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Self-medication for acne among medical students on different academic levels in Riyadh, KSA 2022-2023

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ABSTRACT

The choice and application of medications by individuals to treat diseases or symptoms that they have recognized or diagnosed for themselves are self-medication. Due to the nature of medical education about acne treatment and the easy availability of acne medication, medical students are the most variable for self-medication. *Objectives:* Our study aims to demonstrate self-medication for acne among medical students on different academic level. *Methods:* A cross-sectional study was conducted among medical students at Al-Maarefa University, Riyadh Saudi Arabia. After obtaining permission from the college authority, participants were given revalidated questionnaires about self-medication knowledge, attitude and practice and were distributed to 300 medical students. The Chi-square test and one-way analysis of variance were used to evaluate the data. *Result:* The study included 301 medical students who completed the study questionnaire in which majority of the participants in the survey were between the ages of 21-23 (64.1%). 62.5% of participants were in pre-clinical studies. According to the survey data, most participants (62.8%) reported acne. In terms of self-medication, the majority of participants (56.8%) reported that they had self-medicated for their acne *Conclusion:* Our study concluded from the study that most individuals prefer to use topical preparation rather than oral preparations to treat acne. The results of the current survey also revealed that, despite the fact that the majority of students possess information, there is a need to raise awareness among medical students about efficient methods so that they may better assist the general people.

Keywords: Acne, medical students, Saudi Arabia, self-medication

1. INTRODUCTION

One of the most prevalent skin conditions, acne vulgaris is characterized clinically by comedones, papules, pustules, nodules and in some cases, scarring. It is caused by persistent inflammation of the pilosebaceous gland

(Adityan et al., 2009), since of hormonal fluctuations in the vast majority of cases, it affects 85% of young people between the ages of 12 and 24 (Sampaio and Rivitti, 2007). "Use of medicinal items by the user to treat self-recognized diseases or symptoms or the occasional or ongoing use of medication recommended by a physician for recurring or chronic diseases or symptoms" is what is meant by self-medication (WHO, 2000). Our aim is to evaluate the knowledge and pattern of self-medication for acne among medical students at Almaarefa University because of their pharmacological knowledge and the accessibility of pharmaceuticals from various sources, such as medical representatives, hospitals, wards or senior students, medical students frequently self-medicate (WHO, 2000), between 57.7% and 76% of medical students report using self-medication (Badiger et al., 2012). Low self-esteem, social shame, social seclusion and despair are all consequences of the illness known as acne (Khalid and Iqbal, 2010). Acne has social, psychological and emotional effects that raise awareness, particularly in young people (Kayalvizhi and Senapathi, 2010). We hypothesize that the higher academic level that student reach will have a medical student frequently self-medicate our study aims to demonstrate self-medication for acne among medical students on a different academic level. To our knowledge, there is meagre information regarding self-medication.

2. METHODS

An institutional-based cross-sectional study in 3-month duration (from November 2022 to January 2023) in Almaafra College, located in Riyadh city, the capital of Saudi Arabia. The study population was medical students and medical students' males and females, were included, excluded non-medical. The sample size is 301 and systemic random sampling. After providing them with information on the study's purpose, participants were given a pretested questionnaire. The questionnaire asked about information such as self-medication patterns, dosage knowledge, dosage effects, side effects, complications, precautions and contraindications. There were six knowledge questions on the survey. These were rated from 0 to 6 according to a preset scale. Each knowledge test question was scored as yes (scoring 1) or no (score 0). While the practice of self-medication was examined by questions like reading the package insert, label instructions including the expiration date and availability at home, the attitude was evaluated through questions such as favorite drug and recommendations to others.

Data collection methods

Interviewer administered.

Ethical consideration

Ethical approval has been obtained with number IRB09-0401023-118 and consent was obtained from participants before data collection emphasizing confidentiality and the suitable participant to withdraw from the study at any time.

3. RESULTS

In Table 1 based on the data provided, the majority of the participants in the survey were between the ages of 21-23 (64.1%). The next largest age group was 18-20 (19.9%), followed by 24-26 (12.6%) and the smallest group was those over 26 (3.3%). In terms of gender, the number of female participants was twice (61.8%) the male participants (38.2%). In terms of the academic year, the majority of the participants were in pre-clinical years (62.5%), while 37.5% were in clinical years.

Table 1 Descriptive socio-demographic analysis

Variables	n (%)
Age (years)	
18-20	60 (19.9 %)
21-23	193 (64.1 %)
24-26	38 (12.6 %)
More than 26	10 (3.3 %)
Gender	
Male	115 (38.2 %)
Female	186 (61.8 %)
Academic year	
Clinical	113 (37.5 %)
Pre-clinical	188 (62.5 %)

n=301

The majority of the survey participants were between the ages of 21-23, with 64.1% falling within that age range. The next largest group was 18-20 with 19.9% of participants, followed by 24-26 with 12.6% and those over 26 with only 3.3%. In terms of the academic year, the survey found that 62.5% of participants were in pre-clinical studies, while 37.5% were in clinical studies. Overall, the data suggests that the majority of the survey participants were young and in the early stages of their medical education.

Table 2 Prevalence of acne and self-medication

Variables	n (%)
Acne	
Yes	189 (62.8%)
No	112 (37.2 %)
Self-medication	
Yes	171 (56.8 %)
No	130 (43.2 %)

n=301

In Table 2 according to the survey data, most participants (62.8%) reported acne. A smaller portion (37.2%) reported not having acne. In terms of self-medication, the majority of participants (56.8%) reported that they had self-medicated for their acne, while a smaller portion (43.2%) reported not self-medicating. These results suggest that acne is a common issue among the survey participants and that many of them have attempted to treat it on their own.

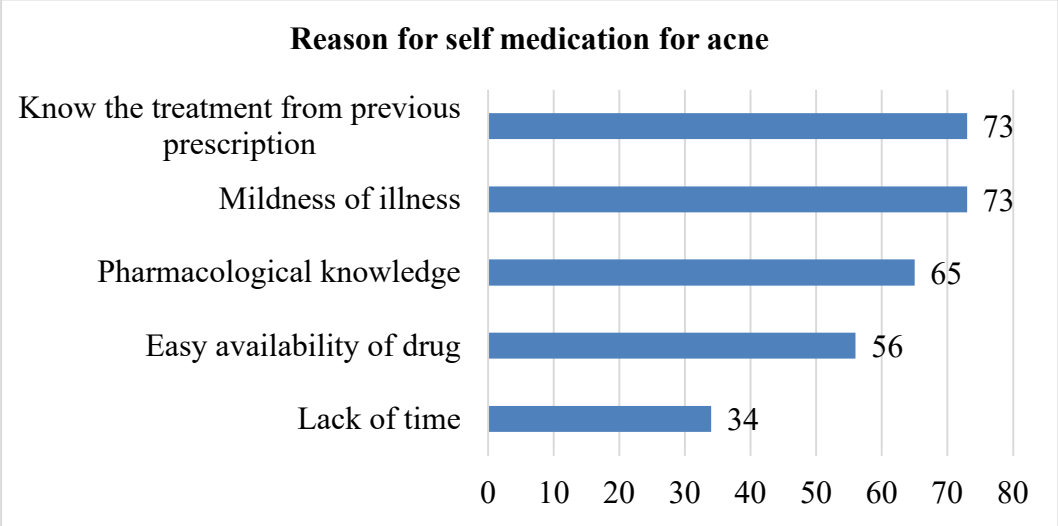

Figure 1 Reason for Self-medication of Acne

In Figure 1 the majority of the participants 73 reported that they knew the treatment from a previous prescription and they believed their illness were mild. 65 participants reported that they self-medicated because of their pharmacological knowledge. According to the survey data, 56 participants reported easy availability of drugs and 34 participants reported that they self-medicated because of lack of time. These results suggest that most of the participants self-medicate based on their prior knowledge about acne and the mildness of their illness.

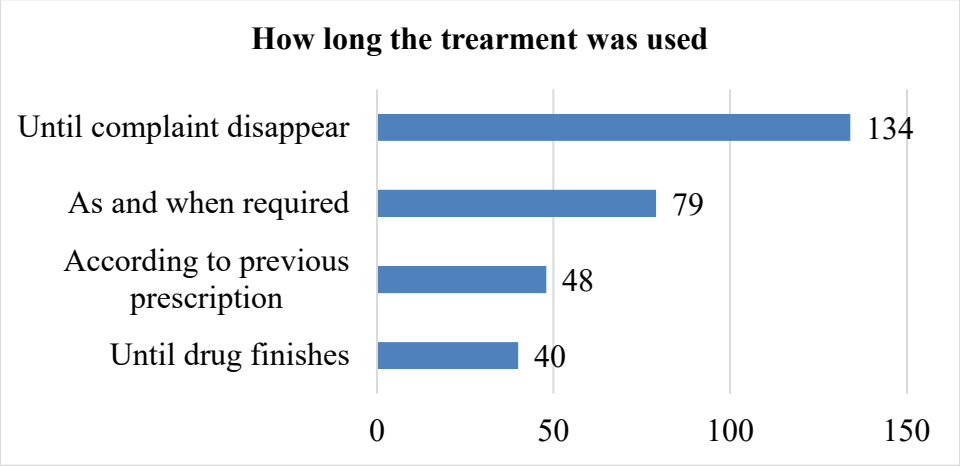

Figure 2 How long the treatment is used

In Figure 2 according to the survey data, the majority of participants (134) reported using the treatment until the complaint disappeared, followed by using the treatment as and when required (79), using the treatment according to the previous prescription (48) and using the treatment until the drug finishes (40). These results suggest that a significant portion of participants use self-medication as a short-term solution and stop when their symptoms disappear.

Table 3a Knowledge for self-medication of acne in medical students n=301

Variables	n (%)
Do you know the right dose for the drug?	
Yes	172 (57.1 %)
No	129 (42.9 %)
Do you know the mechanism of action of the drug you using?	
Yes	166 (55.1 %)
No	135 (44.9 %)
Do you know the side-effect of the drug you using?	
Yes	196 (65.1 %)
No	105 (34.9 %)
Do you know the precautions for the use?	
Yes	200 (66.4 %)
No	101 (33.6 %)
Are you aware about the complications of the drug?	
Yes	189 (62.8 %)
No	112 (37.2 %)
Read the leaflets/package insert/label instruction	
Yes	183 (60.8 %)
No	118 (39.2 %)

In Table 3a according to the survey data, a majority of participants reported having knowledge about the drugs they were using. 57.1% of participants reported knowing the right dose for the drug, 55.1% reported knowing the mechanism of action of the drug, 65.1% reported knowing the side effects of the drug, 66.4% reported knowing the precautions for use and 62.8% reported being aware of the complications of the drug and 60.8% reported reading the leaflets, package insert or label instructions. However, a significant portion of participants (42.9%, 44.9%, 34.9%, 33.6%, 37.2% and 39.2% respectively) reported not having knowledge about these aspects of the drug. These results suggest that while many participants have knowledge about the drugs they are using, there is still a significant portion of participants who may not have all the information they need to safely self-medicate. It is important to read all the instructions and information provided on the drugs package.

Table 3b Knowledge for self-medication of acne in medical students

X	Good 5-6	Moderate 3-4	Poor 1-2
Knowledge	130 (43%)	79 (26%)	92 (31 %)

In Table 3b according to the survey data, 43% of participants reported having good knowledge about self-medication, 26% reported moderate knowledge and 31% reported poor knowledge. These results suggest that while some participants have a good understanding of self-medication, a significant portion of participants may not have the necessary knowledge to safely self-medicate. It is important for individuals to educate themselves about the potential risks and benefits of self-medication.

Table 4 Analysis of attitude regarding self-medication for acne n=301

Variables	n (%)
Source of information for self-medication of acne	
Textbook	25 (8.3 %)
Self-decision	75 (24.9 %)
Drug advertisement/internet/media	58 (19.3 %)
Friends/family	64 (21.3 %)
Pharmacist	79 (26.2 %)
Type preparation preferred	
Oral	63 (20.9 %)
Topical	173 (57.5 %)
Both	65 (21.6 %)
Dermatology consultation before starting treatment	
Yes	190 (63.1 %)
No	111 (36.9 %)
Follow up for re-appearance of acne	
Yes	174 (57.8 %)
No	127 (42.2 %)
Advice for self-medication to friends	
Yes	153 (50.8 %)
No	148 (49.2 %)

In Table 4 according to the survey data, the most common sources of information for self-medication were friends, family members and seniors, with 64 participants reporting that as their source. Next, 79 participants reported that a pharmacist was their source of information. 75 participants reported that they made a self-decision, 58 participants reported that they got their information from drug advertisements, the internet or media and 25 participants reported that they got their information from a textbook. These results suggest that participants most commonly rely on personal connections, such as friends and family or professional advice from pharmacists for information about self-medication.

The survey data shows that the majority of participants (57.5%) preferred topical preparation for their self-medication, followed by oral preparation (20.9%) and both (21.6%). In terms of seeking professional advice before self-medicating, 63.1% of participants reported consulting a dermatologist before starting treatment while 36.9% did not. Additionally, 57.8% of participants reported following up for the re-appearance of their acne while 42.2% did not. Furthermore, 50.8% of participants reported giving advice for self-medication to their friends while 49.2% did not. These results suggest that participants generally tend to prefer topical preparation for self-medication and seek professional advice before starting treatment.

4. DISCUSSION

Acne is identified as a skin condition generally affecting a large number of people (Chen et al., 2021). Acne mainly appears in the form of pimples, whiteheads and blackheads occurring on different places of the body such as the back, chest, neck and face. The major factor involved in the occurrence of acne includes the over production of skin oil, genetics and hormonal changes (Reddy and Jain, 2019). In this regard, the skin care specialist proposes certain skin care creams, hormonal therapy and oral antibiotics to reduce the underlying cause of acne. The aim of such medications is to reduce inflammation, prevent the regrowth of acne-causing bacteria and oil production on the skin. This paper takes a deeper look at the prevalence of acne and self-medication practices adopted by people to overcome its cause.

Based on the results of the present study it is found that the majority of participants are experiencing the problem of acne, among which the larger number of participants were young adults. Moreover, acne may be seen as a common problem for women during pregnancy. The previous studies clearly show that the occurrence of acne among people depends on various factors such as age, gender and hormonal changes (Bhadra, 2020; Reddy and Jain, 2019). Similar to the findings of the study, the prior data also supports the fact that adolescents and young adults are more likely to experience problems related to acne (Jaber et al., 2020). This is because at this stage an individual is going through a period of major hormonal changes due to puberty.

Additionally, the results from this study found that acne was a common skin condition experienced by females more than males (Sood et al., 2020). It is being maintained that acne problems are common in females but it is more severe in men. This shows that acne needs to be cured with proper medication and care to reduce its prevalence in both males and females.

To overcome the growth of acne, the majority of the participants mentioned that they use self-medication techniques. The reasons for the use of self-medication were further analyzed to understand why people preferred the use of self-medication over consultation from a skin care professional. The results showed that participants either have prior knowledge from previous prescriptions or a mild level of acne (Malik et al., 2019). Similar results were being reported from previous research confirming that a large number of people with acne tend to use home remedies rather than consulting a professional (Al-Ghamdi et al., 2020). This response causes delayed acne treatment and poor results. Another study found that self-medicating acne with antibiotics is a common technique among individuals based on their prior prescription (Albatti et al., 2017). This means that self-medication is a common practice among individuals to reduce the prevalence of acne.

The duration of treatment was further investigated to find out the major reason for the use of medication. The results of the present study found that the majority of participants used treatment until the disappearance of acne, as compared to participants who used treatment until the drug was finished. The previous study supports the findings by stating that most people prefer to use treatment until the acne disappears completely (Elif, 2021). Where by continuing medication was not so common among individuals showing that people discontinue their treatment as they see improvement in their skin. The results, therefore, confirm that the use of medication is typically for a shorter time until the acne disappears. However, there may be other factors depending on the severity of the skin condition and the type of medication used for the acne. It is important to consult a professional to properly medicate the acne considering the appropriate time and duration of the skin condition.

Furthermore, the study collected data assessing the knowledge of medical students about self-medication for acne. The findings from the present study showed that although a significant number of participants have knowledge about the right drug, the process of taking medication, its side-effect, precautions and complications. Still, an average number of participants need greater knowledge to properly self-medicate. The study found that an average number of medical students have knowledge about the right drugs and precautions (Malik et al., 2019). Where the majority of the students also read label instructions and expiry dates before its use. Still, there is a need to mandate the curricula to enhance the knowledge and attitude of students about self-medication for acne. Another study found that the limited knowledge among medical students about self-medication for acne is mainly the lack of discussion on this topic in classrooms (Alhomoud et al., 2017). It is important to ensure that medical students have sufficient knowledge about general skin conditions such as acne because they have a major role in educating peoples about general skin issues and the prevalence of acne.

The attitudes of medical students about self-medication of acne were further investigated to examine how they feel about problems related to acne and self-medication. It was found that the majority of the participants preferred the use of topical preparation for the treatment of acne rather than oral antibiotics. Topical preparation is the most commonly used and recommended treatment for acne. The research also supports that topical preparation is the most effective form of treatment for self-medication of acne, as compared to oral preparation which may be less effective for long-term use (Kolli et al., 2019). This is because topical preparations particularly target the underlying cause of the acne such as oil, bacteria or clogged pores. It is also reported to have fewer side effects as compared to oral preparations.

The attitude of participants to consult a dermatologist and keep a follow-up for the re-appearance of acne was further investigated. The results showed that the majority of participants showed a positive response to consulting a health care professional before starting treatment and further continuing a follow-up session in case of re-appearance of acne. A previous study found that the individuals receiving treatment from the dermatologist showed increased satisfaction and better treatment outcomes, as compared to people who self-treat themselves (Adams et al., 2021). Moreover, following up regularly with the healthcare professional reduces the chances of the reappearance of acne.

At the same time, the majority of participants also mentioned that they prefer to share self-medication treatments with their friends. There are various reasons that encourage people to give advice to friends because people feel comfortable discussing personal issues with a close friend, also not everyone has access to a professional health care advisor.

Finally, the study examined the common sources of information used by the participants to gain knowledge about self-medication for acne. The data from the present study shows that the most common source of information for the participant to self-medicate acne was the consultation from the pharmacist and self-decision. An average number of participants said that they received information from friends/family and internet sources. However, the least identified source of information was the textbooks. This means people learn more through social interaction with friends/family, pharmacists and social media, as compared to books. The previous research whereas identifies the internet as one of the major sources used to gain information about self-medication for acne (Alrabiah et al., 2023). Although the internet becomes a major source of information, still it is important to consult a professional healthcare provider to ensure the timely and proper diagnosis of acne and its treatment.

5. CONCLUSION

Our study revealed that acne is the most common skin problem faced by many individuals. The prevalence of acne depends upon different factors including gender and age. Self-medication is generally used as a medication procedure to treat acne conditions among individuals. It is also concluded from the study that most individuals prefer to use topical preparation rather than oral preparations to treat acne. This is because topical preparations are considered more effective outcomes, with the least side effects and are cheaper procedures. The findings of the current study also found that although the majority of students have knowledge still there is a need to create awareness about effective procedures among medical students so that they can better facilitate the general public. Moreover, the study concluded that most of the time individuals rely on pharmacists, internet sources and friends/family to gain information about self-medication for acne. However, it is primarily needed to consult a professional healthcare provider before using a particular treatment to ensure the effectiveness of treatment and positive outcomes.

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Ethical consideration

Ethical approval from the Institutional review board (IRB) of Almaarefa University College of Medicine (Ethical approval code: IRB09-0401023-118) was met before data collection began and the purpose of the study was clearly explained to the participants. They are assured that data from this study will be used for scientific purposes only, that ethical concerns and legal issues was considered and that participation is completely voluntary.

Authors' contribution

All authors had substantial contribution to the paper, YMA and YYA and SS and ABH designed the study and prepared the proposal. YMA and ABH analyzed and interpreted data. BSA and MMA and QMA wrote results and discussion. JOY checked and revised every step of this paper. All authors have collected data and critically reviewed and approved the final draft and are responsible for the content and similarity index of the manuscript.

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Conflict of interest

The authors declare that there is no conflict of interests.

Data and materials availability

All data sets collected during this study are available upon reasonable request from the corresponding author.

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