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Self-medication practices with antibiotics among phase I MBBS students in a peripheral medical college of West Bengal

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ABSTRACT

Background: Increased consumption of self-prescribed antibiotics may lead to resistance against them also causing rise in financial burden. Medical fraternity is in an advantageous position to use antibiotics of their choice. **Aims and Objectives:** The present study was conducted among medical undergraduates to estimate the prevalence and describe different attributes of self-medication among them. **Materials and Methods:** The study was conducted among 188 undergraduate students of MBBS phase 1 using complete enumeration method with the help of a predesigned pretested semi-structured self-administered questionnaire. **Results:** About 76.76% students were practicing self-medication and majority took it due to convenience (77.46%) and to get rid of fever, cough, and runny nose on the basis of previous doctor's prescription (65.49%) mostly from community pharmacists (69.01%). About 43.66% students changed the antibiotics, 47.18% changed dosage and only 34.5% completed the course, 28.2% students had adverse reactions, and 36.6% students did not opine self-medication as an acceptable practice. **Conclusion:** Self-medication with antibiotics is a quite prevalent practice among the medical undergraduates of phase 1. Further studies will be helpful to assess the change of behavior among them during the progression through MBBS later on.

Key words: Self-medication; Antibiotics; Antimicrobial resistance; Medical students

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INTRODUCTION

Antibiotics are one of the most commonly used drugs worldwide. The World Health Organization defines self-medication as "the use of drugs to treat self-diagnosed disorders or symptoms, or the intermittent or continued use of prescribed drug for chronic or recurrent diseases or symptoms."[1] Globally, the non-prescribed consumption of anti-microbial has increased and is considered as a major risk factor for antimicrobial resistance. Self-medication can also be defined "as the selection and use of medicines by individuals to treat self-recognized or self-diagnosed conditions or symptoms."[2] It includes the procurement of unprescribed medicines or medicines bought by producing old prescriptions.[1,3,4] Although there are increasing number of resistant microbial infections to antimicrobial medicines,[5] before year 2000, different types of antibiotics were not released in the market for public sale for almost 25 years and since then only three new types of antibiotics were made available for the public.[6] In a systematic review, it was seen that self-medication approach was frequent among people in middle-east and contributed to irrational usage of antibiotics.[7] An Indian study showed the urgent need of developing an heath education program for the mass regarding usage of antimicrobials.[8] All over the world self-medication with antibiotics is a major public health problem with ever increasing antibiotic resistance. With this background, the present study was done to estimate the prevalence of self-medication with antibiotics among the MBBS students of phase I and to determine the related sociodemographic factors.

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Aims and objectives

The aims of this study were to describe the sociodemographic factors of phase 1 MBBS students of Bankura Sammilani Medical College and Hospital and to estimate the prevalence of self-medication with antibiotics among the study subjects.

MATERIALS AND METHODS

Study type and design

This was an observational study with cross-sectional design.

Study settings

This institutional study was conducted in the lecture theatre of Bankura Sammilani Medical College.

Study period

The study was conducted from the month of October to December 2021.

Study population

Students of MBBS phase 1 of Bankura Sammilani Medical College were considered as study population.

Inclusion criteria

All the students who gave consent to participate in the study were included in the study.

Exclusion criteria

The students who were absent on the day of data collection were excluded from the study.

Sample size and sampling technique

All the 188 students who were present on the day of data collection were included in the study using complete enumeration method.

Study tools and techniques

Study tools

A predesigned and pretested semi-structured anonymous questionnaire was used.

Study techniques

The predesigned and pretested semi-structured anonymous questionnaire was distributed to all the students and it was explained in their own language.

Ethical clearance

The ethical clearance [No. BSMC/IEC/814] was obtained from the Institutional Ethics Committee of Bankura Sammilani Medical College.

Data collection

Data collection was started after obtaining permission from concerned authority of Bankura Sammilani Medical College and Hospital.

Data analysis

After collection data were entered into Microsoft Excel sheet and it was checked twice to detect any erroneous entry. After organizing and presenting the data in the forms of tables and diagrams, they were analyzed applying the principles of descriptive statistics.

RESULTS

One hundred and eighty-eight out of the 200 students responded to the questionnaire. Mean age of the students was 19.48±0.92 years. Table 1 showed that majority of the students (62.76%) were male, Hindu (86.17%), general caste (59.04%), belonging to nuclear family (79.25%), and of urban residence (62.76 %). Parents (any one of the parents or both) of only eight students were doctors by occupation.

Table 2 showed that 185 students took antibiotics in past 1 year and out of them 142 students (76.76%) self-treated themselves. About 92.97% students took antibiotics for 1–5 times in past 1 year.

Table 3 showed that majority of the students practiced self-medication to get rid of fever (76.76%), cough (50%), and runny nose (48.59%). Majority selected antibiotics by previous doctor's prescription (65.49%) and mostly from community pharmacists (69.01%). Convenience was the most common reason for self-medication (77.46%).

Table 4 shows that 53.53 % students sometimes checked the instructions on package and 7.04% students never checked the instructions. About 47.18% students changed dosage

Table 1: Distribution of students according to background characteristics: (n=188)

Background characteristics	Number of students (%)
Gender	
Male	118 (62.76)
Female	70 (37.24)
Religion	
Hindu	162 (86.17)
Islam	20 (10.64)
Others	6 (3.19)
Caste	
General	111 (59.04)
Scheduled caste	39 (20.74)
Scheduled tribe	10 (5.32)
Other backward classes	28 (14.9)
Type of family	
Nuclear	149 (79.25)
Joint	39 (20.75)
Residence	
Rural	118 (62.76)
Urban	70 (37.24)
Whether any of the parents is doctor by occupation	
Yes	8 (4.3)
No	180 (95.7)
Total	188 (100)

Table 2: Distribution of students according to antibiotic intake

Background characteristics	Number of students (%)
Antibiotics taken in past 1 year (n=188)	
Yes	185 (98.41)
No	3 (1.59)
Frequency of taking antibiotics in past 1 year (n=185)	
1–5	172 (92.97)
6–10	11 (5.95)
>10	2 (1.08)
Self-medication with antibiotics (n=185)	
Yes	142 (76.76)
No	43 (23.24)

Table 3: Different attributes of practicing self-medication with antibiotics: (n=142)

Complaints for which self-medication with antibiotics was done (Multiple response)	
Runny nose	69 (48.59)
Nasal congestion	53 (37.32)
Cough	71 (50.00)
Sore throat	53 (37.32)
Fever	109 (76.76)
Aches and pain	37 (26.05)
Vomiting	20 (14.08)
Diarrhea	46 (32.39)
Skin wounds	13 (9.15)
Others	11 (7.74)
Basis of selection of antibiotic (Multiple response)	
Recommendation by community pharmacist	55 (38.73)
Opinion of family members	88 (61.97)
Opinion of friends	16 (11.26)
Own experience	44 (30.98)
Recommendation by net citizens	2 (1.40)
Previous doctor's prescription	93(65.49)
Advertisements	11 (7.74)
Place of obtaining antibiotic (Multiple response)	
Community pharmacist	98 (69.01)
Left over from previous prescription	47 (33.09)
Online shopping/E-pharmacies	15 (10.56)
Others	7 (4.92)
Reasons for self-medication (Multiple response)	
Cost saving	31 (21.83)
Convenience	110 (77.46)
Lack of trust in prescribing doctor	5 (3.52)
Others	27 (19.01)

of antibiotics and most of them (82.08%) did that due to their improved condition. About 43.67% students switched the antibiotics and all of them did that because according to them it did not work. Only 34.5% students completed the course of antibiotics. About 50% students were concerned about taking counterfeit antibiotics and 11.27% students took ≥2 antibiotics during a single illness and 32.4% took same antibiotics with different brand names. About 3.4% of the students who practiced self-medication were of the opinion that self-medication is an acceptable practice.

DISCUSSION

In this study, 76.76% of the students self-treated themselves with antibiotics. Majority (92.97%) of the students had taken

Table 4: Distribution of students practicing self-medication with antibiotics according to their behavioral aspects: (n=142)

Behavioral aspects	Number of students (%)
Checking of instructions done	
Yes always	56 (39.43)
Yes sometimes	76 (53.53)
Never	10 (7.04)
Changing the dosage	
Yes	67 (47.18)
No	75 (52.82)
Reason for changing dosage (multiple response)	
Condition improved	55 (82.08)
Condition worsened	13 (19.4)
To reduce adverse effect	23 (34.32)
Drug insufficient	13 (19.4)
Others	4 (5.97)
Switching antibiotics	
Yes	62 (43.67)
No	80 (56.33)
Reason for switching antibiotics(multiple response)	
Former drug did not work	62 (100)
Former drug ran out	12 (19.35)
The latter drug was cheaper	4 (6.45)
To reduce adverse effect	18 (29.03)
Others	2 (3.2)
Completing the course of antibiotic	
Yes	49 (34.5)
No	93 (65.5)
Concern of counterfeit antibiotics taken	
Yes	71 (50)
No	71 (50)
Antibiotics taken maximally during a single illness	
1	126 (88.73)
≥2	16 (11.27)
Intake of same antibiotics with different names	
Yes	46 (32.4)
No	96 (67.6)
Opinion about self- medication	
Acceptable	90 (63.4)
Not acceptable	52 (36.6)
Total	142 (100)

antibiotics 1–5 times in the past 1 year. Most of students used antibiotics for having fever (76.76%), cough (50.00%), and runny nose (48.59%). Majority (65.49%) of the students used antibiotics on the basis of previous doctor's prescription. About 69.01% of the students obtained the antibiotics from community pharmacist. About 44% of the students changed the dosage of antibiotics. About 36.6% of the students who are practicing self-medication were of the opinion that self-medication is not an acceptable practice. This result is quite similar to that of a study done by Salih and Abd,[9] where 63% students practiced self-medication and 45% received information from community pharmacists regarding self-medication. In their study, 55% were not in favor of the practice of self-medication compared to 36.6% in the present study. The present study finding is also similar to that of a study done by Banerjee and Bhadury[10] in a medical college of West Bengal, where self-medication was quite prevalent among medical undergraduates (57%). In their study, principal

morbidities for self-medication were cough and common cold, fever, etc., resembling the findings of this study. In the same study, 28% of students perceived self-medication as a time saving approach compared to the perception of students in the present study, in which 77% think self-medication as a convenient practice. Similarly, in a study in South India by Sharma et al.,[11] 84.4% health-care university students had practice of self-medication. In their study, 6.8% experienced adverse drug reactions compared to 28% in our study.

Limitations of the study

Self-medication practices with antibiotics would have been estimated among the students of all the phases as well as among the other health-care providers and the basis of choosing the antibiotics would have been ascertained thus identifying the gap between their knowledge, attitude, and practice.

CONCLUSION

The present study concludes that self-medication with antibiotics is quite prevalent among medical undergraduates. Maximum of those students take antibiotics either on their own or based on past prescription. They practice self-medication to get rid of fever, cough, and runny nose. They consult to community pharmacist in major occasions. Doing the act of self-medication, little proportion of students had some side effects. Due to lack of pharmacological knowledge regarding antibiotics, they do not know the common side effects, or their therapeutic index beyond which certain side effect occurs. Hence, it is a high-priority need to create the awareness regarding self- medication which may be facilitated by the faculties of a medical college. This may lead to more rational decision-making regarding care seeking by the medical undergraduates. Laws should be enforced so that certain medicines should not be dispensed without proper prescription by a registered medical practitioner only.

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