

ORIGINAL ARTICLE

Evaluation of Knowledge, Attitude, Practice of Rational use of Medicine among Residents in a Tertiary Care Hospital of Central India

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<http://dx.doi.org/10.18049/jcmad/239a14>

Abstract

Aim and objectives: To assess knowledge, attitude and practice of residents about rational use of medicine (RUM), Essential medicine list (EML), P-drugs and sources of drug information.

Materials and methods: It was a cross-sectional, questionnaire based study, consisting 94 junior residents (JRs) in a tertiary-care teaching hospital. **Results:** 84% residents opined that knowledge of RUM was vital for medical practice. Half of the participants (52%) believed that, they sometimes felt conflicted by occurrence of huge variations between their knowledge of RUM and actual clinical practice, while 36% experienced this all the times. Majority of them (40%) sometimes accepted gifts/ luxury provided by pharmaceutical industries, 47% residents always used essential drug list, in prescription and most of them (44%) used Indian essential drug list. 65% were unaware of the concept of "p" drug, while 60% knew about the concept of Scheduled "H" drug. **Conclusion:** Rectification of fallacies in drug prescribing which pave the way to irrationality, as pointed out in this study, should be corrected. Regular monitoring should be done to check for the implementation of these corrections and their use in daily clinical practice and not just for the sake of the study.

Key words: Essential medicine list (EML), P-drugs, rational use of medicine (RUM)

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Introduction

Prescribing is a complex and challenging task which must be based on accurate and objective information and not an automated action, which can be done without critical thinking or a response to commercial pressure. Worldwide, irrational prescribing and polypharmacy have been identified as major causes of poor prescribing.⁽¹⁾ When medicines are prescribed or used erroneously, they pose serious health risks to the patient and this echoes in significant rise in economic burden at all levels of health care, spanning from individual patient to whole country, world.^(2,3)

World health organization (WHO) has been continuously striving for promoting rational use of medicine (RUM). The ultimate goal is to achieve the situation, where patients receive

medication appropriate to their clinical needs, in doses that meet their own individual requirements for an adequate period of time, and at the lowest possible cost.^(2,3,4,5) The ad infinitum number of drugs available in the market for the treatment of different ailments has created ruckus by promoting irrationality in drug prescribing.

Currently very few indicators are available to measure drug use situation at national or at individual patient level, that too, this indicators are neither universal nor standardized.⁽⁶⁾ Their importance lies in the fact that, if such standard indicators are available, then necessary interventions could be undertaken to curb factors that favor irrationality, and also impact of these indicators on actual outcome could be definitively studied.

Aim

To assess knowledge, attitude and practice of residents about rational use of medicine (RUM), Essential medicine list (EML), P-drugs and sources of drug information.

Objectives

1. To identify factors which hinder rational drug therapy.
2. To foster the concept of essential drugs in order to reduce the cost of health care delivery.
3. Develop and implement a discipline based on the WHO's Guide to Good Prescribing.

Materials and Methods

The present study was a cross-sectional, questionnaire based study which was carried out for six month duration. Permission and clearance was taken from Institutional Ethics Committee. Out of total 200 residents, questionnaires were randomly distributed to 115, of which 94 residents responded, which included post graduate students/junior residents (JRs) of 1st, 2nd and 3rd year from all the clinical departments of NKP Salve Institute of Medical Science and Research Centre, Nagpur. A detailed informed consent was taken from all of them, and those who were willing to do so were finally enrolled in the study. Out of the enrolled

JRs-35 were from 1st year, 33 from 2nd year and 26 were from 3rd year. A prevalidated questionnaire covering knowledge attitude and practice about RUM was given to them. Responses were graded as always, sometimes, rarely, never and know, don't know for some questions. On obtaining the filled questionnaire back, data was systematically tabulated and expressed in the form of percentage, subsequently analyzed by suitable statistical tests.

Results

Out of 94 residents, 84% of the residents opined that knowledge of RUM was vital for medical practice. 68% of them agreed that, they were stimulated by their professors and guides to follow RUM in daily medical practice and 53% agreed that thorough knowledge of posology of medicines is an essential prerequisite, while prescribing drugs. Half of the participants (52%) believed that, they sometimes felt conflicted by occurrence of huge variations between their knowledge of RUM and actual clinical practice, while 36% experienced this all the times. Majority of them (40%) sometimes accepted gifts/ luxury provided by pharmaceutical industries, while 25% always did so (Table- 1).

Table- 1: Percentage of response to questions for appraisal of RUM knowledge

No.	Statements	A	ST	R	N
1.	The knowledge obtained on RUM was important to my medical practice.	84	12	4	0
2.	Content of the discipline was remembered in both other disciplines and discussion groups.	99	1	0	0
3.	Stimulated by professors and senior medical residents to practice the RUM in my daily academic activities.	68	22	8	2
4.	Professors utilize the RUM principles in their practice.	52	32	12	4
5.	In selecting medicines I follow the RUM principles.	55	35	6	4
6.	I am encouraged to know the side effects and interactions of the medicines I prescribed.	66	32	2	0
7.	I am encouraged to completely know the posology of the medicines prescribed by me.	53	39	2	6
8.	I use P drug in practice.	25	8	2	65
9.	I feel the conflict between what I learned on RUM and actual medical practice in our hospital.	36	52	10	2
10.	I accept gifts or any luxury provided by pharmaceutical industries.	25	40	10	25

A- Always; ST-Sometimes; R-Rarely; N-never

47% residents always used essential drug list, while selecting a drug for prescription and most

of them (44%) used Indian essential drug list. Maximum residents (77%) sought information on medicines through non- commercial sources

like text-books, scientific articles, non-commercial websites, while 40% believed that teachers are sometimes their main source of information (Table- 2). Most of the residents believed that their prescription, were influenced by professors. Major bulk of the residents felt that their prescription handwriting was legitimate (73%), while 39% always used abbreviations in prescriptions. Almost all (90%) gave their prescriptions in writing only. 47% were of the opinion that regular discussions about rational drug use are essential (Table- 3).

25% of the participants believed that their prescriptions were sometimes influenced by patient demands. A solid bulk (62%) believed that they were always aware of the cost of the prescribed drugs. 55% felt that they had the freedom to use different regimes, other than used by their seniors (Table- 4). 65% were unaware of the concept of “p” drug, while 60% knew about the concept of Scheduled “H” drug (Table- 5).

Table- 2: Percentage of response to questions for appraisal of the source of information knowledge

No.	Statements	A	ST	R	N
1.	Do you seek information on medicines through non-commercial sources	77	14	2	7
2.	Teachers have been my main source of information on Medicines	36	40	14	10
3.	I use the Essential Medicines List for selecting Medicine	47	40	5	7

Table- 3: Percentage of response to questions for appraisal of attitude in writing prescriptions

No.	Statements	A	ST	R	N
1.	My prescription is influenced by professors and senior residents	48	40	4	8
2.	My prescriptions have a legible handwriting	73	21	6	0
3.	The prescription of medicines in our hospital is influenced by information given by the pharmaceutical industries	26	53	12	9
4.	I always give prescription in writing only	90	10	0	0
5.	I provide patients with information, instruction, warning regarding drug prescription	71	22	5	2
6.	I use abbreviations in my prescriptions.	39	35	22	4
7.	There is regular discussion of rational prescription in this institute	47	33	14	6

Table- 4: Percentage of response to questions for appraisal of the patient care by residents

No.	Statements	A	ST	R	N
1.	I am influenced by patient demands, while prescribing	0	25	56	19
2.	I know the cost of prescribed drugs	62	38	0	0
3.	I prescribe drugs by ethics	89	11	0	0
4.	I have freedom to use different regime other than my seniors told me	55	39	4	2
5.	I fill appropriate to use different regime	76	18	6	0
6.	I prescribe AYUSH drugs	19	25	30	26

Table- 5: Percentage of response to questions for appraisal of conceptual knowledge

No.	Statement	Know	Don't know
1.	P drugs	35	65
2.	How many drugs in Indian essential medicine list	13	87
3.	Schedule H drugs	60	40
4.	Parts of prescriptions	35	65

Discussion

It is widely assumed that use of drugs by qualified doctors of modern medicine would be rational. However, in reality, irrationality abounds in almost every aspect of drug use.

Medically inappropriate, ineffective and economically inefficient use of drugs occurs all over the world more so in the developing countries. As per the WHO -rational use of medicines requires that the patients receive medication 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 to their community'. Rational prescribing is not just the choice of a correct drug for a disease, or mere matching of drugs with diseases, but also the appropriateness of the whole therapeutic set up along with follow up of the outcome. The criteria to evaluate rational, prescribing are:

- Appropriate indication.
- Appropriate drug in terms of efficacy, tolerability, safety, and suitability for the patient.
- Appropriate dose, route and duration according to specific features of the patient.
- Appropriate patient: no contraindications exists, drug acceptable to the patient; likelihood of adverse effect is minimal and less than the expected benefit. Correct dispensing with appropriate information/instruction to the patient.
- Adequate monitoring of patient's adherence to medication.

Irrational prescribing leads to delay/ inability in affording relief/cure of disease, more adverse drug effects, prolongation of hospitalization; loss of man days, increased morbidity and mortality, emergence of microbial resistance, financial loss to the patient/community, loss of patient's confidence in the doctor.⁽⁷⁾ Through the present study, we analyzed various parameters about RUM in medical residents. The findings of present study showed that maximum participants had knowledge about RUM, but most of them felt conflicted on their encounter with plethora of variations between their knowledge of RUM and actual clinical practice. From our study, most probable reasons for such irrational prescribing may be as follows:

- Gifts offered by pharmaceutical industries.
- Non use of Indian essential medicine list while prescribing.
- Influence of senior doctors while prescribing.
- Reliability on pharmaceutical industries for information on drugs.
- Deficiency of regular discussions of RUM in hospital.
- Influence of patients while prescribing drugs.

An aggressive advertisement and selling strategy made by pharmaceutical companies provide doctors with manipulated drug statistics and also offer luxurious items or gifts. Doctors may find difficult to resist such offers. Regarding use of EML, we encountered an eye catchy finding; although maximum residents answered that they use one of the four versions of EML but on asking specifically about each list and differences between these versions, none of them had a hint about this aspect (Indian-44%, WHO-24%, FDA-22%, UNICEF-10%). This justifies our question about EML since it was purposefully inserted into the questionnaire, to avoid bias, which would be increased on asking only about EML use. This finding is troublesome and needs to be rectified at the earliest hour. In order to increase rationality in drug prescribing, considerable stress needs to be given to rectify above said fallacies although actual beneficial effect of educational interventions on the same is questionable.⁽⁹⁾ Presently there are some valid and reliable indicators for testing prescription writing and their influences on health care system are available. The present study also aims to give a considerable amount of contribution to this aspect. The currently available knowledge and interventions do not alter the scenario of irrationality in drug prescribing. As per WHO, continuous education program on RUM should be carried out to train the medical personnel.^(2,5)

Conclusion

Findings of the present study suggested rational more than irrational use of drugs, which is a welcome sign. But it is noteworthy to stress that rectification of fallacies in drug prescribing which pave the way to irrationality, as pointed out in this study, should be corrected and regular monitoring should be done to check for the implementation of these corrections and their use in daily clinical practice and not just for the sake of the study. Such studies should be done at all health care facility centers, so that minimum possible drugs can be used to treat disease effectively, thus decreasing economic burden and at the same time increasing quality of health care.

Source(s) of support: Nil

Conflict of Interest: None declared

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