

Student's perceptions and feedback about teaching-learning pharmacology in Nepalgunj medical college of Chisapani, Nepal

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ABSTRACT

Background: Pharmacology, being both basic and applied science, forms the backbone of rational therapeutics in medical field. Understanding of current perceptions and opinions of medical students is important for the betterment of teaching-learning methodologies in pharmacology subject. This study done with the objective to determine the perception and feedback of teaching learning pharmacology.

Methods: Descriptive cross sectional questionnaire based study was conducted in Nepalgunj Medical College Chisapani, Banke Nepal, among second year MBBS students in September 2017. A questionnaire distributed in class and then collected. Data was analysed using the Statistical Package for Social Sciences (SPSS).

Results: Total 119 students, 78 male and 41 females participated in this study. The percentage average of agreed responses for 15 questions (58.92 ± 19.53) was significant ($p < 0.05$) when compared with the percentage average of the disagreed (5.42 ± 5.17). Seventy three (61.3%) students agreed that pharmacology is a favourite subject but the preferences for pharmacology as a subject in post-graduation was low (18.5%). High proportion of students wanted the faculty members to make more use of Audio-Visual aids 93.3%, case based learning 96.6%, more clinical pharmacology, 97.5%, group discussions, 88.2%, integration to clinical sciences 92.4% and 82.4% prefer MCQs to be introduced in the curriculum for effective learning.

Conclusions: Introduction of integrated teaching, MCQs, case based, and group based discussion with clinical pharmacology and audio-visual aids was favoured by majority of the students. Regular reviewing perception and feedback of the students help teachers to plan the curriculum and improve the teaching methodologies.

Keywords: Feedback, Pharmacology, Perception, Student, Teaching-learning

INTRODUCTION

Pharmacology is a crucial subject for medical students who are going to be future medical practitioners, specialists and superspecialists in various discipline. It is therefore important that medical students appreciate pharmacological principles and are able to correlate and apply them in the practice of medicine.¹ Understanding current scenario of medical undergraduates regarding teaching as well as learning pharmacology and understanding its vital role in academics, clinics and

research may greatly help in improving the teaching of this discipline.² Student feedback has been considered to be an effective methodology for modification of undergraduate curriculum and making pharmacology more interesting and practicable.³ It is generally agreed that reviewing the teaching program at regular intervals and modifications in the methodologies of imparting basic knowledge about drugs and drug therapies is a must.⁴ Students' feedback would probably reveal whether the so called reforms are acceptable to them and their opinion for the betterment of teaching learning pharmacology subject.⁵

Several studies on students' perceptions regarding learning of pharmacology documented students' improvements in performance through improved teaching and learning processes.⁶ Understanding current perceptions held by future medical practitioners regarding pharmacology and its role in both research and clinical practice may be helpful for improving teaching on this subject and introducing appropriate changes into the curricula as and where necessary.⁷ In order to assess the strength of the pharmacology curriculum and students' learning experience in this setting, collection of the students' feedback was done so that necessary reforms can be implemented for the betterment of teaching-learning pharmacology.² In Nepal, limited study had been done on the medical student's perception and feedback on teaching learning of pharmacology and therapeutics however pharmacology is taught in first two years of MBBS course. So, this study was conducted to determine the perception and feedback of teaching learning pharmacology in second year MBBS student of Nepalgunj Medical College, Chisapani, Nepal.

METHODS

The descriptive cross sectional questionnaire based study was conducted at Nepalgunj Medical College, Chisapani, Banke Nepal, among second year MBBS students of Batch 2016 in September 2017. Questionnaire was designed based on the literature review in this field.^{4,5,8} With modification including demographic data of students and distributed to students after short briefing about the aims and objectives of this study and all students present in the class at the time of distribution were included in the study after informed consent. Thirty minute time was given for answering the questionnaire, and then the questionnaires were collected.

Inclusion criteria

- All male and female students of second year MBBS who present in the class at the time of distribution of questionnaire.
- Students who completed the questionnaire after informed consent.

Exclusion criteria

- Participant who do not completed the questionnaire.
- Students who did not give informed consent.

Total 119 data were collected and analysed using the Statistical Package for Social Sciences (SPSS) and p value <0.05 was considered as statistically significant.

RESULTS

Demographic variables of the participants

Total 119 students participated in this study. Among them 65.5% were male and 34.5% female. The mean age±SD of

the student was 20.4±1.05. Majority of them were Nepalese 64.7% followed by Indian 35.3% (Table 1).

Table 1: Demographic variables of the participants (n=119).

	Minimum	Maximum	Mean±SD
Age	18	23	20.4±1.05
Sex	Frequency	Percentages	
Male	78	65.5	
Female	41	34.5	
Nationality			
Nepalese	77	64.7	
Indian	42	35.3	

Perceptions and opinion towards teaching and learning pharmacology by students

Seventy three (61.3%) agreed that pharmacology is their favourite subject and 42 (35.3%) were neutral, however, only students 22 (18.5%) considered pharmacology for post-graduation whereas 72 (60.5%) were neutral. The majority of the students 101 (84.9%) agreed that pharmacology has created a knowledge base that will help them with the rational choice of drugs during future practice. Sixty-eight students (57.1%) mentioned that pharmacology lectures are interesting and stimulating, Highest 92.4% students agreed that pharmacology is more closely integrated with the clinical sciences, and real cases from hospitals should be used during stimulated learning problems and 61.3% agreed pharmacology helps in developing their skills in problem-solving and logical-reasoning. About 50% were neutral on the topic that the teaching of pharmacology should focus strongly on the health problems of Nepal, whereas 42% agreed and 8.4% disagreed. Regarding the need for practical sessions on rationality of prescription and evaluation of drug advertisements and modules of pharmacology during their clinical years agreed by 63.95 and 65.5% respectively. Nearly 50% agreed that the assessment system is fair whereas 42.9% were neutral and more than half, 52.9% agreed with transparency of assessment. Majority of student agreed that MCQs should be included in the assessment 82.4% and 71.4% agreed that practical sessions as well as the objectively structured practical examination (OSPE) and problem stimulated learning (PSL) more than didactic lectures and 64 (53.8%) agreed that pharmacology education had given them capacity for self-directed learning Less than half 49 (41.2%) agreed with that the assessment focuses on the ability to acquire facts rather than the development of problem solving skills whereas more than half 57.1% maintained neutrality (Table 2).

Ideal teaching learning methods in pharmacology at NGMC

Majority of student 79% agreed combination of LCD projector and blackboard followed by LCD projector

(12.6%) as ideal teaching-learning media for pharmacology. Group discussions favored by 45.4%, followed by tutorials, 16.5% and demonstration, 13.4%. The most difficult system to understand was

antimicrobials (52.1%) followed by central and autonomic nervous system, (13.4%) each (Table 3).

Table 2: Perceptions and opinion towards pharmacology teaching and learning by students (n=119).

Statements	Disagree	Neutral	Agree
Pharmacology is my favorite subject in the basic sciences.	4(3.4%)	42(35.3%)	73 (61.3%)
The subject has created the knowledge base which will help me in choosing drugs rationally in my future practice.	1(0.8%)	17(14.3%)	101(84.9%)
I find pharmacology lecturers interesting and stimulating	4(3.4%)	47(39.9%)	68(57.1%)
I would like Pharmacology to be more closely integrated with the clinical sciences and would like real cases in hospital to be used during problems stimulated learning (PSL)	2(1.6%)	7(6%)	110(92.4%)
The subject has helped me to develop my problem-solving and logical-reasoning skills.	7(5.9%)	39(32.8%)	73(61.3%)
I would like the subject to be focus more strongly on the health problems of Nepal.	10(8.4%)	59(49.6%)	50(42.0%)
I would like practical session on rationality of prescription and evaluation of drug advertisements	9(7.6%)	34(28.6%)	76(63.9%)
I would like to welcome modules on Pharmacology and therapeutics during the clinical years of my training.	1(0.8%)	40(33.6%)	78(65.5%)
The assessment system in Pharmacology is fair.	9(7.6%)	51(42.9%)	59(49.6%)
The assessment process is transparent.	10(8.4%)	63(52.9%)	46(38.7%)
I would like MCQs to be included in the assessment.	3(2.5%)	18(15.1%)	98(82.4%)
The assessment concentrates on ability to acquire facts rather than on the development of problem-solving skills.	2(1.7%)	68(57.1%)	49(41.2%)
The Pharmacology teaching has inculcated in me a capacity for self-directed learning.	8(6.7%)	47(39.5%)	64(53.8%)
I will consider Pharmacology as one of my subject for post-graduation	25(21%)	72(60.5%)	22(18.5%)
There should be more emphasis on objective structured practical examination (OSPE) and PSL, rather than didactic lectures	2(1.6%)	32(27%)	85(71.4%)

Table 3: Teaching-learning methods in pharmacology at NGMC (n=119).

The ideal Teaching learning method for learning	Frequency	%
Didactic lecture	15	12.6
Tutorial	19	16.0
Group discussion	54	45.4
Seminar	15	12.6
Demonstration	16	13.4
The ideal teaching learning media for learning		
LCD projector	15	12.6
Blackboard	10	8.4
LCD projector+ Blackboard	94	79.0
The most difficult system to understand from		
Autonomic nervous system	16	13.4
General pharmacology	10	8.4
Cardiovascular system	13	10.9
Endocrine	14	11.8
Antimicrobials	62	52.1
Drugs acting on gastrointestinal system	4	3.4
Drug acting on CNS	16	13.4

Student's opinion about changes recommended in teaching pharmacology at NGMC

Most of the student neither want to increase number of lectures (57.1%) nor wants to decrease the number of lectures (76.5%). High proportion of students wanted the faculty members to make more use of Audio-Visual aids (93.3%) case based learning, 96.6%, clinical pharmacology, 97.5% and group discussions, 88.2% to be introduced in the curriculum for effective learning (Table 4).

DISCUSSION

Student feedback has been considered to be an effective methodology for modification of undergraduate curriculum and making pharmacology more interesting and practicable. Student feedback is thus considered an invaluable tool for improving students performances when suggestions obtained from students are implemented.⁹ In general, the majority of students who participated in this research expressed a positive perception of the teaching

and learning of pharmacology. The percentage average of agreed responses for fifteen questions (58.92 ± 19.53) was significant ($p < 0.05$) when compared with the percentage average of the disagreed (5.42 ± 5.17).

Table 4: Students' opinion about changes recommended in teaching pharmacology at NGMC (n=119).

Statements	Yes	No
Increase the number of lectures	51(42.9%)	68(57.1%)
Make more use of audio-visual aids	111(93.3%)	8(6.7%)
Introduce student seminars	101(84.9%)	18(15.1%)
Introduce Case Based Learning (CBL)	115(96.6%)	4(3.4%)
Introduce more clinical pharmacology	116(97.5%)	3(2.5%)
Decrease the number of lectures	28(23.5%)	91(76.5%)
Introduce group discussions	105(88.2%)	14(11.8%)

In this study, Seventy three (61.3%) students agreed that pharmacology is a favourite subject but the preferences for pharmacology as a subject in post-graduation was low 18.5%, which is similar with the study done by Mahfoudh A.M. et al.⁷ It is probably due to inadequate knowledge about this subject matter which is vital for booming careers in the clinical research and pharmaceutical industries and due to student's interests are biased toward clinical sciences rather than fundamental sciences with prospective earning far better than pharmacology careers.^{10,11}

In our study, Majority of the students 82.4% prefer MCQs in the assessment, this is similar to finding by Jai Krishna et al 61.4%, Mahfoudh AM et al, 58.6% and by Manjunath SM et al, 79.68%.^{4,5,7} The reason might be due to MCQs are one of the major way of examination in different competitions like post-graduation selection, medical licensing examination, even though in passing university examination and also due to student somewhere uncomfortable facing long and short essay type questions, would prefer MCQs in their examinations.

In present study 96.3% students wanted to case base learning to be introduced in the curriculum which is similar with the study done of Manjunath SM et al, 98% and Jai Krishna et al, 73%.^{4,5} High percentage (97.5%) wanted to be introduced more clinical pharmacology. Similarly, (92.4%) students agreed with pharmacology is more closely integrated with the clinical sciences and real cases from hospitals should be used during stimulated learning problems supported by studies from authors, 64.94%, 62% and 89.6%.^{4,5,7} Sixty five percent of students agreed for more integration of pharmacology during the clinical years was supported by the study of Manjunath SM et al, 73.43% and Rani V et al, which is believed to provide students with

the opportunity to become acquainted with various diseases for this reason.^{4,12} That's why many medical schools have integrated pharmacology during clinical years and acquiring knowledge about drugs is essential for medical student to take the responsibilities for preventive, curative aspect of any clinical conditions in future.¹³

Majority of students 93.3% wanted the more use of Audio-Visual aids for effective learning. Regarding, ideal teaching-learning media for pharmacology, it was the combination of LCD projector and blackboard (79%) followed by LCD projector (12.6%), was supported by the study of Manjunath SM et al, which was 81.25% and 18.75% respectively.⁴ students need of more clinical orientation to the Pharmacology teaching at undergraduate level to make the subject more understandable and interesting with modern advancing technology of teaching learning. About 88.2% students in our study and 82% student by Manjunath SM et al, were recommend of introducing group discussions as a teaching-learning method in pharmacology, as it impart knowledge among faculties and student with easy feedback and discussion.⁴

CONCLUSION

The study determined that in general, the perceptions of the majority of participants regarding teaching-learning pharmacology were positive. Introduction of integrated teaching, case based, and group based discussion with clinical pharmacology was favoured by majority of the students. Regular reviewing perception and feedback of the students regarding learning pharmacology help teachers to plan the curriculum and improve the teaching methodologies for undergraduate students.

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