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ASSESSMENT OF THE FREQUENCY OF ACNE AND KNOWLEDGE, ATTITUDE AND PRACTICES FOR SELF MEDICATION FOR ACNE AMONG MEDICAL STUDENTS IN LAHORE

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Abstract:

Background:

Acne is a very common condition, especially among adolescents. It can lead to self-doubt and a need to get rid of the condition as quickly as possible. This leads to excessive self-medication. The purpose of our study was to evaluate the trends of self-medication among medical students in Lahore. Very few studies about this had been conducted in Pakistan before. Therefore, we found it absolutely necessary to carry out a research on this topic.

Objectives: The objectives of this research were:

- To determine the frequency of acne and self-medication for acne among medical students in Lahore and to determine whether the frequency of self-medication was affected by year of study, gender, residency and severity of the problem.
- To determine the knowledge, attitude and various practices adopted by students who self-medicate for acne.

Methodology:

This Cross-Sectional Study was conducted for a period of six months (3rd February 2020 – 15th July 2020). Stratified random sampling was done and a Google form based questionnaire was administered to students of all five years after taking their consent. The technique of stratified random sampling was used to distribute the questionnaire. The questionnaire comprised five sections. The first section consisted of demographic information (name of institute, age, sex, year of study and residence), and whether the student had acne or not. The second section focused on the severity of acne and whether they self-medicated or not. The third section comprised of questions related to the practices adopted by students including the medicines they were using, the sources of information and the reasons of self-medication. The fourth section evaluated the knowledge of students regarding the medicines they were using while the last section focused on the attitudes that the students adopted following self-medication. SPSS Version 25 was used to analyze the data and chi square test with p value <0.05 was applied to determine the statistical association between different variables.

Results:
450 students responded to the questionnaire. Out of 450 students, 206 had acne (45.8%). Self-medication was observed in 98 (47.6%) students. The most common reason for self-medication was mild nature of the disease (n=58, 59.2%). Among the sources for self-medication, TV/newspapers/social media were found to be the leading category (n=38, 38.8%). Out of 206 students who practiced self-medication, 57 used allopathic medication (58.2%). Clindamycin (n=35, 55.6%) and Isotretinoin (n=22, 34.9%) were the most commonly used allopathic drugs. Out of the 98 students practicing self-medication, 72 knew about the dose of the medicine (73.4%), 62 knew about the mechanism of action (63.2%), 59 knew about the adverse effects (60.2%), 72 knew about the precautions for use (73.4%), 44 knew about the complications (44.9%) and 45 knew about the contraindications (45.9%) of the drugs. 75 students believed that self-medication was a part of self-care (76.5%). 42 students would advise self-medication to their friends/family (42.8%). 90 students believed that a dermatologist's consultation was important for acne (91.8%). 86 students said that the medication they used was useful (87.8%). 78 students said that they would continue to self-medicate in the future (79.6%). Out of the four factors we were analyzing (year of study, age, gender and residency), only residency was found to be statistically associated with self-medication.
Conclusions:
Acne was very common in the students evaluated as was the trend of self-medication. Mildness of disease was the major factor leading to self-medication. Social media/TV was the main source of information. Self-medication was higher in boarders than in day-scholars. Most students said that they would continue to self-medicate in the future despite some of them being unaware of the complications and contraindications of the medicines used. Self-medication should only be practiced with a proper knowledge of the dose, adverse effects, precautions, complications and contraindications of the medication being used. Measures should be taken to implement this.

Keywords: Acne, Self-medication.

INTRODUCTION:

Acne is the chronic localized inflammation of the skin as a consequence of over activity of oil glands located at the base of specialized hair follicles which get stimulated by androgens produced in both males and females around puberty. Hence, it begins earlier in females but it is more severe in affected males. Speaking in non-gender biased terms, the most prone age group is between 12 and 24 years [1]. The inflammation occurs when openings of follicles get clogged by oil and cells around them followed by bacterial action. It is clinically marked by oily skin, pustules, papules, cysts, whiteheads, blackheads and scarring [2]. Due to Asians having a generally warm climate, their skin naturally produces more oil which makes them prone to acne [3].

"Pharmacy Times" has recorded acne to be the most common skin disorder [4]. Acne can occur anywhere on the body however, it most commonly affects parts with high concentration of sebaceous glands which include face, chest, upper back, shoulders and the neck [5].

According to WHO's definition, "self-medication is the use of drugs to treat self-diagnosed disorders or symptoms, or the intermittent or continued use of a prescribed drug for chronic or recurrent diseases or symptoms" [6]. Self-medication comes with many potential risk factors that include incorrect self-diagnosis, delay in seeking medical advice when needed, adverse reactions of drugs, dangerous drug interactions, incorrect dosage and incorrect choice of therapy [7]. According to a research done on 440 medical students in coastal South India, the prevalence of generalized self-medication among medical students was 78.6% [8]. The treatment regimen of acne depends upon the age and gender of the patient and the type and severity of the disease [9].

Various etiological factors contribute to acne among which stress is noteworthy. It is evident that stress can trigger breakouts and make existing acne issues worse [10]. Studies have shown that a significant number of medical students suffer from anxiety and stress [11].

All the facts stated above, particularly the relation of stress and abuse of knowledge with self-medication called for a research to be conducted on the undergraduate medical students of all the tertiary care teaching hospitals of Lahore, Pakistan. The purpose of this research was to collect information about the prevalence of acne and the perceptive knowledge, attitude and practice patterns of self-medication among the students while covering the underlying resources, reasons and beliefs as well. This research was conducted in Lahore because 54% of all the medical colleges of Pakistan are in Punjab while 19.5% of them are in Lahore alone [12].

We tactfully designed our study to understand the foundation of self-medication and correlate it with various other factors such as the relation between the medications most commonly used with their easy availability over-the-counter. We studied the views of the acne affected individuals about dermatologist consultations and follow-ups as well as their opinions about self-medication being a part of basic self-care. In order to grab this problem by its root and raise awareness about it we need to fully understand it first.

OBJECTIVES:

The objectives of this research were:

- To determine the frequency of acne and self-medication for acne among medical students in Lahore and to determine whether the frequency of self-medication was affected by year of study, gender, residency and severity of the problem.
- To determine the knowledge, attitude and various practices adopted by students who self-medicate for acne.

MATERIALS AND METHODOLOGY:

Study Design:

- Cross-Sectional Study

Study Settings:

The study was conducted among the medical students of Lahore, from colleges including:

- Allama Iqbal Medical College
- King Edward Medical University
- Services Institute of Medical Sciences
- Fatima Jinnah Medical University
- Akhtar Saeed Medical College
- Ameerudin Medical College
- Shaikh Khalifa Bin Zayed Al-Nahyan Medical and Dental College Lahore
- Lahore Medical and Dental College
- University College of Medicine and Dentristy
- Amna Inayat Medical College
- Shareef Medical and Dental College
- Fatima Memorial College of Medicine
- Rashid Latif Medical College

Duration of Study:

This study was conducted for a period of six months (3rd February 2020 - 15th July 2020)

Sample Size:

Sample size of 450 medical students was taken to fulfill the objectives of the study. Sample size was calculated using Open Epi Software at 95% confidence level, taking frequency of anticipated factor (self-medication among acne patients) as 51%. The calculated sample size was 370. We recruited 450 medical students to attain a confidence level of 97%.

Sampling Technique:
Stratified random sampling was done.

Sample Selection:
The population was divided into 5 strata according to their year of study (MBBS YEAR)

Inclusion criteria:
Medical students of either gender studying in different medical colleges of Lahore having filled the online Google form regardless of whether they had acne or not.

Exclusion criteria:
Students who, filled the form with inappropriate answers, were from disciplines other than medicine or were medical students but were not studying in Lahore.

Variables:
Independent Variables:
- Gender
- Year of Study
- Age
- Severity of Acne
- Residency

Dependent Variable:
Usage of Self-Medication for Acne

Data Collection Procedure:
A self-developed questionnaire in the form of a Google form was administered to 450 medical students of Lahore. Informed consent was taken after explaining the form requirements and students were asked to fill the questionnaire honestly. Confidentiality was ensured. Approval from the Department of Community Medicine, Allama Iqbal Medical College, was taken.

Data Analysis:
All the questionnaires were analyzed using the auto generated response graphs and tables provided by Google forms. SPSS version 25 was also used to apply chi square test to demonstrate the association between different variables and to cross check the results. The final results were demonstrated in the form of figures and tables.

Results and Findings:
A total of 450 medical students responded to the questionnaire. 66 responders (14%) were from first year, 51 (11.3%) were from second year, 68 (15.1%) were from third year, 213 (47.3%) were from fourth year and 55 (12.2%) were from final year.
Out of 450 students, 206 were found to be suffering from acne. (Table 1)

	Frequency	Percent	Valid Percent	Cumulative Percent
1st Year	32	15.5	15.5	15.5
2nd Year	30	14.6	14.6	30.1
3rd Year	32	15.5	15.5	45.6
4th Year	89	43.2	43.2	88.8
Final Year	23	11.2	11.2	100.0
Total	206	100.0	100.0	

Table 1: "Year of Study" of medical students suffering from acne

Mean age of students suffering from acne was 21.26 years. Standard deviation was 1.52. (Table 2)

	Frequency	Percent	Valid Percent	Cumulative Percent
17	3	1.5	1.5	1.5
18	4	1.9	1.9	3.4
19	20	9.7	9.7	13.1
20	35	17.0	17.0	30.1
21	41	19.9	19.9	50.0
22	62	30.1	30.1	80.1
23	35	17.0	17.0	97.1
24	4	1.9	1.9	99.0
25	1	0.5	0.5	99.5
27	1	0.5	0.5	100.0
Total	206	100.0	100.0	

Table 2: "Age" of medical students suffering from acne

Out of 450 responders, 174 were male (38.7%) and 276 were female (61.3%). (Table 3)

Table 3: "Gender" of medical students suffering from acne

	Frequency	Percent	Valid Percent	Cumulative Percent
Female	143	69.4	69.4	69.4
Male	63	30.6	30.6	100.0
Total	206	100.0	100.0	

Out of 450 responders, 274 (60.9%) were hostelites and 176 (39.1%) were day-scholars. (Table 4)

Table 4: "Residency" of medical students suffering from acne

	Frequency	Percent	Valid Percent	Cumulative Percent
Hostelite	136	66.0	66.0	66.0
Day-scholar	70	34.0	34.0	100.0
Total	206	100.0	100.0	

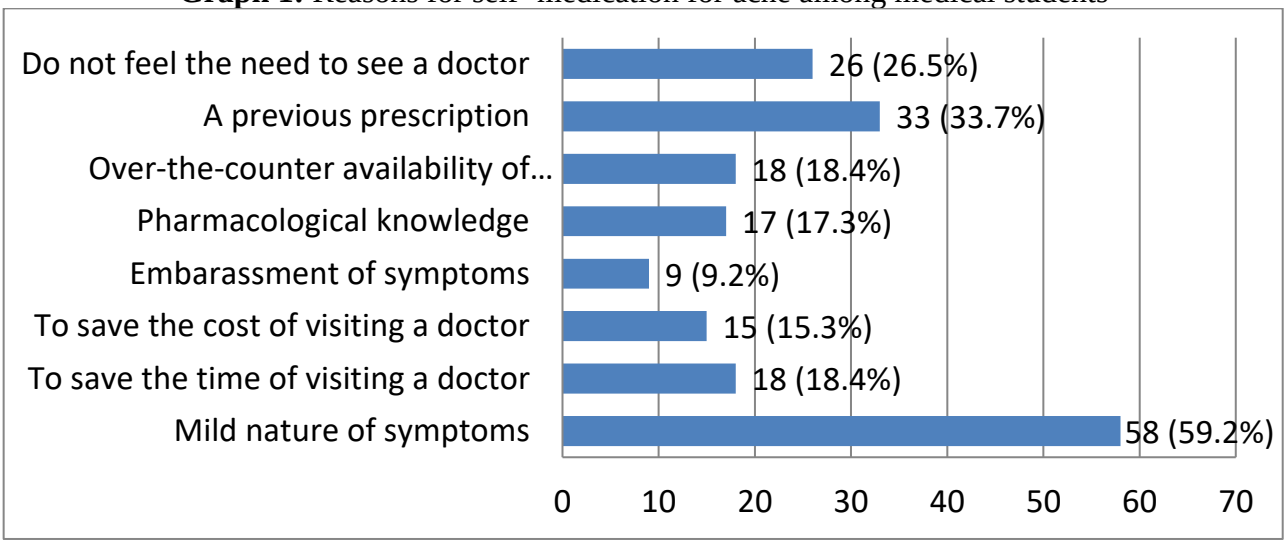
Prevalence of acne was 45.8% (n=206). 122 students were having mild acne, 77 had moderate and 7 had severe acne.
Self-medication was observed in 98 (47.6%) students. (Table 5)

Table 5: Self-medication for acne among medical students

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	99	48.1	48.1	48.1
No	107	51.9	51.9	100.0
Total	206	100.0	100.0	

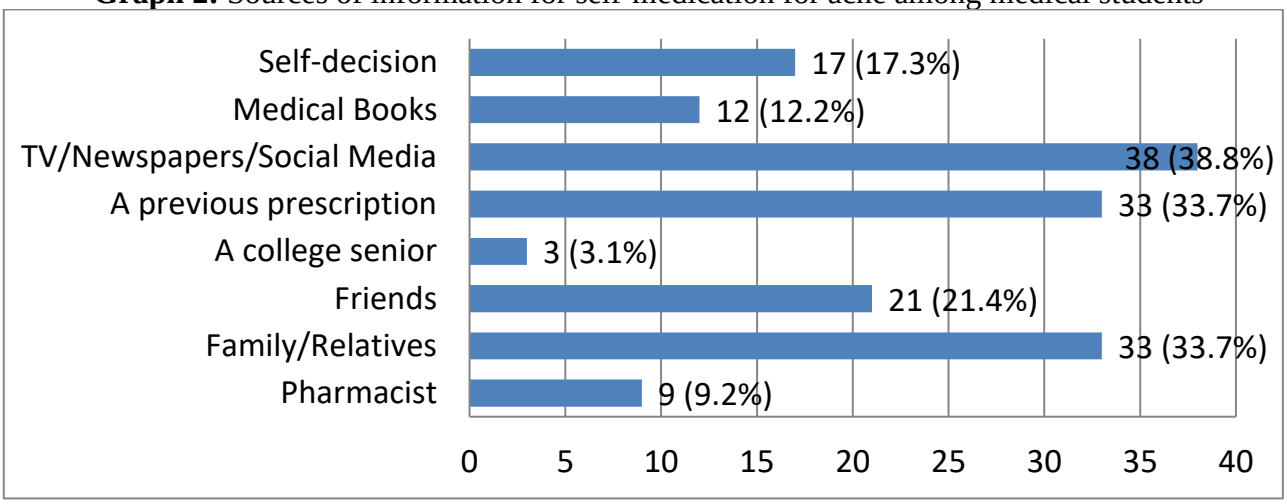
PRACTICES:
The most common reason for self-medication was mild nature of the disease (n=58, 59.2%), followed by a previous prescription (n=33, 33.7%). (Graph 1)

Graph 1: Reasons for self- medication for acne among medical students



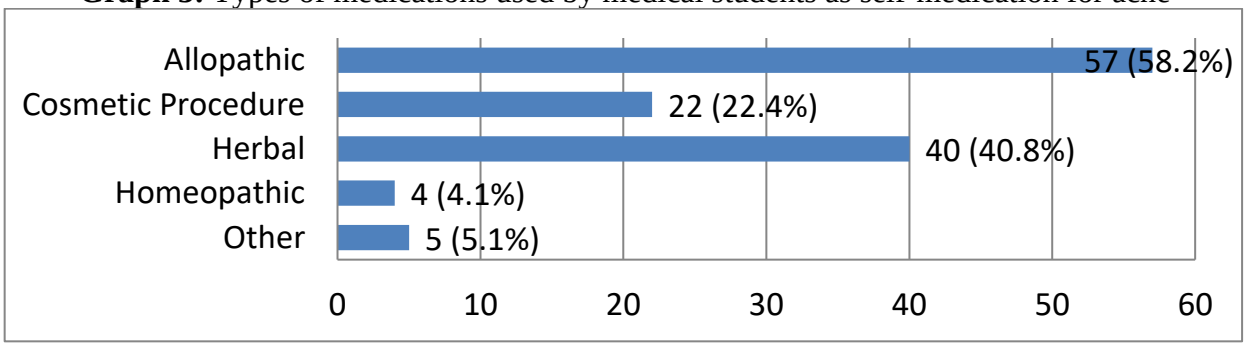
Among the sources for self-medication, TV/newspapers/social media were found to be the leading category (n=38, 38.8%), followed by acquaintances and previous prescription (both 33.7%). (Graph 2)

Graph 2: Sources of information for self-medication for acne among medical students



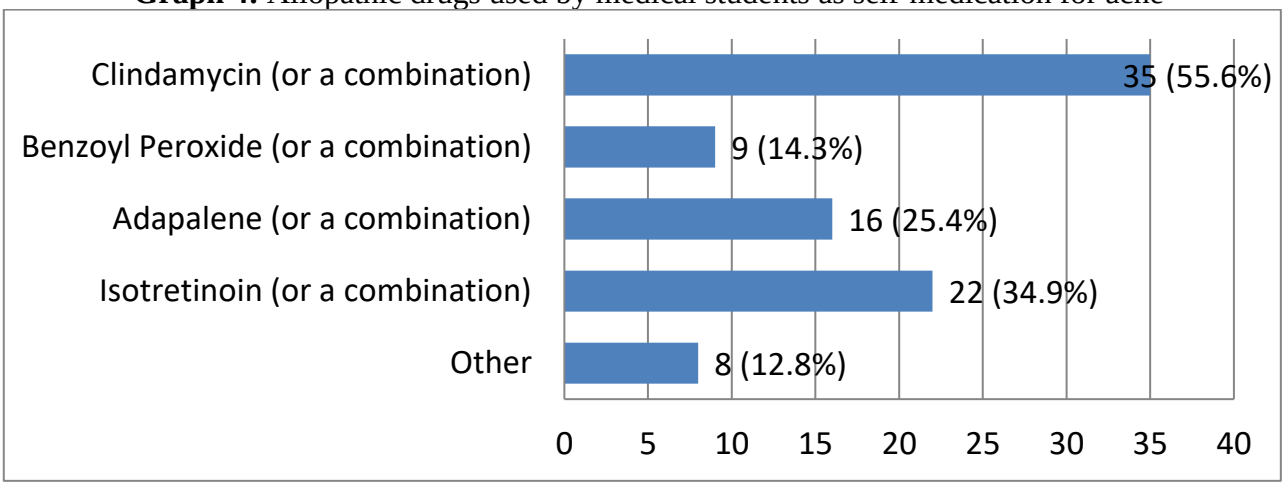
Out of 206 students who practiced self-medication, 57 used allopathic medication (58.2%), followed by herbal medication (n=40, 40.8%). (Graph 3)

Graph 3: Types of medications used by medical students as self-medication for acne



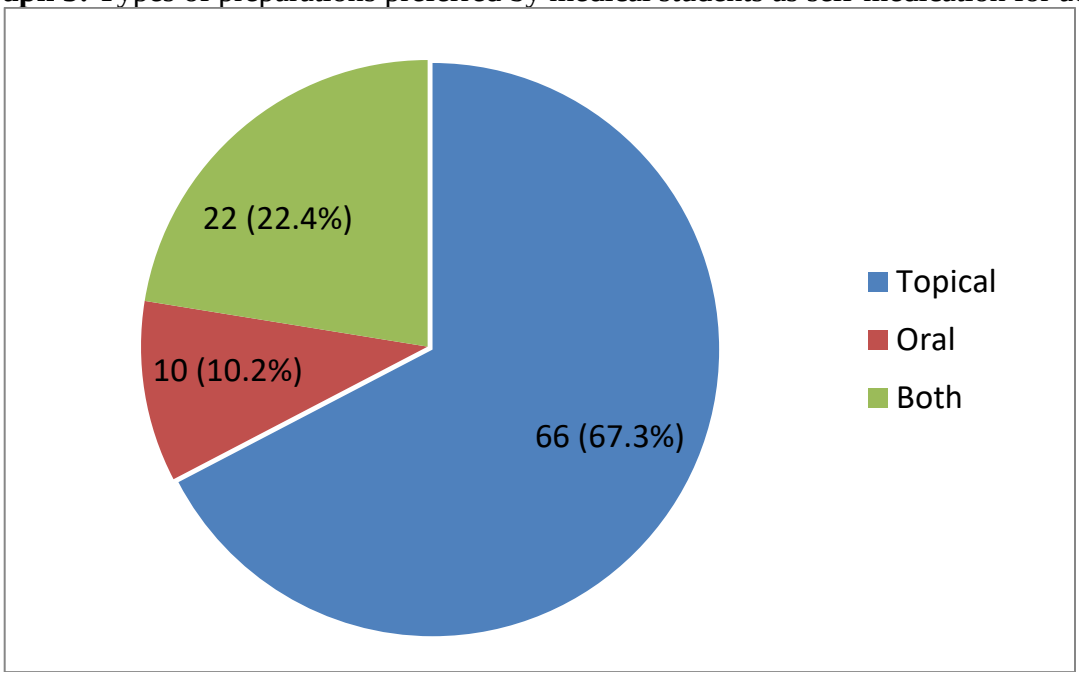
Among the most common allopathic drugs, there were Clindamycin (n=35, 55.6%), Isotretinoin (n=22, 34.9%), Adapalene (n=16, 25.4%), Benzoyl Peroxide (n=9, 14.3%) and other drugs (n=8, 12.8%). (Graph 4)

Graph 4: Allopathic drugs used by medical students as self-medication for acne



66 students preferred topical preparation (67.3%), 10 preferred oral medication (10.2%) and 22 preferred both topical and oral preparation (22.4%). (Graph 5)

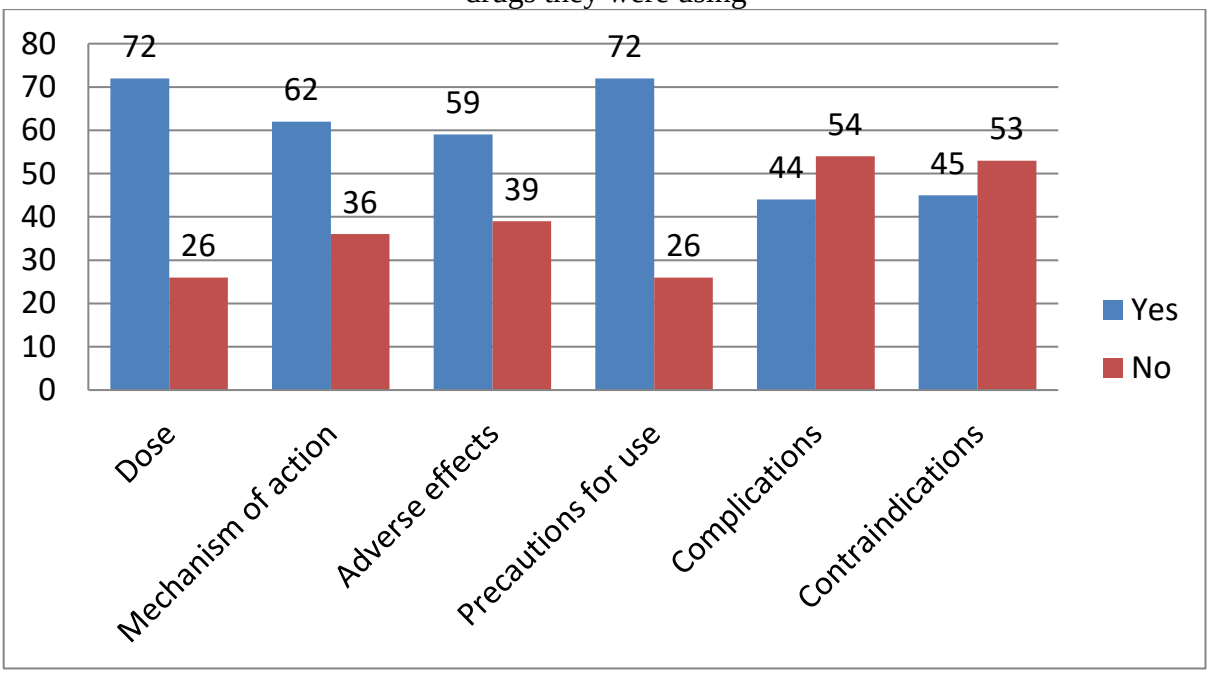
Graph 5: Types of preparations preferred by medical students as self-medication for acne



KNOWLEDGE:

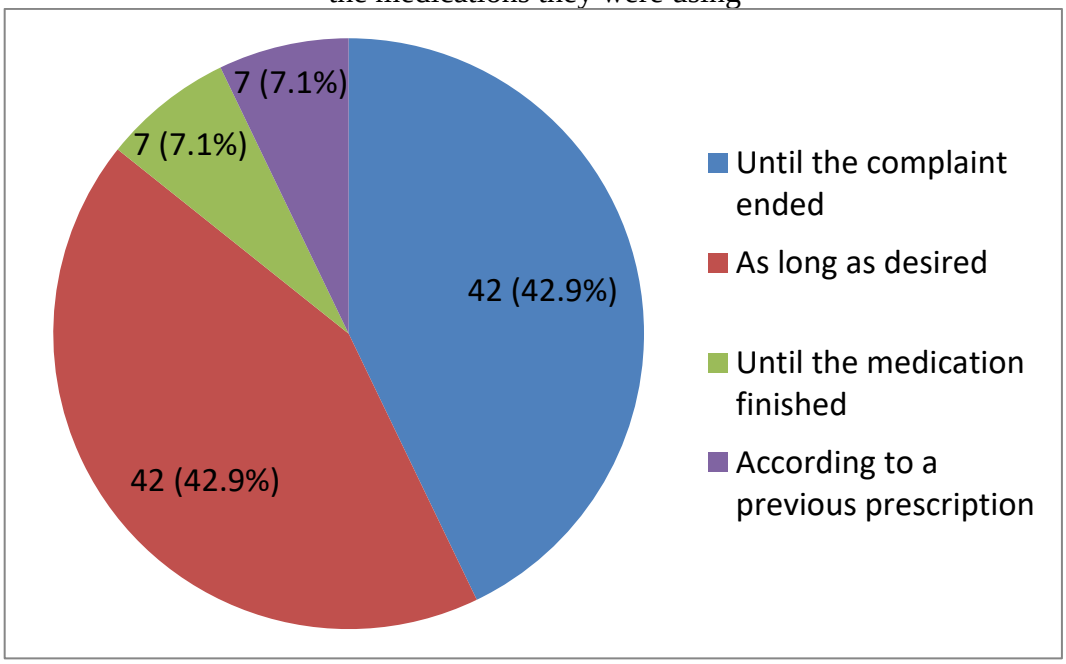
Out of the 98 students practicing self-medication, 72 knew about the dose of the medicine (73.4%), 62 knew about the mechanism of action (63.2%), 59 knew about the adverse effects (60.2%), 72 knew about the precautions for use (73.4%), 44 knew about the complications (44.9%) and 45 knew about the contraindications (45.9%) of the drugs, they had been using for acne. (Graph 6)

Graph 6: Knowledge of medical students self-medicating for acne regarding the actions of the drugs they were using



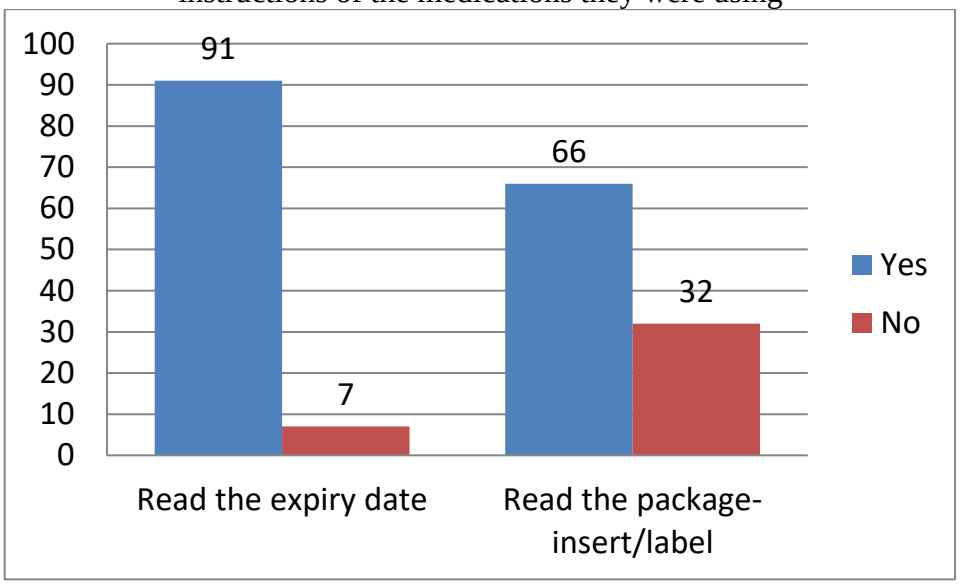
When asked about the duration of their treatment, 42 students said that they continued using the treatment until the complaint ended (42.9%). 42 students used the treatment as long as they desired (42.9%). 7 students used the treatment until the medication finished (7.1%). 7 students used the treatment according to a previous prescription (7.1%). (Graph 8)

Graph 7: Knowledge of medical students self-medicating for acne regarding the duration of use of the medications they were using



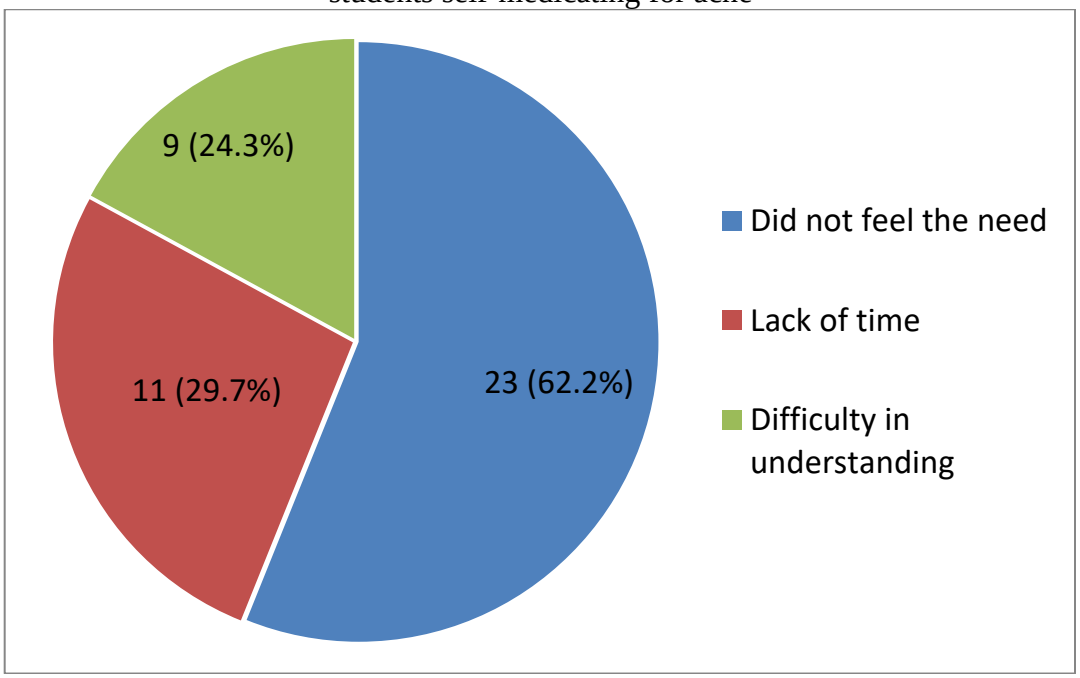
91 students read the expiry date on the medication (92.9%). 66 students preferred to read the leaflets/package-inserts/label-instructions with the medication they used (67.3%). (Graph 9)

Graph 8: Knowledge of medical students self-medicating for acne regarding the expiry and label-instructions of the medications they were using



37 students did not read the instructions due to not feeling the need (n=23, 62.2%), lack of time (n=11, 29.7%) and difficulty in understanding (n=9, 24.3%). (Graph 10)

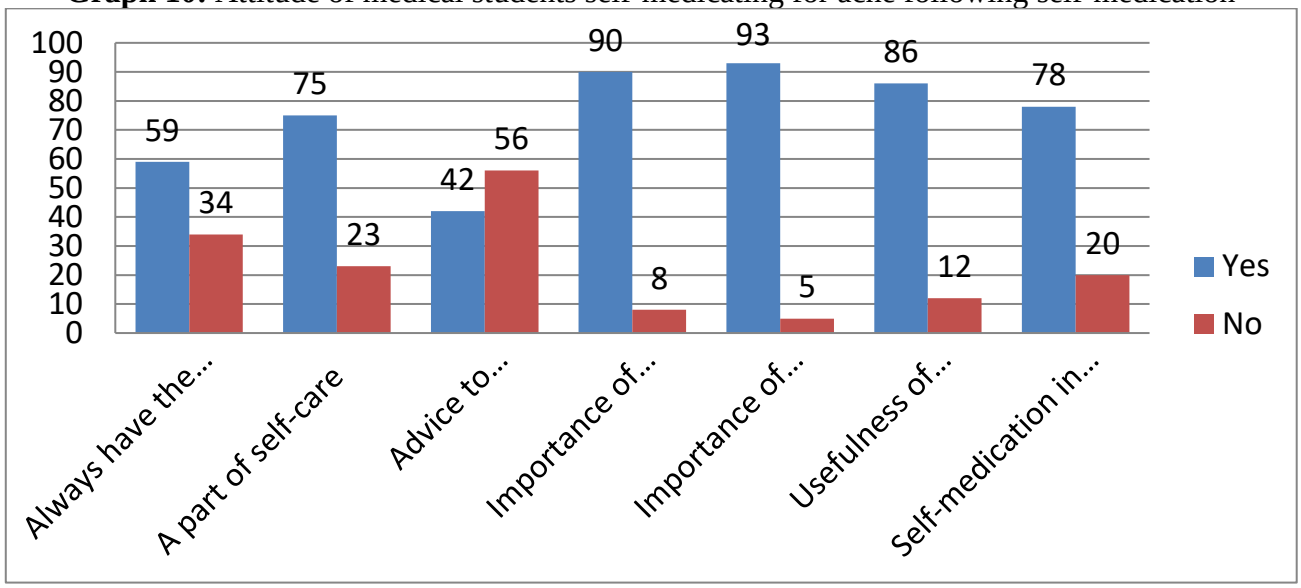
Graph 9: Reasons for not reading the label-instructions with the medication among medical students self-medicating for acne



ATTITUDE:

64 students always had the medication with them at their hostels/homes (65.3%). 75 students believed that self-medication was a part of self-care (76.5%). 42 students would advise self-medication to their friends/family (42.8%). 90 students believed that a dermatologist's consultation was important for acne (91.8%). 93 students believed that a follow up was important (94.9%). 86 students said that the medication they used was useful (87.8%). 78 students said that they would continue to self-medicate in the future (79.6%). (Graph 7)

Graph 10: Attitude of medical students self-medicating for acne following self-medication



ANALYSIS:

Analysis was done to study the relationship between students' education and self-medication. (Table 6)

Table 6: Relationship of medical students' education with self-medication for acne

	Yes	No	Total
1st Year	14	18	32
2nd Year	15	15	30
3rd Year	16	16	32
4th Year	42	47	89
Final Year	12	11	23
Total	99	107	206

On applying chi square test, the value of significance is 0.972. This is greater than 0.05. Thus the relationship is insignificant.

Analysis was done to study the relationship between students' gender and self-medication. (Table 7)

Table 7: Relationship of medical students' gender with self-medication for acne

	Yes	No	Total
Female	62	80	142
Male	37	27	64
Total	99	107	206

On applying chi square test, the p value is 0.098. Thus, the relationship is insignificant.

Analysis was done to study the relationship of residency of the student to self-medication. (Table 7)

Table 8: Relationship of medical students' residency with self-medication for acne

	Yes	No	Total
Hostelite	72	64	136
Day-scholar	27	43	70
Total	99	107	206

On applying chi square test, the p value is 0.05. Thus the relationship is significant.

Cross tabulation between severity of acne and self- medication was done to reach the following results. 53.71% of mild acne sufferers, 40.78% of moderate acne sufferers and 33.33 % of severe acne sufferers practiced self-medication. (Table 8)

Table 9: Relationship between severity of acne and self-medication in medical students

	Yes	No	Total
Mild	65	56	121
Moderate	31	45	76
Severe	3	6	9
Total	99	107	206

On applying chi square test, the value of significance is 0.139. This is greater than 0.05. Thus the relationship is insignificant.

DISCUSSION:

Acne is a very common condition affecting teenagers all around the globe. Our study revealed that 206 (45.8%) out of 450 people who responded, suffered from acne, which is comparable with a study conducted in Karachi[14]. The trend of self-medication among acne patients is very common. Our study showed that 47.6% of the 206 patients, tended to self-medicate which is on par with a study conducted in Rawalpindi [14].

In our study 58% people who responded were males while 44% were females. The p value for relationship between gender and self-medication was 0.098 which wasn't significant.

Among the people who responded, 15.5% were from the first year, 14% were from second year, 15% were from third year, 43.2% were from fourth year and 11.2% were from final year. The p value for relation between year of study and self-medication was 0.972 which was again not significant.

The aspect unique to our study was evaluating the trend of self-medication between day scholars and hostelites which hadn't been recorded significantly in previous researches. 66% percent of people who responded were hostelites and 34% were day-scholars. The p value observed was 0.05 which showed that the results were significant. The increased use of self-medication among boarders can be attributed to easy availability of medicines in hostels, without any restrictions. This can also be attributed to the increased percentage of students self-medicating through their previous prescriptions. This can also be associated with a lack of time and resources to visit a doctor. This shows the need for proper regulation of medicines in hostels. Students should be educated about the negative aspects of self-medication such as risk of misdiagnosis, risk of wrong treatment and risk of developing resistance.

Out of the 206 patients, 122(59.2%) described their acne as mild, 77(37.4%) described it as moderate and 7(3.4%) described it as severe which can be compared with a study in Malaysia [15]. The p value observed for relationship between severity and self-medication was 0.139, which was not significant. The percentage of people suffering from severe acne in our survey was very less which did not give us a chance to study much about how they self-medicated. Future researches can be focused on people with severe acne, so as to evaluate their specific responses.

Among the reasons for self-medication the mildness of symptoms appeared to be to the most common reason (59.2%) which, according to some other researches appeared to be the most prominent reason as well [16]. This was followed by the use of drugs from a previous prescription (33.7%), which was also observed by studies in India [17]. 26.5% didn't feel the need to see the doctor. 17.3% used the drug due previous pharmacological knowledge. 18.4% used it due to the easy availability of over-the-counter drugs. The tendency to use drugs from previous knowledge is unattended due the fact that the curriculum provides confidence to medical students to use these drugs.

The leading source of information for self-medication was TV/internet (38.8%), which reflects the increasing influence of social media on our lives. This increased confidence in the information present online can be hazardous as the authenticity of this material is never 100%. This was the distinguishing

feature of our research which showed the increased reliance of people on material available online. This was followed by suggestion by family (33.7%) and friends (21.4%), which can be seen in an above-stated research as well [14].

Among the people who used self-medication, our research showed that allopathic medication was used by 58.2%, herbal medication was used by 40.8% and clinical procedures were opted by 22.4%. This can be seen in an above-stated research as well [17]. Among the people who used allopathic medicine, 55.6% used clindamycin which is an antibacterial drug. Same results were observed by a study conducted in India [18]. This drug can have serious side effects like diarrhea and severe skin reactions. Substances of this kind should be used only with a prescription. In our research we found that 92.9% of patients read the expiry rate on the package and 67.3% read the package-insert/label-instructions inside the medicine, which is in accordance with an above-stated research [16]. This showed that students were well informed about the hazardous effects of expired drugs and that they were well trained for proper use of drugs. In our research 67.3% people preferred the use of topical drugs which can be attributed to their easy availability, convenient use and immediate result, but this can also result in antibiotic resistance [19].

42.9% people in our study stated that they only used the drug until the complaint ended. This is a reflection of the fact that students lack knowledge about the use of a drug for a specified duration of time and this irregular use of drugs frequently can result in the development of resistance and several adverse effects. This can be attributed to the fact that people use the drugs without proper prescription and consultation. This was followed by 42% of people who used the drug as long as they felt it was required. Similar findings were observed by a researcher in Faisalabad [20].

42.9% of the self-medicating students in our study said that they were confident to advise self-medication to others, which was alarmingly high as compared to a similar study about self-medication carried out in Karachi [21]. This shows the ultimate need to discourage students to advise medication to others without having a complete knowledge about the drug. 91.8% stated the need for proper dermatological consultation for acne which is comparable to a previously mentioned study [14]. This shows the confidence of the students on the medical practitioners and also their attitude towards acne as a disease that needs proper treatment yet a large percentage of students still tend to medicate.

76.5% of people stated that they considered self-medication as a part of self-care which was considerably higher as compared to a study in India [22]. It can be considered as a part of self-care for very mild cases of disease but this practice should not be promoted for a person lacking basic knowledge of the process and also for over-the-counter drugs. 65.3% reported the availability of the drugs at all times at their place of residence (hostels/homes). This reflects that regulations must be in place for avoiding abuse of over-the-counter drugs.

CONCLUSIONS AND RECOMMENDATIONS:

Our study indicated that acne is a very common disease among medical students of all years and both sexes. The trend of self-medication is common among medical students and is higher in boarders than in day-scholars. Mildness of the disease is a common determinant of the trend and self-medication is usually considered a part of self-care which leads to its encouragement for mild cases. It should only be practiced with a proper knowledge about the dose, adverse effects, precautions, complications and contraindications of the medication being used. Social media/TV has a major role in influencing self-medication. Measures should be taken to prevent easy availability of over-the-counter drugs, especially antibiotics to avoid problems such as antibiotic resistance and adverse effects. Measures should also be implemented, possibly with amends in the curriculum, to increase the knowledge of students about acne as a disease.

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