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Original Article

The Impact of acne on the quality of life of the patients attending dermatology outpatient department at Nobel Medical College Teaching Hospital

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Abstract

Background

Acne is a very common distressing skin condition that affects multiple aspects of quality of life of an individual. It has been illustrated that acne have tremendous effect on an individual's self-image and impacts his or her quality of life. The extent of burden of the disease experienced by the patients seems to be underestimated by the whole medical fraternity. The aim of the study is to determine the health related quality of life impairment in acne patients using CADI and to identify various variables that increase the patients' susceptibility for quality of life impairment.

Subjects and Methods

This is a hospital based, cross sectional study conducted in the Department of Dermatology, Nobel Medical College Teaching Hospital from Jan 2017 to December 2017. A total of 202 acne patients were evaluated with CADI. Clinical characteristics were recorded after history and clinical examination.

Results

Out of total 202 patients enrolled, 56.4% of patient scored a CADI score of (5-9) indicating moderate quality of life impairment and 15.3% of patient scored a CADI score of 10 or more indicating severe quality of life impairment. The mean CADI score was 6.82 ± 2.75 . There was positive correlation between the CADI score and impact on quality of life with grade of acne, which was statistically significant ($p < 0.001$).

Conclusion

Acne is a common skin disease with tremendous adverse effect on the patient's health related quality of life. Patients are affected both physically and mentally with this condition.

Key word

Acne vulgaris, clinical grading, Cardiff Acne Disability Index (CADI), impact on quality of life.

Introduction

Acne vulgaris is the most common skin disease encountered in the general population, and has considerable impact on quality of life of the sufferers [1]. It is the most common dermatological disease for which patients seek physician care in the

Caucasian, African Americans and Hispanic populations and the second most commonly treated dermatological disease in the Asian population [2]. Because, the lesions of acne may vary in number and morphology during it's natural course of disease, numerous measurements have been developed, based

on proper clinical examination and photographic documentation, to assess the clinical severity of the disease [3].

A report in the British Medical Journal in 1989 opined that, in a lifetime, a person is more likely to suffer from acne than any other disease [4]. Acne impacts profoundly on the psychosocial development, on the quality of life, and on career prospects [5]. Acne does ruin beauty and, in some, it leaves with scars for life. All grades of acne is very common in young people, with over 90% of males and 80% of females being affected by the age of 21 years [4,6].

Acne vulgaris is a common distressing skin disease that does affect all aspects of an individual's health-related quality of life (HRQoL); in particular, personal relationships, feelings and emotions, sports, social circle and employment prospects [7]. There is usually a directly proportional relationship between the clinical severity of acne and impairment of HRQoL, although impairment is also dependent upon one's 'coping ability'. Moreover, individuals with minor objective evidence of acne may suffer severe subjective impairment, greatly affecting their HRQoL [8]. Although the psychosocial aspects of acne are well recognized, there is also evidence suggesting psychosocial stress itself, may also exacerbate acne. So until recently, there have been very few validated scales to measure HRQoL [9].

Acne vulgaris is a very common skin condition in Nepal, and it seems to cause much concern to patients and families alike. So this study was conducted to highlight the impact of the quality of life on acne patients.

Materials and Methods

We did a hospital based, cross sectional study in the outpatient department (OPD) of Department of Dermatology and Venerology, Nobel Medical College Teaching Hospital, Biratnagar, Nepal, over a period of one year from Jan 2017 to Dec 2017.

Sample selection

Inclusion criteria

- Patients with clinical diagnosis of acne and 10- 35 years of age.

Exclusion Criteria:

- Acne patients with history of steroids use and other acne causing drugs.
- Patients with psychiatric illness.
- Age more than 35 years.
- Patients taking anti-acne medications within last 3 months.

Altogether 202 acne patients were selected for the study. Diagnosis was made on the basis of clinical features and classified depending on type of lesions into: Grade I, Grade II, Grade III and Grade IV. All these patients were interviewed using a CADI questionnaire. The completed forms were then scored according to the recommendation made by Motley and Finlay. The details of the selected patients were recorded in a prepared Performa.

Cardiff Acne Disability Index (CADI) [10]

The Cardiff Acne Disability Index (CADI) (Motley and Finlay, 1992) is a short 5 item questionnaire derived from the longer Acne Disability Index (Motley and Finlay, 1989).

The Cardiff Acne Disability Index is designed for use in teenagers and young adults with acne. It usually doesn't take much time to complete. It is self explanatory and can be simply handed to the patient who is asked to complete it without the need for detailed explanation.

Instructions for scoring

The scoring for each answer is given as follows: (a) 3 (b) 2 (c) 1 (d) 0

The CADI score is ultimately calculated by adding up the score of each question resulting in a possible maximum of 15 and a minimum of 0. The higher the score, more the quality of life is impaired. The CADI contains total of 5 questions with a maximum possible score of 15. These questions also focuses on symptoms and feelings, social life, use of public changing places, psychological and patient's perception of the acne severity over the last 1 month prior to consultation. These scores were graded as low (0-4), medium (5-9) and high (10-15). The lower the cumulative CADI score, the lower the level of disability perceived by the patient while a reverse is

true. The CADI also identifies area of concerns in patients suffering with acne.

Statistical Analysis

The results of the study were statistically analyzed using SPSS version 22. Chi-square test and one-way ANOVA test were applied where needed. The level of statistical significance was set at ($p \leq 0.05$)

Results

Total 202 patients were included in our study, all of them filled out CADI questionnaire after written consent. The mean age of the patients in years were 20.24 ± 6.07 , with minimum age 11 year and maximum age 35 year. Out of total patients 102(50.5%) were male and 100(49.5%) were female. Regarding marital status 62 were married and 140 were unmarried.

Of the total acne patients, 79(39.1%) were at school level or had completed SLC level, 65(32.2%) had completed intermediate level, 46(22.8%) bachelors level and 12(5.9%) had attained their postgraduate degrees. In our study regarding grading of acne, number of patients in grade I was 25 (12.4%), number of patients in grade II was 81(40.1%),

number of patients in grade III was 71(35.1%) and number of patients in grade IV was 25(12.4%).

Overall Cardiff Acne Disability Index Score:

The mean CADI score was found to be 6.82 ± 2.75 with minimum score of 2 and maximum 13. The mean CADI score was more for females was (6.83 ± 2.89) and for males (6.81 ± 2.62) which was not statistically significant ($p=0.967$). Similarly, the score for married patients were higher (6.98 ± 2.73) than for unmarried patients (6.75 ± 2.67). However this was not statistically significant ($p=0.578$). The educational status of patient was analyses for CADI score. The score for patients in bachelors level were higher (7.57 ± 2.83) than patients of SLC, intermediate or Masters level. However, this difference was not statistically significant ($p=0.158$). Of the four clinical grading of acne evaluated in the study, the grade IV patient scored highest score with CADI of (8.92 ± 2.40) followed by grade III (7.77 ± 2.17), II (6.35 ± 2.63) and I (3.56 ± 1.26) and it was significant statistically ($p < 0.001$) as shown in table 1.

Table 1: CADI Score of Acne patients and its analysis for different variables.

Variables	Categories	Number (Percentage)	CADI Score (Mean \pm S.D.)	p-value
Gender	Male	102 (50.5%)	6.81 ± 2.62	0.967
	Female	100 (49.5%)	6.83 ± 2.89	
Marital Status	Married	62 (30.7%)	6.98 ± 2.73	0.578
	Unmarried	140 (69.3%)	6.75 ± 2.76	
Educational status	School Level	79 (39.1%)	6.75 ± 2.83	0.158
	Intermediate	65 (32.2%)	6.54 ± 2.65	
	Bachelors	46 (22.8%)	7.57 ± 2.83	
	Masters	12 (5.9%)	6.00 ± 2.05	
Grading	Grade I	25 (12.4%)	3.56 ± 1.26	<0.001*
	Grade II	81 (40.1%)	6.35 ± 2.63	
	Grade III	71 (35.1%)	7.77 ± 2.17	
	Grade IV	25 (12.4%)	8.92 ± 2.40	

* The test result is significant at $P < 0.05$.

Quality of life impairment

Out of 202 patients in our study, 28.2%(n=57) scored a CADI score of less than 5 suggesting mild quality of life impairment, 56.4%(n=114) scored a CADI score of 5-9 indicating moderate impairment of quality of life; whereas 15.3%(n=31) scored a CADI score of 10 or more indicating severe impairment in quality of life.

The association between different variables undertaken in our study and impact on quality of life according to CADI score is illustrated in the table no 2. Affect on the quality of life due to acne shows statistically significant association between grading of acne; suggesting higher the grade of acne; more severe is the impact in quality of life.

Table 2: Analysis of Impact on quality of life according to CADI score.

Variables	Categories	Impaired Quality of Life (Number and percentage)			P-value
		Low	Medium	High	
Age in years ± SD		19.67 ± 6.07	20.53 ± 6.18	20.26 ± 5.78	0.685
Gender	Male	26 (25.5%)	62 (60.8%)	14 (13.7%)	0.452
	Female	31 (31.0%)	52 (52.0%)	17 (17.0%)	
Marital Status	Married	15 (24.2%)	37 (59.7%)	10 (16.1%)	0.699
	Unmarried	42 (30.0%)	77 (55.0%)	21 (15.0%)	
Educational status	School level	25 (31.6%)	40 (50.6%)	14 (17.7%)	0.294
	Intermediate	21 (32.3%)	36 (55.4%)	8 (12.3%)	
	Bachelors	8 (17.4%)	29 (63.0%)	9 (19.6%)	
	Masters	3 (25.0%)	9 (75.0%)	0 (0.0%)	
Grading	Grade I	24 (96.0%)	1 (4.0%)	0 (0.0%)	<0.001*
	Grade II	31 (38.3%)	43 (53.1%)	7 (8.6%)	
	Grade III	2 (2.8%)	55 (77.5%)	14 (19.7%)	
	Grade IV	0 (0.0%)	15 (60.0%)	10 (40.0%)	
Total		57 (28.2%)	114(56.4%)	31(15.3%)	

* The test result is significant at $P < 0.05$.

Discussion

Skin diseases can affect virtually all aspects of patient's lives. Apart from causing physical discomfort to the acne sufferers, it has been demonstrated that, acne influence the patient's both social as well as personal life [11].

There are several published studies regarding acne and quality of life. Previous studies have shown that acne is related with significant morbidity and decrement in health-related quality of life. Acne has a considerable psychological impact on affected individuals [12]. Both general practitioners and dermatologists were reported to have poor comprehension of the psychological implications of skin diseases on patient's personal and social circle; being insensitive to their patient's emotional sufferings, and trivializing participant's condition [13].

Magin P et al found out that depression was two to three times more prevalent in acne patients than that of the general population,

with a reported 8.8% of acne patients having clinical depression and females were twice more common than males [14].

In our study, there was no significant difference between the sexes in the CADI score and impact on quality of life. Contradictory to this, Pawin H found out that adolescent girls were more vulnerable than boys to the negative psychological effects of acne [15]. Krowchuk DP et al found out that acne affected significantly on 11% of teenagers [16]. However in our study, impairment of life and CADI score was not significant with age.

Jones-Caballero M et al and Walker N et al illustrated positive correlation between Cardiff acne disability index, impact on quality of life and clinical severity [17,18]. This match with our results as we found that quality of life was associated with grading of acne. In contrast to our result, Aush Gupta et al didn't find any association between severity of acne and quality of life [19].

No significant correlations were noted between the level of education obtained and scores of CADI. This might be the fact that patients experience certain level of anxiety and impairment may not only depend on the peer's exploitation but rather patient's own conscience.

Conclusions

Acne is a common disease with significant adverse effect on the patient's health related quality of life. Patients are affected both physically and mentally with this condition.

Limitation

Since this study was done on a tertiary referral centre, the impact on patient's quality of life might be overestimated. A population based survey would help to identify more accurately the disease's impact on general population.

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