

SHORT COMMUNICATION

Rationality of exciting pharmacology practical curricula in MBBS course

Anupam Gupta, Pratibha Rao (Lahiri), Romy Biswas and Kuntala Ray
 Dept. of Pharmacology, North Bengal Medical College, Sushrutnagar, Darjeeling, WB, India
 nathguptadrانupam@yahoo.com; kuntala_80@yahoo.co.in; +91 9434686320

Abstract

The acceptance of changes is the key of perfection. Same is the case of undergraduates' curriculum of pharmacology. The study of MBBS students is the basic bricks of medical profession. Any kind of compromise can affect our future medical services to society. Keeping these points in our mind we did a study on need of change in present curricula of pharmacology practical of undergraduates. The study was done by taking feedback from medical teachers, medical officers, general medical practitioners, house staffs, PGTs, interns and students. We use prefixed questionnaires and the results were analyzed using statistical package SPSS 12.0. The results are very significant in all groups asking for change in present curricula of practical pharmacology of medical undergraduates. For fruitful medical teaching there is need of some significant changes in present curricula of practical pharmacology of medical undergraduates to make them more skilful and intellectual.

Keywords: Pharmacology, curriculum, medical services, practitioners, medical undergraduates.

Introduction

The challenges involved in teaching pharmacology in an integrated curriculum include the need to ensure that a core disciplinary curriculum can be identified and mapped to the new structure, and that students are introduced to key scientific concepts and information in an order that builds from a sound scientific base to the more clinically applied knowledge (Hariharan, 2004). The task of embedding pharmacology in an integrated medical curriculum is not a simple one. As we have demonstrated, it involves the close cooperation of pharmacologists with their fellow scientists from other disciplines as well as with educational designers and clinicians. It is possible, however, to gain the benefits of integration without sacrificing student learning of fundamental concepts of the discipline as well as their application in the clinical setting (Garg *et al.*, 2004).

Materials and methods

A cross-sectional study was carried out in North Bengal Medical College for 3 months duration. The purpose of the study was briefed to concern authority. A pre tested semi-structured questionnaire was given to the faculties of different departments, medical officers and interns after taking written consent. The prescription parts, label marking and names of ten pharmacology practical instruments were asked. Preparation of carminative mixture, ors, potassium permanganate, atropine ointment were also included in the questionnaire (Annexure-I). The participants also gave their opinion about the utility of the existing pharmacology practical class in undergraduate curriculum. Data were computer-coded and analyzed using statistical package SPSS 12.0.

Results

Out of 114 medical students and teachers, 94 participated in the study. Among them, 43.6%, 29.8% and 26.6% were medical teachers and officers and interns and postgraduate students. They were interrogated about different aspects of practical classes of pharmacology held during their MBBS course. The duration after passing the MBBS course were also noted. This study could obtain data from 41.5% within ten years of passing who were mainly interns, postgraduate students and some young teachers. About 33% and 25.5% have passed their MBBS course within 10-20 years and more than 20 years respectively.

The parts of prescription are recalled correctly in 22.3-11% cases in various groups (Table 1). The procedure of different pharmacological preparations is remembered in only in 5-13% cases out of which, highest recall level was in medical teachers. The difference is statistically significant. The important statistical significance is seen in label making varies from 6-21% (the maximum positive results from medical teachers especially of pharmacology). Table 2 depicts the utility of the practical classes held in pharmacology course curriculum among the different tiers of health personnel. Less than 20% of interns, PGTs commented that it is helpful in their day to day life. 23.4%, 18.1% and 14.9% enjoyed the experimental laboratory classes in their learning period of MBBS course and the difference is found to be statistically significant. It was also revealed from the study that 83% of the study population opted for a change in curriculum of the pharmacology practical course whereas 17% did not want any change.

Table 1. Recall of different parts of pharmacology practical classes among health care personnel.

Variables of pharmacology practical	Interns and PGTs (n=25)	Medical officers (n=28)	Medical teachers (n=41)	Significant test
Prescription part	21(22.3%)	11(11.7%)	21 (22.3%)	$\kappa^2=11.526$, p=0.003
ORS preparation	17 (18.1%)	7(7.4%)	21 (22.3%)	$\kappa^2=10.112$, p=0.006
Carminative mixture	5 (5.8%)	5 (5.8%)	7(8.1%)	$\kappa^2=1.249$, p=0.536
Preparation of potassium permanganate	5(5.8%)	7(8.1%)	13(15.1%)	$\kappa^2=0.364$, p=0.834
Preparation of atropine ointment	8 (8.5%)	3 (3.2%)	4 (4.3%)	$\kappa^2=6.547$, p=0.038
Label marking	6(6.4%)	6(6.4%)	21(22.3%)	$\kappa^2=8.326$, p=0.016
Name 10 instruments	15(16.0%)	10(10.6%)	7(7.4%)	$\kappa^2=12.795$, p=0.002

Table 2. Opinion of practical classes held in pharmacology during their undergraduate course among the medical personnel.

Variables of pharmacology practical	Interns and PGTs (n=25)	Medical officers (n=28)	Medical teachers (n=41)	Significant test
Help in day-to-day life	16 (17.0%)	10 (10.6%)	6 (6.4%)	$\kappa^2=16.905$, p=0.000
Enjoy experimental lab	22 (23.4%)	17 (18.1%)	14 (14.9%)	$\kappa^2=18.651$, p=0.000

Discussion

Pharmacology being both a basic and applied science forms the back bone of rational therapeutics. The primary objective of teaching pharmacology is to enable undergraduate medical students to take rational therapeutic decisions in clinical practice. However, this objective is not adequately met by the prevailing curriculum. The subject is taught with high factual information rather than therapeutic skills (Vasundhara *et al.*, 2011). This study has substantiated the view that the existing practical curriculum which have become now inadequate for preparing the medical students for clinical practice (Table 1 and 2).

A set of questionnaires was distributed to all participants (Annexure-I). The data were compiled and analyzed. The study indicated that relevance of pharmacy practical knowledge in patient care is poor (Vasundhara *et al.*, 2010). About 93% participants were unable to answer the very basics of pharmacy practical; the most probable reason behind is no use of the basics in day-to-day practice in doctors life. In this study, only 17% agreed for continuation of the same curricula of pharmacy practical in second year MBBS. According to this study findings, current practical curricula of pharmacology is obsolete and out dated and has failed to achieve the objective for which they were instituted (Heaton *et al.*, 2008). This study upholds the view that there is an imperative need to implement radical changes in the teaching curricula of practical pharmacology which should be in commence with patient care for the doctors of tomorrow to render better health service. One very important point in our study has been noted that the recall memory for different pharmacy preparations from medical officers was only 3-7%. These results reveal that there is no practical implication of present practical curricula.

Conclusion

The different suggestions for the betterment of present curricula from participants were: The skills required for the therapeutic reasoning and prescribing should be addressed and taught in a structured way. Exposure of medical students is needed in different pharmaceutical companies to teach how drugs are prepared. There is also need to include teaching of clinical pharmacology. There is need to train students about the critical evaluation of drug promotion. Teaching about pharmacoeconomics, pharmacogenomics and pharmacovigilance are useful (Jacson *et al.*, 2004).

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Annexure-I

Rationality of pharmacology practical syllabus in 2nd year MBBS course

- 1) Qualification:
- 2) Year of passing of MBBS and Designation:
- 3) Did you enjoy pharmacy lab in MBBS course: Yes/No
- 4) Did you enjoy experimental lab in MBBS course: Yes/No
- 5) Can you name the 10 instruments used in pharmacy lab: Yes/No
- 6) What are the different parts of prescription, do you remember: Yes/no
- 7) Do you remember the procedure for preparation of
 - a) Carminative mixture: Yes/No
 - b) Calamine lotion: Yes/No
 - c) Potassium permanganate lotion: Yes/No
 - d) ORS powder: Yes/No
 - e) Sulfur Ointment: Yes/No
 - f) Atropine ointment: Yes/No
- 8) Do you remember how to paste the label and dose mark in mixture: Yes/No
- 9) Does teaching of undergraduate pharmacy practical help you in your day- to-day practice in anyway: Yes/No
- 10) Can you recall any important preparation that you learnt during pharmacy lab in MBBS course which is of help to you in day to day practice: Yes/No
- 11) Do you think current pharmacy practical curriculum of MBBS needs modification: Yes/No
- 12) Teaching of clinical methods in pharmacy as an alternative to teaching of various preparations in pharmacy lab will be more relevant in present curriculum: Yes/No
- 13) Do you have any suggestions to improve the curriculum of pharmacy practical?
- 14) Do you enjoyed pharmacy lab in 2nd year: Yes/No
- 15) Do you enjoyed experimental lab in 2nd year: Yes/No
- 16) Do you remember the procedure for preparation of carminative mixture: Yes/No
- 17) Do you recall the procedure of preparation of sulfur ointment: Yes/No
- 18) Do you recall the procedure of preparation of calamine lotion : Yes/No
- 19) Do you recall the name of 10 instruments used in different preparations of pharmacy lab: Yes/No
- 20) Is any way pharmacy practical learning helps you in day to day practice: Yes/No
- 21) Is any way experimental lab learning helps you in day to day practice: Yes/No
- 22) Do you think the change in curriculum of pharmacy practical will be more beneficial to students in their day-to-day practice: Yes/No