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Original Article

A Questionnaire Based Study to Assess Knowledge Attitude and Practices about Rationale Use of Medicine in Second Year MBBS Students of Uttar Pradesh University of Medical Sciences, Saifai, Etawah

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ABSTRACT

Background: Any health system should focus on three key aspects of medicines-accessibility, affordability, and rational use of medicine. Rational use of medicines (RUM) requires that "patients receive medicines that meet their clinical needs, at doses that meet their individual needs, over an appropriate period of time, and at the lowest cost to both patients and their communities. **Aim:** This study was conducted to assess the knowledge, attitude and practice on RUM among medical students. **Materials and Methods :** This was a survey-based cross-sectional study conducted after approval by the institutional ethics committee. The study population included 187 second year MBBS (fourth semester) students of Uttar Pradesh University of Medical Sciences, Saifai, Etawah, U.P, India. They were informed about the study and their consent was obtained. The identity of the students was not disclosed. **Results:** Total 187 students participated in the study, 103 males and 84 females. Most of them believe that it is not safe to take prescribed medicines with over the counter (OTC) medicines (55.08%). The majority of respondents (73.26%) believed that the pharmaceutical industry benefits most from irrational prescriptions, while only 6.95% believed that mass communication is a poor medium to educate people about medicines. 63.64% believed that dietary supplements can be taken without a prescription, and 55.08% believed that they read the package insert at OTC. **Conclusion:** Medical students will be prescribing drugs in future, they need to be aware of all aspects of Rationale use of medicine. RUM is included in the undergraduate curriculum, education in this area must be proper and vigorous so that they can be groomed to become great future prescribers.

Keywords: Rational Use of Medicine, Over-the-Counter, generic, Medical Students, Knowledge, Attitude and Practice.

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INTRODUCTION

Any healthcare system should prioritise three characteristics of medications: availability, cost, and appropriate usage.[1] Rational Use of Medicine (RUM) demand that "patients receive medications that meet their clinical needs, at doses that meet their individual needs, over the course of an appropriate period of time, and at the least cost to patients as well as their communities.[2]

Irrational use of medicines is on the rise due to factors such as misleading/false beliefs, inadequate consumer knowledge and prescribing pressures, professional profit-driven practices by prescribing physicians, profitable promotional activities by the pharmaceutical industry, and lack of regulatory follow-through.[3] Measuring unreasonable drug usage is the first step towards correcting it. Health planners require precise knowledge about the type of irrationality being practised in order to choose relevant, efficient, and workable methods to address the issue of irrational drug use. Several studies have investigated how various stakeholders, including nurses, pharmacy students, pharmacists, and prescribing doctors, see RUM.[4-6] Future doctors and prescribing professionals are medical students. It is crucial to understand how they view RUM since they might be crucial in future efforts to solve this issue. Therefore, evaluating their understanding of this delicate subject will aid in identifying areas that require attention and correction.

The WHO six steps of rational prescribing are an important guide to prepare UG physicians for the rational prescribing approach. The six steps, to be followed in sequence, are provided by WHO:

1: Properly defining the patient's problem, 2: Defining the therapeutic objective, 3: Appropriately selecting the appropriate

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drug, 4: Legibly and correctly writing the prescription, 5: Appropriately communicating instructions and warnings to the patient, 6: Timely monitoring or discontinuing treatment. Several earlier research solely looked into the knowledge component of medicine use that is appropriate.[7,8]

There are very few research that have evaluated the knowledge, attitude, and practice of RUM.[8,9] This study was conducted to assess the knowledge, attitude and practice on RUM among medical students.

MATERIALS AND METHODS

After receiving approval from the institutional ethical committee, this survey-based cross-sectional study was carried out. The study population included 187 second year MBBS (fourth semester) students of Uttar Pradesh University of Medical Sciences, Saifai, Etawah, Uttar Pradesh, India. They were informed about the study and their consent was obtained. The identity of the students was not disclosed.

A self-developed, pre-validated, semi-structured questionnaire consisting of closed-ended questions was used. The questionnaire was developed to obtain information on various topics related to RUM. The questionnaire was first tested on ten students and modified accordingly. Appropriate instructions were given on how to complete the questionnaire. The final version of the questionnaire was distributed to the participants. Data were expressed in counts and percentages.

RESULTS

A total of 187 students participated in the study, 103 males and 84 females. Table 1 shows that the majority of the participants (60.43%) were aware of OTC medicines. Most of them believe that it is not safe to take prescribed medicines with OTC medicines (55.08%). Almost all of them knew that the same generic drug is available under different names (95.7%) and that the prices of different brands of the same drug vary widely (93%). Many of the respondents did not know what precautions to take when buying medicines online (66.84%). The majority of respondents were aware of the precautions to be taken when using medicines for children (82.35%), pregnant and lactating women (70.05%), and the elderly (71.12%). The majority of them thought that no tablet can be divided for use in children (67.38). Most of them knew about the expiration date of medicines (90.37%).

Table 2 shows that fewer participants believe that more expensive medicines are better (39.6%) than cheaper ones and that medicines manufactured by foreign companies are better (32.62%). Very few believe that medicines are needed for every illness (13.37%), and only 5.88% believe that the more medicines in a prescription, the better and sooner relief will occur. About 30.5% believed that medicines from government facilities are of inferior quality compared to those from private pharmacies, and only 7.49% believed that doctors can fully rely on the information about medicines provided by the pharmaceutical industry. The majority of respondents (73.26%) believed that the pharmaceutical industry benefits most from irrational prescriptions, while only 6.95% believed that mass communication is a poor medium to educate people about medicines.

Table 1: Evaluation of Respondents Knowledge about Rational Use of Medicine (*n*= 187).

Sl. No.	Statement	No. of Respondents (%)		
		YES	NO	NA
1.	Are you aware about OTC medicines.	113 (60.4)	67 (35.8)	7 (3.7)
2.	Is it safe to take prescription medicine with OTC medicine.	61 (32.6)	103 (55.1)	23 (12.3)
3.	Aware that same generic content of medicine is available under different brand names.	179 (95.7)	8 (4.3)	
4.	There is wide variation in prices of different brands of same medicine.	174 (93.0)	13 (7.0)	
5.	Aware about precautions to be followed while online purchase of medicine.	57 (30.5)	125 (66.8)	5(2.7)
6.	Aware about precautions to be taken while using medicine in children.	154 (82.4)	33 (17.7)	
7.	Aware about precautions to be followed while using medicine in elderly.	133 (71.1)	49 (26.2)	5(2.7)
8.	Aware about precautions to be taken while using medicine in pregnant and breast feeding women.	131 (70.1)	52 (27.8)	4(2.1)
9.	Ant tablet can be divided for use in pediatric patients.	54 (28.9)	126 (67.4)	7(3.7)
10.	Aware about expiry date of medicine.	169 (90.4)	18 (9.6	

Table 2: Evaluation of Respondents Attitude about Rational use of Medici Ne (*n*=187).

Sl. No.	Statement	Yes	No	Na
1.	Costlier medicines are superior to less expensive ones.	74 (39.6)	113 (60.4)	
2.	Better medicines are manufactured by foreign multinational companies.	61 (32.6)	126 (67.4)	
3.	Medicine is needed for every illness.	25 (13.4)	162 (86.6)	
4.	The relief will come faster and better when the more medications are prescribed.	11 (5.9)	176 (94.1)	
5.	Compared to those from private pharmacies, government hospital medications are of lower quality.	57 (30.5)	130 (69.5)	
6.	Doctors can rely entirely on the pharmaceutical industry's information about medications.	14 (7.5)	170 (90.9)	3 (1.6)
7.	Irrational prescribing benefits maximum to pharmaceutical industries.	137 (73.3)	45 (24.1)	5 (2.7)
8.	Mass communication is bad medium to educate people about medicines.	13 (7.0)	174 (93.0)	

Table 3: Evaluation of practices of rational use medicine in respondents (*n*=187).

Sl. No	Statement	No. of Respondents (%)		
		YES	NO	NA
1.	Purchase medicine without prescription.	42(22.5)	145(77.5)	
2.	Reuse a doctor's prescription for similar ailment in a different person.	31(16.6)	147(78.6)	9(4.8)
3.	Purchase any medicines online.	13(7.0)	174(93)	
4.	Buying any medicine based on direct marketing to consumers.	36(19.3)	144(77)	7(3.7)
5.	Take medicine recommended by multiple doctor for the same issue at the same time without informing them.	7(3.7)	167(89.3)	13(7)
6.	Mix allopathic treatment with AYURVEDIC/Traditional home Remedy/Homeopathic/Unani.	55(29.4)	113(60.4)	19(10.2)
7.	Purchase all medicine written in prescription.	171(91.4)	11(5.9)	5(2.7)
8.	Stick to doctor's advice and instructions.	183(97.9)	4(2.1)	
9.	Before stopping the medication, Consult your doctor.	137(73.3)	41(21.9)	9(4.8)
10.	Can nutritional supplement be taken without prescription.	119(63.6)	63(33.7)	5(2.7)
11.	Read label on the OTC medicine.	103(55.1)	63(33.7)	21(11.2)

Table 3 shows that 22.46% of the participants believed that they buy medicines without prescription and only 16.58% reused a doctor's prescription for similar ailments of another person. Only 6.95% believed that they purchase medications online, and 19.25% believed that they purchase medications based on direct-to-consumer advertising. Only 3.74% said that they take medicines prescribed by more than one doctor for the same problem without informing them, and 29.41% admitted that they mix allopathic treatments with Ayurvedic/traditional home Remedies/Homeopathics/Unani. Majority of the respondents (91.44%) believed that they buy all prescription medicines and almost all (97.86%) admitted that they follow the advice and instructions of the doctor and 73.26% believed that they consult the doctor before stopping the medicine. 63.64% believed that dietary supplements can be taken without a prescription, and 55.08% believed that they read the package insert at OTC.

DISCUSSION

National Rural Health Mission following WHO, emphasizes that rational use of medicines should be included in the curriculum of medical students.[1] Students in their early learning stage are very vulnerable, they can be influenced very easily by positive and negative factors, so it is very important to educate them about rational use of medicines so that it becomes their habit to practice rational use of medicines.

This study was conducted to assess the knowledge, attitude and practice of RUM among second year (fourth year) medical

students.It is reassuring that the majority of them were acquainted with the numerous topics covered in the questionnaire.They should have thorough understanding of all the topics covered in the questionnaire because they will eventually be prescribing medication. As a result, the right steps must be made to inform them about how to use medications responsibly.

It is motivating to note that the majority of them (60.43%) knew about over-the-counter medications, and the majority of them disagreed that they could be taken safely with prescription medications because the new NMC curriculum emphasises competency-based learning.

However, some of them have the incorrect belief that OTC medications can be used with prescription medications without causing any negative interactions. This is not a good practise in our institution as OTC medications may also interact with prescription medications and should only be taken on a doctor's advice.

According to a previous study[10] conducted at a medical institute, only 87% of residents and faculty members were aware of the terms RUM and p-drugs. 5 84% and 25% of the 39 college interns included in the participant group knew what RUM was, respectively.[11] According to a survey, 41% of the college interns knew the term "p-drugs" and 95% of them were familiar with RUM.[12] Another study found that 96.5% and 32% of the participants knew the terms RUM and p-drugs, respectively.[13]

The majority of respondents were aware that the same generic drug is sold under many brand names and that different brands of the same drug have vastly varying pricing, but the majority of them (66.84%) were unaware of the safety measures to take while purchasing medications online. In the study conducted by Sontakke *et al.*,[14] it was found that majority of the respondents (82%) believed that any tablet can be divided for use in pediatric patients, while in our study only 29% believed that any tablet can be divided for use in pediatric patients, and it was encouraging to see that majority of them (67.38%) believed that any tablet cannot be divided for use in pediatric patients. Because it is a common misconception that all tablets can be shared for paediatric use, which is untrue because many tablets should not be broken before use, otherwise they will lose their effectiveness, if they have this knowledge, they will share it with the medical staff and chemists, who will then educate the public about it.

In this study, the vast majority of students held the opinion that the pharmaceutical company will earn the most from people using medications irrationally. They are aware that, in the current situation, pharmaceutical corporations are influencing physicians to write nonsensical prescriptions in order to maximise profits. After all, they are the future doctors and need to carry this idea forward. To do so, they should be self-directed and motivated.

About 30% of respondents believed that drugs from government hospitals are of lower quality than those from private pharmacies, and about 40% believed that more expensive drugs are better than cheaper ones, which is not a good sign because most patients who visit government hospitals come from low socioeconomic groups and cannot afford expensive drugs, which results in poor compliance.In the study by Bagewadi *et al.*,[15] it was discovered that approximately 65% of the respondents thought that a larger number of drugs in a prescription led to better and faster relief. However, in our study, only 11% of participants acknowledged that a larger number of drugs in a prescription led to better and faster relief, which is also true because the number of drugs used does not affect the cure rate.

The majority of respondents disapproved the practise of RUM, which involves using another person's similar sickness to fill a doctor's prescription. The majority of them did not believe that they should take medications recommended by more than one doctor simultaneously for the same issue without their knowledge.Most of them avoided combining modern treatment with alternative therapies like homoeopathy, unani, and ayurveda. It was disappointing to learn that just 55.08% of respondents had read the OTC medication information.This study was conducted to assess the knowledge, attitude and awareness about rational use of medicines among trainee doctors.The majority of queries concerned the general population, who are the main users of pharmaceuticals, and how any misconceptions they may have about health care should be clarified by medical personnel. Any misunderstanding or false perception about RUM must be corrected in medical students initially because they will become physicians in the future.

Education of the general public is crucial for the proper use of medications because the general public lacks experience and knowledge in this area and is unaware of the benefits and drawbacks of the proper use of medications. Doctors are the key players in educating the patients and therefore they themselves should be aware about the judicious use of medicines. This is possible only when medical students are exposed to various topics of RUM through proper training and guidance during their learning phase. The recently introduced competency based learning where RUM is included in the curriculum will prove to be a boon to address various aspects of RUM.

CONCLUSION

As these medical students will be writing prescriptions for medications in the future, they must be knowledgeable about every aspect of RUM. Certain areas where they have inadequate knowledge should be properly addressed. The undergraduate curriculum includes RUM; therefore, instruction in this field must be proper and strong in order to prepare students to become outstanding future prescribers.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

ABBREVIATIONS

WHO: World Health Organization; **RUM:** Rational Use of Medicine; **OTC:** Over the counter; **NMC:** National medical Commission.

REFERENCES

1. Gitanjali B, Shashindran CH. Curriculum in clinical pharmacology for medical undergraduates of India. Indian J Pharmacol. 2006;38;S2:S108-14.
2. World Health Organization. Guide to good prescribing—A practical manual [cited Jun 2, 2015]. Available from: http://apps.who.int/medicinedocs/en/d/Jwhozip23e/.
3. de Vries TP, Henning RH, Hogerzil HV, Fresle DA. World Health Organization, guide to good prescribing. A practical manual. Action programme on essential drugs. Geneva; 1994:1.
4. Holloway K. Promoting rational use of medicines. Contact a publication of World Council of Churches. 2006;183:2-3.
5. Toklu H, Demirdamar R, Gümüşel B, Yarış E, Dülger G. Rational drug use awareness of the nurses in the Turkish Republic of Northern Cyprus near East University Hospital. Marmara Pharm J. 2012;16(2):150-4.
6. Gharpure K, Thawani V, Sontakke S, Chaudhari K, Bankar M, Diwe R. Effect of information, education and communication intervention on awareness about rational pharmacy practice in pharmacy students. Indian J Pharmacol. 2011;43(4):381-4. doi: 10.4103/0253-7613.83105, PMID 21844989.
7. Sankaravadivu T, kumar SE, Bhavya E. A prospective study on rational drug use and the essential drug concept. Int J Res Pharm Biomed Sci. 2011;2(2).
8. Tekulapally K. Knowledge, attitude and practices of rational use of medicines among interns in a tertiary care teaching hospital in Telangana. Asian J Med Sci. 2021;12(6):65-9. doi: 10.3126/ajms.v12i6.33939.
9. Singh S, Yadav AK, Pichholiya M, Kamlekar SK, Gupta S. Evaluation of Knowledge, Attitude, and Practice about the Rational Use of Medicines among Junior Residents in a tertiary Hare hospital in India. Pharmacol Clin Pharm Res. 2022;7(3):126-33.
10. Bajait C, Dakhale G, Jaiswal K, Pimpalkhute S, Sontakke S, Urade C. Evaluation of knowledge, attitude and practice of rational use of medicines among clinicians in a tertiary care teaching hospital. Int J Nutr Pharmacol Neurol Dis. 2014;4(3):153-7. doi: 10.4103/2231-0738.132673.
11. Vagge DS. A questionnaire study to evaluate the awareness and knowledge about rational use of medicines among trainee medical graduates in a tertiary care centre. Int J Pharm Phytopharmacol Res. 2014;3(3).
12. Gupta R, Malhotra A, Malhotra P. Assessment of rational prescribing practice among interns: a questionnaire based observational study. Int J Res Med Sci. 2018;6(8):2808-12. doi: 10.18203/2320-6012.ijrms20183274.
13. Dakhale G, Pimpalkhute S, Bajait C, Raghute L. Evaluation of knowledge, attitude and practice of rational use of medicine among interns and resident doctors in a tertiary care teaching hospital. J Young Pharm. 2016;8(2):114-7. doi: 10.5530/jyp.2016.2.10.
14. Sontakke S, Budania R, Parajape S. Evaluation of knowledge, attitude and behaviour about rational use of medicine in second year medical students. Inj. J Basic Clinc Pharmacol. 2013;2:617-21.
15. Wasif S, Bagewadi HG, Deodurg PM. A questionnaire based cross sectional study to assess the knowledge and perceptions regarding concept of rational use of medicines among second year medical students. Indian J Pharm Pharmacol. 2021;8(1):88-91. doi: 10.18231/j.ijpp.2021.014.

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