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Perception, Practice, Prevalence and Pattern of Self Medication in Medical Undergraduate Students in Kerala

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ABSTRACT

Background: Self-medication practice is widespread in many countries and the irrational use of drugs is a cause of concern. It assumes a special significance among medical students as they are exposed to knowledge about diseases and drugs. Aim: To assess the prevalence, pattern, perceptions and practices of self medication in undergraduate medical students. Materials and Methods: This was a cross-sectional, questionnaire-based study. The study was conducted in Azeezia Institute of Medical Sciences & Research, Kollam. Ethics Committee approval was obtained. The purpose of the study was explained all of whom consented to the study. They were asked to fill up a semi-structured validated questionnaire which consisted of both open ended and close ended items. Results: Total of 234 students was analyzed, the detailed results was presented as counts and percentage. Majority (61.94%) were aware about generic drugs. Only 8.98% students could justify the statement that OTC to be used with caution.230 students (98.3%) practiced self medication. Majority (38.26%) had practiced self medication for a single indication. Majority (44.43%) used single drug for self medication and most common drug used was paracetamol. 37.6% students practiced antimicrobial self medication. Most common antimicrobial prescribed was azithromycin (60.22%). Most common indication for self medicating antimicrobial was sore throat (80.68%). 26.14% students did not complete course of antibiotic. Conclusion: There is a need of incorporating self medication as an intrinsic component in medical curriculum.

1. Introduction

Self medication involves the use of medicinal products by the individuals to treat self-recognized disorders or symptoms, or the intermittent or continuous use of a medication prescribed by a physician for chronic or recurring diseases or symptoms [1]. Self medication involves acquiring medicines without a prescription, resubmitting old prescriptions to purchase medicines, sharing medicines with relatives or members of one's social circle or using left over medicines stored at home [2].

According to WHO guidelines responsible self-medication can help prevent and treat diseases that do not require medical consultation and reduce the increasing pressure on medical services for relief of minor ailments especially when resources are limited [3]. Otherwise self medication if not based on authentic medical information can lead to irrational use of drugs, wastage of resources, and increased resistance of pathogens and can lead to serious health hazards such as adverse drug reaction and prolonged morbidity [4].

Not much is known about health related problems and health care utilization, including self medication among young adults. The youth are highly influenced by the media and the internet which promote self-medication behavior [5]. The increased advertising of pharmaceuticals poses a larger threat of self-medication to the younger population in general. This raises concerns of incorrect self-diagnosis, drug interaction, and use of drugs other than for the original indication [6].

A study conducted at All India Institute of Medical Sciences, New Delhi observed that self-medication was considerably high among undergraduate medical and paramedical students in India and it increased with medical knowledge [7]. There is a paucity of literature on the prevalence of self-medication among the undergraduate students of Azeezia Institute of Medical Sciences, Kollam. Hence the present study was conducted with the objectives to assess the students' prevalence, pattern, perceptions and practices of self medication in undergraduate medical students.

Materials and Methods

Study design

This was a cross-sectional, questionnaire-based study.

Study setting

The study was conducted in July 2014 in Azeezia Institute of Medical Sciences & Research, Kollam. Ethics Committee approval was obtained from the Institutional Ethics Committee of Azeezia Institute of Medical Sciences & Research, Kollam.

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Bhuvana. K.B. Int J Biol Med Res. 2015; 6(3): 5109-5113

5110

Study participants and procedure

During the study period three batches (2010, 2011 and 2012) of MBBS students were included who were in the institute. Total of 234 students participated in the study. Among which 74 students were in final year, 66 students were in 3rd year and 98 students were in 2nd year. The purpose of the study was explained all of whom consented to the study. They were asked to fill up a printed, semi-structured validated questionnaire which consisted of both open ended and close ended items. Total 22 questions which would test the knowledge, perception, practice and pattern of self medication were there.

Statistical analyses

The data was analyzed statistically using SPSS software version 17 and results were depicted as counts and percentages.

Results

Total of 234 students were analyzed for perception, practice, prevalence and pattern of self medication, the detailed results was presented as counts and percentage.

Table 1: Perception of medical students towards self medication

Items	Total n=234(%)	4th year n=74(%)	3rd year n=62(%)	2nd year n=98(%)
Aware about self medication	233 (99.57)	73 (98.65)	62 (100)	98 (100)
Aware about generic drugs	145 (61.94)	63 (85.4)	38 (61.29)	44 (44.9)
Not aware about expiry period of drugs	5 (2.14)	0 (0)	1 (1.61)	4 (4.08)
Could define OTC	208 (88.89)	70 (94.6)	62 (100)	76 (77.55)
Agree that misuse of OTC leads to problem	223 (95.3)	74 (100)	60 (96.77)	89 (90.8)
OTC to be used with caution				
Disagree	26 (11.11)	4 (5.4)	7 (11.3)	15 (15.3)
Agree, without justification	187 (79.91)	57 (77.03)	54 (87.09)	76 (77.55)
Agree, with justification	21 (8.98)	13 (17.57)	1 (1.61)	7 (7.15)
Agree that clinicians to be familiar with OTC products is essential	224 (95.73)	70 (94.6)	60 (96.77)	94 (95.9)
Believe that pharmacists are always trustworthy	30 (12.82)	4 (5.4)	11 (17.74)	15 (15.3)
Agree that self medication is harmful without proper knowledge of drug and disease	230 (98.3)	72 (97.3)	60 (96.77)	98 (100)
Believe that mass communication is bad medium to educate people about medicines	59 (25.21)	27 (36.5)	7 (11.3)	25 (25.51)
Read package insert				
Yes, always	95 (40.6)	41 (55.42)	20 (32.26)	34 (34.7)
Yes, sometimes	122 (52.1)	28 (37.83)	40 (64.51)	54 (55.1)
Never	17 (7.3)	5 (6.75)	2 (3.23)	10 (10.2)
Aware about usage of self medication in special population and its precaution	231(98.71)	73 (98.65)	62 (100)	96(97.96)
Agree that self medication may lead to irrational use of drugs	226 (96.59)	74 (100)	59 (95.16)	93 (94.8)

Table 2: Prevalence of self medication and source of information for practicing self medication

Practiced self medication	Total n=234(%)	4th year n=74(%)	3rd year n=62(%)	2nd year n=98(%)
No	4 (1.7)	3 (4.05)	0 (0)	1 (1.02)
Yes	230 (98.3)	71 (95.95)	62 (100)	97 (98.98)
Characteristics	Total n=230(%)	4th year n=71(%)	3rd year n=62(%)	2nd year n=97(%)
Number of times in past 6 months				
0	18 (7.9)	10 (14)	5 (8)	3 (3.1)
1-4	188 (81.7)	61 (86)	44 (71)	83 (85.6
>4	24 (10.4)	0 (0)	13 (21)	11 (11.3)
Source of information ,for practice of self medication	Options were pharmacology based knowledge(PBK), previous illness expertise(PIE), family friends(FF), media, drug advertisements, seniors(S), internet			
Single source	66 (28.7)	39 (54.92)	11 (17.75)	16 (16.49)
Dual source	72 (31.31)	14 (19.72)	20 (32.25)	38 (39.18)
Triple source	70 (30.43)	14 (19.72)	22 (35.49)	34 (35.05)
Quadruple source	18 (7.83)	2 (2.82)	8 (12.90)	8 (8.25)
Pentad source	4 (1.73)	2 (2.82)	1 (1.61)	1 (1.03)
Most common source of information				
Single		PBK (29/39)	PIE (10/11)	FF (7/16)
Dual		PBK & FF(4/14)	PIE&FF (8/20)	PIE & FF(13/38)
Triple		PBK,S, PIE (6/14)	PIE,FF, PBK (15/22)	PIE,FF, S (9/34)

Bhuvana. K.B. Int J Biol Med Res. 2015; 6(3): 5109-5113

5111

Table 3: Patterns of practice of self medication

Source for practice of self medication	Total n=230(%)	4th year n=71(%)	3rd year n=62(%)	2nd year n=97(%)
Single source	152 (66.10)	55 (77.5)	33 (53.23)	64 (66.0)
Dual source	73 (31.73)	15 (21.1)	28 (45.16)	30 (30.9)
Triple source	5 (2.17)	1 (1.4)	1 (1.61)	3 (3.1)
Most common source for practice	Options were Pharmacy(P), Family friends(FF), Medical representatives, Medical staff, Online purchase			
Single		P (51/55)	P (29/33)	P (48/64)
Dual		P&FF(11/15)	P&FF(28/28)	P&FF(29/30)
Reason for practicing self medication				
Single	115 (50)	43 (60.56)	29 (46.78)	43 (44.33)
Dual	78 (33.91)	18 (25.36)	23 (37.09)	37 (38.14)
Triple	34 (14.79)	10 (14.08)	10 (16.13)	14 (14.43)
Quadruple	3 (1.30)	0 (0)	0 (0)	3 (3.1)
Most common reason for practice	Options were Minor ailment (MA), Ease and convenience(EC), Quick relief(QR),No time to consult, Free physician sample			
Single		MA (31/43)	MA(13/29)	MA(23/43)
Dual		MA&QR (9/18)	MA&EC (6/23)	MA&EC (9/18)
Indications for self medication				
Single indication	88 (38.26)	24 (33.8)	17 (27.4)	47 (48.5)
Dual indications	76 (33.04)	20 (28.2)	29 (46.8)	27 (27.8)
Triple indications	39 (16.96)	15 (21.1)	7 (11.3)	17 (17.5)
4 indications	23 (10.00)	11 (15.5)	6 (9.7)	6 (6.2)
5 indications	3 (1.31)	1 (1.4)	2 (3.2)	0 (0)
6 indications	1 (0.43)	0 (0)	1 (1.6)	0 (0)
Most common indication				
Single		Fever (15/24)	Fever(16/17)	Fever(37/47)
Dual		Fever, gastritis(6/20)	Fever, allergy (10/29)	Fever, cold(6/27)
Drugs used for self medication				
Single drug	102 (44.34)	27 (38)	19 (30.65)	56 (57.74)
Two drugs	72 (31.31)	17 (24)	26 (41.9)	29 (29.90)
Three drugs	31 (13.48)	15 (21.1)	8 (12.90)	8 (8.24)
Four drugs	22 (9.56)	11 (15.5)	7 (11.29)	4 (4.12)
Five drugs	3 (1.31)	1 (1.4)	2 (3.22)	0 (0)
Incorrect dose, frequency, duration of the drugs self medicated	24 (10.43)	9 (12.68)	1 (1.61)	14 (14.43)
No knowledge of side effects	68 (29.57)	7 (9.86)	3 (4.84)	58 (59.8)

Table 4: Patterns of practice of anti microbial self medication

Practiced antimicrobial self medication	Total n=234(%)	4th year n=74(%)	3rd year n=62(%)	2nd year n=98(%)
No	146 (62.4)	34 (45.95)	36 (58.06)	76 (77.55)
Yes	88 (37.6)	40 (54.05)	26 (41.94)	22 (22.45)
Antimicrobial name	Total n=88(%)	4th year n=40(%)	3rd year n=26(%)	2nd year n=22(%)
Azithromycin	53 (60.22)	24 (60.00)	18 (69.23)	11 (50.0)
Amoxicillin	25 (28.40)	12 (30.00)	6 (23.07)	7 (31.81)
Ciprofloxacin,Ofloxacin	5 (5.68)	2 (5.00)	1 (3.84)	2 (9.09)
Cefixime	3 (3.40)	2 (5.00)	0 (0)	1 (4.54)
Doxycycline	1 (1.13)	0 (0)	1 (3.84)	0 (0)
Antifungal	1 (1.13)	0 (0)	0 (0)	1 (4.54)
Indications for which antimicrobial was self medicated	Total n=88(%)	4th year n=40(%)	3rd year n=26(%)	2nd year n=22(%)
Throat infection/sore throat	71 (80.68)	35 (87.5)	20 (76.92)	16 (72.72)
Chronic supparative otitis media	1 (1.13)	1 (2.5)	0 (0)	0 (0)
Eye infection	4 (4.54)	3 (7.5)	1 (3.84)	0 (0)
Skin infection	2 (2.27)	1 (2.5)	1 (3.84)	0 (0)
Dental infection	1 (1.13)	0 (0)	1 (3.84)	0 (0)
Fungal infection	1 (1.13)	0 (0)	0 (0)	1 (4.54)
Fever	5 (5.68)	0 (0)	3 (11.53)	2 (9.09)
Viral infection	2 (2.27)	0 (0)	0 (0)	2 (9.09)
Urinary tract infection	1 (1.13)	0 (0)	0 (0)	1 (4.54)
Laboratory investigation not done	84/88 (95.45%)	40/40 (100%)	24/26 (92.3%)	20/22 (90.9%)
Dose & schedule not correct	10/88 (11.36%)	2/40 (5%)	1/26 (3.85%)	7/22 (31.82%)
Did not Complete course of antibiotic	23/88 (26.14%)	4/40 (10%)	10/26 (38.46%)	9/22 (40.9%)
Reason for not completion	n=23(%)	n=4(%)	n=10(%)	n=9(%)
Early relief	19 (82.6)	4 (100)	9 (90)	6 (66.67)
Forgot	4 (17.4)	0 (0)	1 (10)	3 (33.33)

Discussion

Self-medication is an area where governments and health authorities need to ensure that it is done in a responsible manner, ensuring that safe drugs are made available over the counter and the consumer is given adequate information about the use of drugs and when to consult a doctor [3, 8, 9]. Unlike other aspects of self-care, self-medication involves the use of drugs, and drugs have the potential to do good as well as cause harm. In this context, the pharmacist has an important role [8,9].

If we look at table 1, 99.57% were aware about self medication. Majority (61.94%) were aware about generic drugs, more number of final year students were aware than 2nd and 3rd years. Only 2.14% were not aware about expiry period of drugs. 88.89% could define over the counter drugs. 95.3% agree that misuse of OTC leads to problem. Only 8.98% students could justify the statement that OTC to be used with caution. Final year students had better knowledge in depth with analyzing and justifying capacity than 2nd and 3rd year students. In a study conducted by Sontakke et al., the awareness about OTC drugs and generic drugs was higher in senior medical students [10]. Only 12.82% believe that pharmacists are always trustworthy. 98.3% agree that self medication is harmful without proper knowledge of drug and disease. 25.21% believe that mass communication is bad medium to educate people about medicines. Only 7.3% never read package insert. 98.71% agree that caution to be taken during usage of self medication in special population. 96.59% students are aware that self medication may lead to irrational use of drugs.

If we look at table 2, 98.3% students practiced self medication. In studies conducted in India the prevalence of self medication was 57.05% in West Bengal [4] and 78.6% in Mangalore [11]. In studies conducted in other countries, the prevalence of self medication was 25.4% in Ethiopia [12], 55% in Egypt [13] and 55.3% in Karachi [14]. In past 6 months only 10.4% students practiced self medication more than four times. 2nd and 3rd year students practiced self medication more frequently than final year. 31.31% of students used two sources and 30.43% used three sources of information for practice of self medication. Most common single source for final year students was pharmacology based knowledge where as 2nd and 3rd years source was family friends and previous illness expertise which shows that still they were not confident enough with their knowledge. A younger and younger generation has better exposure, ease and convenient to use and access to internet facilities, media and others. So we could notice that 2nd and 3rd year students had many sources of information than final year students. But the quality and authenticity of source is the matter of concern.

If we look at table 3, 66.10% students used single source for practice of self medication. Majority of student's pharmacy as most common and next to that family friend were most common source for practice. This gives us clue to target and correct the problems by having better regulations regarding the OTC drugs and also the roles and responsibilities of pharmacists have to be revised. 50% of students had single reason for practicing self medication. Most common single reason was minor ailment. Other most common reasons were ease and convenience and quick relief. Majority (38.26%) had practiced self medication for a single indication. Most common single indication was fever which was similar to a study conducted in Ethiopia [12] and Mangalore [11]. Various others indications were gastritis, common cold, allergy, pain and body ache, headache, cough, itching, worm infestation, asthma, weakness and vertigo. Asthma, vertigo are not the minor ailments. Consultation will be

needed for certain symptoms or disease, to prevent wrong self diagnoses and treatment. If the knowledge regarding the disease and drug is not proper, it could lead to irrational treatment. Majority (44.43%) used single drug for self medication and most common drug used was paracetamol. Other drugs used for various symptoms/ disease were ranitidine, diclofenac, aceclofenac, cetrizine, oxymetazoline, ambroxol, calamine lotion, albendazole, loperamide, montelukast, zytee gel, domperidone, mefanamic acid, salbutamol, becozinc and vertin. 10.43% students used incorrect dose or frequency or duration of the drugs self medicated. It was surprisingly found that even in final year students usage of drug dose/ frequency / duration was incorrect. 29.57% had no knowledge of side effects caused by drugs, among which 2nd year students has very less knowledge than 3rd and final year students.

If we look at table 4, 37.6% students practiced antimicrobial self medication. It was more prevalent in final year. Most common antimicrobial prescribed was azithromycin (60.22%) followed by amoxicillin (28.40%). Other medications used were ciprofloxacin, ofloxacin, cefixime, doxycycline and antifungals. Most common indication for self medicating antimicrobial was sore throat (80.68%). Three students of 3rd year students and two students of 2nd year students, practiced antibiotics for fever, which is irrational. 95.45% students did not do laboratory investigation to support the evidence of the infection. In 11.36% students, dose or schedule of antimicrobials were incorrect and it was more incorrect in 2nd year students. 26.14% students did not complete course of antibiotic. It was observed more in 2nd and 3rd year students. Reason for not completing course was early relief and forgot to take the medicine.

Strengths

We have added, apart from the routine studies, regarding the frequency of self medication, different number of sources and reasons as it could be multiple sources and reasons for practicing self medication.

Limitations

The study was based on self reported data about self medication in last six months hence recall bias cannot be ruled out. The study could have been more generalized if it was multicentric involving other medical colleges also. All the students were encouraged to fill the questionnaires independently but mutual influence cannot be ruled out. The study did not look into as to how many students have physicians in the family so their influence as a source of prescription cannot be ruled out. The absence of interventions, like providing information regarding hazards of self medication.

Conclusion

The practice of self-medication gets incorporated in the medical professionals' right from their undergraduate days. In this situation further multicentric studies with the objective of evaluating the knowledge, attitude, practices of self-medication involving a wider section of the medical students (both undergraduates and postgraduates) across different medical colleges in the country is urgently needed to estimate the magnitude of self-medication in the medical fraternity. The findings of such multicentric studies could dictate the need of incorporating self medication as an intrinsic component in medical curriculum.

The present study perceives that to prevent the growing trend of self-medication, strong policies should be applied prohibiting the supply of medicines without a valid prescription. Restriction

Bhuvana. K.B. Int J Biol Med Res. 2015; 6(3): 5109-5113

5113

of sale of drugs with potentially harmful effects should be implemented effectively with monitoring systems between the physicians and pharmacists. Steps can also be taken to educate pharmacists on the need to cross-check with the prescribing physician while dispensing such drugs.

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