

Rational prescribing practice assessment among resident doctors in a tertiary care teaching hospital: a questionnaire based observational study

Sajad H. Syed, Rehana Tabasum*, Tuoseef Nazir, M. Y. Bhat

Department of Pharmacology,
Government Medical College,
Srinagar, Jammu and Kashmir,
India

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***Correspondence to:**

Dr. Rehana Tabasum,
Email: rehanatabassum19@
gmail.com

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ABSTRACT

Background: One of the important factors in health policy is recognised to be rational use of medicines (RUM). Physicians can influence the health and well-being of patients by prescribing appropriate drug in right doses and they should be taught to prescribe rationally at the earliest of their professional carrier.

Methods: This cross-sectional, questionnaire-based study was carried out in SMHS hospital which is a tertiary-care teaching hospital associated with Government Medical College, Srinagar, Jammu and Kashmir, India.

Results: Out of 106 resident doctors enrolled in the study, 96.2% respondents were aware about the term essential medicines of India, and 47.6% had National List of Essential Medicines of India available at their work place. When the participants were questioned about the term RUM only 17% of them responded positively, but majority of the resident doctors (88.67%) were aware about the ingredients of the drugs they use to prescribe. Though only 3.7% of our participating doctors always use essential medicines during their prescription writing but majority of them (96.22%) would always use to inform the patient regarding disease, drug therapy and monitoring of drug therapy.

Conclusions: Considering the fact that respondents are future prescribers they should be aware of all aspects about RUM and improper knowledge in certain areas of RUM is a matter of concern that needs to be addressed.

Keywords: Rational use of medicines, Essential medicine list, Prescribing practice

INTRODUCTION

According to a report by World Health Organization (WHO), 50% of all medicines are prescribed, dispensed or sold incorrectly, while 50% of patients fail to take their medicines satisfactorily.¹ Rational use of medicines (RUM) is recognized as an important factor in health policy.² RUM requires that patients receive medications appropriate to their clinical needs, in doses that meet their own individual requirements, for an adequate period of time, and at the lowest cost to them and their

community.² The pace of developments over the recent years in the field of drugs has further complicated the process of rational prescribing, with the availability of many new drugs. To promote rational use of drugs, World Health organization has emphasized treatment of diseases by the use of essential drugs, prescribed by their generic names.³

WHO established essential medicine list (EML) as a major step towards promoting RUM. "model list of essential drug" according to WHO are "list of drugs that

satisfy the health care needs of the majority of the population; they should therefore, be available at all times in adequate amount and in appropriate dosage forms.⁴ This concept was defined in 1975 by the WHO as a major step towards promoting RUM.⁵ The Ministry of Health, Government of India revised the National List of Essential Medicines of India (NLEMI 2011) in June 2011. The NLEMI 2011 contains 348 medicines.⁶ Essential medicines lists have been shown to improve the quality and cost-effectiveness of health care delivery when combined with proper procurement policies and good prescribing practices.⁷ To boost the cause of RUM, P-drug concept was introduced. The idea of P-drug is to make physicians familiar with some personal drugs chosen from NLEMI based on safety, efficacy, suitability and cost.⁸ To address the problem of irrational use of medicines, the health planners need specific information on the type of irrationality that is being practised so that appropriate, effective and feasible strategies can be chosen.

In the previous MBBS curriculum though the concept of RUM was being taught but the recently devised competence based medical education (CBME) programme by MCI has put greater thrust on RUM and will definitely pave the way for rational prescribing if implemented properly. Though majority of resident doctors recognize the importance of RUM, most of them have not been able to apply regularly their knowledge in their daily medical practice.

With the above mentioned fact, this study was planned to evaluate and compare knowledge, attitude and practice of rational use of medicine among resident doctors in a tertiary care teaching hospital.

METHODS

This cross-sectional, questionnaire-based study was carried out in SMHS hospital which is a tertiary-care teaching hospital associated with Government Medical College, Srinagar, Jammu and Kashmir, India, for the period of six months with effect from December 2018 till May 2019. A predesigned structured questionnaire comprising of 3 segments with questions on EM, RUM, concept of P-drugs and demographic profile of participating doctors was prepared after modifications in the designs by Oshikoya et al and Tobaiqyet al.^{9,10} The questionnaire was prevalidated by carrying out a pretest assessment in five respondents and appropriate modifications were done. The questionnaire was finally distributed among 120 resident doctors after explaining the nature and purpose of the study. Out of 120, 106 duly filled questionnaires were used for final analysis. Those who were not willing to participate in the study and those whose questionnaires were not duly filled were excluded from the study. The data so obtained was analysed using simple descriptive statistics.

RESULTS

Out of 106 respondents, 66 were men and 40 women. Most of the participants (52.8%) belonged to age group of 25-30 years. Majority of participating doctors (62.26%) were pursuing their post-graduation in different departments of the institution (Table 1).

Table 1: Sociodemographic profile of participants (n=106).

Characteristics	No. of respondents	
	N (%)	
Gender	Male	66 (62.26)
	Female	40 (37.73)
Age (years)	25-30	56 (52.83)
	31-35	42 (39.62)
	>35	8 (7.54)
Designation	Junior resident	10 (9.43)
	Post-graduate scholar	66 (62.26)
	Senior resident	30 (28.30)

Table 2: Knowledge on rational use of medicines among the resident doctors.

Questions	Percentage of responses	
	Yes	No
	N (%)	N (%)
Are you aware of the term essential drugs?	102 (96.22)	4 (3.77)
Are you aware that now the term used is EM?	36 (33.96)	70 (66.03)
Do you have the national model essential drug list at your work place?	50 (47.60)	56 (52.83)
Do you know the number of drugs included in Indian EML	22 (20.75)	84 (79.24)
Are you aware of the term RUM?	18 (16.98)	88 (83.01)
Can you name the parts of a prescription?	46 (43.39)	60 (56.60)
Are you always aware of the ingredients of the drug you prescribe?	94 (88.67)	12 (11.32)
Are you aware of the term P-drugs?	4 (3.77)	102 (96.22)
Are you aware of advantages of using P-drug for prescription?	2 (1.88)	104 (98.11)

Out of 106 resident doctors, 96.2% respondents were aware about the term EM, and 47.6% had NLEMI available at their work place, but only 20.75% of the doctors were aware about the number of medicines that are included in NLEMI. When the participants were questioned about the term RUM only 17% of them

responded positively, but majority of the resident doctors (88.67%) were aware about the ingredients of the drugs they used to prescribe. Only 3.7% residents were aware of the term P-drug and <2% of them were knowing about the benefits of P-drug in rational prescribing (Table 2).

Table 3: Attitude and practice of resident doctors regarding aspects of rational use of medicines (n=106).

Question	Response	N (%)
	Do you prescribe EM?	Always
Frequently		92 (86.79)
No		10 (9.43)
Do you inform the patient regarding disease, drug therapy, regular follow-up and monitoring of drug therapy?	Always	84 (79.24)
	Frequently	16 (15.09)
	No	6 (5.66)
What do you prefer to write in a prescription slip?	Generic name	20 (18.86)
	Brand name	80 (75.47)
	Both	6 (5.66)
What do you prefer to prescribe a new or old drug?	New	8 (7.54)
	Old	18 (16.98)
	Both	80 (75.47)

Table 4: Practice of resident doctors regarding aspects of rational use of medicines (n=106).

Question	Response		N (%)
	Yes	No	
Undergraduate training has adequately prepared me to prescribe rationally	58 (54.71)	48 (45.28)	
Every doctor should be aware of and prescribe according to the “EML”	94 (88.67)	12 (11.32)	
The cost of a drug influences my prescribing practice	96 (90.56)	10 (9.43)	
I rely on information given by pharmaceutical representatives about particular drugs and prescribe accordingly	8 (7.54)	98 (92.45)	

Though only 3.7% of our participating doctors always use essential medicines during their prescription writing but majority of them (96.22%) would always inform the patient regarding disease, drug therapy and monitoring of drug therapy during their day to day practice. Only 20% respondents prescribed drugs by generic name while majority of respondents (80%) prescribed by brand names. When it comes to choosing the old or new drugs, majority of them (80%) opted for both (Table 3).

Though nearly half of the resident doctors agreed to the fact that under graduate training has prepared them to prescribe rationally but majority of them (88.67%) accepted that they should be aware of and prescribe according to the essential medicines list. When it comes to issue of pharmacoeconomics, majority of the participants (90.56%) agreed to the fact that cost of the medicine influences their prescribing practice but only 7.54% of them would rely on information given by pharmaceutical representatives about particular drugs and prescribe accordingly (Table 4).

DISCUSSION

The present study was carried out to evaluate knowledge, attitude and practice about RUM of resident doctors including post graduate medical students working in a tertiary care teaching hospital. Training in rational use of medicines is more likely to be effective if it takes into consideration outlook and expertise and is targeted to the prescribing requirements in future.⁹ The main aim of the present study was to take into consideration existing knowledge and understanding of resident doctors about various issues concerned with RUM that would guide us in training them better during their under graduate training course. Hence, assessing knowledge of RUM among them in such set-up would be helpful in promoting RUM and subsequently improving health care services.

Majority of respondents seem to be aware of the concept of essential medicine despite not having NLEMI at their workplace. Ironically, only 20% of the respondents knew the exact number of drugs in the NLEMI. The findings are similar to the previous study conducted by Mahajan et al.¹¹ This clearly indicates lack of measures to update professional knowledge. Regarding EM, not only selection but also its appropriate use is necessary for upgrading quality of health care.¹² Some studies have reported improvement in the quality of health care following use of NLEM and standard treatment guidelines.¹³ Hence, it is essential to adopt measures that will encourage the use of EM in prescribing the drugs. In the present study, it was found that only small percentage (18%) of respondents were aware of RUM, but despite of that, it is encouraging to know that majority of them (89%) were always aware of the ingredients of the drug prescribed and they inform the patient regarding disease, drug therapy, and regular follow-up and monitoring of drug therapy. When it comes to prescribing brand or generic, only 18% preferred to prescribe medicines by generic name. Majority of the respondents (75%) choose to prescribe by brand name. Various studies have revealed that prescribing medicines by brand name has become a routine practice.^{14,15} Prescribing by generic name should be encouraged at an early stage of medical practice to promote RUM. In the present study, the percentage of respondents who are aware of P-drug concept and advantages of practicing it, was very less (3.7% and 1.8%). This may be because of the fact that P-drug concept is rather a new concept and in India it has started

gaining importance in the last few years.¹⁶ Even though medical students are exposed to the concept of P-drug in their pharmacology curriculum during MBBS, lack of knowledge regarding P-drug concept indicates that the P-drug concept has remained confined to pharmacology and has not become popular among clinicians. Involvement of clinicians is vital if the P-drug concept is to succeed. A problem-based learning session for teachers in medical colleges needs to be organized for implementation of these newer concepts.

When the respondents were asked how much they rely on the information that is provided by medical representatives, only 7.5% responded positively. This shows that their prescribing decisions are not influenced by medical representatives (MRs). Heavy reliability on MRs from different pharmaceutical companies for drug information is often biased and points to clear-cut preference towards the market-driven forces leading to irrational prescription behaviour and irrational use of medicines. In one study, physicians admitted that their prescribing decision are influenced by MRs and they are bound to prescribe certain medicine at the cost of getting some incentives in the form of free samples, gifts or various kinds of supports.¹⁷

Majority of the resident doctors (90%) considered cost of drug while prescribing. Pharmacoeconomics is a field in pharmacology which measures and compares the cost and consequences of drug therapy to health care system and society. Knowledge of pharmacoeconomics is of great importance in today's clinical practice, because of rapidly increasing number of newer and me-too drugs. So consideration of cost with efficacy is of paramount importance.

CONCLUSION

Though doctors are the major prescribers of medicines, but at present teaching of RUM is not given much importance in most of the medical colleges. Therefore, sincere efforts are required to promote RUM among clinicians to avoid irrational prescribing. Many suggestions have been put forth by WHO regarding future strategy and directions to promote RUM like close coordination between process for the development of standard treatment guidelines and efforts to improve quality use of medicine, and emphasis on the effective utilization of drug and therapeutic committees at regional and district levels. For the effective implementation of rational use of medicine the study of utilization pattern is one the basic prerequisite for the same. Once the utilization pattern is analysed at the community level it will help us to formulate the necessary recommendations for the proper implementation of RUM. The present study was conducted with the aim to study the prescription pattern at the hospital level in this part of world, so that future strategy can be devised to promote RUM among the clinicians. The assessment of the prescribing attitude

will help us to identify the problem in the teaching and implementation of rational use of medicines.

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