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KAP STUDY

Knowledge Attitude and Practices among Medical Students Regarding Acne

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ABSTRACT

OBJECTIVE: To investigate knowledge, attitudes, practices, and quality of life of patients with acne.

METHODOLOGY: This observational cross sectional study was done from May to June 2018 at Dow University of Health Sciences, Karachi after obtaining an institution board review approval. After Verbal consent, data were collected using convenience sampling via validated questionnaire survey forms obtained from each participant. Analysis was performed employing Statistical Analysis for Social Science (SPSS) v. 23.0.

RESULTS: The study participants had a mean age of 21±2 years. Around three-fourths of the study population (n=315,76%) had a good knowledge score involving aggravating and relieving factors of acne. The age of the study population and their knowledge score did have a significant association between them (p=0.141) but there was a significant correlation between the sex (p=0.006) and a positive family history of acne (p=0.00) to the knowledge score. More than half of the study population (n=230, 55%) reported that they feel depressed when they have acne. Regarding attitude and practices, few participants used over-the-counter topical creams (n=78,19%) for prevention, and less than half (n=189,46%) sought acne treatment. Furthermore, the mean CADI score was 3.6±2.8.

CONCLUSION: Despite satisfactory knowledge, patients showed poor attitudes and practices. However, there exist various misconceptions regarding the disease among patients. Dermatologists should keep in mind the impairment in the quality of life of patients when constructing a management plan.

KEYWORDS: Knowledge, Attitude, Practices, Medical students, Acne

INTRODUCTION

Acne vulgaris is a skin disorder, characterized by chronic inflammation secondary to congestion involving the pilosebaceous unit with dead cells along with sebaceous exudate from the skin[1]. The prevalence of acne in the age group of 12-25-year-old is around 85% according to the most comprehensive epidemiological study data, making it one of the most frequent skin conditions encountered in the adolescent age group[2]. More specifically, in Pakistan, acne is commonly prevalent amongst teens and young adults between the ages of 13-35 years old and consists of around one-fifth of dermatologistvisit[3].

Studies have shown that there are numerous misconceptions, erroneous beliefs, and a lack of awareness regarding the etiological factors and treatment modalities of acne vulgaris[4]. Also, the impact of acne has been reported to possess various psychological and social morbidities which may complicate its treatment[5,6]. Therefore, there is a great need to assess the extent of the awareness of acne and the psychosocial impact it entails.

At present, multiple studies on acne vulgaris have been conducted on medical students of different populations[7,8]. However, to the best of our knowledge, only a few studies have been carried out on medical students from a South Asian population like Pakistan. Therefore, the primary objective of this research was to explore the knowledge, attitudes, and practices of undergraduate medical students with acne from a medical university in Karachi, south Pakistan. Furthermore, the secondary objective was to find associations between acne disability, which was assessed with Cardiff Acne Disability Index (CADI)[9], as well as characteristics of the study population.

METHODOLOGY

This observational cross-sectional study was performed from May to June 2018, at Dow University of Health Sciences, Karachi after obtaining an institution board review approval. (IRB-1005/DUHS/Approval/2018/74). Medical students studying under the Bachelor of Medicine, Bachelor of Surgery (MBBS) program who had self-reported acne were selected using convenient sampling. All non-MBBS students were excluded. The sample size was calculated using openepi.com (N=384)[10]. A total of 435 students were contacted to participate in the study, 15 (3.4%) of those declined. Of the 420 patients remaining, five (1.1%) left the interview incomplete. Hence, the ultimate sample population was 415, alongside a 95.4% response rate.

Based on other similar studies, a pre-coded questionnaire was employed after two consultant dermatologists assessed it. A pilot study of 30 questionnaires was conducted to check any difficulty in comprehension. Recall bias was eliminated by asking for recent and relevant information in the questionnaire. Imputation was avoided in the study.

The questionnaire had three parts. The initial section consisted of demographic data including age-group, sex, family history of acne, which was collected alongside knowledge regarding factors affecting acne. The second section inquired the attitude of patients regarding acne, that is, whether they take measures to treat or prevent acne, feelings of depression which may affect any relationships, and their expectation of the length of treatment. Treatment details and practices of patients were also noted. The last section comprised a validated questionnaire (consisting of a total of five questions) which was used to assess the quality of life. Answers to this questionnaire were scored as follows: '(a)' would signifying a score of 'three', '(b)' signifying a score of 'two', '(c)' signifying 'one' and '(d)' representing a score of 'zero' [11]. The total score was obtained by adding together the scores of all individual questions resulting in a possible maximum of 15 (if all five answers were '(a)') and a minimum of zero (if all answers were to be '(d)').

The degree of poor quality of life was related to high scores (that is, a total score of 12 would suggest an increased impairment in the quality of life as opposed to a total score of eight). Blank questions received a score of zero. Statistical Analysis for Social Science (SPSS) v. 23.0 was employed to analyze the data which was collected and stated regarding percentages and frequencies of the categorical answers. (SPSS, IBM Corporation, NY, USA). Chi-square test was used to check for associations between categorical variables and the Mann-Whitney U test was used for determining relationships between age and knowledge. A P value of less than 0.05 was considered significant.

RESULTS

Greater than two-thirds of the study population were females (n=287,69%) and the average age was 21±2 years. Around three-fourths (n=309, 74%) of the sample population had a negative family history of acne.

Table I illustrates knowledge of study subjects about aggravating factors of acne. The majority of the participants had correct knowledge regarding the common factors, however, a large number of acne patients also incorrectly answered that spicy/oily food consumption (n=375,90%), consumption of chocolates (n=322,78%), and reduced intake of water (n=343,83%) also provoked acne.

TABLE I: RESPONSES OF PATIENTS WITH ACNE REGARDING AGGRAVATING THE DISEASE

Factors	Aggravates	Improves	No Impact
Stress	382	5	28
Spicy/oily food consumption*	375	7	33
Chocolates*	322	3	90
Reduced intake of water*	343	7	65
Poor skin hygiene/washing	401	10	4
Repeated squeezing/touching/rubbing pimples	396	5	14
Oily skin	404	4	7
Cosmetics	362	12	41
Premenstrual flare	363	4	48
Hormonal disturbance	397	9	9
Genetic factors	367	6	42

*incorrect response

Each correct response by a study subject was regarded as a single point for the knowledge score, with a total score of less than eight characterized as a poor score while a good score was defined as greater than or equal to eight. Table II shows variables affecting knowledge score of factors exacerbating acne within the study population and attitudes towards this skin disease. The age of study samples and knowledge score displayed no significant association between them and (p=0.141) but a significant correlation between the sex (p=0.006) and a history of acne in the family (p=0.00) to knowledge score was noted. Around half of the study population reported that feel depressed when they have acne (n=230, 55%), and it also affects their self-image or relationship with others (n=202,49%). A third of the patients (n=136,33%) reported that they avoid touching or picking at the problem areas to prevent acne. When asked about the expected time of complete treatment of acne lasts, the most common response was two to six months (n=168,40%).

TABLE II: FACTORS AFFECTING KNOWLEDGE SCORES AND ATTITUDE TOWARDS ACNE

Knowledge Variables	Poor (n)	%	Good (n)	%	Total (n)	%	*P-value
Age (in years)							
18-19	29	25	87	75	116	28	0.141
20-21	36	25	106	75	142	34	
22-23	30	37	52	63	82	20	
24-25	5	7	70	93	75	18	
Sex							
Male	42	33	86	67	128	31	0.006
Female	58	20	229	80	287	69	
Family History							
Yes	11	10	95	90	106	26	0.000
No	89	29	220	71	309	74	
Total	100	24	315	76	415	100	
Attitude Variables							
Does getting acne make you feel depressed?							
No	-	-	-	-	185	45	-
Yes	-	-	-	-	230	55	
Total	-	-	-	-	415	100	
Does acne affect your self-image or relationship with others?							
No	-	-	-	-	213	51	-
Yes	-	-	-	-	202	49	
Total	-	-	-	-	415	100	
What do you do to prevent acne?							
Avoid touching or picking at the problem areas	-	-	-	-	136	33	-
Nothing	-	-	-	-	47	11	
Use an over-the-counter acne cream or gel	-	-	-	-	78	19	
Use non-comedogenic makeup	-	-	-	-	44	11	
Wash acne-prone areas only twice a day	-	-	-	-	110	27	
Total	-	-	-	-	415	100	
How long do you expect the acne treatment to last?							
1 year	-	-	-	-	62	15	-
2 - 6 month	-	-	-	-	168	40	
in curable	-	-	-	-	35	8	
Within 1 month	-	-	-	-	150	36	
Total	-	-	-	-	415	100	

*p value <0.05 was significant

Table III illustrates the practices of patients with acne. A large majority of the patients did not get treatment for their acne when they last had it (n=226, 54%). However, approximately half of the patients (n= 192, 46%) said they visit once or twice if they consult a physician/ dermatologist. Only a third of the patients (n=265, 64%) used topical medication creams. Antibiotics were used by less than one-tenth of the population (n=27, 7%). From all the treatments Retinoid was the least popular (n=5,1%). The data also suggests people were more receptive to topical medications than to oral pills/hormones (n=80, 19%).

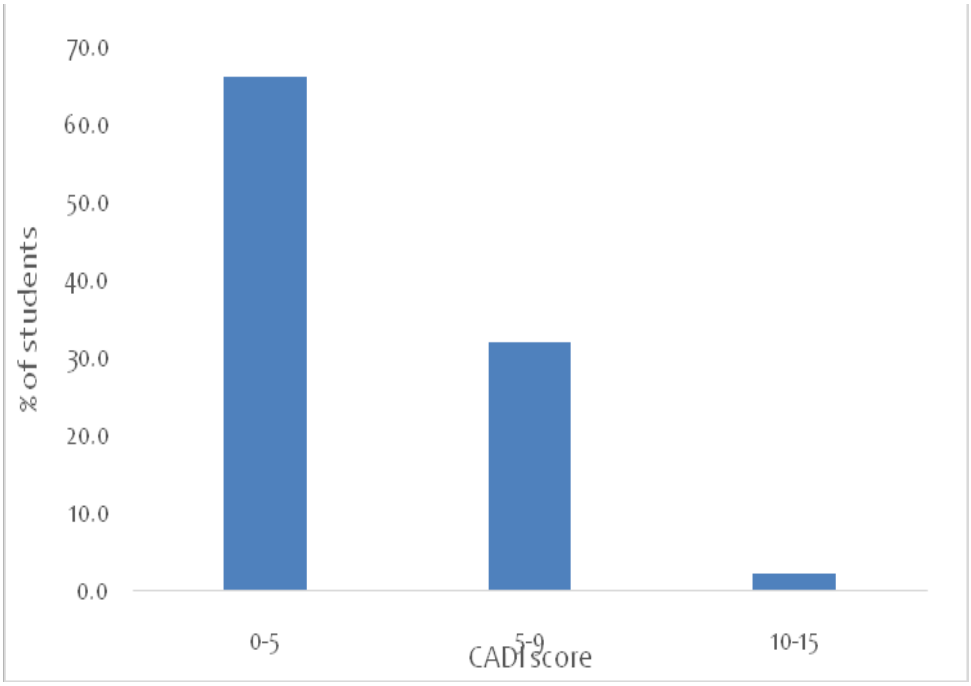
TABLE III: PRACTICE AND MANAGEMENT STRATEGIES OF PATIENTS WITH ACNE VULGARIS.
BP: BENZYL PEROXIDE

Practice Variables	No.	%
Did you get treatment last time you got acne?		
No	226	54
Yes	189	46
Consult Dermatologist		
No	270	65
Yes	145	35
Consult general physician		
No	396	95
Yes	19	5
Used over the counter medication		
No	390	94
Yes	25	6
Used home remedies		
No	380	92
Yes	35	8
Aloe Vera		
No	368	89
Yes	47	11
When you consult a physician/ dermatologist		
go for regular follow up	144	35
No visit	79	19
Visit once or twice	192	46
Use any topical medication creams		
No	265	64
Yes	150	36
Betnovate		
No	375	90
Yes	40	10
Antibiotics		
No	388	93
Yes	27	7

Benzyl peroxide		
No	353	85
Yes	62	15
Retinoid		
No	410	99
Yes	5	1
A mixture of Benzyl Peroxide and other antibiotics		
No	401	97
Yes	14	3
Oral Pills Hormones		
Antibiotics	56	13
No	335	81
Retinoid	24	6

The distribution of CADI scores is shown in Figure I. The CADI scores had a mean of 3.6±2.8 and ranged from zero to 13. No participant in our study had a score higher than 13, showing some lacking knowledge regarding this common entity.

FIGURE I: CARDIFF ACNE DISABILITY INDEX (CADI) SCORES OF PATIENTS WITH ACNE



DISCUSSION

Assessment of a patient's knowledge of acne is crucial and aids physicians not only in management but also improves treatment adherence. Increased androgenic secretion as a result of chronic stress may lead to the development of acne in women. In our study, 92% (382) of the students knew that aggravation of acne might be linked to stress, which is better compared to other studies where 51% - 65% of patients, believed that acne is related to stress[11,12]. Though acne is not related to a diet of any sort, many participants in this study had the misconception that consuming spicy/oily food (n=375,90%) and chocolates (n=392,76%) can cause acne. Our study's findings were consistent with a similar study conducted by Hulmani, et al. in which 63% and 70% of participants believed that chocolates/spicy foods and oily foods caused acne, respectively[12].

Moreover, 97% (n=401) believed poor skin hygiene to be related to acne; our result fared better in comparison to a study done on Saudi adolescents in which 84% of individuals considered acne as a causal exacerbating factor. Less than half of participants within the same study opined that washing did not alleviate acne[4]. Almost all respondents knew that oily skin is prone to acne. Much like an observation made by Ganga, et al., where 96% believed that oily skin is an aggravating factor for acne[13]. In our study, 95% (n=396) knew that acne lesions were worsened by squeezing, picking, or rubbing. The result is better than the studies conducted on Saudi and Indian populations, where 82% and 83% knew that acne lesions worsen by squeezing, picking, or rubbing, respectively[4,12]. Conversely, Ganga, et al. observed only 37% understood that acne is exacerbated by these actions[13]. 87% (n=362) of our sample population identified cosmetic products as an aggravating factor, unlike in studies conducted by, Hulmani, et al. and Al-Natour, et al., where only 41% and 53% of their study population, respectively believed that the use of cosmetic products aggravated acne[4,12]. Conversely, 32% of the respondents in a study by Kaushik, et al., incorrectly believed that acne should be treated with cosmetics[14].

Nearly three-fourths of female patients with acne suffer from premenstrual flares[18]. Many respondents (n=363, 87%) correctly associated aggravation of acne with menstruation. Conversely, a lower percentage has been reported in other studies[8,12]. Genetics plays an important role in the pathogenesis of acne. In the current study, the role of genetics was known to be 88% (n=367). The result is better than studies by Tallab et al. and Savo et al., who reported a very low proportion (18% and 6% respectively) population relating acne to genetic factors [11,15].

Regarding the knowledge score, 76% (315) had good knowledge regarding factors associated with acne, which is in line with a study done on an Indian population[12]. Females and patients with a positive family history of acne had a significantly higher score ($p < 0.05$). Our study shows a knowledge score comparable to that of other studies, notably one by Ganga et al. (72%)[13].

ATTITUDE AND PRACTICE TOWARDS ACNE AND EFFECT OF ACNE ON THE QUALITY OF LIFE:

Regarding self-care practices to prevent acne, many patients answered that they avoid touching or picking at the problem areas (n=136, 33%), fewer stated that they wash their face only twice daily (n=110,27%) and even fewer stated they would use an over-the-counter acne cream or gel (n=78,19%). This reflected a poor attitude compared to other study findings where frequent face cleansing was practiced improving acne[16,17].

A total of 55% (n=230) of subjects stated they felt depressed when they got acne. Interestingly, our result is better compared to a study by Hulmani et al. where 81% of patients felt depressed[12].

The overall mean score of the CADI in our study for all the patients was 3.6, which is the same as in a study done on Serbian patients where the total CADI score was 3.6[18]. A CADI score of ≥5

was achieved by 34% (n=141) of our sample population compared to a study carried out by Peric, et al. in which 19% of the participants had equivalent scores[19]. Hence, clinicians should take into consideration the impact of acne on mental and emotional health when devising a management plan.

This study is not without limitations. Firstly, convenience sampling was employed which may introduce some degree of selection bias. Secondly, the male-to-female ratio was very low due to a greater percentage of females enrolled in the college, which may have played a role in the association between gender and knowledge score of our study sample. Also, the study was conducted in only one medical school in Karachi and so may not be the most accurate representation of all medical students. Furthermore, positive acne status was only measured as self-reported acne and was not diagnosed by a dermatologist. Future studies should explore the relationship between the severity of acne and knowledge about the disease, which our study lacked.

CONCLUSION

Patients with acne had satisfactory knowledge, with a few misconceptions, regarding the disease, but showed poor attitudes and practices regarding its management. Physicians should keep in mind that acne affects the quality of life of patients when constructing a management plan.

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AUTHOR CONTRIBUTIONS

Mohanlal D: Concept & design, drafting of article, statistical expertise
Mansoor M: Analysis and interpretation of the data, statistical expertise
Amin E: Collection and assembly of data
Memon MM: Collection and assembly of data
Khan MS: Collection and assembly of data
Talat H: Drafting of the article, critical revision of the article
Mirza R: Critical revision of the article
Wahid Z: Critical revision of the article

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