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Original Research Article

Self medication practices of over the counter analgesic drugs among medical students in a tertiary care hospital in Jharkhand, India

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ABSTRACT

Background: Self-medication is a very common practice which is gradually spreading all over the world. Analgesics are the most commonly available over the counter (OTC) drugs. They are used for pain relief in many diseases. Use of these analgesics has become a serious ailment because self- medication practices of analgesic drugs are increasing among general population as well as medical students. Being future medical practitioners, self-medication has a special impact in medical students. Various data are available regarding usage of OTC analgesic drugs but still data in Jharkhand are lacking. So, the present study aims to provide an insight into the practice of OTC analgesics among 3rd and 4th year medical students in RIMS, Ranchi, Jharkhand.

Methods: It was a cross-sectional study conducted among medical students in RIMS, Ranchi, Jharkhand in November-December 2018. Data were collected through questionnaire filled by the students and results were expressed as percentage frequency.

Results: Questionnaire were filled completely by 253 students out of 287 students. 85.8% of males and 90.41% of females were practicing self-medication. Advice from seniors and books were the major source of information about the drugs. Paracetamol was the most common drug used (54.87%) and headache (27.43%) was the most common indication. Mild nature of illness (30.34%) and quick relief (29.10%) were the most common reason of self-medication. About 83.39% of them were using these drugs according to need.50.98% had not felt any side effects. 51.38% students were of the view that self-medication practices are not always acceptable.

Conclusions: Medical students use OTC analgesics for various kinds of pain like headache, muscle pain, menstrual pain etc. They generally use different non-steroidal anti-inflammatory drugs (NSAIDS) among which paracetamol is the most common. But self-medication practices are always associated with some risks. So, the students must be educated properly regarding their rational use and advantages and disadvantages of OTC drugs.

Keywords: Analgesics, Jharkhand, Medical students, Over the counter, Questionnaires, Self medication

INTRODUCTION

Self medication is a widely used practice which is increasing day by day.[1] If any person uses drugs in self diagnosed diseases without the advice of a doctor it is called self medication. Since the patient doesn't requires the advice of any doctor so it is an important part of self care. It has become the first choice for common health problems.[2]

Self care can be defined as the primary public health resource in the health care system. It includes self medication, non drug self treatment, social support in illness and first aid in everyday life. It has become widely accepted that self medication has an important place in the health care system. It involves the use of medicinal products by the consumers to treat self recognised disorders or symptoms or the intermittent or continued use of a medication prescribed by a physician for chronic or

recurring diseases or symptoms. In practice it also involves use of medication of family members especially where the treatment of children or elderly member is involved. At the community level, improper self medication could result in an increase in drug induced disease and in wasteful public expenditure.[3]

Over the counter drugs are easily available in the shops and they don't require any written prescription of a doctor. So, use of these drugs are increasing day by day. Due to easy availability, people all over the world are using more and more OTC drugs and therefore global and Indian pharmaceutical market of OTC drugs is increasing day by day.[4]

If people have some knowledge and understanding about these OTC drugs, then use of these drugs are safe.[5] But when such drugs are used in appropriate dosage, then only they are safe.[6] Commonly two types of analgesics have been used by people for any kind of pain- non- steroidal anti inflammatory drugs (NSAIDS) and narcotic analgesics.[7]

NSAIDS are widely used analgesic drugs. They are used for headache, backache, menstrual cramps, fever and other pain related symptoms.[8] Besides these conditions people also use these drugs in dental pain. By using self medication they want to avoid dental treatment.[9] When these drugs are used for shorter duration then they are safe.[8] Use of drugs should be rational. Rational means right drug should be given to right person in right dosage for adequate duration and at lowest cost. If drugs are used irrationally then it may cause increased risk of adverse drug reactions (ADR) and emergence of drug resistance thereby increased morbidity and mortality and wasting of resources.[10]

Our young population are more exposed to media and advertisements due to which these OTC drugs are being more misused by these people. It increases the chance of incorrect diagnosis and thereby increased ADR. Not only general students but medical students are also misusing these drugs. It has significant effect because medical students are future doctors.[11]

Prevalence of self medication was found to vary in medical students of different countries in earlier studies.[6-8,12] Approximately 98% of the study population among Palestinian medical and non medical university students reported that they do practice self medication.[13] Various data are available regarding the usage of OTC analgesics in different states of India.[11,14,15] Such studies are useful to highlight the extent of risks among population due to misuse of analgesics and to educate the people. Many objectives have been explored including perception and pattern of usage of these drugs but still data are lacking. Self medication is also very common among medical students in Jharkhand also.[4] But the data regarding analgesic use is not available. So, the present study aims to provide an insight into the practice of analgesic drugs among third and fourth year MBBS students.

METHODS

Total 287 students participated in the study. The data of 253 students were filled consistently and completely. Thus, the data of 253 students were eligible for analysis.

This study was a questionnaire based cross sectional study conducted MBBS students of RIMS Ranchi, Jharkhand. The third and fourth year students of this college were included in this study. Filled questionnaires were evaluated for their completeness and only the data from completely filled questionnaire was taken for analysis. Incompletely filled questionaires were excluded from the study. The study was conducted in Department of Pharmacology between 1st November to 30th December 2018. The students who participated in the studies were explained about aim of the study. They were ensured about confidentiality of the information collected. A self prepared questionnaire regarding the practice of OTC analgesic drugs were given to them. The questionnaire had questions related to practice of self medication for any type of pain, sources of drug information, name of analgesic used with indication, reason for self medication, frequency and duration of intake, any side effects experienced and lastly opinion about self medication. The questionnaire was given to them during one of their lecture classes and were asked to return it after filling it completely. All questions were multiple choice questions and they had to tick only correct answers.

The data was then analysed for the different genders of students in each year who used self medication. The most common source of information about drugs for these medical students was analysed by studying the questionnaires carefully. Types of analgesics used and their indications were also noted down. The common reasons for self medication and the total number of tablets used daily was studied. Duration of drug intake, time of taking the medicines and their side effects were also evaluated. Responses to side effects and opinion regarding self medication were also accounted for.

Statistical analysis

All data were expressed in the form of frequency and percentage. Chi square test was used for testing statistical significance. A p value less than 0.05 was considered to be statistically significant.

RESULTS

Table 1 shows that among 287 students participating in the study 50.87% (146) were females. About 94.42% (271) were between 20-25 years and only 1 student was below 20 years and 15 students were above 25 years. Total no of students indulging in self medication were 253, among which 121 were males and 132 were females. Percentage

of males involved in self medication was 85.81% and that of female was 90.41% (p >0.05). Percentage of 3rd year students indulged in self medication was 90.28% whereas it was 86.01% in the 4th year students (p >0.05).

Table 1: Characteristics of study participants.

Participants	Total no of students	Self medication	Percentage
Third year students	144	130	90.28%
Male	68	59	86.76%
Female	76	71	93.42%
Fourth year students	143	123	86.01%
Male	73	62	84.93%
Female	70	61	87.14%

Table 2: Sources of information (n= 366).

Sources	Frequency	Percentage
Internet	52	14.2%
Books	112	30.60%
Old prescriptions	51	13.93%
Media	16	4.37%
Advice from seniors	135	36.88%

According to Table 2, the most common source of information about drugs for these medical students was advice from their seniors 135 (36.88%) followed by books 112 (30.60%). Media was the least common source of information.

Table 3: Analgesics used by medical students (n= 328).

Analgesic used	Number of students	Percentage
Paracetamol	180	54.87%
Diclofenac sodium	28	8.53%
Ibuprofen	18	5.48%
Combiflame	15	4.57%
Meftalspas	26	7.92%
Zerodol P	10	3.04%
Dispirin	24	7.31%
Mefenamic acid	12	3.65%
Aceclofenac	11	3.35%
Nimesulide	4	1.21%

Table 3 shows that more than 50% students were using Paracetamol as an OTC analgesic. Fixed dose combination (FDC) drugs like combiflame, meftalspas and zerodol P were used by about 15.54% students. Nimesulide was used by very few students (1.12%).

Table 4 shows that the most common indication for which our medical students were using OTC analgesics was headache, followed by fever, muscular pain and menstrual pain. About half of the population were using these analgesics for headache and fever. Among females, about 43.18% (57) out of total 132 female students were using for menstrual pain. 9.55% used self medication for abdominal pain and only 1.76% were using for their ear problems.

Table 4: Indications for use of analgesic (n= 565).

Indications	Number of students	Percentage
Headache	155	27.43%
Cold and flu	53	9.38%
Fever	122	21.59%
Abdominal pain	54	9.55%
Muscular pain	68	12.03%
Menstrual pain	57	10.08%
Toothache	33	5.84%
Ear problem	10	1.76%
Other reason	13	2.30%

Table 5: Reason for self medication (n=402).

Reasons	Number of students	Percentage
Mild nature	122	30.34%
Quick relief	117	29.10%
Time saving	25	6.21%
Urgency	53	13.18%
Self confidence	21	5.22%
Cost effectiveness	12	2.98%
Easy availability	52	12.93%

Table 5 shows that mild nature of illness and quick relief were the most common reason for self medication. About 25% of the students explained urgency and easy availability as the most common reason. About half of the students generally used single tablet daily and about one third two tablets daily. Only 10.06% followed the doctor's suggestion (Figure 1).

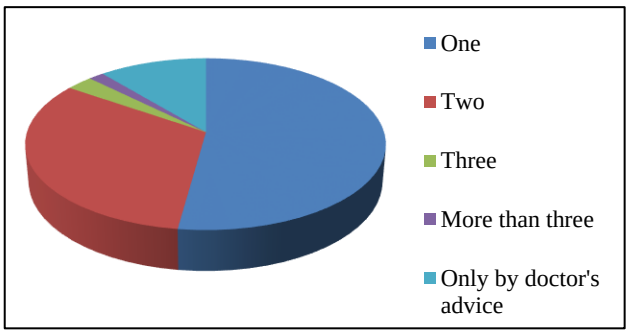

Figure 1: Number of tablets used daily (n=253).

More than three fourth (83.39%) used analgesics as long as needed. About 13.83% used for less than 1 week and 2.76% for more than 1 week (Figure 2).

About half of them (51.77%) used to take these drugs after meal and 36.75 % at the time of pain only (Figure 3).

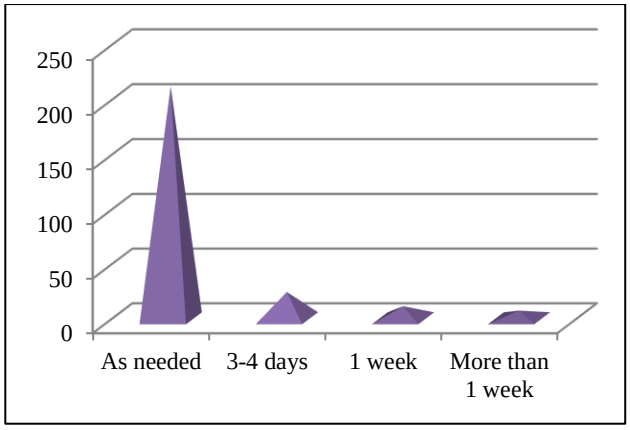

Figure 2: Duration of analgesics used (n=253).

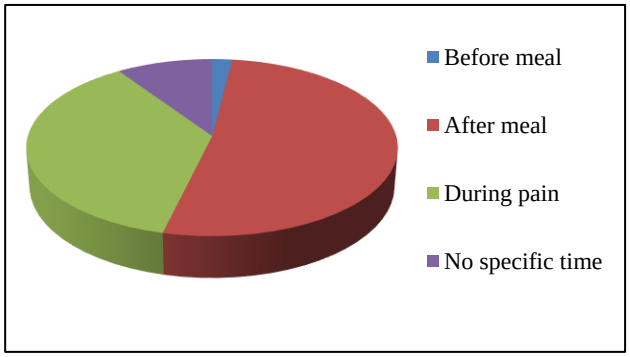

Figure 3: Time of drug intake (n=253).

Among those students who were using OTC analgesics 129 (50.98%) did not complained of any side effects. Among 124 students who had side effects 34.67% complained of acidity while 17.74% complained of vomiting and 30.64% about dizziness (Figure 4).

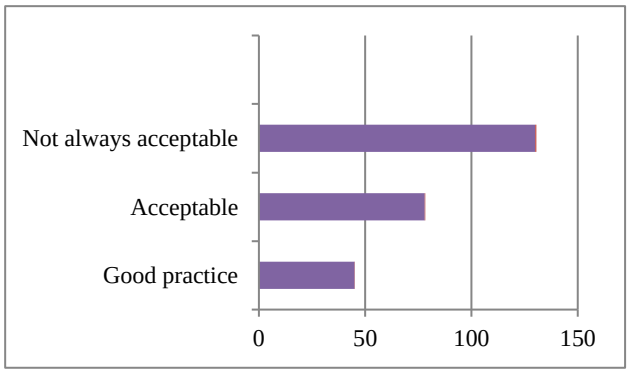

Figure 4: Opinion regarding self medication.

Regarding their response against these side effects 70 (56.45%) discontinued the drug, about 25 (20.16%) reported to the physician and 17 students (13.70%) changed to other drug (Figure 5). 130 (51.38%) were of the opinion that the practice of self medication is not always acceptable. About 30.83% were of the view that it is acceptable. Only 45 (17.78%) said that self medication is a good practice (Figure 6).

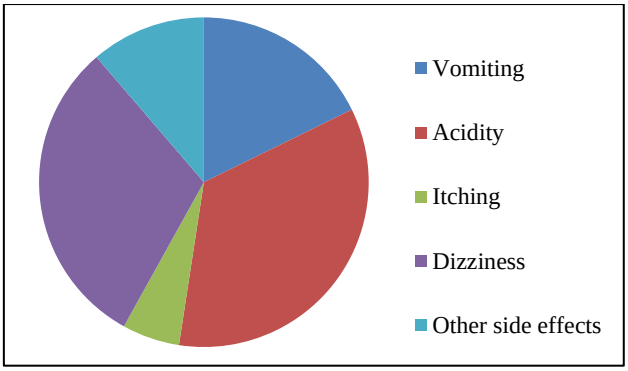

Figure 5: Side effects due to analgesics.

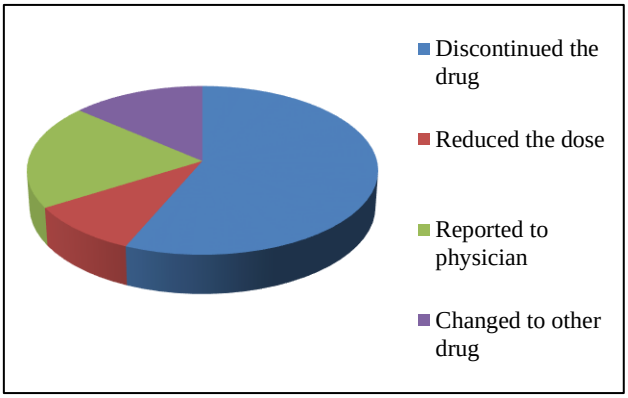

Figure 6: Response against side effects.

DISCUSSION

Self medication is a very common practice today.[16] It we use any medicine which is already available in our home or if we are using medicines which has been prescribed for any other person then also it is self medication.[17]

In present study 88.15% students have used analgesics as self medication out of which 85.81% were males and 90.41% were females (p >0.05). So, authors can say that there is no statistically significant difference between the male and female students using self medication in authors' institute. This may point to the fact that the female students are equally well read and aware of the medicines that should be used in different clinical conditions.

Total 90.28% of the 3rd year students and 86.01% of the 4th year students were using self medication for different symptoms (p >0.05). Present study data is similar to a study done in ACGR Government Medical College, Nellore, India for third year students. 100% of fourth year students were using self medication which is quite high than our study.[14] Usually, it is assumed that the 4th year students should have a better knowledge of drugs than the 3rd year students. But present study results show that there is no significant difference between the two groups. This may be due the fact that the 3rd year students might be consulting their senior or medical books before taking self medication which is a welcome trend.

Among Bangladeshi Undergraduate Pharmacy Students 88% were using self medication which was similar to Saudi Arabia study.[2,17] This figure was 75.5% in Addis Ababa Community.[18] Practice of self medication varies from place to place also because of differences in study population as well as assessment method.

Regarding source of information, the most common source of information was advice from the seniors followed by books, internet, old prescriptions and media. In Saudi population, pharmacists and doctors were the most common source of information as study done by Karami et al.[12] In ACGR Government Medical College, Nellore, old prescriptions and text books were the most common source of information.[14] Similar finding was observed among undergraduate students in a medical college in Kolkata.[19]

Paracetamol was the most common drug used by third and fourth year students in RIMS, Ranchi whereas in Nellore the most common analgesics used by fifth semester students was Diclofenac Sodium whereas seventh semester students used Paracetamol.[14] Among Saudi female students, total 88.3% reported use of analgesics among which 49.2% used Paracetamol.[20] In Nepal also about 82.7% adults of age group 20 and above residing in Chapapani - 12, Pokhara were using Paracetamol as OTC Analgesics.[1] Among Saudi population 73.4% used Paracetamol and 13.1% used ibuprufen 12 whereas in present study diclofenac sodium was the second most commonly used analgesic. Paracetamol is one of the most commonly used non-narcotic analgesic-antipyretic agent used with negligible anti inflammatory action. Recent evidence suggests that Paracetamol may act by inhibiting cycloxygenase 3 (COX 3) in CNS. COX 3 is involved in pain perception and fever but not in inflammation. Paracetamol is indicated for mild to moderate pain such as headache, myalgia and post partum pain. In therapeutic doses, it is quite safe and well tolerated. However, nausea and skin rashes may occur occasionally.[21] Very few students of RIMS, Ranchi have used Nimesulide, most probably due to its hepatotoxic potential.

FDC analgesics are used by 15.54% students in Jharkhand. It indicates the misuse of these analgesics because the combination of such drugs increases the side effects of individual components while its efficacy does not increase much.

Most of the students of RIMS, Ranchi were using analgesics for headache and fever. Present study finding is similar to finding in Addis-Ababa Community. About 25.7% people used analgesics for headache and next common indication for analgesic use was abdominal pain (12.9%).[18] In Saudi people also, the most common indication for analgesic was headache. In Jeddah, the next common indication was arthralgia whereas menstrual pain was the second most common indication as found in study done by Karami et al.[6,12] About 43.18% of girls were using these analgesics for menstrual pain. Probably they know that for dysmenorrhea these NSAIDS are very effective drugs. So, they use these drugs.

Regarding reason for self medication, our finding is similar to findings in Bangladesh, Saudi Arabia, Madhya Pradesh and Nellore, India.[2,6,11,14] One study done in Pokhara, Nepal showed that the most common reason for self medication was -it is time saving (45.5%).[1] This data is very low in our study (6.21%). In Mahmood et al, Study the most common reason for self medication was quick relief as seen in 40% of study population.[5] Analgesics are commonly marketed drugs which are easily available without prescription. Medical students are very busy in medical colleges and due to lack of time and some knowledge about drugs, they frequently use these drugs for mild nature of illness. In Srinagar, the most common factor leading to self medication was not serious problem and previous experience of same illness (63.1%).[15]

Present study shows that 52.17% used these analgesics once daily while 32.41% were using two tablets daily. But in Saudi population about 45.2% were using two tablets daily and 49.2% were using one tablet daily.[12] This is similar to our finding. We should keep in our mind that overdosing as well as under dosing both are dangerous. Overdosing causes toxicity while under dosing may cause prolongation of illness and sometimes the underlying disease may become chronic. It will increase our expenses also.

In current study most of the students did not followed any fixed duration. 83.39% had used analgesics as long as needed. One study among Saudi female students showed that 72.6% had monthly used analgesics drugs. So, it shows analgesics misuse among them.[20] NSAIDS are gastric irritants, so they should always be taken after meal. About half of our students have taken these drugs after meal. But about one third have taken at the time of pain. It indicates the severity of condition.

Almost all drugs have some side effects. Our study indicates that 124 of the participants felt some side effects. Half of them had acidity and vomiting which is quite natural with the use of NSAIDS. These drugs work by inhibiting prostaglandin synthesis which are gastro-protectives. 30.64% complained of dizziness. A study carried out in major community pharmacies of Lahore, Pakistan showed gastrointestinal intolerance 32 % as the most common side effect followed by sedation 30 % .5. OTC drugs used were code in analgesics and sedative antihistamines. Sedation is the most common adverse effect of these drugs.

In response to the side effects, about 56.45% discontinued the drug while 20.16% reported to physician. In a study, in Iraqi patients in Baghdad community 42% needed to consult the physician due to side effect.[7] This difference might be due to difference in study population. Here, medical students have been studied whereas Mohammad S has taken Iraqi patients as study population. Medical

students have obviously more knowledge than patients. In Baghdad community about 56% needed other medicines to treat the side effects. In this study, this data is 13.7%. Among Bahraini people 9% reduced the dose 8 as a result of side effect which is similar to present study finding.

Total 51.38% of the medical students were of the opinion that self medication is not always acceptable, whereas 17.78% were of the view that it is a good practice. Data among Bangladeshi undergraduate pharmacy students show that 51% male and 43% female students have the opinion that self medication is acceptable.[2] which is similar to that of Nepal.[1] The result differs due to difference in study population.

CONCLUSION

Present result shows that self medication with OTC analgesic drugs is very common among medical students. Paracetamol is the most common drug used and headache and fever are the most common indication. Mild nature of illness and the quick relief are the most common reason for self medication. Most of them know that these drugs should be taken after food but, in emergency they take it at the time of pain. Advice from seniors and books are the most common source of information about these drugs.

Self medication can provide some benefits such as saving medical resources from being wasted in minor conditions but, it also has some potential risks like inadequate or excessive dosage, excessively prolonged use, rare or severe adverse effects etc. Medical students have also insufficient knowledge about the drugs so, they need to be educated about the rational use of drugs and long term adverse effects by its irrational use.

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