

Workshop as a Teaching Learning Tool for Training Interns in Writing Rational Prescription

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ABSTRACT

Introduction: Rational drug usage is well recognised as an important part of the National Health Policy. Proper prescription writing is an essential skill for doctors in medical specialties. Several studies have shown deficiencies in students in prescribing. To overcome these difficulties, WHO produced the Guide to Good prescribing based on the concept of Rational use of Medicines. Workshops are known to play an important role in developing more instrumental skills of listening, presenting ideas and learning as a team.

Aim: To assess the effectiveness of workshop as a Teaching Learning tool for training Interns in Rational prescribing and study their perceptions regarding the same.

Materials and Methods: The study was carried on 6th December 2017 at Mysore Medical College and Research Institute, Mysore, Karnataka, India. A one day workshop (six sessions) was conducted

on Rational prescriptions. Thirty Interns were recruited (purposive sampling) who followed the WHO six steps of rational prescribing. Clinical teachers facilitated the discussions. A Pre-test (just before) and Post-test (immediately after) were administered. Paired t-test was used for analysis of scores. Students' perceptions were graded on Likert's scale (Mixed method study design).

Results: Significant improvement was observed in rational prescription writing after conducting the workshop which is evident by the post-test scores. The t value was -6.22873. Most of the interns (70%) strongly agreed that the case vignettes helped to develop logical thinking. Many of them (72.3%) believed that this knowledge is more effectively imparted in workshop mode of teaching and majority (83.3%) felt that they needed to be exposed to this method of learning.

Conclusion: This study confirms that workshop is a good teaching learning method to reinforce rational prescription writing.

Keywords: Case-vignettes, P-drug, Rational use of medicines

INTRODUCTION

Rational drug use is well recognised as an important part of the National Health Policy. The WHO's Guide on Good prescribing is based on the concept of Rational Use of Medicines (RUM) which requires patients to receive appropriate medications for their clinical needs, in proper individual doses for the correct period of time at a low cost for them and the community [1,2]. The Medical Council of India (MCI) curriculum includes the rational use of drugs, writing rational prescriptions and recognising the importance of prescribing essential medicines.

In recent years, medical researchers observed deficiencies in health care due to many prescribing errors, which arise because of making wrong decisions or due to defect in the art of writing prescriptions [3]. Rational prescription should be learnt as early as possible in the academic life and hence medical students should be adequately trained and assessed on their prescribing knowledge and skills in order to promote rational drug prescribing. So it is crucial that undergraduate medical education undergoes drastic improvements to meet the changing demands of medical practice in the 21st century [4].

Many academicians have tried newer teaching methodologies to improve student's knowledge of rational prescription. In a study by Rao BB et al., they used problem solving interactive clinical seminars for undergraduates to make the learning process more effective [5]. A study by Tayem YI showed that Case based Learning led to a significant improvement in students' self-reported analytical and communication skills, confidence, satisfaction, motivation and engagement [6]. Amutha ELA et al., concluded that prescription writing skills can be improved in students by exposing them to clinical case scenarios [7]. Shankar PR et al., opined that problem stimulated learning reinforced learning in pharmacology [8].

According to a study by Dakhale G et al., the awareness of Rational use of Medicines was inadequate in interns and

resident doctors and there was need for more rigorous training [9]. Upadhyaya P et al., noted that more students felt that UG teaching didn't prepare them to prescribe rationally or safely [10]. These findings emphasised the need for more clinical oriented teaching in the later years of the undergraduate course using scenarios and real examples.

Therefore, this study was aimed to assess the effectiveness of a workshop as a Teaching Learning tool for training interns in rational prescribing and study their perceptions regarding the same.

MATERIALS AND METHODS

The present mixed method study design (before and after study) was conducted on 6th December 2017, at Mysore Medical College and Research Institute, Mysore on a group of 30 interns (purposive sampling). The Institutional Ethical Committee clearance (REG:ECR/134/Inst/KA/2013/RR-16) was taken (dated 16/11/17).

Out of a total of 100 interns, 30 Interns consented to the study. A meeting of all the teachers participating in the study was called a month prior to the workshop, to discuss the conduct of the workshop. All the teachers were involved in the formulation of cases which they discussed with their colleagues and suitably modified as per comments received.

Case studies with respect to the six step approach of rational use of medicines were framed. The WHO six steps of rational prescribing [7] an important guide to prepare UG doctors in the approach of rational prescribing were followed.

The six steps followed were:

- Step 1: Define the patient's problem;
- Step 2: Specify the therapeutic objective;
- Step 3: Verifying the suitability of P-drug;

Step 4: Write the prescription;

Step 5: Give instructions and warnings to the patient;

Step 6: Monitor/stop the treatment.

The primary objective of the one day workshop from 9 am to 5 pm (six sessions) was to orient the interns towards rational prescribing practices. The interns were initially administered a pre-test to test their knowledge about rational prescription writing. The interns were then divided into 5 groups of 6 interns each. They were then subjected to case scenarios related to hypertension, tuberculosis, epilepsy, anaemia in pregnancy, oral contraceptives and pneumonia and gastroenteritis in paediatric age group, where they were initially appraised about a clinical case where the investigations and diagnosis were specified. Following this, they discussed the case amongst themselves. They analysed the patient's problem, defined the therapeutic objectives and prepared a P (Personal/Preferred) drug list for the given condition. P-drug concept was introduced to boost the cause of rational use of medicines. They also learnt to write down prescriptions and give relevant information/instructions to the patient. Teachers from the departments of Medicine, Paediatrics and Obstetrics and Gynaecology above the grade of Associate Professor facilitated the discussions. The interns were then updated with current drugs prescribed. Knowledge of the current treatment was imparted through standard treatment guidelines and flow charts.

Immediately after the workshop, a post-test was administered to evaluate the effect of the workshop as an effective teaching learning methodology. The interns were then given a questionnaire which was graded on Likert's scale to assess their perceptions of the workshop.

RESULTS

Most of the interns had completed four postings in different departments. So they had been exposed to diagnosis and treatment of a variety of patients.

The pre and post-test scores showed a statistically significant difference [Table/Fig-1]. [Table/Fig-2] depicts the knowledge of the Interns about rational prescription.

Significant improvement was observed in rational prescription writing after conducting the workshop which is evident by the post-test scores. The result was significant at $p < 0.05$ [Table/Fig-2].

An amount of 70% (21) interns strongly agreed that the case vignettes helped to develop logical thinking. 72.3% (22) strongly agreed that this knowledge is more effectively imparted in workshop mode of teaching and 83.3% (25) strongly agreed that they need to be exposed to this method of learning [Table/Fig-3].

DISCUSSION

The efficacy of a workshop for improving rational prescription writing in a group of Interns has been put forth. The majority of prescription-related errors in hospitals are due to poor prescribing by junior doctors [11,12]. Also, the process of prescribing has become more and more difficult due to availability of more

	Post-test n=30 (mean±SD)	t value	p-value
9.083±6.501	23.667±4.849	-6.228	<0.00001

[Table/Fig-1]: Overall pre-test and post-test scores.

Sl. No.	Questions of Pre-test and Post-test	Pre-test scores	Post-test scores
1	What is a P-drug	6 (20%)	30 (100%)
2	Step criteria for selection of a P-drug	4 (13.33%)	21 (70%)
3	Six steps of rational prescription	4 (13.33%)	23 (76.66%)
4	Sources of drug information	22 (73.33%)	28 (93.33%)
5	Drugs listed in essential drug list	5 (16.66%)	19 (63.33%)
6	Prescription for TB	14 (46.66%)	22 (73.33%)
7	Prescription for hypertension	7 (23.33%)	13 (43.33%)
8	Prescription for OCPs	20 (66.66%)	27 (90%)
9	Prescription for anaemia	12 (40%)	23 (76.66%)
10	Prescription for seizures	4 (13.33%)	23 (76.66%)
11	Prescription for Fever with cough	3 (10%)	30 (100%)
12	Prescription for diarrhoea	8 (26.66%)	25 (83.33%)

[Table/Fig-2]: Questions of pre-test and post-test.

medicines with complex actions, increasing number of indications for drug treatment and inappropriate polypharmacy due to greater complexity of treatment regimens [13].

A Rational pharmacotherapy workshop was conducted for interns in the Department of Family Medicine at Ondokuzmayis University in Samsun, Turkey, based on WHO's Good prescribing guide. The interns exhibited a common irrational prescribing habit in that the rules of prescribing were not followed and it all improved after the workshop [14]. Another educational project was undertaken on interns posted in the department of community medicine in a Medical College in Puducherry. The learners reactions to the workshop showed that it had improved their skill in rational prescription which was evident from the Pre-test and post-test scores [15]. In a study conducted at Queen's University Belfast in Northern Ireland, a ward based workshop on paediatric drug prescribing was carried out. This study has demonstrated an inter-professional teaching and learning approach to safe paediatric drug prescribing. Participation in the workshop enabled students to learn their own professional limitations. Highly significant arbitrary differences in mean Pre-test and post-test scores were observed with regard to knowledge and awareness of paediatric prescribing [16].

In a questionnaire based study to assess rational prescribing practice among interns, 65 of the 73 interns were unaware of the WHO six steps of rational prescribing [17], a finding similar to the present study where 26 of the 30 interns were unaware of the six steps before the workshop. Awareness regarding the WHO six steps of rational prescribing was seen to be inadequate among interns. The WHO six-step guide forms the basis of rational prescribing and prevents the prescriber from missing out on any of the key elements. It is important that the WHO step-by-step guide to prescribing be included as a part of UG training.

	Question to test student's perceptions	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
1	The case-vignettes helped to promote student-student interactions.	17 (56.6%)	12 (40%)	1 (3.3%)		
2	The case-vignettes helped to develop logical thinking.	21 (70%)	8 (26.6%)	1 (3.3%)		
3	Case based learning results in the development of an integrated knowledge base.	17 (56.6%)	12 (40%)	1 (3.3%)		
4	The contents of the case based learning session linked up well with previous knowledge.	18 (60%)	7 (23.3%)	5 (16.7%)		
5	Case based learning workshops help in application of our knowledge in real clinical settings.	21 (70%)	9 (30%)			
6	This knowledge can be effectively imparted in traditional conventional teaching methods.	15 (50%)	9 (30%)	2 (6.7%)	4 (13.3%)	
7	This knowledge is more effectively imparted in workshop mode of teaching.	22 (72.3%)	7 (23.3%)	1 (3.3%)		
8	We as students' need to be exposed to this method of teaching.	25 (83.3%)	5 (16.7%)			

[Table/Fig-3]: Questions to test students' perceptions.

In the present study, 5 out of 30 Interns (17%) had knowledge of essential drug list before the workshop. In a study carried out in a Medical College in Nepal, 8 respondents out of 80 (10%) had knowledge about essential medicines list in Nepal [18]. In another study done in a private teaching tertiary care hospital in Rajasthan, India, the majority of doctors (first year postgraduates) were aware of the Essential Drug List, while a few were not [10]. In a Govt. Medical College in Nagpur, majority of respondents were aware of the concept of essential medicines; 83.5% of the respondents prescribed essential medicine frequently despite of not having National List of Essential Medicines (NLEM) at their workplace but only 4% of the respondents knew the exact number of drugs in the NLEM [9] whereas in the index study 16.66% of the respondents knew about the number of drugs in NLEM before the workshop.

In the same study, the percentage of respondents who were aware of P-drug concept and practising it was less (32% postgraduates and 15.5% interns) [9]. In the index study, 20% of the interns were aware of the P-drug concept before the workshop and 100% were aware at the end of the workshop. This may be because the P-drug concept is confined to Pharmacology and clinicians are not exposed to P-drug concept.

Comparing the student's perceptions in studies using different approaches, in a modified case based learning module implemented on second year MBBS students in Dayanand Medical College, Ludhiana, Punjab, 89.61% of the students felt that the sessions stimulated their interest in the subject and reinforced the clinical aspects of the topics discussed [19] compared to the present study where the 60% interns felt contents of the case based learning session linked up well with previous knowledge. In a study by Upadhyaya P et al., 92% of the respondents (first year postgraduate students) felt that UG teaching on Rational prescriptions should be more clinically oriented [10]. In the present study, 70% of the interns felt that case based learning workshops help in application of their knowledge in real clinical settings.

In a study by Shankar PR et al., majority students opined that problem simulated learning for learning rational prescriptions helped to promote student- student interaction and it helped in the development of an integrated knowledge base whereas in index study, 56.6% of interns felt that the workshop helped the same [18].

In summary, based on the study results the deficient region in rational prescription are drug dosage calculation, writing prescriptions, and accessing drug-related information should be emphasised on, during their training. In addition, awareness about essential medicines list, importance of generic prescribing, cost-effectiveness or pharmaco-economic aspect of drugs, and WHO six step guide to rational prescribing should be incorporated into UG teaching through lectures and discussions. Repeat training in Rational Prescription (RP) writing should be provided to students at the beginning of internship period [20].

LIMITATION

The first limitation is the small sample size. The present authors conducted a one day workshop with 30 interns. The second limitation is we could not do long term follow-up as interns were busy with preparation for entrance exams and were not able to take a post-test after a few months.

CONCLUSION

The interns felt that the workshop helped to develop logical thinking, promoted student-student interaction and helped to apply their knowledge in real clinical settings. So it should be routinely implemented to strengthen certain areas which are most important for young doctors like rational prescription writing at the beginning of internship.

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