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KNOWLEDGE, PREVALENCE AND LIFESTYLE PRACTICES OF MEDICAL STUDENTS REGARDING ACNE VULGARIS

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Abstract:
Objectives: *To assess the prevalence, level of knowledge and lifestyle association of acne vulgaris among under graduate medical students of a public sector institute of Pakistan and to evaluate the level of knowledge and diff erent lifestyle factors with gender and all the years of study.* ***Material and methods:*** *In this cross-sectional study carried out among undergraduate medical students, the data was collected using stratified random sampling tec hnique. A paper-based self-made English questionnaire was distributed to the participants by the researchers. Chi square test was used to compare differences of different categorical variables across gender and academic years.* ***Results:*** *A total of 170 medical students were recruited for the study according to the calculated sample size. More than half of the students (n:110; 64.7%) had acne vulgaris out of which 75 (68%) were females. Year s of study were significantly related to knowledge. Gender was significantly related to lifestyle where females ha d acne lesions appearing more at the time of stress. However, females had less disturbed sleep as compared to m ales.* ***Conclusions:*** *Acne is a prevalent problem in the medical community with females being most affected. Help seeking attitude was lacking and knowledge was adequate with some misconceptions. Hormones and stress were the most perceived causal factors. However, stress was the only significantly associated lifestyle factor.*

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INTRODUCTION:

Acne vulgaris represents the most prevalent skin disease of the world affecting about 9.4% of the world's population during a specific period of their life, of which 80 % present with acne during 11 to 30 years of age suggesting a hormonal influence.[1] It is an epidemic inflammatory disease related to the human pilosebaceous glands with follicular hyper-keratinization and colonization by Propionibacterium acnes.[1] Clinically, acne is characterized by presence of open and closed comedone, papules, pustules, nodules, cysts and occasionally scars.[2] Despite a high prevalence rate across the world, insufficient knowledge exists among medical students, especially before the commencement of their clinical learning years regarding effective control and the possible treatment options of acne vulgaris. Many attribute stress and hormonal changes as the only causes .[3] Hereditary factors alone do not explain the high prevalence rates of acne in many parts of the world. With respect to lifestyle, a number of risk factors for acne have been proposed, including genetic, hormonal and lifestyle factors such as diet and smoking. There is evidence of an association between a Western diet, in particular high glycemic index foods, and acne that contribute to the clinical features of acne in terms of appearance and severity of the various lesions associated with it. [4][5]

A study done in KSA 2017 showed that Acne vulgaris prevalence was about 55.5 % among medical students with no significant gender predilection. [3] Another study done in India in 2017, estimated an acne prevalence of 89% among medical students. [6] However, a study conducted in Pakistan in 2019 found that 69.9% of its student population suffered from acne.[7] An Indian study testing the knowledge about associative factors showed that 82% believed it to be related to diet while 30% considered the condition to be hereditary [6] while a Norwegian study further explained the diet correlation by showing that high intakes of full-fat dairy products caused moderate to severe acne.[8][9] Proper treatment of acne could take a long time but many students believed it could be treated from the first or after few visits to the doctor. [10] Knowledge about lifestyle associations and ameliorating factors was variable.

MATERIAL AND METHODS:

This was a cross-sectional study carried out among undergraduate first to final year medical students of a public institute in June 2019. A stratified random sampling technique was used to collect data from 170 students. In Pakistan, the MBBS course is divided into five years and education is divided into two phases. The preclinical years include the 1st and 2nd year while the clinical students include 3rd, 4th, and final-year. MBBS undergraduate students from all years of study were included and those students who were not willing to participate as well as those who provided incomplete data were excluded from the study.

A paper-based self-made English questionnaire was distributed to the participants which is shown in Appendix. This questionnaire was divided into four sections: Demographic details (5 questions), Frequency and Attitude details (5 questions), Knowledge (7 questions) and Lifestyle Association (9 questions). The participants who did not suffer from acne vulgaris at the present time as well as in the past five years were asked to fill Demographic details and Knowledge section only.

Data were analyzed using IBM Statistical Package for Social Sciences (SPSS), version 26 (IBM Corp., Armonk, NY, USA). Data were tabulated in the form of frequencies and percentages. Cronbach alpha value was calculated to check the reliability of the self-made questionnaire which came out to be 0.7. Chi square test was used to compare differences of different categorical variables across gender and academic year. It was observed that there was a statistically significant difference with p value < 0.05 with a confidence level of 95%. The study was ethically approved from the institutional research forum of Rawalpindi Medical University.

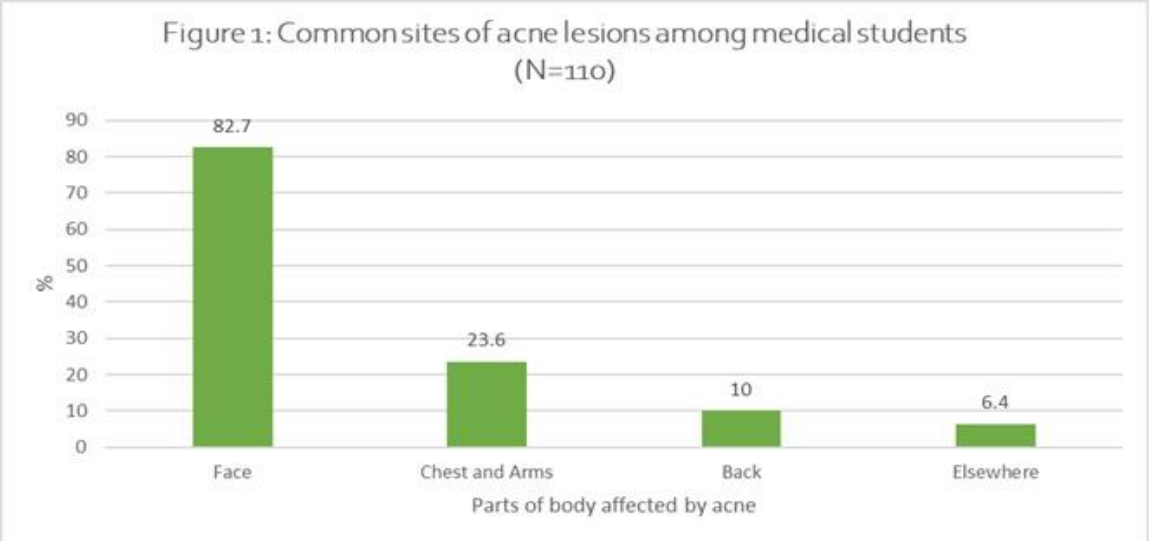
RESULTS:

A total of 170 medical students were recruited for the study according to the calculated sample size. Sociodemographic characteristics are shown in [table 1].

Table 1
Sociodemographic details of students (N=170)

Variable	N%
Gender	
Male	50 (29.4)
Female	**120 (70.6)**
Age (year)	
18-21	**105 (61.8)**
22-25	65 (38.2)
Social Status	
Single	**169 (99.4)**
Married	1 (0.6)
Residence	
Urban	**141 (82.9)**
Rural	29 (17.1)
Year of Study	
1st year MBBS	34 (25)
2nd Year MBBS	34 (25)
3rd year MBBS	34 (25)
4th year MBBS	34 (25)
Final year MBBS	34 (25)

More than half of the students (n:110; 64.7%) had acne vulgaris out of which 75 (68%) were females. Common sites of acne lesions found are shown in [figure 1].



Less than half of them (n:52; 47.3%) had consulted the physician for their problem. Fifty-four students (49.1%) had taken medications for acne and the medications worked only for 42 (38.2%) students. Responses regarding most prone skin type is shown in [table 2].

Table 2
Skin type most prone to acne according to medical students (N=170)

Prone skin	N%
dry	12 (7.1)
normal	7 (4)
oily	**134 (78.8)**
any skin	17 (10)

Years of study were significantly related to knowledge and are shown in [table 3]. Students of pre-clinical years gave a more negative response for genes, personal hygiene, un-sanitary living conditions and chocolates, coffee as the causes of acne as compared to the clinical years. Most of the students of clinical study years believed hormonal change, stress and diet to cause acne.

Table 3
Cross tabulation of factors believed by students to cause acne across class (N=170)

Causes	Response	1st year (n=34)	2nd year (n=34)	3rd year (n=34)	4th year (n=34)	Final year (n=34)	Total (N=170) %	p value*
hormonal change	**yes**	19	31	30	28	**32**	**140 (82.4)**	**<0.001**
	no	15	3	4	6	2	30 (17.6)	
age	**yes**	10	11	16	13	18	68 (40)	0.24
	no	**24**	23	18	21	16	**102 (60)**	
genes	**yes**	6	9	7	13	19	54 (31.8)	**0.004**
	no	**28**	25	27	21	15	**116 (68.2)**	
stress	**yes**	15	20	20	**28**	27	**110 (64.7)**	**0.004**
	no	19	14	14	6	7	60 (35.3)	
diet	**yes**	14	21	23	**28**	22	**108 (65.3)**	**0.012**
	no	20	13	11	6	12	62 (36.5)	
personal hygiene	**yes**	9	12	13	20	21	75 (41)	**0.01**
	no	**25**	22	21	14	13	**95 (55.9)**	
unsanitary living conditions	**yes**	5	8	6	16	10	45 (26.5)	**0.02**
	no	**29**	26	28	18	24	**125 (73.5)**	
infections	**yes**	9	8	11	15	17	60 (35.3)	0.1
	no	25	**26**	23	19	17	**110 (64.7)**	
medications	**yes**	7	5	4	9	11	36 (21.2)	0.2
	no	27	29	**30**	25	23	**134 (78.8)**	
disturbed sleep	**yes**	5	11	3	11	7	37 (21.9)	0.07
	no	28	23	**31**	23	27	**132 (78.1)**	
chocolates, coffee	**yes**	3	9	7	13	14	46 (27.1)	**0.02**
	no	**31**	25	27	21	20	**124 (72.9)**	
obesity	**yes**	1	6s	7	9	6	29 (17.1)	0.12
	no	**33**	28	27	25	28	**141 (82.9)**	

***Chi square test**

DISCUSSION:

The results of the study indicated a high prevalence of acne in our setting which is in association with a Malaysian study that reported a prevalence of 68.1%.[12] and Portugal (62.2%).[13] However, studies done in Saudi Arabia, some European countries including France, Egypt and China reported much lower prevalence rates. [5],[14],[15] The difference in the results could be attributed to the disease being multifactorial [16] and being affected by lifestyle, gender, age, genetics and other environmental factors. Of the students affected, more than half (68%) were females, similar to the female predominance (68%) found in Portuguese medical

students by G Gonçalves [13] and in Egypt by Al-Ham. [14] In contrast,14.4% of female medical students were affected by acne according to another study in Pakistan.[11] The Malaysian study revealed gender association to be statistically insignificant [12], while a study in Nigeria showed more male population suffering from acne.[17]

With respect to the help seeking behaviors of the patients in our study group, only less than half (47.3%) had consulted a physician. These results are shared by a community study conducted by Smithard A.[18] Reasons could include embarrassment, acne not being severe enough, feeling that doctor w.as unapproachable or busy [19] whereas a Pakistani study showed that 80% of the students' preferred medical advice from a dermatologist [20], which reflected an increase in medical students' awareness in the recent times about acne being a treatable medical condition.

Years of study were positively associated with knowledge and causative factors. Shiva Swamy et al. also reported a similar relation with an increase in mean scores of up to 16.5% [21] possibly due to an increased clinical exposure and learning during ward rotations as the academic years advances. The most common causative factors were believed to be hormonal changes (82%) and stress (64.7%) with a $p<0.001$ and $p=0.004$ respectively. Al Robaee also noted in his study that 56% of students believed hormones and stress to be the common associated factor.[22]

CONCLUSION:

Acne is a prevalent problem in the medical community with females being most affected. Help seeking attitude was lacking and knowledge was adequate with some misconceptions. Hormones and stress were the most perceived causal factors. However, stress was the only significantly associated lifestyle factor.

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