Section: Pharmacology

Original Research Article

IMPACT OF LIVE PATIENT INTERACTION ON LEARNING OF PHASE 2 MBBS STUDENTS IN PHARMACOLOGY

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Abstract

Background: In our present medical education system Pharmacology mostly remained a theoretical subject. Students generally try to remember the drugs, their effects, interactions, and adverse reactions without understanding. Currently, pharmacology teaching is facing major challenges, one of which is that at most institutes, teaching merely comprises didactic lectures. Even the practical aspects of pharmacology don't seem to have any direct clinical correlation. Students fail to see the importance of pharmacology in clinical practice, and hence it has arguably become one of the most disliked subjects by the medical undergraduates. With the implementation of the new competency-based curriculum, we must adopt more innovative teaching and learning strategies to support students in enhancing their learning and gaining the knowledge and abilities they need. The present study tried to find the effectiveness of bedside Pharmacology or in other words live patient interaction in understanding concepts of Pharmacology. Live patient interaction could be highly effective in integrating pharmacology with clinical sciences and involving the students in their learning process. The present study was conducted to determine the opinion of phase-2 MBBS students regarding bedside pharmacological teaching. **Materials and Methods:** This is a cross-sectional, questionnaire-based study conducted in the Department of Pharmacology of Sheikh Bhikhari Medical College, Hazaribag on Phase II MBBS students. Students' perceptions were documented on a feedback form, and the data was analyzed. **Result:** 91.2% of students said they enjoyed the live patient interaction learning experience. 98% of students agreed that they had benefited from live patient interaction in understanding concepts of pharmacology. 98% of students believed that pharmacology and clinical science would be better connected through live-patient interaction. Around 91% of students agreed that live patient interaction should be introduced in other topics of Pharmacology for better understanding. **Conclusion:** Students found live patient interaction beneficial for content retention and enjoyable medical education. Long-term effects on prescription writing may occur over years of clinical exposure and internship. More studies are needed to implement this effect.

INTRODUCTION

Medical education has evolved significantly over the years, incorporating various pedagogical approaches to enhance learning outcomes. Pharmacology a fundamental discipline in medical education plays a crucial role in understanding the therapeutic use of drugs. Traditionally, pharmacology teaching relied heavily on didactic lectures and laboratory-based demonstrations. However, there is a growing recognition of the importance of incorporating real-life clinical experiences into medical education for better preparation of students for clinical practice.[1]

Live patient interaction provides an invaluable opportunity for medical students to bridge the gap between theoretical knowledge and clinical application. Interacting with patients allows students to appreciate the clinical relevance of pharmacological concepts, thereby enhancing their understanding and retention of drug-related information.[2]

While the benefits of live patient interaction in medical education are widely recognized, its specific

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impact on pharmacology learning among phase 2 MBBS students remains relatively underexplored. Therefore, conducting research in this area is essential to gain insights into the effectiveness of incorporating live patient interaction into the pharmacology curriculum during the preclinical years of medical education.[3,4]

Instead of getting theoretical knowledge, the actual application of drugs on live patients with therapeutic benefits and suspected adverse effects is supposed to provide more understanding of rational therapy. This issue is better discussed by the teacher of pharmacology to the students of phase 2. In this way, it is different from traditional clinical posting. Also, treatment and management are not emphasized in the clinical posting of second-year students, when pharmacology is taught. The present study was conducted to determine the opinion of phase-2 MBBS students regarding bedside pharmacological teaching.

MATERIALS AND METHODS

Study design and setting: This was a cross-sectional study conducted in the Department of Pharmacology of Sheikh Bhikhari Medical College, Hazaribagh.

Study duration: The study was conducted from March 2024 to June 2024.

Study participants: Phase 2 students of Sheikh Bhikhari Medical College, Hazaribagh.

Inclusion criteria

MBBS phase-2 students who agreed to participate in this study were included.

Exclusion criteria

Phase-2 students not willing to participate in the study.

Study procedure: Traditionally, during clinical posting history taking and clinical examination are of prime concern. But in this study, we have engaged the teacher of pharmacology to discuss the therapeutic application of drugs on actual (real) patients with the students during their clinical postings in Medicine, Surgery, Obst. And Gynae departments. The consent was taken from respective departments also.

Students were engaged in face-to-face interactions with patients in these departments. Under the direction of faculty members of pharmacology, each real-patient interaction lasted around 30 minutes and involved a student-patient discussion concerning the pharmacological basis of therapy.

We discussed the following topics with students during patient interaction:

1. Selection of drug for a presenting disease
2. Therapeutic response which may also have individual variation
3. Any adverse drug reaction

Students were free to ask the teacher/ patient any further questions related to the application of the drug. For every patient provisional diagnosis and treatment strategy were discussed. Every patient session concluded with an open forum for any further queries.

The following drugs in different departments were discussed with their dosages, route of administration, indications and adverse effects.

Obst. & Gyane Department: Labetalol for hypertension, metformin and glibenclamide for Gestational diabetes, Thyroxin for hypothyroidism, ursodeoxycholic acid for cholestasis, Iron folic acid for anaemia.

Surgery Department: Glycopyrrolate as a pre-anaesthetic medication, ceftriaxone as a prophylactic antibiotic, Betadine for wound dressing, and xylocaine as a local anaesthetic.

Medicine Department: Atropine sulfate during poisoning, Insulin in Type I Diabetes, Normal saline as fluid therapy, oxygen, and ceftriaxone as an antibiotic, salbutamol by nebulizer.

Perception of students regarding live patient interaction was collected by online survey. Questionnaires were validated by senior faculty members and distributed via email and WhatsApp. Survey responses on the five-point Likert Scale were re-classified and dichotomized to "agree" for the responses "agree" and "strongly agree" and to "disagree" for the responses "neutral", "disagree", and "strongly disagree". Statistical analysis was done by using SPSS software in the form of mean, average and percentage.

Ethical clearance: Ethical approval has been taken from the Institutional Ethics Committee vide memo no IEC/15/2024 dated 06/03/2024.

RESULTS

A total of 90 students of MBBS Phase II voluntarily participated in the study and 46 students responded to the online questionnaire. 58.7% of the participants were female while 41.3% were male. 52.2% of participants strongly agreed, and 39.1% agree that they enjoyed the learning experience in real life, while 8.7% were neutral. 47.8% strongly agree and 43.5% agree that their interest in pharmacology has been aroused by interaction with patients. 60.9% accepted that understanding of the pharmacology concept helped by the live patient interaction. 52.2% strongly agree, and 45.7% agree that live-patient interaction will be helpful in connecting pharmacology with clinical science. They also accepted that live patient interaction is helpful in the motivation of students towards self-directed learning.

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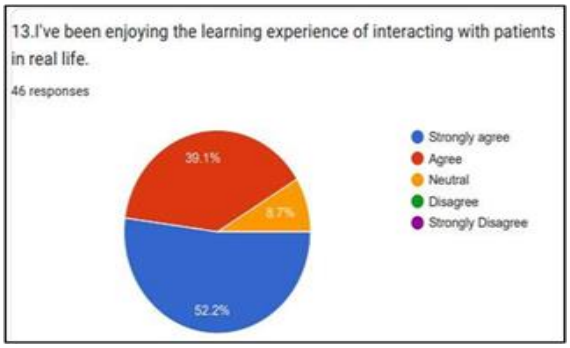
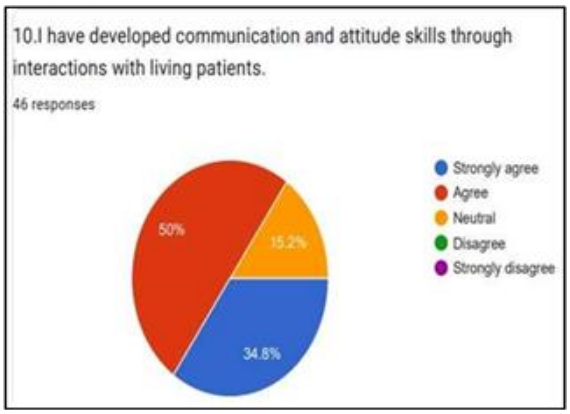
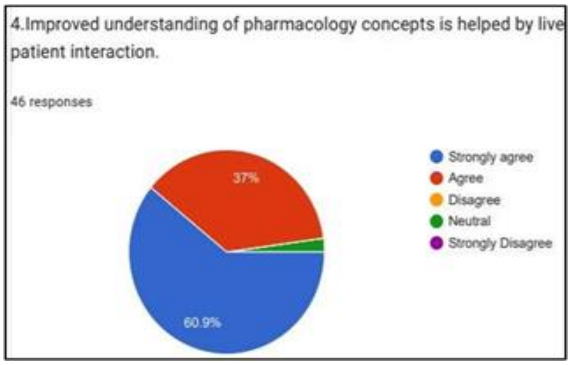


58.7% strongly agreed whereas 37% agreed that live patient interaction helped in exchange of view. 47.8% strongly agreed and 45.7% agreed that live patient interaction enhances faculty and student interaction. 50% strongly agreed and 34.8% agreed that live patient interaction develops communication skills and attitude towards the patient. Live patient interaction is also helpful in teaching other topics of pharmacology 54.3% strongly agreed and 37% agreed because it creates interest among the students towards pharmacology.





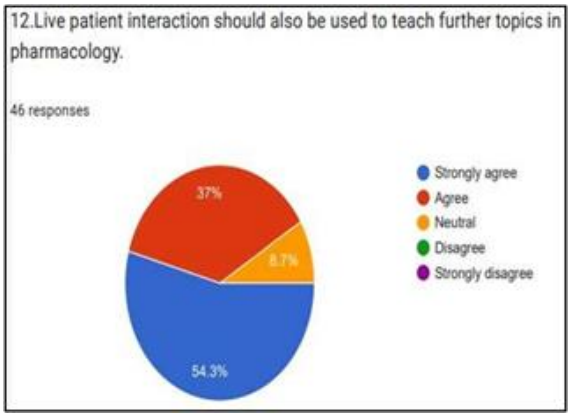


Table 1: Feedback questionnaire to know the student's perceptions regarding live patient interaction.

Question	Strongly agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)
Better understanding concept of Pharmacology	60	37	3	Nil	Nil
Increase my interest	48	43	9	Nil	Nil
Helped correlate pharmacology with Clinical sciences	52	46	2	Nil	Nil
Enhanced self-directed learning	43	42	15	Nil	Nil
Facilitated active discussion	37	59	5	Nil	Nil
Improved interaction between faculty and students.	48	46	6	Nil	Nil

DISCUSSION

In Indian medical education, Pharmacology always remained a theoretical subject. Students mostly try to remember the drugs, their effects, interactions, and adverse reactions without understanding. Currently, pharmacology teaching is facing major challenges, one of which is the fact that at most institutes, teaching merely comprises didactic lectures. Even the practical's in pharmacology don't seems to have any direct clinical correlation. The main aim of pharmacology is to train students in rational therapeutics, but the orthodox way of teaching is able to achieve this goal is quite debatable. Live patient interaction is a new concept in pharmacology which tries to teach various drugs and their effect on real patients. The idea of the present study is to use actual patient (case-based learning) instead of fabricated problems.

Interactive patient is a useful teaching tool in medical education that has been extensively studied and should be included in the medical curriculum.4,5 The traditional teaching method is improvised by problem-based learning. Live patient interaction is a student-centred teaching method that acts as a stimulus and creates self-directed learning environments for the students to explore more and enhance their performance and analytical skills. The

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major stakeholders are the students, whose opinions matter the most.[6,7]

From our study, we found that 91.3% of students enjoyed the experience of live patient interaction. Similarly, Littman E R et al6 in their study observed that 90% of participants enjoyed the experience of live patient interaction. Jha V et al in a systematic review of patient involvement in teaching showed effectiveness in terms of increased learner satisfaction and improved communication skills among healthcare professionals.[8] Similarly in our study 50% strongly agree and 34.8% agree that live patient interaction helps in developing communication and attitude skills. Faculty training and sensitization are essential if we want to incorporate some of the more recent approaches into our teaching and learning processes.

Limitations

Our study had some limitations because there weren't as many faculty members available to support live patient interaction. Improved student-teacher interaction would have resulted from increased staff involvement. Also, some students were reluctant to participate in this study because it was not assessed in university exams. In the short duration of this study, we were not able to assess the actual knowledge gained by the students but we will assess the impact of live patient interaction in understanding the concept of Pharmacology in the long run.

CONCLUSION

As a whole, students felt that the live patient interaction helped in content retention, making the subject enjoyable, and even with the small number of cases, they were a suitable supplement to their medical education. Live patient contact during pharmacology study has long-term effects, which may occur over the following years of clinical exposure and internship, is necessary to determine whether this knowledge results in better prescription writing. So, it is recommended from this study that bedside teaching or live patient interaction should be introduced in our curriculum for a better understanding of the subject along with integrating pharmacology with clinical sciences.

However, more studies are necessary to optimize the effect of live-patient interaction on pharmacology studies.

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