DOI: https://dx.doi.org/10.18203/2319-2003.ijbcp20204499

Original Research Article

A comparative study on self-medication practice of analgesics among MBBS students of Dr. B. R. Ambedkar Medical College, Bengaluru

Poorvi M., Veena D. R.*, Shwetha H., Shanmukananda P.

Department of Pharmacology, Dr. B. R. Ambedkar Medical College, Bengaluru, Karnataka, India

Received: 10 September 2020 **Accepted:** 07 October 2020

*Correspondence: Dr. Veena D. R.,

Email: veena.dr@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: Self-medication with analgesics is prevalent worldwide among medical students due to easy availability of drugs and may lead to irrational usage of drugs. To assess knowledge, attitude, practice and perception of self-medication of analgesics.

Methods: A comparative study on self-medication of analgesics was conducted on 3rd and 5th term Bachelor of medicine and Bachelor of Surgery (MBBS) students of Dr. B. R. Ambedkar Medical College, Bengaluru in November 2019. A pre-designed questionnaire was used to collect information on self-medication with analgesics.

Results: 74.5% of 3rd term and 65.5% of 5th term MBBS students practiced self-medication with analgesics. Majority of students in both groups had some knowledge on self-medication with analgesics. Common condition for using analgesic self-medication was headache (75.8%, 59.7%, p=0.0172) and non-steroidal anti-inflammatory drugs (80.6%, 90%, p=0.0780) were commonly used analgesics. Analgesics were used for quick relief (67.7%, 73.3%, p=0.4512) and students in group II referred medical textbooks as a source of information for practicing self-medication with analgesics (22.5%, 61.6%, p<0.001). Students agreed that self-medication is acceptable for medical students (45.8%, 43%, p=0.045) and medical license is required for better administration of drugs (51.3%, 63.2%, p=0.225).

Conclusions: This study has found that self-medication with analgesics was common among MBBS students for minor illness. It is necessary to create awareness and educate students regarding the hazards of self-medication

Keywords: Self-medication, Analgesics, Medical students, Knowledge, Attitude, Practice

INTRODUCTION

Self medication is defined as obtaining and consuming a medicine without advice of a physician. It has both positive and negative aspects. It saves the time spent to consult a physician and lessens the burden on healthcare infrastructure, which is very important especially in the developing countries where resources are less. However, the irrational medication can have a negative outcome in some and may have an epidemiological impact on the society as it can lead to resistance, adverse reactions, interactions, drug dependence besides wasting financial resources. This also results in masking of a serious

underlying cause, incorrect self diagnosis, delay in seeking medical advice.⁴⁻⁸ Easy availability and less stringent application of drug controlling rules in India, further can also be a deciding factor in promotion of self medication.⁹ Medical students form a unique population as they have access to the medicines and are also equipped with basic knowledge of uses of these drugs. Thus, they are more prone to indulge in self medication compared to the general population.¹⁰ Hence, the present study was conducted to assess the knowledge, attitude, practice and perception of self medication with analgesics among medical students.

METHODS

This was a comparative study conducted between the 3rd and 5th term Bachelor of medicine and bachelor of surgery (MBBS) students of Dr. B. R. Ambedkar Medical College, Bengaluru during the month of November 2019. The study protocol was approved by the Institutional Ethics Committee. Students not willing to participate in the study and incompletely filled questionnaires were excluded from the study.

A predesigned validated questionnaire was used to collect the relevant information based on similar studies conducted previously. It was modified after obtaining valuable inputs from the senior faculty.

The questionnaire was distributed to 3rd and 5th term MBBS students and the data was collected in the lecture halls after a verbal consent was obtained. Students were given 20 minutes to fill and return the questionnaire.

Statistical analysis

Descriptive and inferential statistical analysis has been used in the present study. Results on continuous measurements are presented on Mean±SD (minimum to maximum) and results on categorical measurements are presented in number (%). Significance is assessed at 5% level of significance. Chi-square/Fisher exact test has been used to find the significant difference in the study parameters on categorical scale between two or more groups and non-parametric tests for qualitative data analysis. Fisher exact test used when cell samples were very small.

RESULTS

A total of 216 students volunteered to participate in the study, 65 responses were not considered because of incompletely filled questionnaire. The responses of the remaining 151 students were considered for the final analysis, 79 students belonged to 3rd term MBBS i.e. group I and 72 students belonged to 5th term MBBS i.e. group II. The students were in the age group 19-22 years.

Self medication with analgesics was commonly seen in males (63.2%, 48.60%, p=0.0431) in group I whereas in females in group II (36.7%, 51.3%, p=0.0430).

Assessment of knowledge on self-medication of analgesics

There is a significant difference between both the groups regarding knowledge of difference between opioid and non-opioid analgesics, dose of analgesic used in the treatment of the concerned disease, duration of treatment with analgesic for the concerned disease, available dosage form of the analgesics, timing of administration of analgesics, side effects of analgesics, drug interactions

with use of analgesics. Group II students had more knowledge regarding the above parameters as compared to group I students (Table 1).

Assessment of practice on self-medication of analgesics

The commonest condition among both the groups for using self-medication with analgesics was headache (75.8%, 59.7%, p=0.0172) (Figure 1), however group I students used self medication with analgesics for fever also as compared to group II students (74.1%, 9.7%, p<0.001). Non-steroidal anti-inflammatory drugs (NSAIDs) (80.6%, 90%) were commonly used drugs followed by opioids (16.1%, 10%), and fixed drug combinations of NSAIDs+opioids (16.1%, 5%) in both the groups.

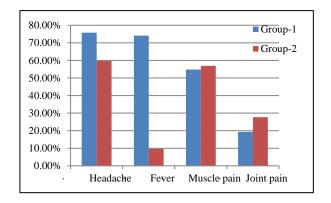


Figure 1: Comparison of the common conditions for using self medication with analgesics between group I and group II.

The commonest reason for self medication with analgesics in majority of the students in both the groups was quick relief (67.7% and 73.3%). The other reasons for self medication with analgesics are prior experience with illness, convenience, illness too trivial for consultation, cost saving, self confidence regarding awareness of medication, had practiced self medication in past year, reluctance to spend money on doctor consultation and lab investigations, pharmacists advice, first method to treat all problems (Table 2).

There was a significant difference regarding the source of information for practicing self medication with analgesics between the 2 groups. Group I students used the previous doctor's prescription (64.5% versus 40%, p=0.0005) whereas group II students referred medical textbooks (22.5% versus 61.60%, p<0.001) for practising self medication with analgesics (Table 3).

Community pharmacy was the most common source for procuring analysesics (85.4%, 80%).

Majority of students (74.2%, 70% group-I and group-II respectively) of both groups did not experience any side effects on analgesic use. However, 83.8% of group I

students and 75% of group II stopped self medication with analgesics after the symptoms resolved.

Group I students (56.4%) agreed that self-medication with analgesics is an acceptable practice for health care as compared to group II students (63.3%).

Table 1: Comparison of assessment of knowledge on self medication of analgesics between group I and group II.

Assessment of Knowledge on Self Medication of Analgesics	Not at all % (n)	Some % (n)	Very much % (n)	P value			
Do you know the difference between opioid and non-opioid analgesics							
Group I	53.1 (42)	39.2 (31)	7.5 (6)	د0.001**			
Group II	2.7 (2)	90.2 (65)	6.9 (5)	<0.001**			
Do you know the dose of analgesic used in the treatment of the concerned disease							
Group I	64.5 (51)	35.4 (28)	0.0(0)	<0.001**			
Group II	5.5 (4)	90.2 (65)	4.1 (3)	<0.001**			
Do you know the duration of treatment with analgesic for the concerned disease							
Group I	64.5 (51)	35.4 (28)	0.0(0)	<0.001**			
Group II	6.9 (5)	91.6 (66)	1.3 (1)	<0.001***			
Do you know the available dosage form of the analgesics							
Group I	49.3 (39)	48.1 (38)	2.5 (2)	<0.001**			
Group II	2.7(2)	94.4 (68)	2.7 (2)	<0.001***			
Do you know the timing of administration of analgesics							
Group I	60.7 (48)	39.2 (31)	0.0(0)	<0.001**			
Group II	8.3 (6)	88.8 (64)	2.7(2)	<0.001			
Do you know the side effects of analgesics							
Group I	24.0 (19)	75.9 (60)	3.7 (3)	0.005**			
Group II	5.5 (4)	90.2 (65)	4.1 (3)	0.005			
Do you know the drug interaction with use of analgesics							
Group I	58.2 (46)	40.5 (32)	1.2(1)	<0.001**			
Group II	2.7 (2)	94.4 (68)	2.7 (2)	<0.001***			

Table 2: Comparison of reasons for self medication practices of analgesics between group I and group II.

Reasons for self-medication	Group-1	Group-2	p value
Quick relief	67.7	73.3	0.4512
Prior experience of illness	59.6	38.3	0.0027**
Convenient	40.3	43.3	0.7574
Illness too trivial for consultation	29.0	16.6	0.0441*
Cost saving	22.5	11.6	0.0508+
Self-confidence regarding awareness of medication	17.7	38.3	0.0013*
Had practiced self-medication in past year	14.5	21.6	0.2389
Reluctance to spend money on doctor consultation and lab investigations	11.2	5.0	0.1542
Pharmacists advice	11.2	20.0	0.1116
First method to treat all problems	11.2	11.6	0.9032

Table 3: Comparison of common source of information for self-medication of analgesics between group I and II.

Common source of information for self-medication with analgesics	Group-1	Group-2	P value
Previous doctor prescription	64.5	40	0.0005**
Opinion of family members	50.0	35	0.0364*
My own opinion	35.4	23.30	0.0711+
Pharmacist's advice	27.4	13.30	0.0160*
Medical textbooks	22.5	61.60	<0.001**
Opinion of friends	14.5	11.60	0.6666
Recommended by internet	14.5	5	0.0330*
Advertisement	12.9	6.60	0.1820

Table 4: Comparison of assessment of attitude on self medication of analgesics between group I and group II.

Assessment of attitude on self medication of analgesics	Strongly agree % (n)	Agree % (n)	Unsure % (n)	Disagree % (n)	Strongly disagree % (n)	p value		
Self-medication is acceptable for students								
Group I	11.1 (8)	34.7 (25)	30.5 (22)	16.6 (12)	6.9 (5)	0.023*		
Group II	18.9 (15)	48.1 (38)	26.5 (21)	3.7 (3)	2.5 (2)	0.023		
Medical students have good ab	ility to diagno	se the symptor	ns					
Group I	5.5 (4)	36.1 (26)	30.5 (22)	22.2 (16)	5.5 (4)	<0.001**		
Group II	2.5 (2)	70.8 (56)	16.4 (13)	8.8 (7)	1.2(1)	<0.001***		
Medical students have good ab	ility to treat t	he symptoms						
Group I	1.3 (1)	45.8 (33)	20.8 (22)	30.5 (22)	1.3 (1)	<0.001**		
Group II	6.3 (5)	55.6 (44)	29.1 (23)	5.0 (4)	3.7 (3)	<0.001***		
Self-medication would be harn	nful if it is tak	en without pro	per knowledge	of drugs & dis	ease			
Group I	48.6 (35)	37.5 (27)	5.5 (4)	1.3 (1)	6.9 (5)	0.015*		
Group II	73.4 (58)	18.9 (15)	5 (4)	0.0(0)	2.5 (2)	0.015*		
Medical license is required for	better admini	stration of dru	ıgs					
Group I	51.3 (37)	27.7 (20)	8.3 (6)	6.9 (5)	5.5 (4)	0.225		
Group II	63.2 (50)	29.1 (23)	2.5(2)	2.5 (2)	2.5 (2)	0.225		
Pharmacists is a good source o	f information	regarding trea	tment of minor	ailments				
Group I	5.5 (4)	37.5 (27)	19.4 (14)	22.2 (16)	15.2 (11)	0.006**		
Group II	24.0 (19)	35.4 (28)	20.2 (16)	16.4 (13)	3.7 (3)	0.006		
Should be careful with over the	e counter drug	gs						
Group I	54.1 (39)	30.5 (22)	12.5 (9)	2.7 (2)	0.0(0)	0.480		
Group II	49.3 (39)	34.1 (27)	16.4 (13)	0.0(0)	0.0(0)	0.480		
Medical students should read t	Medical students should read the package insert							
Group I	41.6 (30)	48.6 (35)	5.5 (4)	2.7 (2)	1.3 (1)	0.853		
Group II	49.3 (39)	41.7 (33)	6.3 (5)	1.2(1)	1.2(1)			
It is a part of self-care								
Group I	16.6 (12)	44.4 (32)	22.2 (16)	13.8 (10)	2.7 (2)	0.032*		
Group II	35.4 (28)	40.5 (32)	17.7 (14)	3.7 (3)	2.5 (2)			
Continue with self-medication and practice								
Group I	0.0 (0)	45.8 (33)	20.8 (15)	23.6 (17)	9.7 (7)	0.001**		
Group II	16.4 (13)	35.4 (28)	31.6 (25)	12.6 (10)	3.7 (3)	0.001***		

Table 5: Comparison of perception of students to prevent self medication practice between group I and group II.

Perception of students to prevent self medication practice	Strongly agree % (n)	Agree % (n)	Unsure % (n)	Disagree % (n)	Strongly disagree % (n)	p value	
Self-medication is acceptable for	Self-medication is acceptable for students						
Group I	45.8 (33)	19.4 (14)	19.4 (14)	8.3 (6)	6.9 (5)		
Group II	43.0 (34)	39.2 (31)	8.8 (7)	3.7 (3)	5.0 (4)	0.045*	
Creating awareness regarding side effects of self-medication							
Group I	56.9 (41)	31.9 (23)	9.7 (7)	0.0(0)	1.3(1)	0.052	
Group II	75.9 (60)	20.2 (14)	3.7 (3)	0.0(0)	0.0(0)	0.052+	
Making health care facilities affordable and easily available							
Group I	56.9 (41)	26.3 (19)	13.8 (10)	0.0(0)	2.7 (2)	0.421	
Group II	68.3 (54)	22.7 (18)	7.5 (6)	0.0(0)	1.2(1)	0.431	

Assessment of attitude on self-medication of analgesics

Students in both the groups agreed that medical students have good ability to diagnose the symptoms (45.8%, 55.6%, p<0.001), and also to treat the symptoms (45.8%, p<0.001)

55.6%, p<0.001) however they also strongly agreed that medical license is required for better administration of drugs (27.7%, 29.1%, p=0.225) (Table 4).

Assessment of perception of students to prevent selfmedication practice

Group II students strongly agreed that creating awareness about the side effects of self-medication with analgesics is necessary compared to group I students (75.9% vs. 56.9%, p=0.052) (Table 5).

DISCUSSION

Analgesics have been the most commonly used and abused drugs for self medication by medical students.

In our study, the prevalence of self medication with analgesics was found to be 79 % and 72% in group I and group II respectively while in studies done by Badiger et al, Shivamurthy et al, Al Essa et al, prevalence of self medication with analgesic was found to be 92%, 63.6% and 73.2% respectively. Our study thus supports earlier studies with similar results signifying increasing practice of self medication among medical students.

63.2% male students practiced self medication in group I which is similar to a study done by Badiger et al, in which it was (94%) among male students and (91%) among female students.¹¹ However, in group II it was higher in female students (51.3%).

In our study, 39.2% of students in group I and 90.2% in group II had some knowledge regarding the difference between opioid and non-opioid analgesics (p<0.001). Students of group II had more knowledge than group I regarding dose of analgesics used (35.4% in group I and 90.2% in group II, p<0.001), drug interactions (40.5% in group I and 94.4% in group II, p<0.001), side effects of analgesics (75.9% in group I and 90.2% in group II, p=0.005). In a study done by Rani et al, 10 comparing self medication practices among MBBS and BDS students showed that 99% of the MBBS students were aware of self medication compared to 70% in dental students. These study shows sufficient pharmacological knowledge enables medical students to indulge in self medication practice. This difference could be due to better knowledge they have about NSAIDs which was taught during their course.

The commonest condition for self medication with analgesics was headache (75.8% in group I and 59.7% in group II, p=0.0172) and NSAIDs (80.6% in group I and 90% in group II, p=0.0780) were the commonly used drugs which is similar to studies done by Shivamurthy et al, Al Essa et al, where headache (68.2% and 92%) was the most common indication and NSAID (47%, 96.5%) was most commonly used analgesic respectively. 12,13 This practice of self medication with analgesics for minor illness is common among medical students.

The most common reason for self medication in our study was quick relief (67.7% in group I and 73.3% in group II, p=0.452) which is similar to studies done by Gupta . ¹⁴ Prior

experience of illness (59.6% in group I and 38.3% in group II, p=0.0027) reported in our study was also seen in studies done in Zafar et al and Abay et al.^{15,16} Since group II students were taught systemic pharmacology they had better knowledge, could correlate and differentiate the symptoms as compared to group I students on mere previous experience. The other statistically significant reasons were self confidence regarding awareness of medication (p=0.0013), considering the illness too trivial for consultation (p=0.0441).

The most common source of information was doctor's previous prescriptions (64.5% in group I and 40% in group II, p=0.0005) which is similar to study done by Shivamurthy et al 12 (33.3%). Also, in our study group II students referred the medical textbooks, as compared to group I students (61.6%, 22.5%, p<0.001). This indulgence in self medication practice can be attributed to their pharmacological knowledge.

In our study, students in both the groups (63.2%, 51.3%, p=0.225), strongly agreed that medical license is required for better administration of drugs. Self medication with analgesics is practiced by the medical students for minor illness and holding a medical degree gives them the experience and confidence to deal with their own health.

Limitations

The limitations for the study were as follows: small sample size and the study could have been conducted in 2nd, 3rd, final year and paramedical students also.

CONCLUSION

It was found through this study that self medication with analgesics was a common practice among MBBS students for minor illness. Using over the counter (OTC) analgesics can mask and delay diagnosis of the underlying disease. Students strongly agreed on the fact that sufficient pharmacological knowledge enables them to indulge in self medication practice due to increase in the level of confidence. It is also necessary to create awareness among medical students regarding the hazards of self medication through Continued medical education programs (CME). A meta analysis of similar studies done in all other colleges will give more statistically significant results. This topic can also be included in the undergraduate course by emphasizing the potential risks of self medication. There is also a great responsibility on drug regulatory authorities and also the medical faculties to curb the practice of self medication.

ACKNOWLEDGEMENTS

We are thankful to the students of 3rd and 5th term MBBS, studying in Dr. B. R. Ambedkar Medical College, Bengaluru, who voluntarily participated in the questionnaire-based study.

Funding: No funding sources Conflict of interest: None declared

Ethical approval: The study was approved by the

Institutional Ethics Committee

REFERENCES

- 1. Khajuria V, Gupta S, Arora S, Sadiq S. Self medication in dermatological conditions-A Northern Indian Tertiary Hospital Experience. Res J Pharm Bio Chem Sci. 2013;4(1):247-52.
- 2. Mehta RK, Sharma S. Knowledge, Attitude and Practice of self medication among medical students. J Nurs Health Sci. 2015;4(1):89-96.
- 3. Shaik T, Mehar BR. A questionnaire based study to assess the knowledge, attitude and practice (KAP) of rationale use of antibiotics among undergraduate dental students in a tertiary care dental hospital of South India. Int J Basic Clin Pharmacol. 2017;6(2):312-5.
- 4. Alghanim SA. Self medication practice among patients in a public health care system. East Mediterr Health J 2011;17:409-16.
- 5. 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.
- 6. Ruiz ME. Risk of self medication practices. Current Drug Safety. 2010;5:315-23.
- 7. Naïm RO, Escher M. Self medication with analgesics: What are the risks? Revue Medicale Suisse. 2010;6:1338-41.
- 8. Aljinovic Vucic V, Trkulja V, Lackovic Z. Content of home pharmacies and self medication practices in households of pharmacy and medical students in Zagreb, Croatia: Findings in 2001 with a reference to 1977. Croat Med J. 2005;46:74-80.
- 9. Balamurgan E, Ganesh K. Prevalance and pattern of self medication use in coastal regions of South India. Brit J Med Pract. 2011;4(3):a428.

- 10. Rani N, Sadi S, Khajuria K. Comparative Study of Knowledge, Attitude and Practice of self medication among undergraduate students of MBBS and BDS. Int J bas clin pharmacol. 2018;7(12):1-5.
- 11. 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(4):217-20.
- 12. Shivamurthy S, Manchukonda R, Gurappanavar D. Evaluation of analgesic self-medication pattern among under-graduate medical students of Adichunchanagiri Institute of Medical Sciences, BG Nagar, Karnataka: a cross-sectional questionnaire-based study. Int J Bas Clin Pharmacol. 2015;4(3):438-41.
- 13. Essa MA, Alshehri A, Alzahrani M, Bustami R, Adnan S, Alkeraidees A, et al. Practices, awareness and attitudes toward self-medication of analgesics among health sciences students in Riyadh, Saudi Arabia. Saud Pharma J. 2019;27:235-9.
- 14. Gupta V, Bansal P, Manhas R, Singh Z, Ghaiye P. Preferred system of medicine and reasons of self-medication among college students in Malwa region of Punjab. J Drug Deliv Ther. 2011;1(2):27-9.
- 15. Zafar SN, Syed R, Waqar S, Irani FA, Saleem S. Prescription of medicines by medical students of Karachi, Pakistan: a cross-sectional study. BMC Public Health. 2008;8:162.
- 16. Abay SM, Amelo W. Assessment of self-medication practices among medical, pharmacy, and health science students in Gondar University, Ethiopia. J Young Pharm. 2010;2(3):306-1.

Cite this article as: Poorvi M, Veena DR, Shwetha H, Shanmukananda P. A comparative study on self-medication practice of analgesics among MBBS students of Dr. B. R. Ambedkar Medical College, Bengaluru. Int J Basic Clin Pharmacol 2020;9:1707-12.