ORIGINAL ARTICLE

Prevalence and Quality of Life in Acne Vulgaris Patients Among Patients Attending Dermatology Clinic at Al-Hussien University Hospital

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Abstract

Background: ***Acne Vulgaris is a common chronic inflammatory skin disease, with a prevalence of about 65% among adolescents and adults. It is mostly characterized by comedones, papules, pustules, cysts and nodules.***

Aim and objectives: ***To determine the prevalence of acne vulgaris in the studied group, to assess the possible risk factors related to acne vulgaris patients, and to assess the impact of acne vulgaris on quality of life.***

Patients and methods: ***Two hundred individuals with dermatological issues who visited the dermatology clinic at Al-Hussien University Hospital participated in the current study. We divided the studied patients into 100-males and 100-females the sample collected randomly by stratified random sample.***

Results: ***There was a significant positive correlation between total quality of life and skin lesions increasing with sweet food, while there was a significant negative correlation between total quality of life and family history of acne. There was no significant correlation between quality of life, age, sex, marital status, manipulation of skin lesion, premenstrual flare of skin lesion, skin lesion increasing with summer, skin lesion increasing with sun exposure and taking fast food.***

Conclusion: ***Acne vulgaris has mild affection on quality of life, the majority of patients 32 (54.2%) have mild impairment of QOL, 23 patients (38.9%) have moderate impairment, while only 4 patients (6.8%) have severe impairment of QOL. The mean of QOL in the studied patients is 1.75 ± 3.07. Total quality of life is positively correlated with the severity of acne vulgaris.***

Keywords: Acne vulgaris patients; Life quality; Dermatology

1. Introduction

Some cases of acne persist into adulthood, while others manifest only in adults. The data also shows that acne is becoming more common among people who are no longer in their teens. There are three distinct age groups that comprise acne patients: preadolescents, adolescents, and adults.[1]

While a tiny number of people may still experience acne well into middle age, for the most part, acne clears up after a person hits puberty. Both internal and external factors contribute to acne's prevalence; environmental influences, including certain foods, certain cosmetics, certain work environments, and even women's menstrual cycles, can exacerbate the condition.[2]

Female patients account for two-thirds of all visits to dermatologists for AV, with one-third of these consultations coming from women above the age of 25. The male-to-female ratio of AV cases is approximately 1.1:1.25, with women being the most often affected. In women, the onset of most AV instances is delayed.[3]

A higher number of inflammatory pustules, papules, and nodules, as well as non-inflammatory closed and open comedones, indicate a more severe case of acne. Acne that is more severe may also leave behind cysts, scars, redness, and discolouration.

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The current study aims to determine the prevalence of acne vulgaris in studied group, to assess the possible risk factors related to acne vulgaris patients, to assess impact of acne vulgaris on quality of life.

2. Patients and methods

This analytical cross-sectional study was conducted on 200-patients of dermatologic patients who attending dermatology clinic of Al-Hussien university hospital from October 2023 to September 2024. We divided the patients into 100-males and 100-females in which the sample collected randomly by stratified random sample.

During the study, the studied patients were divided into 2 stratum (males and females). For every stratum, a reasonable number of patients were examined then, 100 patients were selected for every stratum by simple random technique.

Sample Size:

Sample size was determined by using the Epi Info program, depending on the following data: Power of the test 95%, confidence level 95%, outcome in nonexposed 35%, and outcome in exposed 65%. The minimum sample size required was 152 and increased to 200 to avoid any bias.

Inclusion criteria:

Patients who were accepted to share in the study ranged in age from 10 to 30 years.

Research tool:

Cardiff acne disability index (CADI):

Acne patients should have their quality of life evaluated carefully and treated accordingly to prevent any potential deterioration. When it comes to quickly gauging quality of life, CADI has been shown to be a legitimate, easy, and trustworthy method. We urge its regular usage in dermatology outpatient clinics to offer personalised care, since even a little illness can have a profound impact on someone's quality of life.[4]

CADI is a survey that aims to assess the well-being of acne-stricken youth and young adults. On a worldwide scale, it has found application in therapeutic research and clinical settings. Teens and young adults who suffer from acne can take the brief CADI questionnaire, which was created in 1992 by Motley and Finlay. There are five questions on the CADI, and each one uses a 4-point Likert scale (from 0 to 3), for a possible total score of 0 to 15. Higher scores indicate a more severe harm to the quality of life.[5]

With a possible score of 0–3 for each question, the sum of the five questions might be anywhere from 0 to 15. Each participant was assigned a severity rating based on the amount of acne-related impairment: 0 (no impairment), 1–5, 6–10, and 11–15.[6]

Statistical analysis:

SPSS, a statistical package for social science software, was used to process and analyse pre-coded data. Summary statistics for quantitative variables with regularly distributed means and standard deviations. Qualitative variables are described using percentages and numbers. The Chi-square test was utilised to compare qualitative data, and correlation analysis and linear regression analysis were employed to assess the strength of the link between quantitative and categorical variables. The threshold for statistical significance was set at p-values≤0.05.

3. Results

Table 1. Socio-demographic data of acne and other diseases in the studied group.

	STUDIED PATIENTS (N=200)		P-VALUE
	Other skin disease(n=141)	Acne(n=59)	
AGE			
-10	26[18.4%]	5[8.5%]	
-15	43[30.5%]	28[47.4%]	
-20	40[28.4%]	21[35.6%]	0.023
25-29	32[22.7%]	5[8.5%]	
SEX			
MALE	74[52.5%)	26[44.1%]	0.278
FEMALE	67[47.5%]	33[55.9%]	
MARITAL STATUS			
MARRIED	37[26.2%]	5[8.5%]	0.029
SINGLE	102[72.3%]	54[91.55]	
DIVORCED	2[1.4%]	0[0%]	
RESIDENCE			
URBAN	109[77.3%]	45[76.3%]	0.505
RURAL	32[22.7%]	14[23.7%]	
OCCUPATION			
STUDENT	70[49.6%]	34[57.6%]	
SKILLED WORKER	14[9.9%]	8[13.6%]	0.222
NON SKILLED WORKER	36[25.5%]	14[23.7%]	
OTHERS	21[14.9%]	3[5.1%]	

No statistically significant distinction was seen among patients who had and did not have acne vulgaris about sex, domicile, and occupation; nevertheless, a statistically significant difference was noted regarding age and marital status, Table 1.

Table 2. Prevalence of acne among the studied group.

	STUDIED PATIENTS (N=200)
DISEASE	
ACNE	59(29.5%)
OTHER DISEASE	141(70.5%)

Fifty-nine patients (29.5%) had acne, and 141(70.5%) had other disease, Table 2: Figure 1.

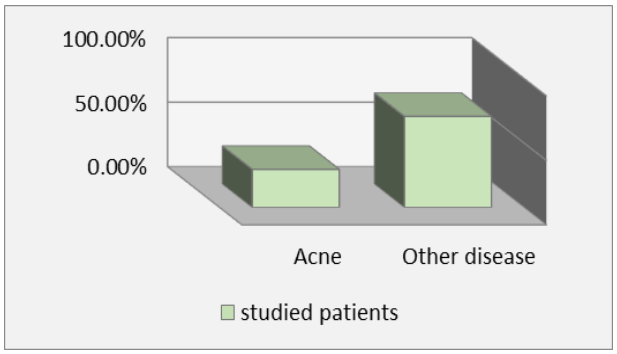

Figure 1. Prevalence of acne in studied patients.

Table 3. Impact of acne vulgaris on total quality of life.

	STUDIED PATIENTS WITH ACNE VULGARIS (N=59)	
	N	%
MILD IMPAIRMENT (1:5)	32	54.2
MODERATE IMPAIRMENT (6:10)	23	38.9
SEVERE IMPAIRMENT (11-15)	4	6.8
TOTAL QOL MEAN ± SD	1.75±3.07	

The majority of patients 32(54.2%) had mild impairment of QOL, 23-patients (38.9%) had moderate impairment, while only 4-patients (6.8%) had severe impairment of QOL. The mean of QOL in studied patients was 1.75±3.07, Table 3; Figure 2.

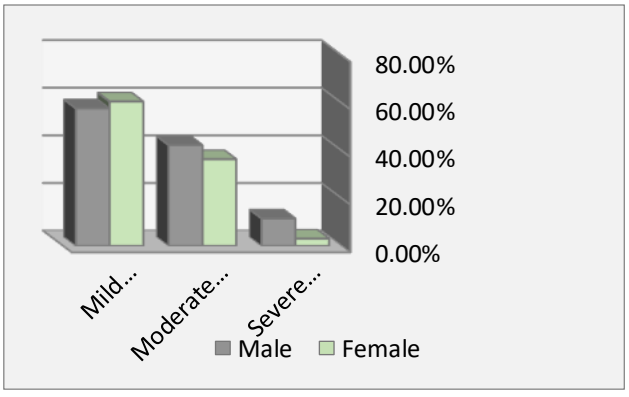

Figure 2. Impact of acne vulgaris on total QOL between patients with acne vulgaris.

Table 4. Flaring agents of acne among patients in the studied group.

	STUDIED PATIENTS (N=200)		P-VALUE
	Other skin disease(n=141)	Acne(n=59)	
MANIPULATION OF SKIN LESION			
YES	52[36.8%]	41[69.5%]	<0.001
NO	89[63.2%]	18[30.5%]	
SKIN LESION INCREASING WITH SUMMER			
YES	21[14.9%]	30[50.8%]	<0.001
NO	120[85.1%]	29[86.2%]	
SKIN LESION INCREASING WITH SUN EXPOSURE			
YES	21[14.9%]	28[47.5%]	<0.001
NO	120[85.1%]	31[52.5%]	

A very statistically significant difference existed between patients with and without acne vulgaris concerning the increase of skin lesions during summer, sun exposure, and management of skin lesions, Table 4.

Table 5. Relation of food to acne among patients in the studied group.

	STUDIED PATIENTS (N=200)		P-VALUE
	Other skin disease(n=141)	Acne(n=59)	
REGULARITY TAKING OF MILK			
YES	42[29.8%]	13[22.1%]	0.263
NO	99[70.2%]	46[77.9%]	
TAKING OF FAST FOOD			
YES	78[55.3%]	46[77.9%]	0.003
NO	63[44.7%]	13[22.1%]	
EATING OF CHOCOLATE			
YES	61[43.3%]	30[50.8%]	0.167
NO	80[56.7%]	29[49.2%]	
SKIN LESION INCREASING WITH SWEETY FOOD			
YES	23[16.3%]	27[45.8%]	<0.001
NO	118 [83.7%]	32 [54.2%]	

No statistically significant difference was observed between patients with and without acne vulgaris concerning the regular consumption of milk and chocolate. However, a statistically significant difference was noted regarding fast food consumption, and a highly statistically significant difference was found concerning the exacerbation of skin lesions associated with sugary foods, Table 5.

Table 6. Correlation between total QOL, duration of acne vulgaris and degree of acne vulgaris

	QOL	
	R	P
DEGREE OF ACNE VULGARIS	0.458	0.001
DURATION OF ACNE VULGARIS	0.159	0.234

A substantial positive link existed between overall quality of life and the severity of acne vulgaris, however no significant correlation was found between overall quality of life and the length of acne vulgaris, Table 6.

4. Discussion

The frequency of acne vulgaris in this study is 29.5%, which is different from Dabash et al.,[7] research found that 80.9% of medical students at Palestine's An-Najah National University (ANU) have acne vulgaris. Finding out how many ANU medical students suffer from acne and how often they treat themselves was the goal of this cross-sectional study.

Similar to or comparable to Egyptian research is this contemporary study Tayel et al.,[8] that indicated It was stated by 34.7% of the population that they have acne. The recent study found that 29.5% of the participants had acne vulgaris. A cross-sectional study was carried out in this investigation. A total of 787 pupils were chosen from 12 Alexandria secondary schools using multistage stratified random sampling. The identical weather and other environmental factors are to blame for this resemblance or reduced

increase in frequency.

This study is close to a study conducted by Abu El-Hamd et al.,[9] where 33.5% of the population had acne vulgaris. Students with acne had a mean age of 16.8. The prevalence of acne vulgaris was higher in females compared to males. Sohag Province, Upper Egypt's governmental and technical secondary schools were the subjects of this cross-sectional study. Over the course of 2014 (February–April), 994 students participated in the study.

In this study there are no significant difference between patients with and without acne vulgaris regarding consumption of milk p-value (0.263) or chocolate p-value (0.167) or smoking p-value (0.938) this agreed with study conducted by Anaba and Oaku[10] in which p value of milk consumption, chocolate and smoking was (0.919) (0.956) and (0.825) respectively.

But chocolate consumption has a significant difference in a study conducted by Sundra et al.,[11] P-value of chocolate intake < 0.05, this may be related to the chocolate type, background diet, pubertal development, chocolate ingredients, additives or preservation.

Premenstrual flare of skin lesions is a significantly different experience for persons with acne vulgaris compared to those without the condition. This was in line with research carried out by GELLER et al.,[12] Participants were enlisted at Mount Sinai Hospital in New York during dermatological appointments that were already planned for those over the age of 18. Women who reported their first period at least six months ago and who had an acne complaint during the last 30 days were given an anonymous survey. The study did not include women who were under the age of 18. When it comes to the pathophysiology of acne, hormone control plays a major role. The androgen receptors in the sebaceous glands and the outer root sheath of hair follicles are stimulated by androgens such as dihydrotestosterone (DHT) and dehydroepiandrosterone sulphate (DHEA-S). Comedones, both open and closed, form when sebum and keratin build up in hair follicles.

Contrary to a previous study by, this one found a statistically significant distinction between acne vulgaris patients and those without the condition in terms of the p-value (0.001) for the premenstrual flare of skin lesion Anaba and Oaku[10] which did not differ from one another in terms of menstrual flare p-value (0.178) One possible explanation for this discrepancy is that the study only included women over the age of 25, excluding younger women who may have had hormone disruptions.

In this present study, a high glycemic diet has a significant effect on acne vulgaris development, p-value (0.001). This agrees with a study conducted by Hasnani, Abdul Manaf and Zalmy[13]. In this study, 44 individuals who sought treatment for acne vulgaris at a dermatology clinic in a tertiary hospital in Kuala Lumpur were included in the case group. The research ran from 2010 to 2011. The 44 controls were selected from the student and staff population of the Kuala Lumpur Campus of the University Kebangsaan Malaysia; they were all healthy and free of acne vulgaris. A convenience sample was used to recruit both the case and control groups.

The present study showed regular milk intake has no significant difference in acne development p-value (0.263) this interfere with study conducted by Hasnani, Abdul Manaf and Zalmy[13] in which regular milk intake had significant difference this may explained by the sampling of their study was convenience sampling but our sampling was random sampling, not all Egyptian people regularly taking milk.

In this present study there is statistically difference between patients with and without acne vulgaris regarding fast food p-value0.003. This agreed with study conducted by Roengritthidet et al.,[14] In March 2020, the research was carried out using an online survey. Srinakharinwirot University Skin Centre recruited 2,476 volunteers through the internet media.

Regarding the increase of skin lesions with summer, there is an extremely significant distinction between the groups of patients with and without acne vulgaris in this study, skin lesion increasing with sun exposure p-value (< 0.001) for both this agreed et al with study conducted by Dreno et al.,[15] In that order, P < 0.001 and P < 0.03. Human sebaceous glands on the body create squalene and other fats. Ozone and extended UV radiation easily oxidise this unsaturated fatty acid, which makes up around 10–15% of sebum. The result is an increase in keratinocyte hyperproliferation and the production of inflammatory cytokines, which in turn causes acne or its aggravation.

Stress p-value (0.056) did not differ significantly between acne vulgaris and non-acne vulgaris subjects in this study. This disagrees with a study conducted by Roengritthidet et al.,[14] in which there was a statistically significant difference in stress and acne p-value (< 0.001). This may be explained by the fact that stress was a general feature of the population, so it is common in anxiety and other diseases.

In our study, there is no statistically difference between smokers and nonsmokers regarding acne. This agrees with study conducted by Yang et al.,[16] this may be due to the pro inflammatory cytokines of smoking which had anti-inflammatory effect.

In the current study, there are significant effect of summer and sun exposure on acne development. This agree with study conducted by Yang et al.,[16] Possible explanation: increased sebum secretion, particularly on the forehead, in warmer climates. Acne may become worse if sebum production increases.

Patients with and without acne vulgaris differed significantly in this study with respect to acne manipulation (acne excoriation). Found that this is in agreement with research carried out by Dlova et al.,[17] Tertiary dermatological clinics saw 3,814 patients; of them, 382 (10%) had acne or rosacea as their primary diagnosis, making it the fourth most prevalent ailment observed. The most prevalent type of acne was acne vulgaris, which accounted for 273 cases (75.6%), followed by steroid-induced acne at 46 cases (12.7%), acne during middle age at 6 cases (1.7%), acne excoriée (acne manipulation) at 2 cases (0.6%), and "undefined" at 34 cases (9.4%). The acne spectrum and variants were documented in five tertiary hospitals in South Africa's second most populated province over the course of three months (January 1-March 31, 2015) in this cross-sectional study.

In this study, the majority of patients, 32(54.2%), had mild impairment of QOL, 23 patients (38.9%) had moderate impairment, and only 4 patients (6.8%) had severe impairment of QOL The mean of QOL in the studied patients was 1.75±3.07. A study conducted by Cinna and Nair[18] was conducted on 140 persons who consented and attended the dermatology outpatient department. The study was prospective, cross-sectional, pre-structured, and questionnaire-based. A straightforward grading system was used to classify acne vulgaris. DLQI (dermatological life quality index) and CADI (cancer-specific adverse drug experience) questionnaires were used to measure quality of life. There was a moderate impairment of quality of life for 38.6%, a mild impairment for 48.65%, and a severe impairment for 12.9%. The CADI scores ranged from 0 to 15, with an average of 5.2 ± 3.14.

Limitations: Since this is a one-time measurement of exposure and outcome, it is difficult to drive causal relationships from cross-sectional analysis.

4. Conclusion

The prevalence of acne among patients attending the dermatology clinic at Al-Hussien University Hospital is 59 patients (29.5%), 33% females, and 26% males. Multiple risk factors are involved in the development of acne vulgaris, these factors are age, marital status, family history of acne, manipulation of skin lesions, summer, sun exposure, premenstrual flare, fast food and sweet food. Acne vulgaris has a mild effect on quality of life; the majority of patients 32, 54.2%) have mild impairment of QOL, 23 patients (38.9%) have moderate impairment, while only 4 patients (6.8%) have severe impairment of QOL. The mean of QOL in the studied patients is 1.75 ± 3.07. There is a significant positive correlation between total quality of life and severity of acne vulgaris.

Disclosure

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Authorship

All authors have a substantial contribution to the article

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Conflicts of interest

There are no conflicts of interest.

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