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Evaluation of knowledge, attitude and practices of rational use of medicines among interns and homeopathy practitioners

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Abstract

Objectives

1. To assess the knowledge, attitude and practices about essential drug list and P drug concept

2. To identify factors which obstruct the rational use of medicine (RUM)

Methods: This study is conducted in 300 subjects. Out of these, 200 were interns and 100 were homeopathy practitioners. Questionnaire comprising of 20 questions was distributed to all subjects. The study was done in two phases i.e pre-test phase and post-test phase to compare responses from each group.

Results: Total 300 of the participants who provided complete information in the questionnaire, were included in analysis. There is improvement in the knowledge regarding RUM after educational intervention such as RUM definition, STEP criteria, WHO essential drug list and P-drug concept. Participants attitude towards use of essential drug in practice, awareness of the ingredients of the drug, polypharmacy causing irrational drug use, awareness of standard treatment guidelines while prescribing and various causes due to which drugs are not using rationally improved significantly. After the intervention majority participant understood the importance of practicing drug rationally.

Conclusion: The present study provides an insight into the perception of various aspects of RUM in interns and homeopathy practitioners which would be helpful in planning effective intervention targeting the prescribers which can be considered one of the major stakeholders in rational use of drug.

Keywords: Attitude, Knowledge, Practices, Rational use of medicines

Introduction

Rational use of medicine (RUM) as defined by WHO requires that patients receive medications appropriate to their clinical needs, in doses that meet their own require-ments, for an adequate period of time, and at the lowest cost to them and their community.[1] Rational prescribing is the prescribing of drug by physician in the right way, right drug, right dose and right time to the right person through the right route of administration. On the other hand irrational prescribing is blanket term which is a combination of no drug need, drug abuse and misuse, use

of polypharmacy and use of unsafe drugs.[2] Increase in irrational use of medicines is due to factors such as misleading/false beliefs, inadequate knowledge on part of the consumers and prescribing pressures, professional and profit driven approach of prescribers, profitable promotional activities by pharmaceutical industry and lack of implementation of regulations by regulatory authorities.[3] Essential medicines, a corner stone of RUM is 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.[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] P-drug concept was introduced to boost the cause of RUM. The idea was to make physicians familiar with some personal drugs chosen from NLEM (National Essential List of Medicines) based on safety, efficacy, suitability and cost.[6] The first step to correct irrational use of medicines is to measure it. To address the problem of irrational use of medicines, the health planners need specific information on the type of irrationality been practiced so that appropriate, effective and feasible strategies can be chosen. Various studies have evaluated the perception of RUM among different population like nurses, pharmacy students, pharmacists and prescribers.[7]

A medical student enters practice during internship. Internship is the period where students after passing final MBBS examination prescribe medicines and offer patient care under the guidance of teachers. 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. Their attitude toward good prescribing, rational drug use is of utmost importance as they constitute the future generation of doctors. 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.[8]Education regarding Rational use of medicines is more likely to be effective in interns if it takes into consideration their existing knowledge, attitude and practice about rational use of medicines. Any intervention would require to have an understanding of the participants awareness about various issues concerned with RUM. This being their learning stage, they are most vulnerable to getting influenced by various factors which can affect their perception either positively or negatively.[9] Apart from allopathic medicine doctors, Ayurvedic, Unani, Siddha, and Homeopathic (AYUSH) doctors also have a significant role in health-care system for rural and slums in urban areas. Such medical practitioners use allopathic medicines for their patients instead of using medicines from their own course or pathy. Among AYUSH courses, only BAMS curriculum has allopathic Pharmacology in their syllabus. Unlike MBBS curriculum, it is not of one and half years. So such medical practitioners lack proper knowledge of the allopathic medicines and their rational use. In this situation, the pharmaceutical companies influence such practitioners for the sale of their products.[10] This leads to irrational use of medicines resulting in reduced treatment efficacy and contributing to problems like drug interactions and higher prevalence of antibiotic resistance. Indiscriminate use of drugs not only waste scarce resources that could otherwise be spent on other essential services, but also leads to drug induced disease. 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.[11]

Irrational use of medications (increased use of over the counter (OTC) drugs, prescription, non-prescription drugs and traditional medicines) leads to increased health hazards, failure of therapy and lack of patient satisfaction making medication use and safety a global issue [12,13,14,15]. Thus, rational drug use is an essential factor in ensuring patient safety, effective management of diseases and promoting good healthcare services [16]. Appropriate use of drugs can enhance the success of therapy and prevention of adverse events. Counseling the patients could promote strict adherence to the dosage regimen, avoid drug interactions, identifying predictable adverse drug reactions and recognizing possible toxic effect at earliest.

Considering the mentioned fact, the present study was planned to evaluate and compare the knowledge, attitude and practices of rational use of medicine among interns and homeopathic practitioners.

Materials & Methods

Study Design: It was a prospective, cross-sectional, observational questionnaire based study.

The Study Setting: It was conducted in the Government medical college attached to the teaching tertiary care hospital in India.

Study Population: Study was conducted among interns and homeopathic practitioners who were attending special Modern Pharmacology Course of one year.

Selection Criteria

Inclusion criteria

1. Interns and homeopathic practitioners who were willing to participate in study.

Exclusion criteria

1. Interns and homeopathic practitioners were not willing to participate in study and who gave incomplete information.

Data Collection

This study was commenced after getting approval from the Institutional Ethics Committee. It was made clear to the participants that at no point of the study their identity will be revealed. Strict confidentiality was maintained. Self-designed pre-validated questionnaire with 20 multiple choice questions about rational use of medicines was given with sufficient time to answer. The questionnaires were handed over to the participants after explaining the purpose of the study. Any doubt regarding questionnaires was clarified by investigators. Written informed consent was obtained from each respondent. The study was done in two phases i.e pre-test phase and post-test phase. Questionnaires to homeopathic practitioners was distributed during their modern pharmacology lectures in the Government Medical College. Questionnaires were distributed before and after intervention to the participants. Intervention session included an hour long presentation on important issues related with rational use of medicines. The collected data was checked, reviewed and organized for its completeness. Only completely filled questionnaire were selected for final data analysis.

Results

In the present study a total number of participants responded to questionnaire regarding RUM were 300. Out of these, 200 were interns and 100 were homeopathy practitioners.

Flow Chart No.1: Number of participants

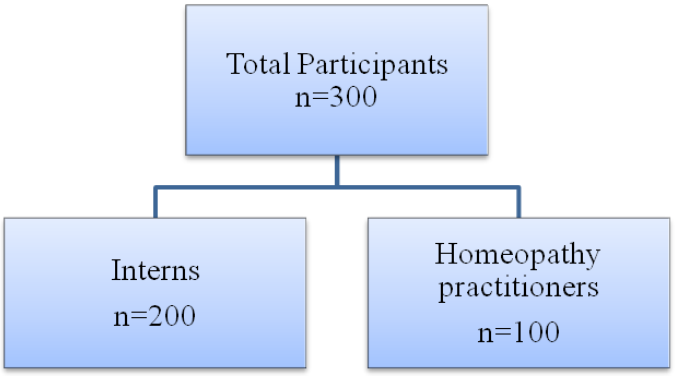

Table No.1 Knowledge based questions

Sr. no	Questions	Interns% (n=200)		Homeopathy practitioners% (n=100)	
		Pre-test	Post-test	Pre-test	Post-test
1	What is the definition of rational use of drug ?	78%	92%	65%	84%
2	What is STEP criteria for selection of P-drug?	54%	82%	52%	90%
3	What are the policies to promote rational use of drugs ?	81%	96%	72%	82%
4	How many drugs are included in WHO EDL of 2017 ?	27%	82%	20%	70%
5	How many times National list of essential medicines is revised ?	25%	69%	17%	83%
6	Can the same essential drug list be used for all countries ?	78%	84%	57%	87%
7	Advantages of using P-drug for prescription	81%	94%	50%	83%

It is observed in Table no. 1 that there was improvement in the knowledge regarding RUM after intervention. 78 % interns knew the correct definition of rational use of drug before the intervention and after intervention 92 % gave the correct answers. Interns in pretest phase had knowledge about STEP criteria (54%),the number of drugs included in WHO EDL of 2017 (27%) and how National list of essential medicines is revised (25 %) and in post-test, there was significant improvement of 82%, 82% and 69% respectively in group of interns. 65% of homeopathy practitioners in pre-test phase had knowledge regarding definition of rational drug use, 52% about STEP criteria, 20% the number of drugs included in WHO EDL of 2017and17% knew how National list of essential medicines is revised. After the intervention in post-test phase there was improvement in the knowledge about definition of rational drug use (84%), STEP criteria (90%), drugs included in WHO EDL of 2017 (70 %) and how National list of essential medicines is revised (83 %). Similar study results are depicted in figure no – 1.

Figure no-1 Responses to knowledge based questions

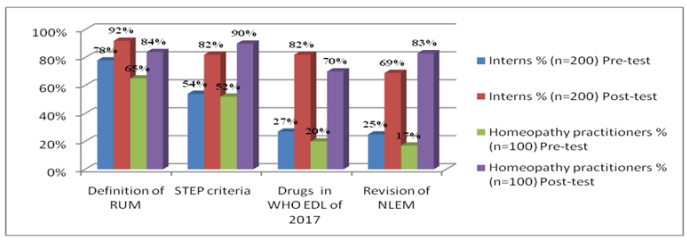

Table no-2 Responses to attitude based questions

Sr. No	Question	Options	Interns % (n=200)		Homeopathy practitioners %(n=100)	
			Pre-test	Post-test	Pre-test	Post-test
1	Do you think that commonly prescribed drug is called as an essential drug?	Yes	14 %	0 %	31 %	16 %
		No	60 %	93 %	41 %	81 %
		Sometimes	26 %	07%	28 %	3 %
2	Awareness of the ingredients of the drug you prescribe?	Always	60 %	86 %	89 %	96 %
		Sometimes	40 %	14 %	11 %	4 %
		Never	0 %	0 %	0 %	0 %
3	Do you think that polypharmacy is responsible for irrational drug use?	Yes	59 %	84 %	63 %	81 %
		No	19%	8 %	20 %	13 %
		Don't know	22%	8 %	17 %	6 %
4	Are you aware of standard treatment guidelines?	Yes	42 %	87 %	77 %	96 %
		No	35 %	12 %	14 %	4 %
		Don't know	23 %	1 %	10 %	0 %
5	According to you what are the likely causes irrational use of drugs?	Lack of training or knowledge	26%	2%	44%	13%
		Financial incentives	0%	0%	3%	0%
		Availability problem	2%	1%	2%	0%
		Cost of drug	2%	2%	2%	2%
		All of the above	70%	95%	49%	85%

It has been shown in table No-2 - there was change in the attitude regarding RUM after intervention. 60% interns & 41% homeopathy practitioners are of the opinion that commonly prescribed drug is not an essential drug in pre-test phase while in post-test phase 93% interns & 81% homeopathy practitioners gave the correct answers.60 % interns & 89 % homeopathy practitioners have answered that they were always aware of the ingredients of the drug in pre-test phase while in the post-test phase i.e after lecture on RUM there was increase in the % interns (86%) and homeopathy practitioners(96%). This suggests that the lecture could make a positive impact on the need to look for the ingredients of the drugs.59 % interns & 63 % homeopathy practitioners before the interventional lecture on RUM while 84 % interns & 81 % homeopathy practitioners after lecture are of the opinion that polypharmacy is responsible for irrational drug use. So polypharmacy is one of the factors responsible for irrational drug use.Significant level of awareness has been observed in homeopathy practitioners (77 %) as compared to interns (42 %) regarding standard treatment guidelines as homeopathy practitioners were actually practicing medicine. While in post-test phase there was improvement in awareness in both group i.e in homeopathy practitioners (96 %) & in interns (87 %). This shows that educational intervention on RUM had a definite positive response on participants awareness. This plays a significant role in

prescribers insight.70 % interns & 49 % homeopathy practitioners in pre-test and 95 % interns & 85% homeopathy practitioners in post -test answered that lack of training or knowledge , financial incentives , problem of availability of drugs and cost of drug were the causes for not using the drug rationally.

Table No-3Response to practice based questions

Sr.No	Question	Options	Interns % (n=200)		Homeopathy practitioners %(n=100)	
			Pre-test	Post-test	Pre-test	Post-test
1	Do you think that essential medicines should be prescribed?	Always	22 %	83 %	50 %	71%
		Sometimes	58 %	17 %	45 %	27 %
		Never	20 %	0 %	5%	02%
2	What do you prefer to write in the prescription order?	Generic names	84 %	92 %	60 %	83 %
		Brand names	6 %	1 %	23 %	6 %
		Branded generic names	10 %	7 %	17 %	11 %
3	Do you refer standard treatment guidelines while prescribing ?	Always	38 %	69 %	63 %	82 %
		Sometimes	44 %	31 %	34 %	16 %
		Never	18 %	0 %	3 %	2 %
4	Do you prescribe the drugs on patient's demand?	Always	43 %	0 %	20 %	1 %
		Sometimes	55 %	9 %	79 %	12%
		Never	2 %	91 %	1 %	87 %
5	What is your most common source of information about new drugs?	News bulletin /drug bulletin	14 %	15 %	27 %	14 %
		Seminar	6 %	5 %	3 %	5 %
		CME	23 %	27 %	36 %	54 %
		Medical representative	20 %	15 %	18 %	8 %
		Medical journal	37 %	38 %	16 %	19 %
6	Do you inform the patient regarding disease, drug therapy, regular follow-up and monitoring of drug therapy?	Always	65 %	90 %	77 %	91 %
		Frequently	29 %	10 %	20 %	9 %
		Occasionally	4 %	0 %	3 %	0 %
		No	2 %	0 %	0 %	0 %

It is observed in Table no. 3 that in pre-test phase 22 % interns & 50 % homeopathy practitioners answered that essential medicines should be prescribed. After the interventional lecture on RUM, response towards prescribing essential medicines was changed. In post-test phase 83 % interns & 71 % homeopathy practitioners opined that essential medicine should be prescribed. Majority of interns (84%) &homeopathy practitioners (60 %) in pre-test phase prefer to write generic names of drug in the prescription order. While in post-test phase interns (92%) &homeopathy practitioners (83 %) understood the need to prescribe generic drugs. In pre-test phase 38 % interns & 63% homeopathy practitioners were always refer the standard treatment guidelines while prescribing. After the interventional lecture on RUM 69 % interns & 82 % homeopathy practitioners felt the need to refer to standard treatment guidelines.55% interns & 79 % homeopathy practitioners sometime prescribe the drugs on patient's demand. After the interventional lecture in post-test phase 91 % interns & 87 % homeopathy practitioners opined that never prescribe the drugs on patient's demand. This shows that there is a significant impact of intervention on prescribers practice.

There are various sources to get information about new drugs. According to 38% interns medical journal was most common source while 36 % homeopathy practitioners answered that CME was the most common source to get information about new drugs. Majority of interns 65% and homeopathy practitioners 77% in pre-test phase have the habit of informing the patient regarding disease, drug therapy, regular follow-up and monitoring of drug therapy. But in the post-test phase 90% interns and 91% homeopathy practitioners felt the importance of giving information regarding disease, drug therapy, regular follow-up and monitoring of drug therapy to patients. Thus, there was significant improvement in the opinion of interns and homeopathy practitioners regarding the

Discussion

Our study was done to assess the knowledge, attitude and practices among the interns and homeopathic practitioners about rational use of medicine. This study conducted in homeopathic practitioners seems apparently to be the first which evaluated the knowledge, attitude and practices of RUM. The results showed that after the educational intervention most of the participants had improved knowledge about a rational use of medicine and an attitude to prescribe drugs as per the essential drug list and standard treatment guidelines. A study was done in Pakistan to evaluate the prescribers approach towards a rational drug practice, showed that the drug practice among the hospitalized patients was irrational. An accurate prescribing decision, an appropriate treatment, and a rational use of drugs are the major needs of the day, to ensure a safe medication practice.[17] Hence the effective teaching/intervention in clinical pharmacology

and rational therapeutics is the backbone to inculcate a rational and scientific basis of prescribing. RUM contributes to maintaining high quality health care, assessing knowledge of RUM among interns and homeopathy practitioners which will be helpful in promoting RUM and improving health care services.

Knowledge

It was encouraging to know that most of the respondents had knowledge about RUM such as definition, STEP criteria, WHO essential drug list and P-drug concept, but knowledge regarding the number of drugs included in WHO EDL and how the National list of essential medicines is revised was poor. After the interventional lecture knowledge regarding all aspects of RUM was improved. It is important that these concepts are clear in their minds and they actually implement them in their practice. This would be possible only when the dynamics of rational use of medicines are repeatedly reinforced upon them.

Attitude

Attitudes or belief refers to traditional ideas, which are erroneous from an individual's perspective, which forms obstacles to appropriate behavior and practice. Proper educational intervention can improve practice while improper attitudes can have a harmful effect. [18] Akhtar et al study reported that essential drugs concept plays the most critical part to rational prescribing.[19] In this study there was significant improvement in attitude towards use of essential drug in practice. Also after the educational intervention there was improvement in awareness of the ingredients of the drug, about polypharmacy causing irrational drug use, awareness of standard treatment guidelines while prescribing and various causes due to which drugs are not using rationally. Though this is a positive finding it is really difficult to assess how many of these respondents would really follow this in actual practice. This problem which is one of the major contributors to irrational drug use can be resolved only if the prescriber is self-motivated and dedicated towards the cause of patient care. Repeatedly reminding the prescriber about the importance of rational drug prescription by appropriate way, can be helpful to a certain extent.

Practice

Practice has a direct impact on an individual's behavior and change in practice can be obtained by carrying out more educational interventions for improving the practice. Regarding practice of RUM, majority of respondents have a practice of referring to the standard treatment guidelines and use of generic names of drug in the prescription order. They felt the need to give information to the patient regarding disease, drug therapy, regular follow-up and monitoring of drug therapy.

Oshikoya et al study[20] showed that interns use national formulary as most common source for drug information. While in the present study medical journal and CME were the most common sources to get information about new drugs.

A prospective study in Gujarat shows that clinical pharmacology and rational therapeutic training improves the knowledge of undergraduates, it's not retained in internship and does not adequately prepare interns to prescribe safe and rational drugs.[21]Hence by organizing interventional programme to educate the prescriber about various issues concerned with RUM and reduce any misconceptions or false beliefs. Intervention taken in participants has improved the knowledge, attitude and practice regarding use of medicine rationally which was evident from the prepost test responses. It also improved their perception of avoiding the unnecessary prescription of drugs. This will help to reduce out of pocket expenditure for the patient.

Conclusion

This study evaluates knowledge, attitude and practices about rational use of medicine (RUM) in interns and

homeopathy practitioners. The study has emphasized that the educational intervention taken was effective in improving the knowledge, attitude and practice of interns and homeopathy practitioners about RUM. Study provides an insight into the perception of various aspects of RUM in interns and homeopathy practitioners which would be helpful in planning an intervention that address those still unaware and having inadequate/improper knowledge about RUM which can be considered one of the major stakeholders in rational use of medicine.

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