

QUALITY OF LIFE IN PATIENT WITH ACNE VULGARIS

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ABSTRACT

INTRODUCTION

Acne Vulgaris is one of the common skin disease which can impair the quality of life of the individual. This study is done to assess the quality of life in patient with acne using Dermatology life quality index (DLQI) and Cardiff acne disability index (CADI).

MATERIAL AND METHODS

This was a cross-sectional, questionnaire-based study in 101 patients of acne vulgaris at dermatology and Venerology OPD of Universal College of Medical Science, Bhairahawa, Nepal. The participants were given DLQI and CADI to assess the quality of life. The severity of acne was assessed by simple grading system.

RESULTS

There was some effect in quality of life in patient with acne but there was no significant relation with severity of acne and quality of life.

CONCLUSION

Psychological assessment should be done in patient with acne vulgaris as it can have negative effect in quality of life.

KEYWORDS

Quality of life, Clinical severity, Acne grade, Acne vulgaris

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<https://doi.org/10.3126/jucms.v11i02.57895>

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INTRODUCTION

Acne Vulgaris is a chronic inflammatory disorder of pilosebaceous unit, mostly affecting adolescents.^{1,2} It is a multifactorial disorder. Its etiopathogenesis include follicular hyperkeratinization, increases bacterial colonization (commonly *Propionibacterium acne*), and increase sebum production.^{2,3} There are also different contributory factor which aggravate the acne like endocrine factor (androgen),⁴ genetic predisposition, environmental factors, stress and food habits.⁵ It predominately affect face but it can also affect back and other parts of body.⁶

There is a major impact in quality of life in patient with acne vulgaris. They often isolate and exclude themselves from the society and also limit their social life.^{7,8} In the long run acne may cause cutaneous as well as psychological scars.⁹

More severe acne is associated with greater effect on quality of life with implications for self esteem, body image and relationships with others. There is greater impact in quality of life in severe type of acne.¹⁰

The level of social, psychological and emotional problems in patient with acne is as high as that of other chronic diseases like asthma, epilepsy, diabetes or arthritis.¹¹ It has been found to have significant negative impact in quality of life in patient with acne vulgaris.^{11,12}

There are only few studies about quality of life according to severity of acne Vulgaris. So this study had focus in quality of life in acne vulgaris and its relation to its severity.

MATERIAL AND METHODS

This cross-sectional, questionnaire-based study was carried out after receiving ethical clearance (UCMS/IRC/211/22) from IRB, Universal College of Medical Sciences. All data was collected in outpatient Department of Dermatology, Universal College of Medical Sciences, Bhairahawa, Nepal. Sample size was calculated from the formula: $N = Z^2 * P(1-P) / d^2$. Confidence interval of 95% was taken with corresponding (Z) value to be 1.96. The prevalence (P) of acne vulgaris is 6.3%.¹³ The margin of error (d) is taken to be 0.05, and this gives 90.2. The sample size is 91.

Patients with acne who are ≥ 16 years were included in the study. All the participants who were < 16 years, having other dermatological disease, or psychiatric disease and who do not give consent were excluded from the study.

After obtaining the informed consent and demographic details (age, sex, occupation, marital status, family history of acne in first degree relatives, premenstrual flare, aggravating factors, personal history, duration of disease, site of lesion, grades of acne, and any comorbid condition), each patient with Acne vulgaris was asked to fill the Nepali version of Dermatological life quality index (DLQI) and The Cardiff Acne Disability Index (CADI) questionnaire. Permission has been taken from original authors to use the DLQI questionnaire.

The dermatology Life Quality Index (DLQI) is a simple, self-administered and user-friendly questionnaire. It is used to measure the health related quality of life of adult patients suffering from skin disease.¹⁴ Patient must answer the

questions having in mind the obstacles faced during previous week. Scores on the questionnaire scale vary from 0 to 30, and higher the score, worse is the quality of life. 0-1 score means the disease has no effect over the quality of life of the patient, 2-5 means a small effect, 6-10 means moderate effect, 11-20 means great effect and 21-30 score means a very important effect of disease over quality of life.

The Cardiff Acne Disability Index (CADI) is a short five-item questionnaire derived from the longer Acne Disability Index.¹⁵ The Cardiff Acne Disability Index is designed for use in teenagers and young adults with acne. The scoring of each answer is: (a) 3 (b) 2 (c) 1 (d) 0. The score is calculated by summing the score of each question resulting in a possible maximum of 15 and a minimum of 0. The higher the score, the more the quality of life is impaired. For the purpose of this study, they were divided into 1-5 means mild impairment, 6-10 means moderate impairment, and 11-15 means severe impairment due to acne.

Severity of Acne vulgaris was assessed using simple grading system.¹⁶ It includes 4 grades ie Grade 1 (mild): predominantly comedones, occasional papules; Grade 2 (moderate): predominantly papules, few comedones and pustules; Grade 3 (severe): predominantly pustules, few nodules and papules; Grade 4 (cystic): predominantly cysts, abscess and widespread scarring.

Microsoft Excel sheet was used to tabulate the data. Data analysis was done SPSS software (version 18). Relevant descriptive statistical measures was calculated. T-test, Chi-square test and Pearson correlation were used. *P* value less than 0.05 will be significant.

RESULTS

A total of 101 patients with acne vulgaris were assessed where 66 males and 35 females, with a mean age of 20.75 ± 4.83 (Mean \pm Standard deviation). The majority of patient were students (77.2%) and were unmarried (84.2%). The most common site of acne was face (84.2%) and maximum patient presented with moderate grades of acne (59.4%). (Table 1)

There were varying degree of DLQI in acne patient, 33.3% female and 40% male had great effect, 24.2% female and 17.1% male had moderate effect, 22.7% female and 25.7% male had small effect, 15.2% female and 14.3% male and had very important effect and only 4.5% female and 2.9% had no effect of disease over quality of life. This was not statically significant ($p=0.894$). 44.4% patient with severe grade of acne and 100% patient with cystic type had great effect of disease over quality of life. There was also no significant relation between different grades of acne and DLQI ($p= 0.283$). The mean overall DLQI score was 12.0 ± 7.714 (Table 2)

Analysis of acne patient with CADI questions showed that 40.9% female and 31.4% male had mild impairment with acne, 33.3% female and 34.3% male had moderate impairment and 25.8% female and 34.3% male had severe impairment with acne. There was no significant association between gender and CADI in acne patients (*p* value 0.568). 75% patient with grade 4 acne and 50% with grade 3 acne had moderate impairment in CADI but it was not statically significant (*p* value 0.211) (Table 3)

Table 1. Socio - demographic variables

Socio - demographic variables		Frequency	Percentage
Gender	Male	66	65.3
	Female	35	34.7
Age Group	10-20	55	54.5
	20-30	42	41.6
	30-40	4	4.0
	Mean \pm SD = 20.75 \pm 4.83 years		
Occupation	Service	7	
	Housewife	11	17.8
	Student	78	77.2
	Business	5	5
Marital Status	Married	16	15.8
	Unmarried	85	84.2
Site of Lesion	Face	85	84.2
	Face and chest	10	9.9
	Face ,chest and back	6	5.9
Grade of Acne	Mild	19	18.8
	Moderate	60	59.4
	Severe	18	17.8
	Cystic	4	4.0

Table 2. Association between dermatology quantity of life with gender and acne grade

Variables		DLQI					p value
		Q (0-1)	2-5	6-10	11-20	21-30	
Gender	Female	3 (4.5)	15 (22.7)	16 (24.2)	22 (33.3)	10 (15.2)	0.894
	Male	1 (2.9)	9 (25.7)	6 (17.1)	14 (40)	5 (14.3)	
Acne Gender	Mild	1 (5.3)	6 (31.6)	4 (21.1)	6 (31.6)	2 (10.5)	0.283
	Moderate	3 (5)	13 (21.7)	14 (23.3)	18 (30)	12 (20)	
	Severe	0 (0)	5 (27.8)	4 (22.2)	8 (44.4)	1 (5.6)	
	Cyst	0 (0)	0 (0)	0 (0)	4 (100)	0 (0)	
Mean \pm SD = 12.0 \pm 7.714							

Table 3. Association between cardiff acne disability index with gender and acne grade

Variables		CADI group			p value
		1-5	6-10	11-15	
Gender	Female	27 (40.9)	22 (33.3)	17 (25.8)	0.568
	Male	11 (31.4)	12 (34.3)	12 (34.3)	
Grade	1	7 (36.8)	6 (31.6)	6 (31.6)	0.211
	2	25 (41.7)	16 (26.7)	19 (31.7)	
	3	6 (33.3)	9 (50)	3 (16.7)	
	4	0 (0)	3 (75)	1 (25)	
Mean \pm SD = 7.86 \pm 4.38					

DISCUSSION

Acne vulgaris is a common skin condition which has a significant impact on quality of life. Feeling of isolation, loneliness, lower self-esteem and lower body satisfaction occurs in patient with acne.¹⁷ So, along with treating the disease, dermatologist should also consider the impact of disease in the impairment of quality of life of the patient.

There are variable result showing the relationship between acne severity and DLQI and CADI. Our study showed no significant association between acne severity and DLQI. This can be probably due to the small sample size in our

study and also it depends on patient perception rather than the severity of disease. But severe and cystic grade acne had great effect in quality of life than that of mild grade of acne. The study done by Tasoula E et al¹⁰ showed that the impact of acne on quality of life was proportional to acne severity where moderate and severe grade acne had more burden on their quality of life in compare to mild grade of acne. Similarly study done in Erbil city also showed significant association between acne and QOL impairment.¹¹ The study done by Ogedegbe EE et al showed weak correlation between Global Acne Grading Scale (GAGS) and CADI score.¹⁸ Similarly study done by de vries F et al found that increased acne severity was associated with a more impaired QOL but was not statically significant.¹⁹ There was a correlation between severity of acne and DLQI in study done by Vilar GN et al.²⁰

In our study there was no significant association in gender and DLQI and CADI. Similarly study done in Greece and Nigeria also showed no gender difference.^{10,18} The quality of life was more impaired in female than male in the study done in Erbil city.¹¹ Similarly study done by de vries F et al also had more impairment in quality of life in females than males.¹⁹

The overall CADI score was 7.86 \pm 4.38, indicating moderate degree of disability from acne. Similar high score was found by Motley and Finlay¹⁵ in UK. But the study done in Nigeria CADI score was 3.43 \pm 3.0, indicating a mild degree of disability from acne.¹⁸

CONCLUSION

Our study showed that both the questionnaire system DLQI and CADI was effective though we could not find the significant difference in acne patient. There was some impairment in quality of life and there was some disability due to acne but it was not related to gender or severity of acne.

So dermatologist should encourage to include quality of life evaluations in acne along with treating the disease which has mostly been underestimated. DLQI and CADI can be used in routine clinical practice so that in patient with severe impairment in quality of life, we can modify the treatment accordingly.

LIMITATIONS

There are some limitation of the study. The study has use the validated DLQI and CADI, further research with much large sample size can be conducted. The study had demonstrated a variety in age, gender, geographic location but was a single center study, so we can do multicentre study also.

ACKNOWLEDGEMENTS

We acknowledge and thank Prof AY Finlay for permission to use DLQI and CADI questionnaire for the study. We also thank all the participant who were included in the study.

CONFLICT OF INTEREST

None

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