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Original Research Article

Assessment of rational prescribing practice among interns: a questionnaire based observational study

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ABSTRACT

Background: Rational use of medicines (RUM) is recognized as an important factor in health policy. Prescribing appropriate drugs in right doses is an integral part by which a physician can influence the patient's health and well-being. Rational prescription writing is a skill which should be mastered at the earliest. Understanding the knowledge and perception of interns will help us to identify the problems in clinical pharmacology teaching, and the method to implement RUM. Objective was to assess the rational prescribing practice among interns in a tertiary care teaching hospital.
Methods: This cross-sectional, questionnaire-based study was carried out in 92 interns of Acharaya Shri Chander College of Medical Sciences and H, Sidhra, Jammu (J and K). Interns posted in different departments of the hospital in the year 2016 (n = 92) were approached and explained the purpose of the study. 88 gave consent to participate in the study. Out of 88 only, 82 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 completed questionnaires were then assessed for responses of the students on principles of good prescribing.
Results: Of the 92 interns, 88 gave consent to participate in the study while 82 of them returned the duly completed questionnaires (response rate was 89.1%). The mean age of the respondents was 24.1 years. Out of 82 interns, 95.1% respondents were aware about the term RUM, only 8.5% had National List of Essential Medicines of India (NLEMI) available at their work place. Though 41.5% interns were aware of the term P-drug, only 3.7% were aware about STEP criteria. Majority of interns 62.1% relied on information from standard text books whereas 24.3% rely on Medical representatives (MR) for obtaining information about various drugs and regimens.
Conclusions: In conclusion, it is encouraging finding that higher percentages of interns were aware about essential medicines (EM) and also prescribe it. However, level of understanding related to personal drug (P-drug) concept and existence of Essential medicine list (EML) are much below par. Furthermore, prescribing by trade name and dependency on MR for drug information is the matter of concern. Hence, there is a need to strengthen the mechanism for continuing professional development of interns to update their knowledge and skills to prescribe rationally.

Keywords: Essential drugs, Interns, P-drug, Rational use of medicines

INTRODUCTION

Prescription is the written order by a physician directed directly to a patient and contains information regarding dose of the drug, route of administration and frequency of administration.[1] Rational use of medicines (RUM) is recognized as an important factor in health policy. 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] Prescribing appropriate drugs in right doses is an integral part by which a physician can influence the patient's health and well-being. Drug plays an intrinsic role in maintaining and restoring health as well as to combat diseases.[1] WHO estimates that more than half of all medicines are prescribed, dispensed or sold inappropriately, and that half of all patients fail to take them correctly. The overuse, underuse or misuse of medicines results in wastage of scarce resources and widespread health hazards. 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.[2]

Essential medicines (EM), a corner stone of RUM defined as those that satisfy the health care needs of the majority of a population. This concept was defined in 1975 by the WHO as a major step towards promoting RUM.[3] 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.[4] 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.[5]

The concept of personal drug (P-drug) was introduced recently to rationalize the drug use with obvious benefits to the patients. P -drugs should be selected from NLEM as they will be based on good scientific evidence and consensus between experts.[6] P drug enables doctor to avoid repeated searches of good drugs and one will get to know their effects and side effects thoroughly.[6,7]

Internship is the period where students after passing final MBBS examination undergo medical apprenticeship under the supervision of a consultant. During this period they should form habit of correct method of prescribing right drugs in right doses. Rational prescription writing is a skill which should be mastered at the earliest. At the start of clinical training most 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. Most of them are unaware of the fact that prescribing errors contribute significantly in escalating occurrence of adverse events.[8]

Most often students are only expected to copy the prescribing behavior of their clinical teachers, or existing standard treatment guidelines, without explanation as to why certain treatments are chosen.[9] Their attitude toward good prescribing, rational drug use is of utmost importance as they constitute the future generation of doctors. They should know how to prescribe safely and correctly and for this the skills, knowledge, and attitudes needed to make good prescribing decisions should be inculcated.[10,11]

However, despite all the measures still irrational prescribing is prevalent in our country. It is better we make interns be aware of RUM and motivate them for the rational prescribing. Understanding the knowledge and perception of medical students will help us to identify the problems in clinical pharmacology teaching, and the method to implement RUM. So, the aim of the present study attempts to assess the prescribing pattern of interns in a medical college.

METHODS

This cross-sectional, questionnaire-based study was carried out in 92 interns of Acharaya Shri Chander College of Medical Sciences and Hospital, Sidhra, Jammu, J and K after approval from institutional ethics committee. Self-administered, prevalidated questionnaire consisting of both open-ended and close-ended items was used to obtain information about various issues concerned with RUM such as use of EM, concept of P-drugs, sources of drug information, etc. The questionnaire was prevalidated by carrying out a pretest assessment in 5 interns and appropriate modifications done. Final version of the questionnaire was distributed to the participants after explaining the nature and purpose of the study. About half an hour was given to the participants to fill the questionnaire.

The completed questionnaires were then assessed for responses of the students on principles of good prescribing. Written informed consent was obtained from each participant. Interns posted in different departments of the hospital in the year 2016 (n = 92) were approached and explained the purpose of the study. 88 gave consent to participate in the study. Out of 88 only, 82 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. As a part of the questionnaire they were also supposed to write a prescription for a patient suffering from common cold and fever for which a blank space was provided in the questionnaire. The prescription was analysed for its rationality and content. The data so obtained was analysed using simple descriptive statistics.

RESULTS

Of the 92 interns, 88 gave consent to participate in the study while 82 of them returned the duly completed questionnaires (response rate was 89.1%). Of the 82 respondents, 35 were male subjects whereas 47 were females. The mean age of the respondents was 24.1 years (Table 1). Out of 82 interns, 95.1% respondents were aware about the term RUM, only 8.5% had NLEMI available at their work place and 46.3% Interns were able to name the parts of the prescription correctly. Though 41.5% interns were aware of the term P-drug, only3.7% were aware about STEP criteria (Table 2). Nearly 89.9% respondents prescribed drugs by generic name while majority of respondents (13.4%) prescribed by brand

names. 82.9% were aware about the term EM and 25.6% always prescribed them (Table 3).

Table 1: Demographic details of the respondents.

Characteristics	n (%)	
Gender	Male	37 (45.1)
	Female	45 (54.8)
Age	23-24	48 (58.5)
	24-25	22 (26.8)
	>25	12 (14.6)

Majority of interns 51 (62.1%) relied on information from standard text books, 2 (2.4%) refer drug indices, 5 (6.1%) use internet whereas only 4 (4.9%) respondents read review articles in journals and 20 (24.3%) rely on MR for obtaining information about various drugs and regimens (Figure 1).

About 76 (92.7%) had attempted the prescription exercise where they were supposed to prescribe for a patient suffering from fever. The details are shown in Table 4.

Table 2: Interns' knowledge of rational use of medicines.

Question	Percentage of respondents	
	Yes	No
Are you aware of the term essential drugs?	68 (82.9%)	14 (17.1)
Do you have the NLEMI at your work place?	7 (8.5)	75 (91.5)
Are you aware of the term RUM?	78 (95.1)	4 (4.9)
Can you name the parts of a prescription?	38 (46.3)	44 (53.7)
Are you always aware of the ingredients of the drug you prescribe?	74 (90.2)	8 (9.8)
Are you aware of the term P-drugs?	34 (41.5)	48 (58.5)
Are you aware of STEP criteria for selection of drug?	3 (3.7)	79 (96.3)
Are you aware of advantages of using P-drug for prescription?	9 (11.0)	73 (89.0)
Undergraduate training in clinical pharmacology has equipped me to prescribe safely/rationally?	2 (2.4)	80 (97.6)

Table 3: Attitude and practice of interns' about aspects of rational use of medicines.

Question	Response	Percentages
Do you prescribe essential medicines?	Always	21 (25.6)
	Frequently	38 (46.3)
	No	23 (28.0)
Do you inform the patient regarding disease, drug therapy, regular follow-up and monitoring of drug therapy	Always	63(76.8)
	Frequently	17 (20.7)
	Occasionally	2 (2.4)
What do you prefer to write in a prescription slip?	Generic name	68 (82.9)
	Brand name	11 (13.4)
	Both	3 (3.7)
What do you prefer to prescribe a new or old drug?	New drug	9 (10.9)
	Old drug	17 (20.7)
	Both	56 (68.2)

Table 4: Parameters which were included in the prescription fever to be written by all the interns.

Parameters included in the prescriptio	Interns n (%)
Date of prescription	21(25.6)
Strength of medication	68 (82.9)
Duration of use	52 (63.4)
Frequency of use	63 (76.8)
Directions for use	9 (10.9)
Non drug measures	6 (7.3)
Prescriber's name, Signature and name	34 (41.4)

DISCUSSION

RUM contributes to high-quality health care, while irrational use leads to health hazards and wastage of resources that are already insufficient in the majority of health care systems. It is likely that prescribing habits are first formed in the internship and that methods learned may determine a doctor's approach to prescribing in subsequent medical life. There is, however, little empirical research on the scope of intern responsibilities

with respect to prescribing, the way in which interns acquire these skills or the determinants of their practice. Hence, assessing knowledge of RUM among them would be helpful in promoting RUM and improving health care services.

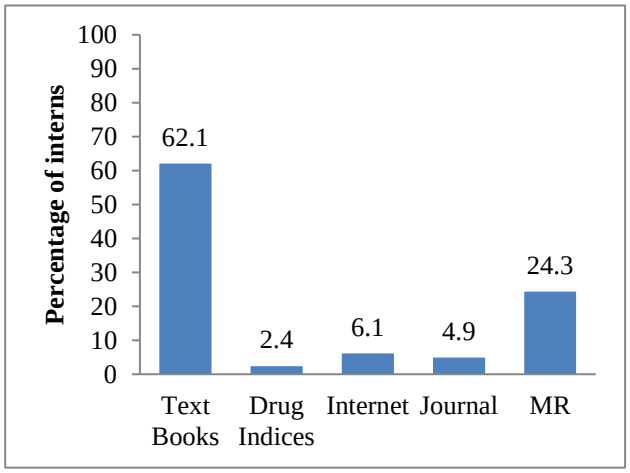

Figure 1: Sources of drug information.

In the present study, though the majority of interns 82.9% seem to be aware of the term Essential medicine (EM) but only 25.4 % of them always prescribed EM. The findings are similar to the previous study conducted by Mahajan et al.[12] This clearly indicates a lack of measures to update professional knowledge. Regarding EM, not only selection, but also its appropriate use is necessary for upgrading the quality of health care.[13] The National List of EM (NLEM) is one of the key instruments in balanced health care delivery system of a country, which includes accessible, affordable, quality medicine at all the primary, secondary, tertiary levels of health care. The primary purpose of NLEM is to promote RUM considering the three important aspects, i.e., cost, safety, and efficacy. Furthermore, it promotes prescription by generic names.

In this study, the percentage of respondents who are aware of P-drug concept and practicing it, is less (32% and 15.5%). 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[6]. Even though medical students are exposed to this in their pharmacology curriculum during MBBS, lack of knowledge regarding P-drug concept indicates that the P-drug concept has remained confined to pharmacology. Involvement of interns, post-graduate students is vital if the P-drug concept is to succeed. A problem-based learning session for teachers in medical colleges needs to be organized.

Another positive finding in this study was that the majority of interns believed in prescribing according to generic name (93%). Generic prescribing is vital for cost-effectiveness of drug therapy to patients. It reduces errors in prescribing and minimizes confusion. The importance of generic prescribing in developing countries was studied by Cameron et al.[14] It asserted that substantial savings could be achieved by switching private sector purchases from originator brand medicines to lowest-priced generic equivalents. However, in our study it was found that a large number of interns about 97.6% felt that UG training was inadequate to prepare them to prescribe rationally. This finding is in accordance with that of the study carried out in first-year postgraduate students in India.[15]

Errors in prescription writing were commonly found among the students and interns. Most of the prescriptions were lacking in important entries like the date of prescribing, and particulars of the prescriber. These elements, according to the WHO, are essential when filling a prescription.[16] A student may have a good understanding of pharmacology, but his quality of writing prescriptions may be poor because of lack of care in checking for errors.[17]

Directions or instructions for medication use were absent in almost all prescriptions which is in contradiction to their positive attitude exhibited earlier regarding their responsibility of providing patient instructions. Attitudes do not necessarily match behaviour. Several studies show that what people think may not be a good way to predict their behaviour.[18] Adequate knowledge on rational drug use does not always result in rational prescribing behaviour.

In the present study, most of the participants prefer textbook and medical journal for seeking information about any drug which should be encouraged further. RUM is an important issue and its practice should be promoted specially in developing economy with limited resources but at present also teaching RUM is not seeking much importance in most of the medical colleges which may be responsible for prescribing errors with its adverse consequences.[19-21] Hence, sincere efforts are required to promote RUM among interns to avoid irrational prescribing.

CONCLUSION

In conclusion, it is encouraging finding that higher percentages of interns were aware about EM and also prescribe it. However, level of understanding related to P-drug concept and existence of EML are much below par. Furthermore, prescribing by trade name and heavy dependency on MR for drug information is the matter of concern. Strengthening UG training in rational prescribing practice and incorporating WHO six steps of rational prescribing in their UG curriculum is of utmost importance. Hence, there is a need to strengthen the mechanism for continuing professional development of interns to update their knowledge and skills to prescribe rationally.

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