

Original Article

# Impact of Adult Acne in Quality of Life by using DLQI (Dermatology Life Quality Index)

Rosina Paudel <sup>1\*</sup>, Dhan Keshar Khadka <sup>2</sup>, Arpana Rijal <sup>3</sup>

1. Department of dermatology and venereology, B.P. Koirala Institute of Health Sciences (BPKIHS), Dharan, Nepal.
2. Associate Professor, department of dermatology and venereology, B.P. Koirala Institute of Health Sciences (BPKIHS), Dharan, Nepal.
3. Professor, department of dermatology and venereology, B.P. Koirala Institute of Health Sciences (BPKIHS), Dharan, Nepal.

\* Correspondence: [paudelrosi@gmail.com](mailto:paudelrosi@gmail.com)

**Abstract:** Acne is a chronic inflammatory disease of pilosebaceous unit. It is one of the most common diseases of adolescence, seen in 80% of young people. Adult acne seems to be a common problem and there has been an increase in prevalence of adult acne in last two decades. This study determined the impact of adult acne in Quality of life by using DLQI (Dermatology Life Quality Index). It is a hospital based descriptive cross-sectional study in the department (OPD), Department of Dermatology and Venereology at B. P. Koirala Institute of Health Sciences, Dharan. The sample size N=161 where data has been collected with the help of purposive sampling technique. Quality of life was measured in adult acne patients, using the Nepali version of dermatology life quality index (DLQI) questionnaire. Data has been summarized using frequency distribution tables and graphical methods of presentation of data. Bi-variate analysis for association was done using appropriate test of significance. Multivariable binary logistic regression was then further done to find the adjusted odds ratio for the determinants. Statistical significance was tested with 95% confidence interval and p value less than 0.05 was considered significant. Adult acne has shown to affect quality of life moderately, with greater effect among females. Severity of acne was found to have significant association with smoking, sun exposure and intake of milk products. This study being an observational study needs careful interpretation of the associated factors. The findings from this study warrants need for interventions targeting for behavioural and dietary modification to reduce the severity of acne, and its impact on quality of life.

**Keywords:** chronic inflammatory disease, DLQI, adult acne, Nepal

## 1. INTRODUCTION

Acne is a chronic inflammatory disease of pilosebaceous unit. It is one of the most common diseases of adolescence, seen in 80% of young people [1]. It is most common in teenagers though physiological acne is seen in 54% of women and 40% of men, and its prevalence does not decrease with age [2]. When the disease is present after the age of 25 years, it is called adult acne, which is comprised of 2 main subtypes: Persistent acne is the subtype of adult acne which occurs since adolescence. The lesions of adolescence persist in adult in this subtype [3]. The lesions tend to be papulonodular and are mainly localized over the

lower part of the face and neck [4]. Late-onset acne appears for the first time after the age of 25 years. “Persistent” acne continues after adolescence, while “late onset” acne starts after the age of 25 years [5]. It is responsible for 80% and 20% of cases, respectively [6]. The majority of adult cases can be classified as persistent. Adult acne is seen more in women while in case of boys acne usually disappears after adolescence. Though persistent acne is more commonly seen there are cases of late-onset acne, occurring after 25 years of age [7]. Recently there has been an increase in the age of onset of acne, mainly in women aged 20.5–26.5 years [8]. Adult acne differs from acne seen in adolescents as lesions are predominantly papules and pustules, with absence of comedones [9]. These lesions of adult acne were formerly diagnosed as acneiform eruption and not as true acne, as they were thought to be precipitated by external agents such as drugs, cosmetics, chemical products etc [10]. The severity of adult acne tends to vary from mild to moderate, comprising mainly inflammatory lesions [11]. Besides inflammatory lesions, some comedones and deep and indolent nodules of long duration can also be seen in the cheeks which are responsible for residual hyperpigmentation [12]. Furthermore, late-onset acne presents with fewer total lesions, which are predominantly located in the U-zone [13]. Family history of acne in first degree relatives, no previous pregnancies, history of hirsutism, working as an office worker, higher level of psychological stress, and some dietary factors, including low consumption of vegetables or fruits and fish, were all associated with acne [14]. Tobacco smoking was associated with more severe forms of acne [15]. An underlying endocrine disorder, especially hyperandrogenism, is an important diagnostic consideration in case of any female patient with acne. In such cases suggestive clue is rapid recurrence of acne following isotretinoin therapy [16]. High levels of androgens are associated with acne in women, and their local production in the process cannot be excluded. Levels of DHEA-S, androstenedione, testosterone and dihydrotestosterone is found to be significantly greater in women with acne than in those without the disease [17]. Acne in women is particularly sensitive to hormonal changes during the menstrual cycle, and almost 70% of women who were assessed in a study reported of worsening of acne during the premenstrual period [18]. The role of cosmetics in acne exacerbations still remains controversial [19]. The detrimental impact of adult acne on quality of life has been recognized. Adult acne may lead to decrease in self esteem, negative body image and psychological stress. The presence of scars is mainly responsible for impact on quality of life [20]. Adult acne seems to be a common problem and there has been an increase in prevalence of adult acne in last two decades. This study determined the impact of adult acne in Quality of life by using DLQI (Dermatology Life Quality Index).

## 2. MATERIALS & METHODS

It is a hospital based descriptive cross-sectional study. The study was conducted among the patients attending the outpatient department (OPD), Department of Dermatology and Venereology at B. P. Koirala Institute of Health Sciences, Dharan. The study was conducted over a period of one year Patients attending the OPD at Department of Dermatology and Venereology at B. P. Koirala Institute of Health Sciences, Dharan, diagnosed with adult acne. This study considered 5% significance level ( $\alpha = 0.05$ ) and power of 80% ( $\beta = 0.2$ ) to determine the sample size  $N = 139$ . Adding 15% for non-response, or incomplete data, the sample size has been inflated to 161. Purposive sampling technique was adopted to obtain the participants. Demographic data were recorded in the preset proforma. A detailed history was taken using a questionnaire including general socio-demographic information (age, sex, race, religion, education, occupation and marital status), information regarding personal habits (smoking and alcohol consumption), pregnancy, menstrual pattern, use of oral contraceptives, history of adolescence acne, history of acne in relatives, relevant comorbidities (polycystic ovary syndrome PCOS, hirsutism, type II diabetes, and thyroid disease), and factors aggravating acne (sun exposure and stress) and these data were recorded in preset

proforma. Quality of life was measured in adult acne patients, using the Nepali version of dermatology life quality index (DLQI) questionnaire. DLQI contained 10 questions which involved 6 sections: symptoms and feelings, daily activities, leisure, work and school, personal relationships and treatment. Question 1 and 2 assessed symptoms and feelings; 3 and 4, daily activities; 5 and 6, leisure; 7, work and school; 8 and 9, personal relationships and 10, treatment. The DLQI consists of 10 questions in which each question is given 4 options from not at all effect (score 0) to very much effect (score 3). The minimum and maximum possible score, thus, is 0 and 30 respectively.

The interpretation of the patients score is done as follows:

0-1 = no effect at all on patient's life

2-5 = small effect on patient's life

6-10 = moderate effect on patient's life

11-20 = very large effect on patient's life

21-30 = extremely large effect on patient's life

The clinically meaningful change or reduction in the DLQI score is measured as the change in score from one band to the other in the above mentioned interpretation chart. Data was entered in Microsoft Excel, and converted into Statistical Package for Social Sciences for statistical analysis. Alpha numerical codes were used. Data was entered after every day's work. The data has been presented in percentage, mean and standard deviation. Data has been summarized using frequency distribution tables and graphical methods of presentation of data (Bar diagram, Multiple bar diagram, pie charts, etc. as appropriate). Bi-variate analysis for association was done using appropriate test of significance (chi-square test, t-test, Mann-whitney test, Kruskal Wallis H test, one way ANOVA). Multivariable binary logistic regression was then further done to find the adjusted odds ratio for the determinants. Statistical significance was tested with 95% confidence interval and p value less than 0.05 was considered significant.

### 3. RESULTS & DISCUSSION

This study was carried out to evaluate the clinico- epidemiological profile of adult acne and quality of their life being affected by it. One hundred and sixty-one (161) patients clinically diagnosed of adult acne attending the outpatient department of Dermatology and Venereology of B.P. Koirala Institute of Health Sciences, Dharan were enrolled in the study.

#### 3.1 Dermatologic Life Quality Index (DLQI) of the study population

Quality of life among the cases was assessed by using DLQI (Dermatologic Life Quality Index). In this study, the mean DLQI of the total 161 patients was observed to be  $5.329 \pm 4.286$ . The majority of the patients had some sensation of itching or stinging sensation (Mean  $\pm$  SD =  $1.286 \pm 0.80$ ). Similarly, majority of patients felt more embarrassed or became self-conscious due to acne (Mean  $\pm$  SD =  $1.248 \pm 1.006$ ). Interference in clothing (Mean  $\pm$  SD =  $0.596 \pm 0.917$ ) and going for shopping (Mean  $\pm$  SD =  $1.242 \pm 1.071$ ) were also seen in patients due to acne. In relation to the aspects of life represented by the DLQI sections, Symptoms and feelings was the most affected domain with a mean  $\pm$  SD of  $2.534 \pm 1.66$  followed by daily activities (mean  $\pm$  SD of  $1.839 \pm 1.788$ ).

**Table 01:** Effect in quality of life in each questionnaire (n = 161)

Questions	Mean $\pm$ SD	Median, IQR,
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		(Min-Max)
1. Over the last week, how itchy, sore, painful or stinging has your skin been?	1.286± 0.8018	1, 1, (0-3)
2. Over the last week, how embarrassed or self conscious have you been because of your skin?	1.248± 1.006	1, 1, (0-3)
3. Over the last week, how much has your skin interfered with you going shopping or looking after your home or garden?	1.242± 1.071	1, 1, (0-4)
4. Over the last week, how much has your skin influenced the clothes you wear?	0.596± 0.9177	0, 1, (0-3)
5. Over the last week, how much has your skin affected any social or leisure activities?	0.845± 0.997	1, 1, (0-4)
6. Over the last week, how much has your skin made it difficult for you to do any sport?	0.00± 0.00	0, 0, (0-0)
7. Over the last week, has your skin prevented you from working or studying?	0.019± 0.1758	0, 0, (2-0)
8. Over the last week, how much has your skin created problems with your partner or any of your close friends or relatives?	0.00± 0.00	0, 0, (0-0)
9. Over the last week, how much has your skin caused any sexual difficulties?	0.00± 0.00	0, 0, (0-0)
10. Over the last week, how much of a problem has the treatment for your skin been, for example by making your home messy, or by taking up time?	0.093± 0.350	0, 0, (2-0)

**Table 02:** DLQI scores in each domain

DLQI Domains	Mean	Median	SD	Min, Max
Symptoms and feelings (Q1+Q2)	2.534	2	1.665	0, 6
Daily activities (Q3 + Q4)	1.839	2	1.788	0, 6
Leisure activities (Q5 + Q6)	0.845	1	0.997	0, 4
Work and schooling (Q7)	0.019	0	0.175	0, 2
Personal relationship (Q8 + Q9)	0.00	0	0.00	0, 0
Treatment of disease (Q10)	0.093	0	0.350	0, 3
Total score	5.329	5	4.286	0, 17

### 3.2 Quality of life

Categorizing the total DLQI scores, moderate effect on quality of life was seen among 57 (35.4%) cases, with no effect to small effect in 43 (26.7%) each and very large effect in 18 (11.2%) cases. No extremely large effect was observed in the quality of life among the adult acne cases. Effect in quality of life was more in case of female cases with moderate effect in 30.3% cases, small effect in 30.3% cases and large effect in 13.6% cases. In male cases, 75.9% of them had no effect in quality of life, while small and moderate effect was seen in 10.3% and 13.8% of them respectively.

**Table 03:** Quality of life among the adult acne cases

Categories	Frequency	Percentage
No effect	43	26.7
Small effect	43	26.7
Moderate effect	57	35.4
Very large effect	18	11.2
Extremely large effect	0	0.0
Total	161	100.0

**Table 04:** Sex distribution of Effect in quality of life

Severity→ Sex ↓	DLQI grading				
	No effect	Small effect	Moderate effect	Large effect	Total
Female	21 (15.9)	40 (30.3)	53 (40.2)	18 (13.6)	132 (100)
Male	22 (75.9)	3 (10.3)	4 (13.8)	0 (0)	29 (100)
Total	43 (26.7)	43 (26.7)	57 (35.4)	18 (11.2)	161 (100)

### 3.3 Association of Different Factors with Adult Acne

Severe to very severe acne was seen in 20 (15.27%) of cases who were below the age of 35 years and in 8 (26.67%) of cases who were above the age of 35 years. Similarly, males had more severe acne 34.48% compared to females 13.64%. Severity of acne was found to have statistically significant association with sex group. The proportion of severe/very severe acne was higher among cases who were overweight (18.42%) compared to cases with normal or low BMI (16.47%). However, the association of acne severity was not found to be significant statistically with BMI. Similarly, the proportion of severe/very severe acne was higher among smokers (36.36%) and cases consuming alcohol (18.18%) compared to cases who do not smoke (14.39%) or consume alcohol (16.84%). Severity of acne was found to have statistically significant association with smokers. However, the association of acne severity was not found to be significant statistically with alcohol consumers.

**Table 05:** Association with socio-demographic and behavioural characters

Character-istics	Category	Severity			p-value
		Severe/ Very severe	Mild/ Moderate	Total	
Age	<35	20 (15.27)	111 (84.73)	131 (100)	0.137
	>35	8 (26.67)	22 (73.33)	30 (100)	
	Total	28 (17.39)	133 (82.61)	161 (100)	
Sex	Female	18 (13.64)	114 (86.36)	132 (100)	0.007
	Male	10 (34.48)	19 (65.52)	29 (100)	
	Total	28 (17.39)	133 (82.61)	161 (100)	
Smoking	No	20 (14.39)	119 (85.61)	139(100)	0.029*
	Yes	8 (36.36)	14 (63.64)	22 (100)	
	Total	28 (17.39)	133 (82.61)	161(100)	
Drinking	No	16 (16.84)	79 (83.16)	95 (100)	0.825
	Yes	12 (18.18)	54 (81.82)	66 (100)	
	Total	28 (17.39)	133 (82.61)	161 (100)	
BMI (kg/m <sup>2</sup> )	< 23	7 (13.2)	46 (86.8)	53 (100)	0.327
	≥ 23	21 (19.4)	87 (80.6)	108 (100)	
Total		28 (17.39)	133 (82.61)	161 (100)	

\* Fischer Exact test applied

The proportion of severe and very severe acne was higher among cases who had onset before the age of 25 years (21.79 %) compared to cases with onset after the age of 25 years (13.25 %). Similarly, proportion of cases with duration less than 1 year had more severe acne (21.74%) compared to those having acne for more than 1 year (15.65%). Similarly, severe and very severe acne was seen more in cases with no history of adolescent acne (27.27%) compared to those with history of adolescent acne (14.84%). However, the association of acne severity was not found to be significant statistically with age of onset, duration of acne or history of adolescent acne.

**Table 06:** Association of severity with acne characteristics

Character-istics	Category	Severity			p-value
		Severe/ severe	Very	Mild/ Moderate	
Age of onset (years)	< 25	17 (21.79)		61 (78.21)	0.153
	≥ 25	11 (13.25)		72 (86.75)	

	Total	28 (17.39)	133 (82.61)	161 (100)	
Duration of acne (year)	<1	10 (21.74)	36 (78.26)	46 (100)	0.357
	≥ 1	18 (15.65)	97 (84.35)	115 (100)	
	Total	28 (17.39)	133 (82.61)	161 (100)	
History of adolescent acne	Absent	9 (27.27)	24 (72.73)	33 (100)	0.093
	Present	19 (14.84)	109 (85.16)	128 (100)	
	Total	28 (17.39)	133 (82.61)	161 (100)	
Family history of acne	No	6(10.34)	52(89.66)	58(100)	0.077
	Yes	22(21.36)	81(78.64)	103 (100)	
	Total	28 (17.39)	133 (82.61)	161 (100)	

The severity of acne was more in cases with menarche at age less than 12 years (15.63%). Severe acne was seen in 12.50% of cases with irregular cycle and 13.71% of cases with regular cycle. Similarly, severe acne was seen in 11.36% of cases with prior history of pregnancy and 18.18% of cases without prior history of pregnancy, as presented in table below. Based on age of menarche, menstrual history and history of pregnancy, the association of acne severity was not found to be statistically significant.

**Table 07:** Association with menstrual and obstetric history among female cases

Character-istics	Category	Severity			p-value
		Severe/ severe	Very	Mild/ Moderate	
Age at menarche (in years)	<12	5 (15.63)		27 (84.38)	0.927*
	12- 15	12 (12.9)		81 (87.1)	
	>15	1 (14.29)		6 (85.71)	
	Total	18 (13.64)		114 (86.36)	
Menstrual history	Irregular	1 (12.5)		7 (87.5)	1.000*
	Regular	17 (13.71)		107 (86.29)	
	Total	18 (13.64)		114 (86.36)	
Prior history of pregnancy	No	8 (18.18)		36 (81.82)	0.282
	Yes	10 (11.36)		78 (88.64)	
	Total	18 (13.64)		114 (86.36)	

\* Fischer exact test applied

The severity of acne was more in cases consuming fruits for 3 or more days per week (21.05%) and milk for 3 or more days/ week (32.61%) than those consuming less than 3 days/ week. In case of meat it was more in cases consuming meat less than 3 days per week (17.99%) compared to those consuming meat for 3 or more days/week (13.64%). Severity of acne was found to have statistically significant association in cases consuming milk for 3 or more days per week. However, the association of acne severity was not found to be significant statistically with fruit and meat consumers.

**Table 08:** Association of acne with food intake behaviour

Character-istics	Category	Severity			p-value
		Severe/ severe	Very	Mild/ Moderate	
Fruits(days/ week)	< 3	20 (16.26)		103 (83.74)	0.496
	≥ 3	8 (21.05)		30 (78.95)	
	Total	28 (17.39)		133 (82.61)	
Milk (days/ week)	< 3	13 (11.3)		102 (88.7)	0.001
	≥ 3	15 (32.61)		31 (67.39)	
	Total	28 (17.39)		133 (82.61)	
Meat (days/ week)	< 3	25 (17.99)		114 (82.01)	0.768
	≥ 3	3 (13.64)		19 (86.36)	
	Total	28 (17.39)		133 (82.61)	

The severity of acne was more in cases who reported aggravation of acne with menstrual cycle (14.53%), aggravation with sun exposure (28%) and aggravation with stress (18.06%). Association of acne severity was statistically significant with sun exposure. However, the association of acne severity was not found to be significant statistically with effect of menstrual cycle and stress.

**Table 09:** Association of severity of acne with perceived effect of stressors

Character-istics	Category	Severity			p-value
		Yes	No	Total	
Effect of menses	No effect	1 (6.67)	14 (93.33)	15 (100)	0.692*
	Worsens	17 (14.53)	100 (85.47)	117 (100)	
	Total	18 (13.64)	114 (86.36)	132 (100)	
Effect of sun exposure	No effect	14 (12.61)	97 (87.39)	111 (100)	0.017
	Worsens	14 (28)	36 (72)	50 (100)	
	Total	28 (17.39)	133 (82.61)	161 (100)	



Effect of stress	No effect	15 (16.85)	74 (83.15)	89 (100)	0.841
	Worsens	13 (18.06)	59 (81.94)	72 (100)	
	Total	28 (17.39)	133 (82.61)	161 (100)	

\* Fischer Exact test applied

The effect in quality of life was more in severe and very severe grades of acne, as seen by moderate to severe impact in quality of life in 20% of cases with severe acne. However, the association of acne severity was not found to be significant statistically with quality of life.

**Table 10:** Association between severity of acne and effect in quality of life

Character-istics	Category	Severity			p-value
		Severe/ Very severe	Mild/ Moderate	Total	
Effect in quality of life	No/Mild	13 (15.12)	73 (84.88)	86 (100)	0.415
	Moderate/ Severe	15 (20)	60 (80)	75 (100)	
	Total	28 (17.39)	133 (82.61)	161 (100)	

Acne is a chronic inflammatory disease of pilosebaceous unit. It is one of the most common diseases in adolescence, seen in 80% of young people [21]. When the disease is present after the age of 25 years, it is called adult acne, which is comprised of 2 main subtypes: persistent acne and late onset acne. "Persistent" acne continues after adolescence, while "late onset" acne starts after the age of 25 years [22]. The majority of adult cases can be classified as persistent. Adult acne differs from that seen in adolescents, showing a predominance of papules and pustules, with absence of comedones. The severity of adult acne tends to vary from mild to moderate, comprising mainly inflammatory lesions [23]. The detrimental impact on quality of life in adults with acne has been recognized. The reasons for its increase in adulthood are unknown endogenous and exogenous factors, such as smoking and psychological stress, can combine and contribute to its clinical expression.

### 3.4 Body Mass Index

Body mass index ranged from 17 to 34 kg/m<sup>2</sup> with a mean of 24.39 ± 3.59 kg/m<sup>2</sup>. This is similar to previous study where mean body mass index (BMI) was 22.4 ± 3.9 kg/m<sup>2</sup> [24]. Similarly, in our study majority of the cases i.e. 64 (39.8%) were pre-obese, 32 (19.9%) were overweight, while 48 (29.8%) had normal BMI, and 5 (3.1%) cases were underweight. The proportion of severe/ very severe acne was higher among cases who were overweight (19.4 %) compared to cases with normal or low BMI (13.2%). However, the association of acne severity was not found to be significant statistically with body mass index.

### 3.5 Menstrual and Obstetric Details

In our study most of the cases 93 (57.8%) had menarche at the age of 12- 15 years with only 32(19.9%) patients having menarche below 12 years of age. (77%) had regular menstrual cycle and only (5%) had irregular cycle. Among the cases (54.7%) had previous history of pregnancy. The severity of acne was more

in cases with onset of menarche at age less than 12 years (15.63%). Severe acne was seen in 12.50% of cases with irregular cycle and 13.71% of cases with regular cycle. Similarly severe acne was seen more in cases without prior history of pregnancy (18.18%) compared to those with prior history of pregnancy (11.36%). Based on age of menarche, menstrual history and history of pregnancy, the association of acne severity was not found to be statistically significant. In previous similar study majority of female (81.0%) reported having a regular menstrual cycle. the majority of women reported menarche between the ages of 12 and 15 years, regardless of cycle regularity (63.7% with regular cycle, 58.8% irregular cycle); a smaller percentage reported early onset of menses [25]. Similarly in another study 22.3% of the women reported having irregular menstrual patterns and 24.2% reported using oral contraceptives. while 39.1% had history of previous pregnancy [26].

### 3.7 Quality of Life

In this study, the mean DLQI of the total 161 patients was observed to be  $5.329 \pm 4.286$ . The majority of the patients had some sensation of itching or stinging sensation (Mean  $\pm$  SD =  $1.286 \pm 0.80$ ). Similarly majority of patients felt more embarrassed or became self-conscious due to acne (Mean  $\pm$  SD =  $1.248 \pm 1.006$ ). Interference in clothing (Mean  $\pm$  SD =  $0.596 \pm 0.917$ ) and going for shopping (Mean  $\pm$  SD =  $1.242 \pm 1.071$ ) were also seen in cases due to acne. In relation to the aspects of life represented by the DLQI sections, Symptoms and feelings was most affected with a mean value  $2.534 \pm 1.66$ , followed by daily activities with a mean value of  $1.839 \pm 1.788$ . Adult acne had a moderate effect on quality of life of 57 (35.4%) cases, followed by no effect to small effect in 43 (26.7%) each and very large effect in 18 (11.2%) cases which is comparable with previous study done by Poli et al which reported impairment in quality of life was moderate and related to the self-reported severity of acne with no effect in 24%, very mild effect in 32%, mild effect in 27%, moderate and severe effect in 7% each respectively [27]. But in contrast, a study by Dreno et al. which assessed impact in quality of life using CADI showed marked impact on quality of life in 48.3% of subjects. The presence of scars was associated with an impact on quality of life that is suggestive of clinically significant impact in 53.2% of subjects [28]. No extremely large effect was observed in the quality of life of adult acne cases in our study.

## 4. CONCLUSIONS

This study was carried out to evaluate the clinico- epidemiological profile of adult acne and quality of their life being affected by it. One hundred and sixty-one (161) patients clinically diagnosed of adult acne attending the outpatient department of Dermatology and Venereology of B.P. Koirala Institute of Health Sciences, Dharan were enrolled in the study. A detailed history with respect to general socio-demographic information (age, sex, race, religion, education, occupation and marital status), information regarding personal habits (smoking and alcohol consumption) pregnancy, menstrual pattern, use of oral contraceptives, history of adolescence acne, history of acne in relatives, dietary patterns, relevant comorbidities and factors aggravating acne (sun exposure and stress) were recorded in preset proforma. Detail examination for site of acne, distribution, type of lesion and grading of acne was done. Association of acne and quality of life with clinical parameters of the study population was evaluated. Adult acne has shown to affect quality of life moderately, with greater effect among females. Severity of acne was found to have significant association with smoking, sun exposure and intake of milk products. This study being an observational study needs careful interpretation of the associated factors. The findings from this study warrants need for interventions targeting for behavioural and dietary modification to reduce the severity of acne, and its impact on quality of life. Further studies considering a control group could better evaluate the factors associated with acne among adult population. Similar studies in other parts of country could

better evaluate the clinical profile and factors associated with adult acne. Behavioural and dietary modification may be helpful regarding prevention of aggravation of acne to some extent.

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