To study the impact of teaching pharmacology on practice of self medication among medical students.

by Mazhar Hussain

Title: To study the impact of teaching pharmacology on practice of self medication among medical students.

Abstract

Objective: To study the impact of teaching pharmacology on the practice of self medication among medical students.

Materials and Methods: This observational study was conducted on medical students of Sheikh Zayed Medical College, Rahim Yar Khan from October to December 2016.Group A compromised students of 1st and 2nd year while group B compromised students of 3rd and 4th year respectively. Both groups were given questionnaires to fill about practice of self medication on its various aspects before and after teaching pharmacology. Comparison between two groups was done by chi square test.

Results: 285 (79.62%) students in group A and 305 (85.67%) students in group B indulged in the practice of self medication. The main reasons for using self medication in both groups were time saving, for mild illness and quick relief which was not statistically significant. The most commonly used medication in both groups were analgesic 240(75.47%) in group A and 265(74.43%) in group B, antipyretic 222 (69.81%) in group A and 242(67.97%) in group B, antacids 215(67.61%) in group A and 224(62.92%) in group B respectively. However seniors used antibiotics, anxiolytics and multivitamins twice as compared to junior students which were found significant. ($p<0.05$).

However awareness about the self medication practices in terms of dosage, duration of treatment, adverse effects, precautions, drug interactions was quite high in group B as compared to group A($p<0.05$). Similarly awareness about OTC drugs, expiry of drug and reading leaflet instruction was statistically significant in Group B versus group A ($p<0.05$).

Conclusion: Teaching pharmacology has a positive impact on practice of self medication among medical students

Keywords: Pharmacology, Self Medication, Medical Students, Questionnaire

Introduction: Generally self medication is defined as self treatment of any medical ailments without the proper medical consultation and diagnosis . The practice of self medication is on the rise all across globe.[1-2] Practice of self medication is also increasing at an alarming rate in developing countries. The main reason behind that wide availability over the counter medicine, high cost of new medicine, low socio economic status and non availability of doctors especially in rural areas. In addition lack of proper health awareness program, implementation of health reform policies and proper drug acts poses the population to indulge in the practice of self medication in developing world. Therefore a holistic approach is required to give awareness of self medication to population in order to protect from its dares consequences.[3-4]

However it is noted that practice of self medication has some advantages too if it is practiced correctly. There is easy access to medicine, economical, convenient, time saving and rapid relief of symptoms in some acute conditions.[5] WHO also favors practice of self medication on those conditions that usually do not requires proper medical consultation as it provides a cheapest alternative for common ailments and also reduces burden on health care system.[6] Unfortunately it has more disadvantages when it is mal-practiced as most of serious medical ailments are misdiagnosed or under diagnosed, improper dosage may lead to adverse effects like renal and GIT toxicity with NSAIDS, treatment failure and emergence of resistance especially with the use of antibiotics, teratogenicity with terotogen drugs and dependence in case of drug acting on central nervous system.[7]

Pharmacology is science which deals with the study of drugs. Pharmacology subject included in the curriculum of 3rd year MBBS class. In this subject students are usually taught about mechanism of drug actions, their therapeutic uses, dosage, indications, contraindications, adverse effects and various drug interactions. The purpose of pharmacology is to provide sufficient knowledge about drugs to 3rd year MBBS students onwards so that they can apply it to patients in clinical setting with confidence. However it is noticed that MBBS students itself indulge in the practice of self medication without knowing any sufficient knowledge about drugs.[8-9]

The knowledge of medical students of 1st and 2nd year MBBS classes usually not differs too much from general population on the practice of self medication. However in 3rd and 4th year MBBS class their knowledge may be more than general population about practice of self medication because they are exposed to knowledge of various drugs and diseases.[10] So the present study was designed to observe the awareness and practice of self medication among medical students of various MBBS classes before and after teaching pharmacology in order to know that either teaching pharmacology has any positive or negative impact on practice of self medication.

MATERIALS AND METHODS:

This cross sectional study was conducted on medical students of Sheikh Zayed Medical College, Rahim Yar Khan from October to December 2016. An ethical approval was taken from institutional review board and the purpose of study was clearly explained and confidentially was ensured to all students before the start of study. A total of 674 Students were randomly divided in to two groups. Group A compromised 318 students of 1st and 2nd year MBBS while group B compromised 356 students of 3rd and 4th year MBBS classes respectively. Both groups were given open and closed ended self generated questionnaires to fill in about practice of self medication on its various aspects. A written informed consent was obtained and proper instruction was given to each student before filling up the questionnaire.

A structured questionnaire compromised of four sections which was prepared after extensive literature review. In first sections students were asked to fill up baseline characteristics. In second part of the questionnaire students were asked to choose single best answer about reasons for using self medication while in third part there were multiple options about commonly used drugs and students were choose according to their preferences in descending orders. In the last part of the questionnaire students which were related to drug students were asked to select yes or no about awareness of drugs on its various aspects.

Data Analysis: Randomization was done by generation of random number to each student by computed software. Data among two groups were expressed as counts and percentages. Comparison of the statistical data between two groups was done by chi square test. The p value less than 0.05 was considered to be statistically significant.

Results: All the students answer the questionnaire completely and response rate is 100%. There were 318 students in group A and 356 in group B. There were 178(55.98%) boys and 140(44.04%) girls in group A while in group B 212(59.55%) were boys and 144(40.45%) were girls respectively. The mean age of the students (+SD) in group A was 20±1.8 and in group B it was 22±2.2. The practice of self medication among two groups within last 1 year was not statistically significant 285(89.62) in group A and 305 (85.67) in group B.

The main reason for using self medication was time saving, for mild illness and quick relief followed by previous exposure and cost effectiveness in both study groups which was not statistically significant. (Table 2)

The most commonly used medication in both groups were analgesic 240(75.47%) in group A 265(74.43%) and in group B, antipyretic 222 (69.81%) in group A and 242(67.97%) in group B, antacids 215(67.61%) in group A and 224(62.92%) in group B respectively. However seniors used antibiotics, anxiolytics and multivitamins twice as compared to junior students which were found statistically significant. (Table 3)

However awareness about the self medication practices in terms of dosage, duration of treatment, adverse effects, precautions, drug interactions was quite high in group B as compared to group A. Similarly awareness about OTC drugs, expiry of drug and leaflet instruction was statistically significant in Group B versus group A. (Table 4)

DISCUSSION

Present study showed that prevalence of self medication was much higher among students before and after teaching pharmacology. However as compared to first and second year MBBS students, the students of 3rd and 4th year were quite confident about the practice of self medication. The main reason behind that during 3rd and 4th year they were exposed to knowledge of pharmacology that's why most of the students keen about drug indication, contraindication, dosage , adverse effects and various drugs interaction. In addition they carefully read the instruction given on leaflets while the students of 1st and 2nd year were not exposed to too much knowledge of drugs that's why most of them avoids to read leaflet instructions.

A number of studies were conducted in the past on the practice of self medication among both medical and non medical students with varying results. The reason for this variation may be due to difference in socioeconomic status, demographic characteristics and methodologies used for practice of self medication under different circumstances. A study conducted by Klemenc-Ketis[11] and Sawalha[12] showed that there was not too much difference in the practice of self medication in both medical and non medical students but seniors medical students practice self medication more carefully as compared to juniors one because they knew the potential hazards of irrational use of self medication. A similar type of study revealed that although junior's students were not exposed to the knowledge of drugs during their curriculum but they had some awareness about self medication due to available information from multiple sources but they had no awareness about OTC medicine, adverse effects and drug interaction as compared to senior students.[13]

On the contrary study conducted by Bahir et a[14] l showed that students of 3rd year were less indulge in practice of self medication as compared to 1st and 2nd year because they spent more time in wards and with senior doctors and they usually prefer to take advise for their illness from senior doctors. Kumari et al[15] concluded that senior medical students practice self medication less as compared to juniors because they had a good knowledge of self medication on its various aspects which is part of good medical training during their curriculum. Patel et al[16] in another study revealed the strong impact of teaching pharmacology on knowledge, attitude and practice of self medication among medical students. After teaching pharmacology students were more confident, have concerned attitudes and tend to self medication practice more appropriately. However in another study which represented two medical and non medical universities revealed that there was not much difference in practice of self medication among medical and non medical university students despite majority of them knew that it incorrect[17]

In our study finding were almost similar as compared to above mentioned studies in sense that practice of self medication were not so much different in all medical students, but awareness, attitude and practice toward self medication was acceptable in seniors medical students as compared to juniors one because they have more concern attitudes towards self medication that may be part of teaching pharmacology in their curriculum.

In spite of all these a meta analysis of twenty seven studies over periods of 10 years revealed that self medication practice was significantly higher in both medical students and physicians. This self directed care behavior is one of the occupational hazards for the medical profession.[18] There is strong need to educate medical students as well as all others health professionals from the start of their carrier to ensure safe practice of self medication. In addition government should make strict rules about valid prescription, drug legislation and pharmaceutical advertisement in order to stop the irrational growing trend of self medication.

CONCLUSION: The practice of self medication was not much different in senior and junior medical students however senior medical students were more concerned about the rationale use of drugs after teaching pharmacology.

Table 1: Baseline characteristics of students.

	Group A(n= 318)	Group B(n= 356)
Age(years)	20±1.8	22±2.2
SEX		
Male	180(56.60)	210(58.9)
Female	138(43.39)	146(41.0)
Urban	265(83.33)	302(84.83)
Rural	53(16.66)	54(15.1)
Mother education		
Under Matric	110(34.59)	133(37.35)
Above Matric	208(65.4)	223(62.64)
Self care orientation		
High	302(94.9)	312(89.8)
Low	16(5.03)	44(12.35)
Practice self Medication within last 0-12 Months		
Yes	285(89.62)	305(85.67)
No	33(10.37)	51(14.32)

a) Figure indicate number of responders
b) Figures in parenthesis indicate percentage

Table 2: Reason for Self-medication practice

	Group A(n= 318)	Group B(n= 356)
Time saving	89(27.98)	110(30.89)
For Mild illness	75(23.58)	90(25.28)
Quick relief	68(19.10)	78(21.91)
Previous Experience	35(11.0)	40(11.23)
Cost effective	30(9.43)	25(7.02)
others	21(6.60)	13(3.65)

a) Figure indicate number of responders

b) Figures in parenthesis indicate percentage

Table 3: Commonly used drugs for Self Medication

	Group A(n= 318)	Group B(n= 356)
Analgesic	240(75.47)	265(74.43)
Antipyretic	222(69.81)	242(67.97)
Antacids	215(67.61)	224(62.92)
Antibiotics	105(33.01)	215(60.39)*
Cough & flu preparations(Anti Allergic)	195(61.32)	210(58.98)
Anxiolytics	55(17.2)	140(39.32)**
Multi vitamins	18(5.66)	135(37.92)*
Herbals	9(2.83)	14(3.93)

a) Figures indicate number of responders

b) Figures in parenthesis indicate percentage

*p<0.05, **p<0.001 when compared to group A

Table 4: Awareness of Self medication on its various aspects.

	Group A(n= 318)	Group B(n= 356)
Aware about dose	10(3.14)	252(70.7)**
Aware about duration of therapy	15(4.71)	240(67.4)**
Read leaflets instructions	125(39.30)	300(84.2)*

Read about Expiry of drug	120(37.7)	295(82.8)*
Aware about OTC drugs	32(10.0)	325(91.2)**
Aware about precautions	42(13.2)	298(83.70)**
Aware about Adverse effect	25(7.86)	225(63.2)**
Aware about drug interactions	8(2.5)	208(58.4)**

a) Figures indicate number of responders
b) Figures in parenthesis indicate percentage
   *p<0.05, **p<0.001 when compared to group A

To study the impact of teaching pharmacology on practice of self medication among medical students.

1%

6   Pandya, Rushi, Kunal Jhaveri, Falgun Vyas, and Varsha Patel. "Prevalence, pattern and perceptions of self-medication in medical students", International Journal of Basic & Clinical Pharmacology, 2013.
Publication

1%

7   www.scribd.com
Internet Source

1%

8   Lukovic, Jasminka Adzic, Vladimir Miletic, Tatjana Pekmezovic, Goran Trajkovic, Nevena Ratkovic, Danijela Aleksic, and Anita Grgurevic. "Self-Medication Practices and Risk Factors for Self-Medication among Medical Students in Belgrade, Serbia", PLoS ONE, 2014.
Publication

1%

9   Ibrahim, Nahla Khamis Ragab, Banan Mohammad Alamoudi, Wejdan Omar Baamer, and Rajaa Mohammad Al-Raddadi. "Self-medication with analgesics among medical students and interns in King Abdulaziz University, Jeddah, Saudi Arabia", Pakistan Journal of Medical Sciences, 2014.
Publication

<1%

10 pdfs.semanticscholar.org
Internet Source

<1%

11 www.szmc.edu.pk
Internet Source

<1%

12 www.bofas.org.uk
Internet Source

<1%

13 "Influence of medical training on self-medication by students", International Journal of Clinical Pharmacology & Therapeutics/09461965, 20080101
Publication

<1%

EXCLUDE QUOTES	ON	EXCLUDE MATCHES	OFF
EXCLUDE BIBLIOGRAPHY	ON		