Original Research Article

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Prevalence and pattern of self-medication among undergraduate students in a medical college of Kolkata

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ABSTRACT

Background: Self-medication is quite a prevalent public health problem in every part of the world. It can cause serious harms to the recipients through various implications like adverse drug reactions, incomplete cure, drug dependence etc. Medical students are in a unique position for wide practice of self-medication. The current study aimed to estimate the prevalence and to find out the existing knowledge, attitude and pattern of practice regarding self-medication among the undergraduate medical students of ESIC Medical College, Joka, Kolkata.

Methods: A cross-sectional study had been conducted among 300 undergraduate medical students through an online survey with the help of a predesigned pretested digital questionnaire. The participants fulfilling the inclusion criteria were included by complete enumeration method after taking informed consent.

Results: The overall prevalence of ever-use of self-medication was 65%. Majority had some knowledge about actual definition of self-medication (74%), hazards due to change of time schedule of antibiotics (59.7%), hazards due to increase in dose of antibiotics (64%), adverse drug reactions of different antibiotics (65%) and importance of completing the dosage schedule of antibiotics (56.7%); the most common source of their information being textbooks or teachers (74%). Most common indications for self-medication were fever (79.6%), followed by cough and cold (74.8%), pain (61.4%), indigestion (51.3) and diarrhoea (43.3%). The most common drugs used were antacids (81.2%), analgesics (72.1%), antipyretics (53.2%) and antibiotics (43.3%). The major reason for practice of self-medication was minor illness (74.3%).

Conclusions: Self-medication was widely prevalent among the medical students of ESIC Medical College, Joka, Kolkata. Continuous counselling activities with proper information through inclusion of this topic to academic course are the need of the hour to halt this malpractice.

Keywords: Prevalence, Self-medication, Undergraduate, Medical, College, Kolkata

INTRODUCTION

Self-medication is the practice of intake of medicines by the people on their own or with help of a pharmacist, but without proper advice or prescription from a medical professional to treat a self-diagnosed condition.¹ According to WHO, self-medication is a part and parcel of self-care which is again an important resource of primary healthcare system.² It is quite a prevalent practice worldwide, due to various factors like inaccessibility of health services, easy procurement of over the counter drugs, weak drug dispensing legislations and with wide access to internet. Various socio-demographic factors are also responsible for self-medication practice. Improvement in educational level when increases the risk taking behaviour to treat oneself out of over-confidence, on the other hand low socio-economic status forces people to get over-the-counter medicines directly to save money

without opting for professional help to avoid doctor's fee. ^{2,3} Irrational self-medication is detrimental to health as it enhances the risks of adverse drug reaction, antimicrobial resistance and also leads to wastage of resources. ⁴ Over-dosage or under-dosage may lead to damage of organs or incomplete cure. Repeated self-medication can also produce drug dependence to certain drugs and misdiagnosis by professionals if being visited for incomplete cure, as symptoms are masked temporarily. ⁵

Medical students though not having legal permit to prescribe medicines, but have an inevitable urge of self-medication practice for themselves and also for others as they are going through the professional course with gradual acquirement of knowledge regarding different drugs and their proper use. As they reach their final semester, self-medication practice increase with increment in their ability of diagnosis of different clinical conditions and knowledge of the use of drugs.

Previously a good amount of researches had been done to address this issue both in India as well as in abroad. ^{1,3,4,6,7} But the pattern has not still been explored among medical students of Kolkata. With this background, the current study had been taken up to estimate the prevalence of self-medication and also to find out the existing knowledge, attitude and pattern of practice regarding the same among the undergraduate medical students of ESIC Medical College, Joka, Kolkata.

METHODS

A cross-sectional observational study had been conducted among the undergraduate medical students in the month of May, 2017 attending the ESIC Medical College, Joka, Kolkata. Informed consent from every participant had been taken before conduction of the study. All the students of existing 2nd, 4th, 6th and 8th semesters were included as the study population after taking consent. Seriously ill, chronically absent and not willing subjects were excluded from the study.

The study tool consisted of a questionnaire which was prepared in English language and had not been translated into vernacular, as all the study subjects could understand English well. The questionnaire had two parts, first one was prepared to record the socio-demographic characteristics and the second part was to assess the K.A.P of self-medication among the students. Face validity of each item had been checked from previous researches in presence of experts. They also decided the content validity of the each domain. Reliability had been checked by test retest method (r=0.89). Pretesting followed by pilot testing was done. Necessary corrections and modifications were made accordingly.

An online survey had been performed to get the responses from the subjects. The participants were contacted with the digital questionnaire through various

social networking systems by complete enumeration method. Out of total 381 registered students, 300 responses had been obtained with an unresponsiveness of 21.3%. Data were entered in Microsoft Excel and subsequently analyzed by SPSS version 20.0.

RESULTS

Out of total 300 respondents, majority were male (59%), belonged to 4th semester (30.7%), with permanent residence in an urban area (73%) and hostelite (62%). Mean age of the respondents was 20.95±1.884 with a minimum age of 18 years and a maximum of 30 years.

Regarding knowledge of self-medication, majority of the respondents had some knowledge about actual definition of self-medication (74%), hazards due to change of time schedule of antibiotics (59.7%), hazards due to increase in dose of antibiotics (64%), adverse drug reactions of different antibiotics (65%) and about importance of completing the dosage schedule of antibiotics (56.7%) (Table 1).

The most common hazards of change of timing of antibiotics as mentioned by the participants were development of drug resistance, followed by drug toxicity and loss of drug effectiveness, whereas recurrence of infection followed by drug resistance were found to be common responses from them as the hazards of not completing the dose of antibiotics. Major sources of information regarding knowledge about self-medication were found to be textbooks or teachers (74%), followed by internet (56%), previous prescription (25.7%), seniors (23.3%), pharmacist (23%) and advertisements in different media (15.3%).

Regarding attitude about self-medication, majority of the participants agreed on the statements that self-medication is acceptable for medical students (48.6%), they have good ability to diagnose (50%) and treat (41.7%) the symptoms of them, they are likely to bother their doctors with minor problems always (30.3%), they should procure over-the-counter drugs without prescriptions from a recognised doctor (27%), they can advise overthe-counter drugs for their friends or relatives or others (41%) and pharmacist is a good source of advice or information about minor problems always (34.7%); though a significant proportion of students also did not show any clear cut idea about the facts that medical students are likely to bother their doctors with minor problems always (30%) and should procure over-thecounter drugs without prescriptions from a recognised doctor (26%). Majority of the subjects strongly agreed the facts that medical license would be essential for better administration of drugs (54.7%) and self-medication would be harmful if taken without proper knowledge of drugs and disease (68.7%). Nearly half of them (45.3%) strongly disagreed on not completing the course of medicines if the symptoms subside (Table 1).

Table 1: Knowledge and attitude regarding self-medication (n=300).

	Not at all No (%)		Some No (%)		Very much No (%)
Knowledge regarding self-medication					
Definition of self -medication	29 (9.7)		222 (74)		49 (16.3)
Hazards due to change of time schedule of antibiotics	60 (20)		179 (59.7)		61 (20.3)
Hazards due to increase in dose of antibiotics	39 (13)		192 (64)		69 (23)
Adverse drug reaction of antibiotics	33 (11)		195 (65)		72 (24)
Importance of completing the dosage schedule of antibiotics	24 (8)		170 (56.7)		106 (35.3)
Attitude regarding self-medication	Strongly disagree	Disagree	Don't know	Agree	Strongly agree
Self-medication is acceptable for medical students.	16 (5.3)	49 (16.4)	55 (18.4)	146 (48.6)	34 (11.3)
Medical students have good ability to diagnose the symptoms of them.	19 (6.3)	44 (14.7)	52 (17.3)	150 (50)	35 (11.7)
Medical students have good ability to treat symptoms of them.	23 (7.6)	60 (20)	63 (21)	125 (41.7)	29 (9.7)
Medical license would be essential for better administration of drugs	5 (1.6)	14 (4.7)	37 (12.3)	80 (26.7)	164 (54.7)
Self-medication would be harmful if taken without proper knowledge of drugs and disease.	8 (2.6)	9 (3)	27 (9)	50 (16.7)	206 (68.7)
The course of medicines should not be completed if the symptoms subside.	136 (45.3)	28 (9.3)	48 (16)	44 (14.7)	44 (14.7)
Pharmacist - good source of advice/information about minor problems always.	44 (14.7)	62 (20.6)	61 (20.3)	104 (34.7)	29 (9.7)
Medical students are likely to bother their doctors with minor problems always.	24 (8)	66 (22)	90 (30)	91 (30.3)	29 (9.7)
Medical students should procure over-the-counter drugs without prescriptions from a recognised doctor.	51 (17)	54 (18)	78 (26)	81 (27)	36 (12)
Medical students can advise over the counter drugs for their friends/relatives/ others.	39 (13)	51 (17)	59 (19.7)	123 (41)	28 (9.3)

Table 2: Pattern of practice of self-medication (n=187).

Pattern of practice	Yes frequency (%)	No frequency (%)
Do you reuse the prescription when experienced with similar symptoms?	118 (63.1)	69 (36.8)
Do you discontinue the prescribed medicines by yourself when symptoms are relieved?	112 (59.9)	75 (40.1)
Do you increase the drug dose on yourself when symptoms are not relieved?	33 (17.6)	154 (82.4)
Do you experience adverse reactions during self-medication?	34 (18.2)	153 (81.8)
Are you habituated to any drug due to self-medication?	149 (79.7)	38 (20.3)
Do you give your prescription to someone who is having similar symptoms as yours?	130 (69.5)	57 (30.5)

Regarding the practice, prevalence of self-medication (ever-use) among medical students in ESIC Medical College was found to be 65%; whereas the prevalence in last one year was 62.33%. Most of the students preferred self-medication (70.5%) most of the students preferred self-medication (70.5%) when they fall sick; while 45.4% used to consult doctor, 32% wait till symptoms subside, 22.9% ask for suggestions from seniors and 8% used to consult internet during sickness. Majority of the students practised self-medication for 1-2 times in last one year (40.6%), followed by 3-4 times (37%) and more than 4

times (22.4%). Most common indications for practicing self-medication were fever (79.6%), followed by cough and cold (74.8%), pain (61.4%), indigestion (51.3), diarrhoea (43.3%), nausea and vomiting (24.5%), anxiety and tension (5.8%), dysmenorrhoea (3.2%) and asthma (2.1%). The most common drugs used in self-medication were antacids (81.2%), analgesics (72.1%), antipyretics (53.2%), antibiotics (43.3%), vitamins (34.7%), antiallergic (24.5%), herbals (12.8%), antispasmodic (4.2%), sedatives (4.2%) and antidepressants (3.7%).

The common antibiotics used in self-medication were azithromycin (27.20%) followed by coamoxyclav (22.20%), norfloxacin (13.6%), amoxycillin (13.6%), ciprofloxacin (8.7%), cefixime (7.4%), levofloxacin (7.4%), ofloxacin (7.4%), erythromycin (5%), metronidazole (3.7%), doxycyclin (2.5%), ampicillin (2.5%) and clindamycin (1.2%). More than half of the subjects (81.3%) advised antibiotics to others in last one year. The common antibiotics advised were azithromycin, coamoxyclav, norfloxacin, ofolxacin and cefixime.

Most of the participants (83.9%) had practised self-medication on themselves while 36.35% on family members and 21.3% on friends. Out of 187 respondents, majority told the common causes of self-medication practice were minor illness (74.3%), followed by prior experience (48.1%), quick relief (38.5%), emergency use (24.6%), lack of time to visit a doctor (18.7%), cost-effectiveness (11.76%) and drug dependence (2.13%); while out of 113 respondents, majority told the common causes of not practicing self-medication were risk of wrong diagnosis (60.2%), followed by risk of missing the actual diagnosis (46%), risk of adverse reactions (38.1%) and risk of drug dependence (15.04%).

Regarding the pattern of practice, majority (63.8%) reused prescriptions when they experience similar symptoms while 36.8% did not. More than half of the subjects (59.9%) discontinued the prescribed medicines when the symptoms are relieved; while 40.1% completed the course. Most of them (82.4%) claimed that they did not increase the drug dose when symptoms are not relieved; whereas 81.8% said that they did not have any adverse reactions during self-medication and 18.2% said that they had experienced the same. Majority (79.7%) were not habituated to any drug due to self-medication, while 20.3% were habituated to some drugs due to self-medication. Most of them (69.5%) gave their prescription to someone who is having similar symptoms as them; while 30.5% did not have this practice (Table 2).

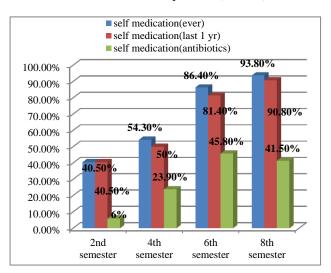


Figure 1: Multiple bar diagram showing semester wise pattern of self-medication practices.

Prevalence of ever use of self-medication was found to be highest among the 8th semester students (93.80%) and least amongst 2nd semester (40.50%). A pattern of increase in prevalence had been seen from lower to higher semesters. Prevalence of self-medication during last one year was found to be highest among the 8th semester students (90.80%) and least amongst 2nd semester (40.50%). A pattern of increase in prevalence had also been seen from lower to higher semesters in this case; whereas prevalence of self-medication with antibiotics had been found to be highest amongst 6th semester students (45.80%) of ESIC Medical College (Figure 1).

DISCUSSION

The study found that the overall prevalence of self-medication among the students of ESIC Medical College, Joka, Kolkata was 65%, which was consistent with other researches, like a study by Jagadeesh et al showed a prevalence of 66%, a study by Patil et al found it to be 88.18%, whereas a study in West Bengal revealed the prevalence of 57.05% and another in Magalore found it to be 78.6%. 8-11 Researches outside India found the prevalence of self-medication varying from 43.24% reported in Mekelle University, 50.9% in a study in Saudi Arabia and even higher in a study in Serbia (79.9%) and in a study conducted in Chitwan Medical College, Bharatpur, Nepal (84%). 3.12-14

Regarding knowledge of self-medication, majority of the respondents had some knowledge about actual definition of self-medication (74%), hazards due to change of time schedule of antibiotics (59.7%), hazards due to increase in dose of antibiotics (64%), adverse drug reactions of different antibiotics (65%) and about importance of completing the dosage schedule of antibiotics (56.7%), whereas a study in Nepal revealed the proportions to be rather lower (28%, 28%, 38.7%, 36% and 17.3% respectively) indicating poorer knowledge level of the participants than the current study.³ Concerning the source of information, the present study reported the common sources to be textbooks or teachers (74%), followed by internet (56%), previous prescription (25.7%), seniors (23.3%), pharmacist (23%) and advertisements in different media (15.3%); while it was pharmacist (60.31% and 49.68%), followed by textbook (46.03% and 8.91%) in a study by Mehta et al and Wajantri et al respectively.^{3,15}

Regarding attitude about self-medication, the findings of the current study was found to be more or less consistent with the results of a study by Mehta et al except the fact that self-medication would be harmful if taken without proper knowledge of drugs and disease.³ The current study showed that majority (68.7%) of the students had strongly agreed on the above statement, whereas the study by Mehta et al found that majority (62.7%) had strongly disagreed on it showing a more harmful attitude.³

Most common indications for practicing self-medication in the present study were fever (79.6%), followed by cough and cold (74.8%), pain (61.4%), indigestion (51.3), diarrhoea (43.3%), which was consistent with other studies.^{3,9,16} The most common drugs used in self-medication as found in this study were antacids (81.2%), analgesics (72.1%), antipyretics (53.2%), antibiotics (43.3%), vitamins (34.7%), anti-allergic (24.5%), which was also found to be consistent with other researches.^{3,9,16}

Major reasons for practice of self-medication, as found in this study were minor illness (74.3%), followed by prior experience (48.1%), quick relief (38.5%). The findings were in congruence with other studies.^{3,10} On the other hand, the major reasons against self-medication were reported to be risk of wrong diagnosis (60.2%), followed by risk of missing the actual diagnosis (46%), risk of adverse reactions (38.1%) in this study; while it were risk of adverse drug reaction (50%) and risk of wrong diagnosis (50%) as found by Mehta et al.³

The prevalence of self-medication were found to be 40.5%, 54.3%, 86.4% and 83.8% respectively among 2nd, 4th, 6th and 8th semester students in the current study; while they were 86.33%, 89.34%, 85.37% and 91.75% respectively as found in a study by Patil et al.⁹

The current study had been hindered with some limitations. It was based on an online survey which had its own difficulties like misinterpretation of questions, missing data etc. Due to time and money constraints the study could not be extended to the other medical colleges of Kolkata. The results might have been slightly distorted due to willful falsification of statements by few participants. More over the study had been done only on medical students of a single medical college of Kolkata. With the perceptions of this study further community based researches could be done to explore the unknown facts and prevalence of self-medication among other sub groups of the community.

CONCLUSION

This descriptive study had found that self-medication was quite common among undergraduate medical students of ESIC Medical College, Joka, facilitated by the easy availability of drugs and information from textbook. The respondents showed inadequate knowledge inappropriate attitude towards some points regarding selfmedication which had been reflected in their easy and frequent practice of self-medication. The students harm themselves and also others by encouraging and helping them to form a habit of buying over the counter drugs without proper prescription from a doctor. Medical students being the future health professionals should take the responsibility to control this malpractice. The topic can also be included in the undergraduate course by emphasizing the potential risks of self-medication. There is also a great responsibility of drug regulatory authorities

and faculties about the control of self-medication by explaining the students about its harmful effects.

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REFERENCES

- Kumari R, Kumar D, Bahl R, Gupta R. Study of Knowledge and Practices of Self-medication among Medical Students at Jammu. J Med Sci. 2012;15(2):141-4.
- World Health Organization. Guidelines for the regulatory assessment of medicinal products for use in self-medication. (2000) Available at: http://apps.who.int/medicinedocs/pdf/s2218e/ s2218e.pdf. Accessed on 3 June 2017.
- Mehta RJ, Sharma S. Knowledge, Attitude and Practice of Self-Medication among Medical Students. IOSR J Nursing Health Sci. 2015;4(1):89-96
- James H, Handu SS, Khalid AJ, Khaja A, Otoom S, Sequeira RP. Evaluation of the knowledge, attitude and practice of self-medication among first-year medical students. Med Princ Pract. 2006;15:270–5.
- 5. Bell E. Dangers of Self-Medications (2011). Available at: http://EzineArticles.com/?expert= Eva_Bell. Accessed on 3 June 2017.
- 6. Badiger S, Kundapur R, Jain A, Kumar A, Pattanshetty S, Thakolkaran N, et al. Self-medication patterns among medical students in South India. Australas Med J. 2012;5:217-20.
- 7. Shankar PR, Dubey AK, Dwivedi NR, Nandy A, Barton B. Knowledge, perception and practice of self-medication among premedical and basic science undergraduate medical students. Asian J Med Sci. 2016;7(6);63-8.
- 8. Jagadeesh K, Chidananda KN, Revankar SP, Prasad NS. Study on self-medication among 2nd year medical students. Int J Basic Clin Pharmacol. 2015;4:164-7.
- Patil SB, Vardhamane SH, Patil BV, Jeevangi SK, Binjawadgi AS, Kanaki AR. Self-Medication Practice and Perceptions Among Undergraduate Medical Students: A Cross-Sectional Study. J Clin Diagnos Res. 2014;8(12):HC20-3.
- 10. Banerjee I, Bhadury T. Self-medication practice among undergraduate medical students in a tertiary care medical college, West Bengal. J Postgrad Med. 2012;58:127–31.

- Kumar N, Kanchan T, Unnikrishnan B, Rekha T, Mithra P, Kulkarni V, et al. Perceptions and Practices of Self-Medication among Medical Students in Coastal South India. PLoS One. 2013;8(8):e72247.
- 12. Gutema GB, Gadisa DA, Kidanemariam ZA, Berhe DF, Berhe AH, Hadera MG et al. Self-Medication Practices among Health Sciences Students: The Case of Mekelle University. J Applied Pharm Sci. 2011;1(10):183-9.
- AlRaddadi KK, Barakeh RM, AlRefaie SM, AlYahya LS, Adosary MA, Alyahya KI. Determinants of self-medication among undergraduate students at King Saud University: Knowledge, attitude and practice. J Health Spec. 2017;5:95-101.
- 14. Lukovic JA, Miletic V, Pekmezovic T, Trajkovic G, Ratkovic N, Aleksic D, et al. Self-Medication Practices and Risk Factors for Self-Medication

- among Medical Students in Belgrade, Serbia. PLoS One. 2014;9(12):e114644.
- Wajantri P, Angadi MM, Masali KA, Shashank KJ, Sowmya BA. Study on Knowledge, Attitude and Practice about Self Medication among College Students. Int J Health Sci Res. 2013;4(7):2249-9571.
- 16. Pandya RN, Jhaveri KS, Vyas FI, Patel VJ. Prevalence, pattern and perceptions of self-medication in medical students. Int J Basic Clin Pharmacol. 2010;2(3):275-80.

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