

# Knowledge, attitude and practices of rational use of medicines among interns in a tertiary care teaching hospital in Telangana



Kranti Tekulapally

Associate Professor, Department of Pharmacology, Malla Reddy Medical College for Women, Suraram, Hyderabad

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## ABSTRACT

**Background:** Rational use of drugs significantly impacts the treatment outcomes and the cost of health care. Most of the medical students are exposed to rational use of medicines and prescription writing during their second year but it is only during internship that they actually start prescribing under expert guidance. **Aims and Objective:** This study was planned to assess the rational prescribing practices of Interns in a tertiary care teaching hospital. **Materials and Methods:** With prior approval from Institutional Ethics Committee, a cross sectional study was conducted among 2014 batch of Interns from Malla Reddy Medical College for Women, Suraram, Hyderabad. Hard copies of prevalidated questionnaire consisting of 23 questions including a question on writing a prescription for a patient suffering from cold and fever was administered to the students after taking oral informed consent. Data from completed questionnaires was entered into excel sheet and analysed using descriptive statistics. **Results:** Of 64 interns, only 20% were aware of the term rational use of medicines, 75% of the term essential medicines and 22% of p drugs. Most of them were unaware of the step criteria for p drugs and advantages of using p drugs (87%). 95% of them reiterated that they could label the parts of prescription but mean score of the interns for writing a prescription was 3. 62% of them had positive attitude towards prescription writing. **Conclusion:** There is a need to improve the knowledge, attitude and practices of Rational use of Medicines among the Interns. Educational interventional strategies in the form of seminars, workshops, orientation programs can be adopted to promote rational use of medicines.

**Key words:** Essential drugs; P drugs; Rational prescribing

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## INTRODUCTION

The rational use of medicines (RUM) means the patients receive medications appropriate to their clinical needs, in doses that meet their own individual requirements for an adequate period of time and at low cost to them and to the community.<sup>1</sup>

There are two concepts in the rational use of medicines - essential medicines and P drug concept. In 2002, WHO defined essential medicines as those that satisfy the priority health care needs of the population. These medicines are intended to be available within the context of functioning health systems at all times, in adequate

doses, in appropriate dosage forms, with assured quality, with adequate information and at a price the individual and the community can afford. The Ministry of Health, Government of India releases the National List of Essential Medicines (NLEM), latest being in 2015 with 348 medicines that are appropriate to meet the healthcare needs of the general population of the country. Adoption of the essential medicines list for procurement and supply of the medicines by both the public and private health care providers will result in improved availability of drugs, cost saving and more rational use of drugs.<sup>2</sup>

The P drug concept was introduced to boost the cause of Rational Use of Medicines. It is expected that every doctor

### Address for Correspondence:

Dr. Kranti Tekulapally, Plot No.23, Royal Gardens, Jai Jawahar Nagar, Yaprul, Secunderabad – 500087. **Mobile No:** +91-9866676590.

**E-mail:** dr\_t\_kranti@yahoo.com

should select his p- drug; the preferred or personal drug to treat a particular disease.

The requirements for rational use will be fulfilled only if the process of rational prescribing is followed. Rational prescribing, a process based on a series of steps - make a specific diagnosis, consider the pathophysiologic implications of the diagnosis, select a specific therapeutic objective, select a drug of choice, determine appropriate dosing regimen, device a plan for monitoring the drug action and determine an end point for therapy and plan a program for patient education.<sup>3</sup>

The medical students are taught how to prescribe rationally, the p drug concept and about the essential drugs in the second-year clinical pharmacology sessions. But it is only during the Internship period that they start prescribing and offer patient care under the guidance of experienced teachers. There is thus a wide gap between learning and practicing and there are no refresher courses in between.

Interns are also exposed to the medical representatives and their drug promotional literature that may influence their drug prescribing attitude and practices. As future practitioners, they are expected to acquire the correct habit of prescribing right drugs in right doses that comes only with adequate knowledge and attitude.

In Telangana, the studies assessing the knowledge, attitude and practices of Rational use of Medicines especially in Interns are scarce. This study was therefore planned to assess the rational prescribing practices of Interns in a tertiary care teaching hospital.

## MATERIALS AND METHODS

After obtaining permission from the Institutional Ethics Committee, a cross sectional study was carried out among the Interns' of 2014 batch of Malla Reddy Medical College for Women, Suraram, Hyderabad, Telangana. The study was explained to the interns and those who were willing to participate were included in the study. Hard copies of pre-validated questionnaire<sup>4</sup> consisting of a total 23 questions was distributed to the interns. For 11 questions on knowledge, the interns had to choose yes or no as answer. For the rest of questions assessing their attitude and practices, they either had to choose answers on a three-point scale or choose one the options given. Scores for attitude questions were computed from 3 to 1 for positive attitude and inversely from 1 to 3 for negative attitude. Attitude was then categorized as score of >75% - positive and <75% -negative attitude. In addition, Interns were asked to prescribe for a patient suffering from common cold and fever to assess their prescription writing skills for

which a total of 10 marks was allotted-marks distributed for writing all the parts of the prescription including the date of prescription, patient details, strength, frequency, duration and directions for drug treatment, review details and prescriber's details. Data from completed questionnaires was entered into excel sheet and analysed using descriptive statistics.

## RESULTS

Data of Sixty-four Interns who completed the questionnaire was included for analysis. Of which, 50% of them were 23 years old, 27% of them were 22years old and the rest were 24 years in age.

The responses of the interns to questions on their knowledge about Rational use of medicines are shown in Table 1.

None of the students could neither specify the number of drugs and the number of fixed dose combinations included in the NLEM, 2015.

Figure 1 shows the responses of the Interns to questions on their attitude towards Rational use of Medicines.

Overall attitude scores of the Interns are presented in Table 2.

Responses of the students to questions on understanding their prescribing practices is given in the Figures 2 and 3.

To the question on the sources of information about drugs, the interns responses are as represented in Figure 4.

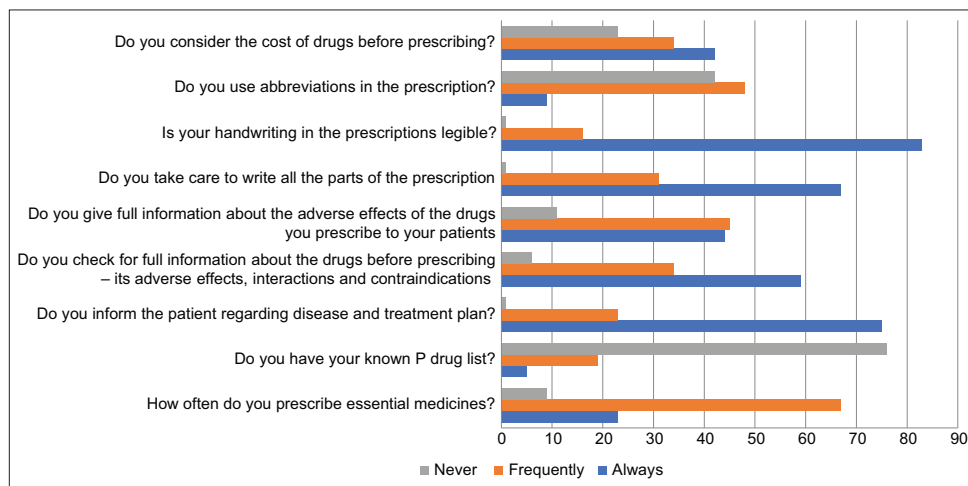
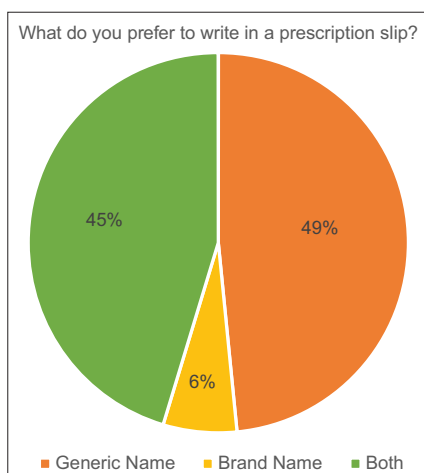
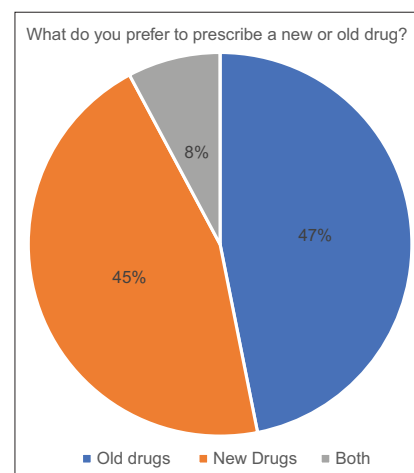
The mean score of the Interns for writing a prescription to a patient suffering from common cold and fever was 3. The box plot representing the scores of Interns is given in Figure 5.

## DISCUSSION

The results of the present study evaluating the knowledge, attitude and practices of rational use of medicines among interns show that most of the Interns are aware of the term essential drugs (75%) but not the number of drugs (95%) and fixed dose combinations (98%) included in the National Essential Drug List, 2017. Only 20% of the Interns were aware of term RUM while 26% of the students acknowledged the presence of NLEM at their workplace. They are unaware of p drug (78%) and p drugs concepts (87%) and do not maintain their own p drug list. Sixty four percent of the students showed positive attitude

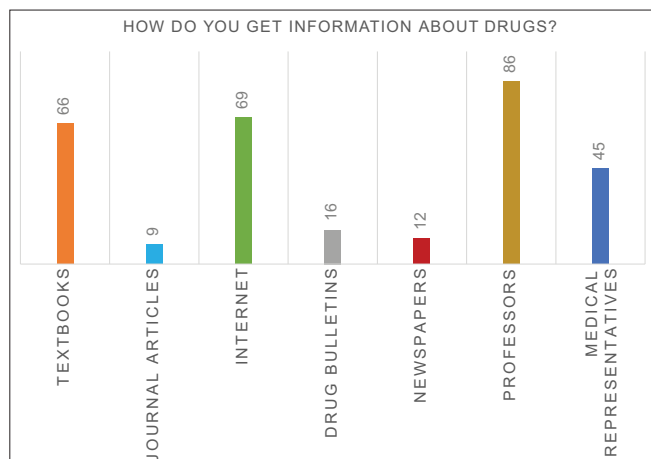
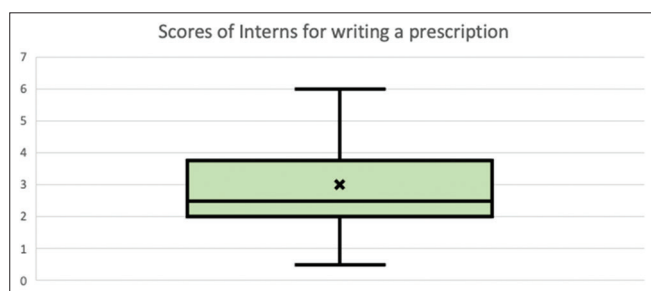
**Table 1: Results showing knowledge of interns about rational use of medicines**

Questions	Yes	No
1. Are you aware of the term essential medicines?	48 (75%)	16 (25%)
2. Do you have the National List of Essential Medicines (NLEM) at your work place?	17 (26%)	47 (73%)
3. Do you know the number of drugs included in NLEM 2015?	3 (4%)	61 (95%)
4. Do you know the number of fixed dose combinations included in NLEM 2015? If yes, please specify the number_____	1 (1%)	63 (98%)
5. Are you aware of the term Rational Use of Medicines?	13 (20%)	51 (80%)
6. Can you name the parts of a prescription?	61 (95%)	3 (4%)
7. Are you always aware of the ingredients of the drug you prescribe?	54 (84%)	10 (16%)
8. Are you aware of the term P-drugs?	14 (22%)	50 (78%)
9. Are you aware of STEP criteria for selection of P-drug?	8 (12%)	56 (87%)
10. Are you aware of advantages of using P-drug for prescription?	8 (12%)	56 (87%)
11. Undergraduate training in clinical pharmacology has equipped me to prescribe safely/rationally?	52 (81%)	12 (19%)

**Figure 1:** Results showing attitude of Interns towards RUM**Figure 2:** Responses of the Interns showing their preferences for writing generic names and brand names in a prescription**Figure 3:** Responses of Interns showing their preferences to write old/new drugs

**Table 2: Attitude scores of Interns**

Attitude Category	N(%)
Positive	40 (62%)
Negative	24 (37%)

**Figure 4:** Results showing Sources of information about drugs to Interns (in percentages)**Figure 5:** Results showing Interns' scores for prescription writing

towards prescribing rational drugs is evidenced by results that they frequently prescribe essential medicines to their patients, consider the cost of the drugs before prescribing, they inform the patients about their disease, treatment plan and the drugs prescribed. Most of them reported that they write all the parts of the prescription in legible handwriting. But the low mean scores (mean score of 3) for prescription writing skills indicates that they are not practising the ideal prescription writing skills. They did not show preferences for prescribing generic and brand names, old and new drugs. Most of them imbibe information about drugs from their professors (86%) while 45 % of them from medical representatives. 81% of them agreed that their undergraduate training equipped them to prescribe drugs safely and rationally.

In contrast, a similar study done on junior residents and faculty members of a medical institute reported that only 87% of them were aware of the term RUM and 35% of the term p-drugs.<sup>5</sup> Among 39 interns of a college who

were included as a group of participants among others, 84% of them were aware of RUM and 25% of them of p drug.<sup>6</sup> Gupta R et al.,<sup>4</sup> reported that 95% of interns of their college were aware of RUM and 41 % of p – drug concept. Another study also reported the awareness of the term RUM and p-drugs to be 96.5% and 32% respectively.<sup>7</sup>

The major limitation of this study is that the sample size was small. Similar studies are recommended in other sites to get enough data for the authorities to suggest any curricular changes.

In conclusion, Rational use of medicines contributes to high quality health care while irrational use leads to health hazards and wastage of resources that are already insufficient in majority of health care systems. Educating all concerned in the appropriate and correct use of medicines becomes a critical strategy to solve the problem of irrational use of drugs. Certain general measures can be adopted to promote RUM such as the establishment of knowledge centres on the rational use of medicines, greater use of electronic media and resources for providing education and information.<sup>8</sup> An additional component can be incorporated in Interns Orientation program that is organized in most of the medical colleges just before the start of Internship to serve as refresher course.

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## REFERENCES

1. Dhakale G, Pimpalkhute S, Bajait C and Ragjute 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): 114-117. <https://doi.org/10.5530/jyp.2016.2.10>
2. KD Tripathi. *Essentials of Medical Pharmacology*. Seventh edition. New Delhi. Jaypee Brothers Medical Publishers (P) Ltd; 2014
3. Lofholm PW and Katzung BG. Rational Prescribing and Prescription Writing, In: Katzung BG ed. *Basic and Clinical Pharmacology*. 14th edition. New York, Mc Graw Hill Education. 2018. p1146-1147.
4. Gupta R, Malhotra A and Malhotra P. Assessment of rational prescribing practice among interns: a questionnaire based observational study. *Int J Res Med Sci* 2018;6: 2808- 2812. <https://doi.org/10.18203/2320-6012.ijrms20183274>
5. Bajait CS, Pimpalkhute SA, Sontakke SD, Dakhale GN, Jaiswal KM and Urade CS. 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; 4:153-157.

<https://doi.org/10.4103/2231-0738.132673>

6. 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. International Journal of Pharmaceutical and Phytopharmacological Research. 2014;3(3).
7. Dhakale G, Pimpalkhute S, Bajait C and Ragjute 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): 114-117. <https://doi.org/10.5530/jyp.2016.2.10>
8. World Health Organization. The Role of Education in the Rational Use of Medicines. SEARO Technical Publication Series No. 45. October 2000.

**Author's contribution:**

**KT** - Concept, design and conduct of the study, literature review, statistical analysis and interpretation of the results, preparation and revision of the manuscript.

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Malla Reddy Medical College for Women, Suraram, Hyderabad.

**Orcid ID:**

Dr. Kranti Tekulapally -  <https://orcid.org/0000-0002-1199-5942>

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