International Journal of Research in Medical Sciences
Aashi MM et al. Int J Res Med Sci. 2016 Mar;4(3):942-946
www.msjonline.org
pISSN 2320-6071 | eISSN 2320-6012
DOI: http://dx.doi.org/10.18203/2320-6012.ijrms20160547

Short Communication

Self-medication among medical student in King Abdul-Aziz University

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Received: 09 January 2016
Revised: 15 January 2016
Accepted: 03 February 2016

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ABSTRACT

Background: A huge number of medications are used without prescriptions which make us face a real problem which is the overuse of medications. Medication overuse dose come with physical, mental and emotional abnormalities. The objective of the study was to investigate the irrational uses of these medications which are NSAIDS, paracetamol, antibiotic antihistamines, opioids, and anti-anxiety drugs among medical students in KAU.
Methods: We conducted a descriptive cross sectional survey of 507 students enrolled at medical college of King Abdul-Aziz university in Jeddah 2015. The two steps stratified random sampling was used to collect the data. The questionnaire includes a socio-demographic information and data about using any of the following medication as anti-anxiety, antibiotics, paracetamol, opioids, (NSAIDs), and anti-histamine. The data entry and analysis was done by SPSS software package version 20.
Results: Paracetamol were the most frequently 117 (23.1%) drug uses by medical students, followed by antihistaminic 48 (9.5%), antibiotic 33 (6.5%), NSAIDS 22 (4.3%), anti- anxiety 7 (1.4%) and opioid 4 (0.8%). Most of them were self-medication (74%). Relief fever was the most common cause for seeking self-medication reported by medical student 103 (20.4%), most frequent side effects was nausea and vomiting 47 (9.3%)
Conclusions: There is an increase of self-medication in medical students of KAU especially paracetamol and NSAIDs use. We suggest increasing studies on the local irrational use of medications and increasing awareness on the importance of prescribed medications.

Keywords: Self-medication, Side effects, Irrational use, Paracetamol

INTRODUCTION

Almost half of all medicines all over the world are overused illogically. Medicines experts at the world health organization (WHO) stated that this issue can have severe consequences such as adverse drug reactions, drug resistance, prolonged illness and even death.[1]

Moreover, a huge number of medications are used without prescriptions which make us face a real problem which is the overuse of medications. Medication overuse dose come with physical, mental and emotional abnormalities. Also non-medical use of prescription stimulants (NPS), especially among college students.[2] ADHD symptoms, which mean use without a legitimate prescription, and in particular inattention symptoms, appeared to be associated with non-medical use of prescription stimulants.[3]

Using the medications need to meet these three requirement as following; (1) Medications appropriate to their clinical needs; (2) An adequate period of time and; (3) The lowest cost to them and their community.[4]

Irrational use of medicines is a major problem worldwide. WHO estimates that more than half of all

medicines are prescribed, dispensed or sold inappropriately, and that half of all patients fail to take them correctly.[5] There is a lot of concern in health community about the irrational use of drugs in self-medication. So, we need to first defined self-medication as consuming drugs without the advice of a doctor.[6]

It is estimated that 60% of medicines in public health facilities and 70% of medicines in private facilities were prescribed and sold inappropriately in developing countries, which leads to the decrease in safety and quality of health care as well as enormous wastage of health resources.[7]

Irrational use of medications could be very unsafe to the body. Although, over-the counter (OTC) drugs are meant for SM and are of proved efficacy and safety, their shocking use due to lack of knowledge of their side effects and interactions could have serious implications, especially for children, old age, pregnancy and lactation as well.[8] One of the most common complications is medication-overuse headache (MOH) with a prevalence of 1%-2%. It is a severe form of headache where the patients usually have a long history of headache and of unsuccessful treatments.[9]

There are many factors that promote such practice such as lack of health awareness, low economic status, non-availability of essential health care facility and psychological factors.[10] The most common prescription medications dispensed without prescriptions were antibiotics (22%) and analgesics/antipyretics (19%). According to studies that the most common reasons for buying medications without a prescription were that the symptoms were too minor to visit a doctor (54%), time saving (40%), and minor illnesses for which the participants knew the required treatment (40%).

To clarify this better we need to identify and examine the problem and recognize the important to take an action. Then we need to identify underlying causes and the motivating factors. Also, list possible interventions which includes educational, managerial, and regulatory. This intervention can be used to address and understand the problem better. Assess resources available for actions choose an intervention or interventions and monitor the impact and restructure the intervention.[11] According to a local study in medical college at King Abdul-Aziz University (KAU) there is a high prevalence (75.2%) of self-medication used by medical students and interns, and the most common reason (35.4%) was the non- serious of their illness.[12] So, this study going to examine the irrational/overuse of these medications which are NSAIDS, paracetamol, antihistamines, antibiotic, opioids and anti-anxiety drugs among medical students in KAU. The reason that we choose medical students in KAU, as a participants, we have unlimited access to understand and examine this issues as we are students in this environment.

METHODS

The research team conducted a descriptive cross sectional survey of student enrolled at medical college of King Abdul-Aziz university in Jeddah 2015. The survey going to be anonymous to let the participant more honest in answering all the questions. To give a brief background about the sitting, Jeddah is located in the west of Saudi Arabia which has the largest number of medical student. The total number of student in the college is approximately 2000 student, 500 of them had done the online survey before. The two steps stratified random sampling was used to collect the data. First, sampling from each year. Then, sampling from each gender in this year based on appropriate proportion of the respective field of study.

The questionnaire covered socio-demographic information and use any of the following medication; Anti-anxiety, antibiotics, paracetamol, opioids, (NSAIDs), and anti-histamine. Was assessed as a closed question "are you currently using this drug?" If the answer was yes, the online questionnaire will guide you to open ended table with the following information for each drugs like self-medication, frequency, pattern of use, when they start to use it, causes, and the side effect. If the answer was no the online survey will guide you to the next drug category. The data entry and analysis was done by SPSS software package. The study was approved by the institutional review board (IRB) of KAU.

RESULTS

The total sample amount was 507, 244 (48.2%) of them were male and 262 (51.8%) of them were female. Table 1 shows that paracetamol was the most frequently drug uses among medical students 117 (23.1%), 111 (21.8%) of them used it for self-medication, followed by antihistamine 48 (9.5%), 19 (3.7) were for self-medication, then antibiotics 33 (6.5%), 13 (2.5%) were for self-medication, after that NSAIDS total of 22 (4.3%), 20 (3.9%) of them used it for self-medication, then anti-anxiety 7 (1.4%), 5 (0.9%) of them used it for self-medication, and finally opioid total of 4 (0.8%), 3 (0.5%) used it for self-medication. Thus making it a total of 33.3% of self-medication for all of the previously mentioned categories of drugs.

Table 1: Frequency of drugs used and self medication.

Drug	Frequency of use of drug	Frequency of self medication
Paracetamol	117 (23.3%)	111 (21.8%)
Anti-histamine	48 (9.6%)	19 (3.7%)
Antibiotic	33 (6.6%)	13 (2.5%)
NSAIDS	22 (4.4%)	20 (3.9%)
Anti-anxiety	7(1.4%)	5 (0.9%)
opioid	4(0.8%)	3 (0.5%)
Total	231 (46.1%)	171 (33.3%)

Table 2 resolves that paracetamol was more commonly used by females 79 (15.6%) compared to males 38 (7.5%), there is statistical significant p= (0.00). On the other hand, there is no statistical significant difference between gender and other drugs used, also the table shows that paracetamol, NSAIDS, and anti-histamine were more commonly used among 4th year medical students compared to the rest of students in other grades, the statistical significant was respectively p=(0.001), p=(0.001) and p=(0.052).

Table 2: Relation between genders, year of the medical student and the drug which is being used.

Drug	Gender M - F	2nd Year	3rd Year	4th Year	5th Year	6th Year	Total
Paracetamol	38 - 79 (7.5% - 15.6%)	15 (3%)	11 (2.2%)	36 (7.2%)	29 (5.8%)	26 (5.2%)	117 (23.3%)
Anti-histamine	21 - 27 (4.2%-5.3%)	5 (1%)	5 (1%)	18 (3.6%)	8 (1.6%)	12 (2.4%)	48 (9.6%)
Antibiotics	16 - 17 3.2%-3.4%	6 (1.2%)	5 (1%)	10 (2%)	7 (1.4%)	5 (1%)	33 (6.6%)
NSAIDS	4 - 18 1.6%-2.8%	0 (0%)	1 (0.2%)	12 (2.4%)	1 (0.2%)	8 (1.6%)	22 (4.4%)
Anti-anxiety	3 - 4 0.6%-0.8%	2 (0.4%)	1 (0.2%)	0 (0%)	3 (0.6%)	1 (0.2%)	7 (1.4%)
Opioid	3 - 1 0.6%-0.2%	2 (0.4%)	0 (0%)	0 (0%)	2 (0.4%)	0 (0%)	4 (0.8%)
Total	85 - 146 16.7%-28.7%	30(6%)	23(4.6%)	76(15.2%)	50(10%)	52(10.4%)	231 (46.1%)

Table 3 shows that most frequent symptoms was relief fever 103 (20.4%) followed by sore 66 (13%), moderate muscle and joint pain 61 (12.1%), then runny noses and colds 41(8.1), and finally headaches 31 (7.3%).

Table 3: Frequency of symptoms.

Symptom	Frequency	Percentage
Relief of fever	103	20.4%
Sore throats	66	13%
Moderate muscle and joint pain	61	12.1%
Runny nose and colds	41	8.1%
Headache (migraines - tension - clusters-sinuses)	31	7.3%

Table 4: Frequency of side effects.

Side Effect	Frequency	Percentage
Nausea and vomiting	47	9.3%
Decrease in appetite	22	4.3%
Drowsiness	16	3.2%
Dizziness	13	2.6%
Impaired thinking	11	2.2%

Table 4 shows that the most frequently side effect was nausea and vomiting 47 (9.3%) followed by decrease in appetite 22 (4.3%) then drowsiness 16 (3.2%) and finally dizziness 13 (2.6%). Family education and income did not have any significant change on the pattern of drugs used or self-medication among medical student.

DISCUSSION

In this study it was found that the total irrational use of conducted drug classes was 33.3% which agrees with the result of students in GCMS, North West Ethiopia with prevalence of 38.5%, practiced self-medication.[13] But in a study conducted in at Ain Shams University, Egypt the percentage was 55% and in West Bengal, India 57.05% which are much higher although this differences could be attributed to the cultural difference, sample size, knowledge of the side effect and uses of self-medications and availability of the medications.[14,18]

We found that paracetamol and NSAIDs with percentage of (23.3%) and (4.4%) respectively compared to other drug classes are the most common used medications in all medical years especially 4th year medical students and this agrees with GCMS students, North West Ethiopia Egypt, Iranian college students in Qom city previous KAU study Western Nepal.[13,15-17] Our results shows that antianxiety and opioids are the least used drugs and this could be linked to the knowledge of the risk of the side effects of these drugs, the cost, and the strict system in purchasing these kind of drugs.

As the results shows the most common reported symptoms were fever 20.4% which similar to students of GCMHS Ethiopia although in West Bengal, fever (15.73%) wasn't the commonest cause followed by sore

throat (13%), moderate muscle and joint pain (12.1%).[13,18] Although there are a lot of controversial results about the causes that lead to self-medications most of the symptoms are more experienced in common cold.

We found that paracetamol was used more common by female (15.6%) compared to male (7.5%), which agrees with studies from Spain and Kuwait.[19,20] We believe it is due to the frequent pain associated with menstrual cycle. On the other hand we found that there is no statistical significant difference between gender and other drugs used which agrees with study of An-Najah National University palatine.[21]

We noticed that 4th year medical students were the most self-medicated by 11.8%. This could be attributed to the mental state of the students as they think that they are aware of their symptoms and what are the diagnosis and the treatment and this behavior has risks, because wrong or inadequate information expose the subjects to potential health risks.[22]

That most frequent side effects was nausea and vomiting 47 (9.3%) which could be due to the sensitivity of chemical component of the medications especially opioids, and also this is followed by decrease in appetite 22 (4.3%), drowsiness 16 (3.2%), and dizziness 13 (2.6%). These side effects depend on age, gender, dose, genetic differences and interaction with other drugs.

CONCLUSION

There is an increase of self-medication in medical students of KAU especially Paracetamol and NSAIDs use which agrees with several other studies. We suggest increasing studies on the local irrational use of medications and increasing awareness on the importance of prescribed medications by the help of pharmacists, physicians and social media to avoid the potential side effects that we have mentioned and to seek professional health providers for treatment which will lead to great benefits like decreasing annual costs on medication.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Aashi MM, Alghanmi HB, Alhibshi RH, Alsaati BA, Aljohani NJ. Self-medication among medical student in King Abdul-Aziz University. Int J Res Med Sci 2016;4:942-6.