40.1%
	No	151	59.9%
4- Eat large amount of chocolate	Yes	144	45.2%
	No	138	54.8%
5- Drink of water	Less than 1 cup / day	49	19.4%
	1-4 cups	129	52.2%
	5-8 cups	53	21%
	9-12 cups	11	4.4%
	More than 12 cups a day	10	4%

Table 5: Cardiff Acne Disability Index (CADI):

1- Grades of CADI score		
Low	107	42.5%
Medium	115	45.6%
High	30	11.9%

RESULTS

In the present study, 297 university female students were included. The prevalence of acne among the included students was 84.8% (252/297) demonstrate the age, marital status, body mass index as well as some other social status of the participants. It was observed that 58% of study population was in the age group of > 20 years. Only 7.4% were married. 48.1% of participants had average weight, while a 21.5% was overweight.

The characteristics of acne: As the degree of severity of cases, most of cases 58.3% were classified as moderate, and only 5.8% were severe. The most common site of acne was multiple 35.3% followed by the cheeks 32.18%. Regarding the duration of acne most of cases were complain for more than one year (71%), and less than 6 months only 13%, as shown in table (2).

Factors affecting acne were explored in table (3). Facial nature was recorded and it was observed that high proportion of the cases had mixed skin nature 53.6%. About 74.6% of the cases had a positive family history of acne. Also the presence of stress was significantly associated with higher incidence of acne (79.8%) of the affected cases.

Most of the affected cases were routinely using facial wash products (72.2%). the relation of acute exacerbation with menstrual cycle was observed in 61.1%. Usual sun exposure was recorded in 63.9% of cases, while the use of sun screen cream was mentioned in about 36.9%.

From Table(4): Among dietary factors, eating large amount of potato chips fried and fast food was mentioned in about 53.6% of cases and at the same time eating spicy food was mentioned in about 40.1% and chocolates in about 45.2% of cases. Large group of the affected cases was noticed to eat small amounts of fresh fruits and vegetables (70.2%). Also, the amount of water drinking was mentioned, most of cases drink 1-4 cups (52.2%).

As regarding the Cardiff Acne Disability Index, it was observed that most of cases recorded as medium grade 45.6%, followed by high grade 42.5 and low 11.9%.

DISCUSSION

Acne Vulgaris is common skin diseases which present a significant health problem among adolescents and young adults.⁸ The prevalence of acne among University students in this study was 85%, it is higher than that reported nationally among University students in Central Saudi Arabia (56.2%), and internationally in Turkey (40.1%).^{3,9} This difference could be due to variation in genetics, social factors, diet, climate or habits etc..

In the present study we tried to explore the factors affecting the severity of acne in the affected cases. Among the evaluated factors (chocolate, spicy food, potato chips fried and fast food, fruits and vegetables, amount of water they drink, premenstrual phase and stress). We found significant relationship between these factors and the severity of acne ($p=.00$) for each of them.

From previous studies they found similar finding which is several factors affect the severity of acne and there's clear association

between them. These factors are dietary factors (chocolate, oily and fatty foods, and high sugar content foods), premenstrual phase, and stress considered to be significantly increase the severity of acne.¹⁰

In other study conducted in Iran they found only chocolate consumption had a statistically significant relationship with the severity of acne.¹¹ Another study conducted in Iran also, they found similar to our finding that consumption of sweets, nuts, chocolate and fatty foods were associated with more severe acne.¹⁰

Therefore, it is reasonable to limit the consumption of chocolate, spicy food, potato chips fried and fast food which has a direct effect on the acne severity.

Acne can cause severe psychological problems. Previous studies have shown that patients with acne are prone to low self-esteem, low self-confidence & social dysfunction which may lead to anxiety, depression & sometimes suicidal ideation.¹² In this study the degree of acne-related to quality of life changes on patients were studied. The Cardiff Acne Disability Index (CADI) was used to assess the impact of acne on quality of life. In this paper, demographic data (age, marital status, collage, residency and BMI) and site of acne did not correlate with CADI score. Except for monthly income we found there's significant correlation with CADI score ($p=.04$). That similar finding was reported in study of Malaysia as they found significant correlation between monthly income and CADI.¹³

Also, we found significant association between CADI and acne severity and Acne duration ($p=.000$), ($p=.02$) respectively. That was inconsistent with a study in Jeddah as they found no correlation between them.¹⁴

Also, it has been found in our study that the quality of life in acne patients can be affected by reasons other than acne severity and duration as if it related to menstrual cycle.

CONCLUSION

Our data confirmed that the prevalence of acne is high among late adolescents and young adults. And there is a clear association between the severity of acne and dietary factors as chocolate, spicy food, potato chips fried and fast food. Also, the CADI is significantly associated with severity of acne and with it's duration. Therefore, we recommend that limit the consumption of these dietary factor which has a direct effect on the acne severity.

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