

Assessment of knowledge regarding rational use of medicines among Interns of a Tertiary care Teaching Hospital

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Abstract

Background: Irrational prescription of drugs leads to the delay in relief, more adverse effects, prolonged hospitalization, increased morbidity and mortality, the emergence of antibiotic resistance, economical loss to patient and community. This study was undertaken in order to assess the basic knowledge regarding rational use of medicines among medical interns.

Methodology: This questionnaire based observation study was conducted among fresh interns of a tertiary care teaching hospital, Karnataka. A prevalidated questionnaire comprising 14 questions on rational use of medicines was distributed. The data was analysed and expressed as percentage of responses.

Results: Majority of participant's grade their prescribing knowledge as good (67%). Most of the interns agreed as UG training was adequate to prepare them to prescribe rationally and safely. 60% felt that safety is the most important aspect while prescribing a drug. 80% suggested the integration of UG pharmacology with clinical subjects.

Conclusion: The study found that large number of participants was aware of essential medicine. Hence, assessing knowledge of RUM among interns would be helpful in promoting RUM and improving health care services.

Keywords: Rational prescription, pharmacology.

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1. Introduction

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." Worldwide more than half of all drugs are prescribed, dispensed, or sold inappropriately. [1]

Irrational prescription of drugs leads to the delay in relief, more adverse effects, prolonged hospitalization, increased morbidity and mortality, the emergence of antibiotic resistance, economical loss to patient and community.[2] The medical internship is the phase, in which consolidation of undergraduate medical education through continued acquisition of learning and skill under direct supervision and guidance from teachers. The interns should

learn a good prescription writing skill and rational drug usage as they become the future generation of doctors. Rational prescription writing is a skill and it should be learned at the earliest since studies have shown that despite gains in clinical experience, prescribing skills will not improve after graduation. [3] Literature shows that the available studies focus on improving the rational drug treatment during early years of MBBS, of which most of the interventions were knowledge focused with little follow-up to develop it as a skill. Studies in India also have indicated that the irrational prescribing practices are common in medical interns. At the beginning of internship most of the medical students find that they don't have a very clear idea of how to prescribe a drug for their patients or what information they need to provide.

This study was undertaken in order to assess the basic knowledge regarding rational use of medicines among medical interns.

2. Materials and Methods

This questionnaire based observation study was conducted among fresh interns of a tertiary care teaching hospital, Karnataka. Institutional Ethics Committee approval was taken to conduct this study. About 80 interns participated in the study. A prevalidated questionnaire comprising 14 questions on rational use of medicines was distributed. The participants were explained the nature and purpose of the study. The completed questionnaires were collected and tabulated in microsoft excel sheet.

2.1 Statistical analysis

Only completely filled questionnaires were taken up for analysis. The data was categorized and coded. The data was analysed and expressed as percentage of responses for every question. Graph pad prism software version 5.01 was used to analyze data.

3. Results

A total of 80 interns participated in the study. Majority of participants grade their prescribing knowledge as good (67%). Most of the interns agreed as UG training was adequate to prepare them to prescribe rationally and safely. 60% felt that safety is the most important aspect while prescribing a drug. 80% suggested the integration of UG pharmacology with clinical subjects as shown in Fig 1. About 73% of the participants were aware of Essential Medicines List and will be prescribing from EDL list. Many of them know the importance of generic name of the drugs while prescribing. About 97% assured to consider the cost of the drug. Although majority of the interns checked the drug information but the source of information was varied. (Fig 2.)

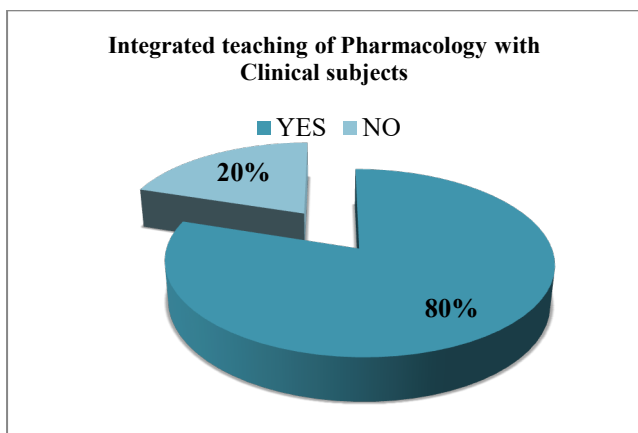


Figure 1: Integrated teaching of Pharmacology with Clinical subjects

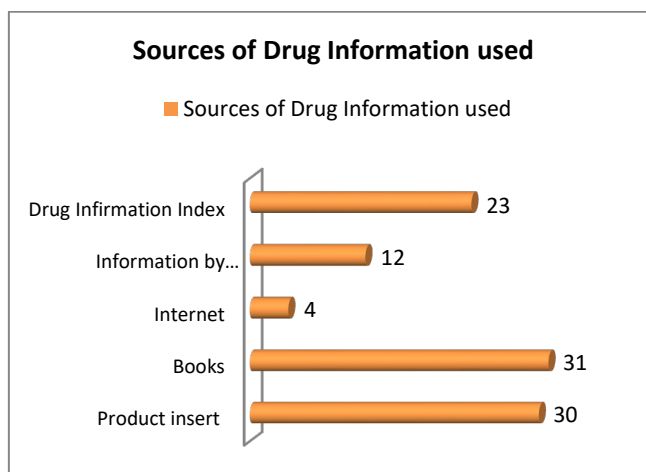


Figure 2: Sources of Drug Information used

4. Discussion

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'[4] incorporation of Rational drug use in under graduate medical curriculum should be one of the interventions of Rational Drug Use policy.[5] The present study evaluates knowledge of RUM among interns in a tertiary care teaching hospital. Though a large number of interns felt that they were having good prescribing skill, nearly 20 % of the interns graded themselves as poor prescribers. It shows the need for adequate training so that the knowledge gap can be decreased. Prescribing is a complex and challenging duty that requires diagnostic skills, knowledge of medicines, communication skills and understanding of the principles of clinical pharmacology, appreciation of the risk, uncertainty and experience. [6] A similar study conducted showed the interns were dissatisfied with the prescribing skills.[7] Each prescriber must be able to prescribe drugs safely and effectively to the designated patients in order to prevent medical errors. It was encouraging to know that most of the interns knew the importance of safe and rational prescription. A Study done by Pat *et al* noted the promotion of optimal drug prescribing and safe drug use should be emphasized during the internship period.[8] Irrational prescribing leads to delay/ inability in affording relief/cure of disease, more adverse drug effects, prolongation of hospitalization. Although the interns work is usually under the supervision of a senior consultant, there will be occasions, when they have to make their own decision.

As Pharmacology stands as the backbone of clinical discipline of medical science. There is a need of training for Interns to improve their prescription skills. Majority of the

participants were familiar with essential drug list as the students were taught during their Clinical Pharmacology lectures. Still 25% of the interns need to be reinforced to learn the concept. In a study conducted among clinicians found that though the majority of clinicians seem to be aware and prescribed EM but there was lack of appropriate.[9] ED list is a standard list of drugs prepared as a model by World Health Organization (WHO) to meet the primary health care needs of majority of the population. This list is periodically revised to meet the changing requirements. Each country prepares its national list of ED based on WHO guidelines.[5] EMLs have been shown to improve the quality and cost-effectiveness of health care delivery. it is essential to adopt measures that will encourage their use. Though the most of the interns knew the importance of writing generic names, there should be persistent effort to follow the same throughout their career. [7] Prescribing medicines by generic name avoid the confusion and makes therapy rational and cheaper. Moreover in the teaching institutions world over, in textbooks, in scientific journals and in the research publications, medicines are always mentioned by generic names. Despite this, most doctors prescribe the medicines by their brand names. The reason for this could be (1) tradition (2) aggressive medicine promotion (3) availability of multi-ingredient fixed dose drug combination. Generic prescribing is vital for cost-effectiveness of drug therapy to patients. It reduces errors in prescribing and minimizes confusion. Regarding dose calculation in children, the responses were

different which shows inadequate knowledge in paediatric prescription. An important drawback for Under graduates is remembering doses and calculating doses for pediatric postings and this leads to more prescription error. So training the undergraduate students on dose calculation is utmost important. This would prepare them for safe prescription later during their practice. A study showed that training sessions on dosage calculation to be done at undergraduate level in Pharmacology as well as reinforcement of the same by various clinical departments for rational drug use. [10] Considerable number of interns referred various sources for drug information like text books, CIMS .Interns should be encouraged to attend continued Medical Education to update treatment guidelines, utilize authentic medical literature from electronic media.

5. Conclusion

The studies found that large number of participants were aware of essential medicine drug and other components of rational prescription. But reinforcement required in practical considerations like dose calculation and drug selection considering condition and cost. Hence, assessing knowledge of RUM among interns would be helpful in promoting RUM and improving health care services. The educational strategy should include clinical oriented teaching of Pharmacology for undergraduates and periodical assessment of their learning outcomes.

Questionnaire:

S. No	Question	Response
1	How would you grade your prescribing knowledge	Very poor Poor Average Good Excellent
2	UG training has prepared you to prescribe safely	Yes No
3	UG training has prepared you to prescribe rationally	Yes No
4	What is the most important aspect of prescribing a drug	Safety Efficacy Cost effectiveness
5	Do you think UG pharmacology should be taught in integration with clinical subjects?	Yes No
6	Are you aware of essential drug list (EDL)?	Yes No
7	Are you going to prescribe according to EDL?	Yes No
8	Drug should be prescribed by which name?	Generic name Brand name
9	Usually in children you calculate the dose according to	Age Weight Height Surface area
10	Do you consider the cost of the drug?	Yes

		No
11	Are you taught to consider the cost?	Yes No
12	Do you know the concept of P drug?	Yes No
13	Do you check information about drugs before prescribing?	Yes No
14	If above is yes, which material do you consult?	<ul style="list-style-type: none"> • Product insert • Books • Internet • Information by medical representative • Drug information index(CIMS/IDR) • Any other source

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