
Assessment of Knowledge, Attitude and Practices Regarding Self-Medication for Acne Among Medical Students in MUCM

Tan Meng Shen^{*}, Sankavi Subbramani, Shawn Kee Zhe Hao, Nisa Adini Binti Mohd Jafri

Faculty of Medicine, Manipal University College Malaysia, Manipal Academy of Higher Education (MAHE), Melaka, Malaysia

Abstract

Acne is one of the commonest chronic skin lesions affecting both genders of the teenager and adult population. Acne, although common, can be disfiguring and cause great amount of discomfort to some to the extent of affecting their quality of life. Self-medication has now become a common practice worldwide more so amongst the medical students due to their knowledge about drugs and diseases. The objective of our study was to determine if the medical students use self-medicate drugs like benzoyl peroxide for their treatment of acne as well as to assess the student's knowledge, practices and attitude on self-medication for acne. We also aimed to determine the reason for self-medication, sources of information and types of drugs used for the self-medication of acne among the medical students. A cross-sectional study was conducted from May 2021 till June 2021 involving the medical students of Manipal University College Malaysia. A study population of 1300 medical students was selected and purposive sampling was used to select students for this study. An online questionnaire was sent to the students and they were required to answer both part 1 and 2 of the validated questionnaire. The data collected was then analysed using Epi Info app version 7.2. The analysis included frequency table, percentages, odds ratio and Chi-square test. All statistical tests were seen at two-tailed level of significance ($p \leq 0.05$). A total of 134 (93.06%) out of 144 medical students participated; 61.94% practiced self-medication for acne while 31.34% did nothing and 6.72% consulted a dermatologist. It was found that self-medication was practiced most among the students with acne lesions on their face (55.97%). The most common source of information on self-medication was from either seminars, lectures or the internet (35.82%). 59.70% showed that they had poor knowledge on self-medication for acne following 34.33% having moderate knowledge and the remaining 5.97% showed good knowledge. It is seen that students with moderate and poor attitude were 0.26 (95% CI for OR= 0.06-8.67; P-value= 0.808) and 0.14 (95% CI for OR= 0.07-9.93; P-value= 0.905) times less likely to practice self-medication than those with good attitude. Majority of them reads the instructions and the expiration date on the drug label with 90.30% and 91.04% respectively. Self-medication for acne is essential for self-care, which involves treating minor sickness. Nevertheless, it should be done with profound knowledge and only with over the counter medications.

Keywords

Knowledge, Attitude, Practices, Acne, Self-medication, Medical Students, Cross-sectional Study, Malaysia

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* Corresponding author

E-mail address: tanmengshen@gmail.com (T. M. Shen), shawn.kee135790864@gmail.com (S. K. Z. Hao), nisaadini@gmail.com (N. A. B. M. Jafri), sankhavi99@gmail.com (S. Subbramani)

1. Introduction

Acne vulgaris is one of the commonest chronic inflammatory skin conditions that is affecting both males and females, both teenager as well as adults [1]. Acne, commonly known as pimples, is a pathology of the sebaceous follicles and is clinically characterized by seborrhea, comedones, papules, pustules, nodules and, in some cases, scarring [2]. It affects 85% of the people between 12 to 24 years of age due to hormonal changes in the majority of cases [3]. The most usual area for acne appearance is the face and it can be cosmetically disfiguring to some and may even cause misery in them. Even though most acne cases are of mild severity, social and psychological factors have caused many to put in great effort in finding a suitable treatment for the lesion [4].

According to WHO, self-medication means the act of consumer to treat self-diagnosed disorders with medicinal products or continue to use the same prescription for a chronic or recurring disorder. The advantages of self-medication includes self-reliance, convenience, cheaper due to absence of consultation fees and wider choice of treatment. On the other hand, wrong self-diagnosis, inappropriate therapy, unnoticed adverse effects and unawareness of the contraindication as well as warnings are some of its drawbacks [5].

A study [6] was carried out at a tertiary care teaching hospital in Ahmedabad, India to determine the knowledge and patterns of self-medication of acne in undergraduate medical students. It shows that 518 students from a total of 582 students suffered from acne and self-medication of acne was observed in 307 (59.3%) students. Another cross-sectional study was undertaken by researchers in KBN medical college in Kalaburagi, Karnataka, India [1] to determine the prevalence and reasons of self-medication for acne in undergraduate medical students. It shows that 77.4% of students has carried out self-medication of acne, and this practice is more common in females (83.6%) than in males. The main reason for self-medication of acne in students was due to having mild acne. Both of the studies showed that self-medication of acne is indeed prevalent in undergraduate medical students in India. In Pakistan, a study was done by Malik IJ *et al.* [7] regarding the knowledge, attitude, and practices of acne self-medication in medical students. 69.9% of participants suffered from acne and practices of self-medication of acne was done by 50.4% of acne sufferers. The high prevalence of acne in medical students [8], adolescents and even in various communities [9, 10], have caused them to initiate self-medication of acne. However, many individuals do perceive acne as a self-limiting problem and when self-medication products are used, many are not aware of the various disadvantages and side effects associated with the topical drugs used. [11]

In Malaysia, a study [12] was done on adolescents (Form 1-5) to

determine the prevalence of acne as well as to understand if it had an impact on students' daily lives. It shows that the prevalence of facial acne among adolescents was 67.5% ($n = 276$) and males (71.1%) are more affected than females (64.6%). Another cross-sectional study by Muthupalaniappen L *et al* [13] concerning University Kebangsaan Malaysia's (UKM) medical students, to see if acne was a problem in their lives and to identify various risk factors that brought on the acne. Researches stated that the prevalence of acne in medical students in UKM was considerably high (68.1%), and male medical students were 4.7 times more likely to develop acne if compared to female medical students involved in that study. The researchers also stated that there seemed to be a genetic factor at play as students with both parents having a history of acne vulgaris were 3 times more prone to develop acne. This statement hold true and is also backed by other studies [14, 15]. This shows that acne was indeed prevalent in adolescent students and also medical students in Malaysia. Although self-medication of acne is prevalent in many countries, a study on the knowledge, attitude and practices regarding self-medication of acne among medical students has not been carried out in Malaysia.

Self-medication or self-treatment is extremely popular among medical professionals [16, 17]. It is becoming more widespread among medical students as a result of their medical expertise and easy access to medications [18, 19]. The goal of this study was to understand if medical students in Manipal University College Malaysia have resorted to use medications, especially benzoyl peroxide as self-medication of their acne, as well as to determine their knowledge, practices and attitude regarding self-medication of acne. Furthermore, the objectives of this research were to determine the reasons for self-medication, sources of self-medication, knowledge, and types of drugs utilised during self-medication.

2. Methods

2.1. Study Design, Setting, Time and Population

This study was carried out as a cross-sectional study, with its sample being undergraduate medical students from Manipal University College Malaysia (MUCM), involving both the Muar campus situated in Johor as well as the Melaka campus in Melaka. We have initiated this study in the month of May 2021 till June 2021. MUCM is a private medical college, consisting of students in FIS, MBBS and BDS courses. In the MBBS course, there are 10 semesters in total. Pre-clinical years which involves semester 1-4 are currently carried out in the Melaka campus, while the clinical years (semester 5-7, 8-10) are carried out in the Muar campus and the Melaka campus respectively. We have limited our study down to the MBBS course students, involving students from Semester 1- 10.

2.2. Sample Size

Based on a study done at Khaja Banda Nawaz (KBN) medical college, India, 77.4% of students self-medicate to treat acne [1], therefore we get a study estimate of 77.4%. By using Microsoft excel sample size calculator [20] & inputting the study population (N) as 1300 (total amount of students in MUCM), with the precision of 7% and the above study estimate, the minimum sample size is 129. After taking into account of the non-response as 10% and using the below formula, the final sample size is 144.

$$n_{\text{final}} = n_{\text{calculated}} / (1 - \text{non-response}) = 129 / (1 - 0.1) = 144$$

2.3. Sampling

The sampling method used for this study was purposive sampling, which is a non-probability sampling method. The inclusion criteria for this research were semester 1-10 preclinical and clinical MBBS students of Manipal University College Malaysia who voluntarily agreed to participate in the study, and must complete the questionnaire after successfully giving their consent to be considered valid for this study. The exclusion criteria included those who were unwilling to take part in the research, FIS and BDS students, incomplete questionnaires and answers that are irrelevant.

2.4. Data Collection

The questionnaire consisted of two parts, in which the first part was about the demographic details in which details such as gender, age, ethnicity, nationality, family economic status and the semester of the participant were asked. Moreover, this part also comprised questions on the site of acne, practice of self-medication for acne and the sources of information for self-medication of acne. The second part of the questionnaire consisted of questions on the knowledge, attitude and practices of self-medication for acne. The questions used in the questionnaire were obtained from a study by Malik IJ et al [6].

To assess the knowledge on self-medication for acne, 8 statements were given regarding the dose, precautions of use, side effects, and contraindications of benzoyl peroxide. For each statement the participants can choose either “Yes”, “No”, or “Not sure”. For the statement on dose of the drug, participants were given a set of options to choose from like “0.5%”, “2.5%”, “12.5%” and “Not sure”. A score of 1 was given for each correct answer and a score of 0 was given for the wrong answer and “Not sure” answer. The section on attitude towards self-medication for acne was assessed by 4 questions and practices of self-medication for acne were assessed by 5 questions. For the statements given under the attitude section, the participants were asked to respond to the questions on a five-point Likert scale- 1 (Strongly disagree)- 5 (Strongly agree).

The questionnaires were then distributed to all the MBBS students of MUCM from semester 1 to semester 10 via Google Forms.

2.5. Data Processing and Data Analysis

The data obtained from the Google Forms was then displayed as a spreadsheet and analysed by Epi Info version 7.2.

For qualitative data (gender, ethnicity, nationality, family economic status, current semester of student, site of acne, severity of acne, availability of treatment for acne, past similar treatment for acne, time required for treatment of acne, type of self-medication for acne, and practices regarding self-medication for acne), we calculated the frequency and percentage. As for quantitative data (age, knowledge towards self-medication for acne, attitude towards self-medication for acne), we calculated the mean, standard deviation and range. The level of significance was set at 0.05. As for the measurement of association, we calculate the odds ratio and for hypothesis testing, we use the statistical test listed below in Table 1.

Table 1. Variables and statistical tests applied to analyse data.

| INDEPENDENT VARIABLES | DEPENDENT VARIABLES | STATISTICAL TEST |
|--|--------------------------|------------------|
| Age | Self-medication for acne | Chi Square Test |
| Gender | | Chi Square Test |
| Ethnicity | | Chi Square Test |
| Nationality | | Chi Square Test |
| Family economic status | | Chi Square Test |
| Preclinical and clinical year | | Chi Square Test |
| Knowledge towards self-medication for acne | | Chi Square Test |
| Attitude towards self-medication for acne | | Chi Square Test |

2.6. Ethical Consideration

As our questionnaires were distributed via Google forms, the first question involved asking all participants for their written informed consent, after allowing them to read the relevant information regarding the study. They were not forced to enter

the study and were given the option to not participate in this study. In addition, all their information is kept confidential and relevant information was used only for the sole purpose of this study. This research was given approval by the Research Ethics Committee, Faculty of Medicine, Manipal University College Malaysia (MUCM), Malaysia.

3. Results

The questionnaire consisted of a total of 28 questions that was divided into 7 sections. They were distributed to MBBS students of MUCM via a link that would give them access to the Google forms. A total of 134 responses was collected. Of those 134 students who responded, 83 (61.94%) of them were below or equal to 22 years old, whereas the remaining was above 22 years old. The age range was 18-25 and its mean was 22.14. Besides that, most of the respondents were females (64.93%) while 47 (35.07%) of the respondents were males. In relation to the ethnicity of the respondents, most of the respondents were

Indians (44.78%), The second highest ethnicity that responded were Chinese students (33.58%), followed by Others (11.94%) and Malays (9.70%). A total of 124 of the participants are Malaysians and the remaining 10 of them are International students. Regarding the respondents' household income (Ringgit Malaysia), 26 (19.40%) of the respondents have a household income of less than RM 4360, another 64 of them have a household income between a range of RM 4360 to RM 9619, while the remaining 44 (32.84%) have a household income of more than RM 9619. As for the semester the respondents were in, 19 respondents were pre-clinical students whereas a total of 115 of respondents were clinical students.

Table 2. Demographic characteristics.

| Variables | | Frequency (n) | Percentage (%) |
|-----------------------|-----------------------|---------------|----------------|
| Age | <22 | 83 | 61.94 |
| | >22 | 51 | 38.06 |
| | Mean (SD) | 22.14 (1.52) | |
| | Min-Max | 18-25 | |
| Gender | Female | 87 | 64.93 |
| | Male | 47 | 35.07 |
| Ethnicity | Malay | 13 | 9.70 |
| | Indian | 60 | 44.78 |
| | Chinese | 45 | 33.58 |
| | Others | 16 | 11.94 |
| Nationality | Malaysian | 124 | 92.54 |
| | International student | 10 | 7.46 |
| Household income (RM) | <4360 | 26 | 19.40 |
| | 4360-9619 | 64 | 47.76 |
| | >9619 | 44 | 32.84 |
| Academic semester | Preclinical | 19 | 14.18 |
| | Clinical | 115 | 85.82 |

Table 3 shows the Acne and its self-medication including a major component of our study which is the Practices regarding self-medication for acne among the preclinical and clinical MBBS students in MUCM. Out of the 134 participants, 55.97% of the participants only have acne on their face, none have acne only on the chest, 2.24% have acne on the back, 23.88% have acne on the face and back, 1.49% have acne on the face and chest, 2.99% have acne on the chest and back while 8.96% have acne on the face, chest and back. Participants were allowed to put their own answer to this component and 4.5% of the participants have acne on other places such as thighs and back, back of the arm, face and shoulder, and scalp. It was found that 61.94% of the participants use self-medication as their choice of treatment for acne, while 31.34% would do nothing, and 6.72% would consult a dermatologist over a general practitioner. Those who practise self-medication use either Allopathy (3.73%), Home-made remedies (26.87%), Homeopathy (0.75%), and others such as cosmetic products or chemical peels (68.66%). The most common purpose for self-medication was the Mild nature of the disease (39.55%), followed by the Easy availability of the drugs (35.07%), Know treatment from past prescription (12.69%), Lack of time (7.46%), Pharmacological knowledge (0.75%), Embarrassment of discussing symptoms (0.75%), and others (3.75%). The sources

of information on self-medication for acne were either from acquaintances (24.63%), Prescription issued to others (7.46%), Self-decision (20.15%), Drug advertisements (8.21%), Books (3.73%), and others which include seminar, lectures and the internet (35.82%).

The practices of medical students regarding self-medication for acne component consisted of 5 questions, 3 of them being a 'yes' or 'no' answer and the other 2 were multiple choice questions. The first question was to see whether students read the instructions on the drug label to which 121 (90.30%) responded yes and the remaining 13 (9.70%) responded no. There were 122 (91.04%) participants who responded yes while the other 12 (8.96%) responded no for the following statement, 'Do you read the expiration date of the drug?'. Some students have their acne medication available to them at home or hostel (n=70, 52.24%) meanwhile 64 (47.76%) participants do not. Most of the students use their acne treatment Until the complaint disappears (n=99, 73.88%), Until the drug is finished (n=22, 16.42%) and According to past prescriptions (n=13, 9.70%). Out of the 134 students who practiced self-medication, only 4 (2.99%) used oral medications while solely topical drugs were applied by 110 (82.09%) students. Both oral and topical medications were used by 20 (14.93%) students.

Table 3. Acne, self-medication for acne and Practices regarding self-medication for acne.

| Variable | Frequency (n) | Percentage (%) | |
|--|---|----------------|-------|
| Site of acne | Face | 75 | 55.97 |
| | Chest | 0 | 0 |
| | Back | 3 | 2.24 |
| | Face & back | 32 | 23.88 |
| | Face & chest | 2 | 1.49 |
| | Chest & back | 4 | 2.99 |
| | Face, chest & back | 12 | 8.96 |
| | Other | 6 | 4.5 |
| Treatment for acne | Self-medication with benzoyl peroxide and OTC drugs | 83 | 61.94 |
| | Consult a general practitioner | 0 | 0 |
| | Consult dermatologist | 9 | 6.72 |
| Type of treatment for acne | Do nothing | 42 | 31.34 |
| | Allopathy | 5 | 3.73 |
| | Home-made remedies | 36 | 26.87 |
| | Homeopathy | 1 | 0.75 |
| Reason of self-medication for acne | Others (cosmetic products, chemical peels, etc) | 92 | 68.66 |
| | Mildness of disease | 53 | 39.55 |
| | Easy availability | 47 | 35.07 |
| | Know treatment from past prescription | 17 | 12.69 |
| | Lack of time | 10 | 7.46 |
| | Pharmacological knowledge | 1 | 0.75 |
| | Embarrassment of discussing symptoms | 1 | 0.75 |
| Source of information on self-medication for acne | Other | 5 | 3.75 |
| | Acquaintances | 33 | 24.63 |
| | Prescription issued to others | 10 | 7.46 |
| | Self-decision | 27 | 20.15 |
| | Drug advertisements | 11 | 8.21 |
| | Books | 5 | 3.73 |
| Do you read the instructions on the drug label | Others (seminar, lecture, internet) | 48 | 35.82 |
| | Yes | 121 | 90.30 |
| Do you read the expiration date of the drug | No | 13 | 9.70 |
| | Yes | 122 | 91.04 |
| Is acne medication always available at home or hostel | No | 12 | 8.96 |
| | Yes | 70 | 52.24 |
| For how long was the acne treatment used | No | 64 | 47.76 |
| | Until the complaint disappears | 99 | 73.88 |
| | Until the drug is finished | 22 | 16.42 |
| Which preparations do you prefer for treatment of acne | According to past prescription | 13 | 9.70 |
| | Oral | 4 | 2.99 |
| | Topical | 110 | 82.09 |
| | Both | 20 | 14.93 |

Table 4. Knowledge towards self-medication for acne.

| Statements on Knowledge towards self-medication for acne. | Frequency of correct answer | Percentage (%) |
|---|-----------------------------|----------------|
| 1. Benzoyl peroxide is used to treat acne. | 96 | 71.64 |
| 2. The dose of benzoyl peroxide used for acne treatment is 2.5% | 35 | 26.12 |
| 3. Benzoyl peroxide can cause itchiness of skin. | 60 | 44.78 |
| 4. Benzoyl peroxide will not cause alopecia. | 28 | 20.90 |
| 5. Benzoyl peroxide can cause burning sensation on skin. | 65 | 58.51 |
| 6. Benzoyl peroxide cannot be used alongside other acne medication like salicylic acid. | 38 | 28.36 |
| 7. Benzoyl peroxide is not safe to apply around the eyes/lips. | 76 | 56.72 |
| 8. Benzoyl peroxide is not safe to apply inside the nose or on the neck. | 75 | 55.97 |

Table 4 highlights another major component of our study that is the knowledge towards self-medication for acne among the medical students of MUCM which was assessed by 8 questions. The highest correct response was recorded for the first statement in which 96 participants out of 134 participants (71.64%) knew that benzoyl peroxide is used to treat acne. The lowest response rate was 20.90% representing 28 students who knew that benzoyl peroxide will not cause alopecia correctly. 35 participants with a

percentage of 26.12% knew the dose of benzoyl peroxide used for acne treatment. 44.78% from the total sample representing 60 participants knew that benzoyl peroxide can cause itchiness of skin. 58.51% of the sample knew correctly that benzoyl peroxide can cause burning sensation on skin, 38 participants out of 134 participants correctly answered the statement on using benzoyl peroxide alongside with other acne medication, 56.72% knew that benzoyl peroxide is not safe to apply around the eyes/lips and

55.97% knew that the medication is not safe to apply inside the nose or on the neck.

Table 5 isolates another component of our study that is the attitude of the participants towards self-medication for acne. 55 participants (41.04%) out of 134 agreed that self-medication is a part of self-care for acne treatment.

39.55% of the sample were neutral about advising self-medication for treatment of acne to their friends and families. 63 participants with a percentage of 47.01% strongly agreed that dermatologist's consultation is important for treatment of acne and 43.28% of the participants strongly agreed that follow up for acne treatment is important.

Table 5. Attitude towards self-medication for acne.

| Statement | Strongly agree n (%) | Agree n (%) | Neutral n (%) | Disagree n (%) | Strongly disagree n (%) |
|---|----------------------|-------------|---------------|----------------|-------------------------|
| I think self-medication is a part of self-care for acne treatment. | 43 (32.09) | 55 (41.04) | 29 (21.64) | 6 (4.48) | 1 (0.75) |
| I can advise self-medication for treatment of acne to my friends or family. | 18 (13.43) | 38 (28.36) | 53 (39.55) | 16 (11.94) | 9 (6.72) |
| Dermatologist's consultation is important for treatment of acne. | 63 (47.01) | 43 (32.09) | 21 (15.67) | 6 (4.48) | 1 (0.75) |
| Follow up for acne treatment is important. | 58 (43.28) | 46 (34.33) | 24 (17.91) | 3 (2.24) | 3 (2.24) |

The following table consists of the 2 major components assessed in the study, which were Knowledge and Attitude of MUCM students towards self-medication of acne. The "Practices" components consisted of questions that reviewed respondents regarding their various habits and practices of self-medication of acne and were not assessed in terms of a score. However, for the Knowledge component, respondents scoring above 80% out of a total of 100% are given a score of 'Good'. If they managed to achieve a score between 60% to 80%, they will be deemed as 'Moderate', while those getting below 60% are considered 'Poor'. The same categorization of scores is applied in the 'Attitude'. As for the results regarding the 'Knowledge' component, the majority of respondents (80, 59.70%) fell into the 'Poor' category. Another 46 (34.33%) of respondents had a 'Moderate' score, while a remaining 8 respondents (5.97%) managed to achieve a 'Good' score. The mean score for the 'Knowledge' component was 44.12, with the standard deviation of 27.19. Moving on to the 'Attitude' component, 79 (58.96%) out of 134 respondents were categorized under 'Poor', another 52 (38.81%) respondents managed to achieve a 'Moderate' score and the remaining 3 (2.24%) have managed to get a 'Good' score. The mean score for the 'Attitude' component was 54.74, with the standard deviation of 12.11.

Table 6. Knowledge and attitudes towards self-medication for acne.

| Variables | Frequency (n) | Percentage (%) |
|--------------------|---------------|----------------|
| Knowledge | | |
| Good (>80%) | 8 | 5.97 |
| Moderate (60%-80%) | 46 | 34.33 |
| Poor (<60%) | 80 | 59.70 |
| Mean (SD) | 44.12 (27.19) | |
| Min-Max | 0-100 | |
| Attitude | | |
| Good (>80%) | 3 | 2.24 |
| Moderate (60%-80%) | 52 | 38.81 |
| Poor (<60%) | 79 | 58.96 |
| Mean (SD) | 54.74 (12.11) | |
| Min-Max | 30-100 | |

Table 7 is regarding the association between students' demographic profile, their knowledge towards self-medication for acne, their attitude towards self-medication for acne and self-medication for acne. The students whose family income was above RM 9619 were 3.09 times more likely to self-medicate for acne than those whose family income was below RM 4360 (95% CI for OR: 1.13 to 8.46; P-value: 0.025), while the students whose family income ranged between RM 4360 - RM9619 were 3.52 times more likely to self-medicate for acne than those whose family income was below RM 4360 (95% CI for OR: 1.36 to 9.11; P-value: 0.008). The association between the other variables was all insignificant (P-value >0.05 and the 95% CI for odd ratio included 1 in it). The students aged more than 22 years old were 1.84 times more likely to self-medicate for acne than those 22 and younger (95% CI for OR: 0.87 to 3.86; P-value: 0.106). Females were 1.34 times more likely to self-medicate for acne than males (95% CI for OR: 0.65 to 2.77; P-value: 0.431). Malay, Indian and others were 1.17 (95% CI for OR: 0.33 to 4.14; P-value: 0.808), 1.10 (95% CI for OR: 0.50 to 2.40; P-value: 0.819) and 3.17 (95% CI for OR: 0.79 to 12.69; P-value: 0.093) times more likely to self-medicate for acne than Chinese. In terms of nationality, international students were 1.47 times more likely to self-medicate for acne than Malaysian students (95% CI for OR: 0.36 to 5.98; P-value: 0.585). On the other hand, students currently in preclinical years were 1.06 times more likely to self-medicate for acne than students in clinical years (95% CI for OR: 0.39 to 2.90; P-value: 0.906). As to knowledge towards self-medication for acne, students with moderate and poor knowledge were 2.17 (95% CI for OR: 0.46 to 10.16; P-value: 0.319) and 3.46 (95% CI for OR: 0.77 to 15.61; P-value: 0.090) times more likely to self-medicate for acne than students with good knowledge. Regarding attitude towards self-medication for acne, those with moderate and poor attitude were 0.26 (95% CI for OR: 0.06 to 8.67; P-value: 0.808) and 0.14 (95% CI for OR: 0.07 to 9.93; P-value: 0.905) times less likely to self-medicate than those with good attitude.

Table 7. Chi square analysis of association between the demographic profile of student, their knowledge towards self-medication for acne, their attitude of self-medication for acne and the self-medication for acne.

| Independent Variables | Self-medication for acne | | Odds ratio (95% CI) | Chi-square | P-value |
|--|--------------------------|------------|---------------------|------------|---------|
| | Yes n (%) | No n (%) | | | |
| Age | | | | | |
| ≤22 | 47 (35.07) | 36 (26.87) | Reference | | |
| >22 | 36 (26.87) | 15 (11.19) | 1.84 (0.87-3.86) | 2.612 | 0.106 |
| Gender | | | | | |
| Male | 27 (20.15) | 20 (14.93) | Reference | | |
| Female | 56 (41.79) | 31 (23.13) | 1.34 (0.65-2.77) | 0.620 | 0.431 |
| Ethnicity | | | | | |
| Malay | 8 (5.97) | 5 (3.73) | 1.17 (0.33-4.14) | 0.059 | 0.808 |
| Indian | 36 (26.87) | 24 (17.91) | 1.10 (0.50-2.40) | 0.053 | 0.819 |
| Chinese | 26 (19.40) | 19 (14.18) | Reference | | |
| Others | 13 (9.70) | 3 (2.24) | 3.17 (0.79-12.69) | 2.820 | 0.093 |
| Nationality | | | | | |
| Malaysian | 76 (56.72) | 48 (35.82) | Reference | | |
| International students | 7 (5.22) | 3 (2.24) | 1.47 (0.36-5.98) | 0.298 | 0.585 |
| Family economic status | | | | | |
| <RM4360 | 10 (7.46) | 16 (11.94) | Reference | | |
| RM4360-9619 | 44 (32.84) | 20 (14.93) | 3.52 (1.36-9.11) | 7.067 | 0.008 |
| >RM9619 | 29 (21.64) | 15 (11.19) | 3.09 (1.13-8.46) | 4.990 | 0.025 |
| Academic semester | | | | | |
| Preclinical | 12 (8.96) | 7 (5.22) | 1.06 (0.39-2.90) | 0.014 | 0.906 |
| Clinical | 71 (52.99) | 44 (32.84) | Reference | | |
| Knowledge towards self-medication for acne | | | | | |
| Good (>80%) | 3 (2.24) | 5 (3.73) | Reference | | |
| Moderate (60%-80%) | 26 (19.40) | 20 (14.93) | 2.17 (0.46-10.16) | 0.992 | 0.319 |
| Poor (<60%) | 54 (40.30) | 26 (19.40) | 3.46 (0.77-15.61) | 2.869 | 0.090 |
| Attitude towards self-medication for acne | | | | | |
| Good (>80%) | 2 (1.49) | 1 (0.75) | Reference | | |
| Moderate (60%-80%) | 31 (23.13) | 21 (15.67) | 0.74 (0.06-8.67) | 0.059 | 0.808 |
| Poor (<60%) | 50 (37.31) | 29 (21.64) | 0.86 (0.07-9.93) | 0.014 | 0.905 |

4. Discussion

The goal of this study was to understand if medical students in Manipal University College Malaysia (MUCM) have resorted to using medications, especially benzoyl peroxide as self-medication of their acne, as well as to determine their knowledge, practices and attitude regarding self-medication of acne. Furthermore, the objectives of this research were to determine the reasons for self-medication, sources of self-medication, knowledge, and types of drugs utilised during self-medication. According to the data collected, 61.94% of respondents had done self-medication for acne with benzoyl peroxide, another 31.34% had done nothing after getting acne, while the remaining minority (6.72%) has consulted a dermatologist. Other than benzoyl peroxide, 68.66% of the respondents have also used other products (cosmetic products, chemical peels, etc) for their acne. This is followed by another 26.87% of respondents who have used home-made remedies for their acne. Out of the remaining 6 respondents, 5 have used allopathy while 1 has used homeopathy for their acne. In addition, 90.30% of the respondents have read the instructions before using the drug, which shows that our participants are wary and do take the effort to learn how to use the drug before

applying it. A total of 39.55% of respondents have reasoned that due to the mildness of the disease, they have resorted to self-medicate for their acne. This is closely followed by another 35.07% who self-medicate for their acne due to the easy availability of acne drug. Another 12.69% of the participants have self-medicated for acne as they knew the treatment from past prescriptions. We can agree here that many respondents have done self-medication of acne as the drug is freely available around pharmacies and due to the mild nature of the disease, they do not think it is necessary to see a professional for advice. Comparing these results to the study by Tameez-Ud-Din A et al [4], only around 50.4% of the respondents have done self-medication for acne. A majority of the respondents in this study also read the information (expiration date) on the drug labels (88.6%) and 41.5% knew the precautions of the acne drugs. In another study by Karamata VV et al [6] stated that 59.3% of their respondents have done self-medication of acne. The main reason driving the students to carry out self-medication for acne is due to the mildness of disease (42.3%) which is quite consistent with our finding. The second and third highest reasons also included 'known treatment from past prescriptions' (28.9%) and 'easy availability of drug' (17.9%) which is also very consistent with our results. By observing another study by Hemant V.

Talanikar et al [21], 45% of the respondents did self-medication for acne. However, around half of the respondents (52%) used Clindamycin to treat acne while only 13% used a combination of adapalene and benzoyl peroxide. In addition, 65% of respondents self-medicate their acne due to the mild nature of illness which is around 25% higher than our results. It differs slightly as respondents in Hemant V. Talanikar et al study can choose more than one reason for this statement. 56% of the respondents also used Allopathy for treatment of acne.

In this study, many of the medical students (71.64%) knew that benzoyl peroxide is used for treatment of acne, whereas only some students were aware of the side effects of benzoyl peroxide usage. Moreover, we also came to know that very few students were aware of the contraindications of benzoyl peroxide usage for treatment of acne. Interestingly, the study carried out by Tameez-Ud-Din A et al [4] had a similar finding where 22% of the students knew about the contraindications. From this study, some of the medical students were aware of the precautions for the usage of benzoyl peroxide in the treatment of acne. This study also showed that the majority of the medical students have moderate to poor knowledge about self-medication for acne and only very few students have good knowledge. In the study conducted by Raikar DR et al [1] the mean score for knowledge was not more than 50% indicating poor knowledge about self-medication for acne. Similar findings were also reported in the study conducted by Tameez-ud-din et al [4]. From our study we also found out that the majority of medical students have a moderate to poor attitude towards self-medication for acne, only very few medical students have a good attitude towards acne self-medication.

Our study has shown that there is no significant association between age, gender, ethnicity, nationality, academic year and the practice of self-medication for acne. Similar results were obtained by another study done in Pakistan [10], where they found no association between the gender and the self-medication for acne. However, there is a significant association between family economic status and self-medication in those with family income of more than RM4360. They are more likely to practise self-medication for acne. The same results were also seen in a study conducted in São Paulo [11], which reveals that there is a significant association between family income and self-medication.

In this study, there was also no significant association between the knowledge and the attitude towards self-medication for acne with self-medication for acne itself. A study in Ahmedabad [6] showed that a certain group of final year students with better knowledge scores had a higher rate of self-medication for acne. On the other hand, overconfidence associated with students from lower academic levels resulting in self-medication for

acne was proposed in a study in Jeddah [17].

There were some limitations to our study. Firstly, this research was directed for medical students in a single private university at one mark of time, so the outcomes are not representative of the current clinical practice in Malaysia. This lowers the generalisability factor for this study. Secondly, the lack of information around the clinical definition of acne might have brought a somewhat less than anticipated prevalence of acne and its self-medication. In addition, our data was not evenly spread throughout all batches of MBBS.

Future studies relevant to our study can choose a wider range of questions that assess many other acne medications and not just benzoyl peroxide alone. Many other factors causing acne can also be tested in the patients, for example, individuals who have oily skin, will the amount of acne medication differ for those who have dry skin? Future studies can also include more participants to obtain a more accurate and generalized response in the community. If the study is carried out in a school setting involving students, the sample should be taken from all batches in equal numbers. In addition, associations between demographic data and the knowledge, attitudes and practices of self-medication for acne should be carried out in the future.

5. Conclusion

As a summary, it was observed that 61.94% of MBBS students of MUCM has carried out self-medication for acne. Many of the respondents favoured self-medication due to having mild acne and high availability of acne medication. In terms of knowledge, many of our respondents knew benzoyl peroxide was used for acne treatment, however it was observed that many were unaware of the side effects and contraindications of this drug. In addition, many of our respondents had moderate to poor attitude when it comes to self-medication for acne. An overview of the results regarding attitude stated that they were mostly neutral towards advising self-medication for acne to another person, and agreed that consultation and follow-ups are important in acne treatment. Many respondents also practised precautions by reading instruction on the acne drug label and were also wary of the expiration date of the medication. As an overall, although many students practiced self-medication for acne, many had poor knowledge and attitudes towards it. Thus, it is important that over-the-counter drug distributors like pharmacies should take the initiative to advise customers, especially students, regarding benzoyl peroxide's usage, its various side effects and contraindications. Students should also play their part by equipping themselves with knowledge before trying to self-medicate for their acne. If their acne is moderate or severe in nature, or if they have any doubts regarding self-medication for acne, they should

consult a dermatologist and go for follow-ups if needed.

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Appendix

You are being invited to take part in a research project which aims to assess the knowledge, attitude, and practices of self-medication for acne among medical students in MUCM. It will ask for basic information without breaking anonymity. This survey will take about 5-10 minutes. This survey form includes demographic information, and a few questions assessing the knowledge, attitude and practices regarding self-medication for acne among the participants respectively. Participation in this study is voluntary and you have the right to deny and/or withdraw from the study at any time, no need to give any reason, and this will not have any negative impact on you. Any information you provide is anonymous. Results of the study will be reported as a total picture and not individually. Should you have any inquiries, please do not hesitate to contact any of the investigators shown below. We would like to thank you for your time and participation.

Investigators:

1. Mr. Tan Meng Shen
2. Mr. Shawn Kee ZheHao
3. Ms. Nisa Adini binti Mohd Jafri
4. Ms. Sankavi a/p Subbramani

I have read the above information. I am 18 years of age or older. I consent to participate in the study as titled above of my own free will. I further understand that I have the freedom to choose not to participate in the study. No reward or

inducement has been offered to me to participate as a volunteer in the study.

Do you agree to be a part of this survey?

(Yes, I agree/No, I disagree)

Sociodemographic Profile

Gender (Male/Female)

Age

Ethnicity (Malay/Indian/Chinese/Others)

Nationality (Malaysian/International student)

Household income per month (Less than RM4360/Between RM4360-RM9619/More than RM9619)

Which semester are you currently in? (1-10)

Acne and its Self-medication

Where do you normally get acne?

(Face/Chest/Back/Face & back/Face & chest/Chest & back/Face, chest & back/Other:)

How would you treat the acne?

(Self-medication with benzoyl peroxide and OTC drugs /Consult a general practitioner/Consult a dermatologist/Do nothing)

If you practise self-medication, what type of medication do you use?

(Allopathy/Home-made remedies/Homeopathy/Others (cosmetic products, chemical peels, etc))

Why do you practise self-medication?

(Mildness of the disease/Easy availability/Know treatment from previous prescription/Lack of time/Pharmacological knowledge/Embarrassment of discussing symptoms/Other:)

Where do you get information on self-medication (Acquaintances/Prescription issued to others/Self-decision/Drug advertisements/Books/Others (seminar, lecture, internet))

Knowledge of Self-medication

Benzoyl peroxide is used to treat acne.

(Yes/No/Not sure)

The dose of benzoyl peroxide used for acne treatment is:

(0.5%/2.5%/12.5%/Not sure)

Benzoyl peroxide can cause itchiness of skin.

(Yes/No/Not sure)

Benzoyl peroxide can cause alopecia.

(Yes/No/Not sure)

Benzoyl peroxide can cause burning sensation on skin.

(Yes/No/Not sure)

Benzoyl peroxide can be used alongside with other acne medication like salicylic acid.

(Yes/No/Not sure)

Benzoyl peroxide is safe to apply around eyes or lips.

(Yes/No/Not sure)

Benzoyl peroxide is safe to apply inside the nose or on the neck.

(Yes/No/Not sure)

Attitude towards Self-medication

I think self-medication is a part of self-care for acne treatment.

1 (Strongly disagree)-5 (Strongly agree)

I advise self-medication for treatment of acne to my family and friends.

1 (Strongly disagree)-5 (Strongly agree)

Dermatologist's consultation is important for the treatment of acne.

1 (Strongly disagree)-5 (Strongly agree)

Follow-up for acne treatment is important.

1 (Strongly disagree)-5 (Strongly agree)

Practices regarding Self-medication

Do you read the instructions on the drug label?

(Yes/No)

Do you read expiration date of the drug?

(Yes/No)

Is acne medication always available at home or hostel?

(Yes/No)

For how long was the acne treatment used?

(Until the complaint disappears/Until the drug is finished/According to past prescription)

Which preparations do you prefer for treatment of acne?

(Oral/Topical/Both)

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