Perceptions about learning Pharmacology and Therapeutics among 3rd professional year M.B.B.S. students of a teaching hospital in Visakhapatnam.

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Abstract: *Introduction: Pharmacology, like any other branch of medicine, is progressing by leaps and bounds. Therefore, reforms in undergraduate teaching are the need of the hour. 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 in medical education. In view of this, the present study was conducted to determine the perception and feedback of teaching/learning Pharmacology using a pre validated questionnaire among 3nd M.B.B.S. (Sixth Semester) professional year students by Department of Pharmacology at Andhra Medical College, Visakhapatnam.Aim:.To understand the perceptions and to evaluate the items of core knowledge, items of core skills and items of integration skills among 3rd professional year M.B.B.S. students in learning pharmacology and therapeutics.Methods: This was a cross-sectional study done using a pre validated Questionnaire. The study was in the Department of Pharmacology at Andhra Medical College, Visakhapatnam. A questionnaire containing 15 questions were given to each student and they were asked to marksingle best suitable option. Totally 170 students participated in the study . The questionnaire was based on previous studiesundertaken on the evaluation of perception and feedback of teaching/learning in pharmacology and it was suitably modified for our sixth semester medical students. The completed questionnaire was collected and data was analyzed. All thequestionnaires were manually checked for the completeness and then coded for entry in Microsoft Excel sheet.Results:16 questionnaire's were incomplete and therefore 156 questionnaire's were Analyzed using Statistical Package for Social Sciences (SPSS), Version 20.0.Conclusion:. The traditional methods of teaching pharmacology needs to be changed because of the ban on animal experimentation and the gaining importance of Translational Pharmacology. The teaching learning methods should include computer assisted laboratory(CAL) for comprehending experimental pharmacology and problem based learning, and bed side teaching for comprehending therapeutics. Moreover active involvement of students in Pharmacovigilance is also recommended. The limitation of the study is the sample size. Keywords: Questionnaires,Awareness, health-care providers.*

I. Introduction

Pharmacology is a standout amongst the most imperative subjects in therapeutic educational programs, which is regularly extending. Subsequently different educating learning strategies are utilized around the world. Everything has its own points of interest and impediments. Generally, the instructing of pharmacology in medicinal schools pursues an order based and address based methodology with a substantial accentuation on obtaining genuine information concerning drugs.

Pharmacology, like any other branch of medicine, is advancing significantly. Along these lines, changes in undergraduate teaching is of great importance. It is commonly concurred that auditing the showing program at ordinary interims and alterations in the strategies of bestowing fundamental information about medications and medication treatments is an absolute necessity in therapeutic training.

Teaching and learning in pharmacology is in a phase of renewal, being driven by different weights like weight from inside the trainee themselves, from expert bodies, just because of changes in instructing style. Pharmacology subject though crucial for physicians, is seen as dry and volatile by medical undergraduates. Because of substance overload, undergraduates frequently think that its hard to recollect and review the pharmacological terms, concepts and drug names in the subject.

Undergraduates input would most likely uncover whether the supposed up gradation of medicinal instructive educational programs is enabling them with the learning and coordination abilities required for

prepping them into therapeutic professionals. The present examination was in this manner intended to decide the feeling of undergraduates, with regard to the skills acquired in core knowledge, and application or integration of the subject in future practice.

Questionnaires offer a target methods for gathering data about individual's knowledge, beliefs, attitudes and behaviour[1,2]. Howiit D and Cramer D[3] stated that Questionnaires should be validated, reliable and should be standardized. A standardized questionnaire is one that is composed and regulated, so all members are asked the definitely answer same questions in an identical manner and answers recorded in a uniform way[4].

The revised educational programs puts a strong emphasis on self-coordinated learning. Understanding current view of the MBBS undergraduates with respect to pharmacology and its application both in research and clinical practice might be useful for improving teaching modules of this subject and bringing fitting changes into the educational module where and when essential.

In view of this, the present study was conducted to determine the perception and feedback of teaching/learning Pharmacology using a pre validated questionnaire among 3nd M.B.B.S. (Sixth Semester) professional year students by Department of Pharmacology at Andhra Medical College, Visakhapatnam

II. Aims And Objectives
To understand the Perceptions about learning Pharmacology and Therapeutics among 3rd professional year M.B.B.S. students.
1)To evaluate the Items of core knowledge among 3rd professional year M.B.B.S. students in learning pharmacology and therapeutics.
2) To evaluate the Items of core skills among3rd professional year M.B.B.S. students in learning pharmacology and therapeutics.
3) To evaluate the Items of integration skills among 3rd professional year M.B.B.S. students in learning pharmacology and therapeutics.

III. Materials And Methods
Inclusion Criteria:
1) MBBS students of both gender in the 3rd Professional year enrolled for the study.
2) Those students who are willing to give a valid informed consent.
Exclusion Criteria:
1) MBBS students in the 3rd professional year who have not cleared the subject of pharmacology.
2) Those students who are not interested to participate in the study.

This was a cross-sectional study done using a pre validated Questionnaire. The study was conducted over one month that is from January 2019 to February 2019.The study was carried out by the Department of Pharmacology at Andhra Medical College, Visakhapatnam. Prior permission was obtained from the Institutional Ethics Committee. A questionnaire containing 15 questions were given to each student and they were asked to marksingle best suitable option.Totally 170 students participated in the study .Students were instructed not to reveal their identity in the questionnaire. Thirty minutes was the time allotted for answering the questionnaire? The questionnaire was based on previous studiesundertaken on the evaluation of perception and feedback of teaching/learning in pharmacology and it was suitably modified for our sixth semester medical students.

Statistical analysis: The completed questionnaire was collected and data was analysed. All the questionnaires were manually checked for the completeness and then coded for entry in Microsoft Excel sheet. 16 questionnaires were incomplete and therefore 156 questionnaires were Analysed using Statistical Package for Social Sciences (SPSS), Version 20.0.

IV. Results
Students involved in the study were students from Andhra Medical College in Visakhapatnam.The age group of the sample is 19-22 years with mean age of 20.5 ±1.1(SD). Number of Females and Males in the study population is 128(82%) and 28(18%) respectively. (Table 1).

TABLE 1: Socio-demographic characteristics of the study participants [n 156]

VARIABLES	CATEGORIZE	FREQUENCY	PERCENTAGE (%)
Gender	Male	28	18
	Female	128	82
Profession of Father	Medical	17	11.3
	Non-medical	133	88.7
Profession of Mother	Medical	7	4.7
	Non-medical	143	95.3

Fifty one students (33%) agreed that after completing the subject of Pharmacology were able to describe the pharmacokinetics and pharmacodynamics of essential and commonly used drugs, whereas 32(21%) disagreed and 73 (47%) responded neutrally. The majority of students 75(48%) agreed that they were able to list the indications, contraindications, interactions and adverse reactions of commonly used drugs, while 24(15%) disagreed and 57(37%) maintained neutrality. Sixty eight students (44%) expressed neutrality over their knowledge on the use of appropriate drug in a particular disease with consideration to its cost, efficacy and safety for individual needs, however, 47(30%) students agreed and 26(41%) students responded oppositely respectively. More than half of the students 65(42%) expressed neutrality in their opinion about the use of appropriate drug in a particular disease with consideration to its cost, efficacy and safety for mass therapy under national health programmes, while 40 (26%) disagreed and 51(33%) agreed respectively. Seventy two (46%) students expressed neutrality to the knowledge acquired on the pharmacokinetic basis, clinical presentation, diagnosis and management of common poisonings, while 54(35%) students and 30(19%) students agreed and disagreed respectively.(Table 2).

TABLE 2: Perceptions about acquiring core knowledge in Pharmacology and Therapeutics in AMC[n=156]

S.No	Questionnaire	Agree	Disagree	Neutral
1.	Describe the pharmacokinetics and pharmacodynamics of essential and commonly used drugs.	51(33%)	32(21%)	73(47%)
2.	List the Indications, contraindications, interactions and adverse reactions of commonly used drugs	75(48%)	24(15%)	57(37%)
3.	Indicate the use of appropriate drug in a particular disease with consideration to its cost, efficacy and safety for Individual needs.	47(30%)	41(26%)	68(44%)
4.	Indicate the use of appropriate drug in a particular disease with consideration to its cost, efficacy and safety for Mass therapy under national health programs.	51(33%)	40(26%)	65(42%)
5.	Describe the pharmacokinetic basis, clinical presentation, diagnosis and management of common poisonings	54(35%)	30(19%)	72(46%)
6.	List the drugs of addition and recommend the management	34(22%)	57(37%)	65(42%)
7.	Indicate causations in prescription of drugs in special medical situations such as pregnancy, lactation, infancy and old age	75(48%)	30(19%)	51(33%)
8.	Integrate the concept of rational drug therapy in clinical pharmacology	28(18%)	46(29%)	82(53%)
9.	State the principles underlying the concept of Essential Drugs	17(45%)	36(23%)	50(32%)
10.	Evaluate the ethics and modalities involved in the development and introduction of new drugs	51(33%)	41(26%)	64(41%)

Sixty five (42%) students were neutral on their capability of listing the drugs of addition and recommending the management , while 34(22%) students agreed and 57(37%) students reported oppositely. The majority of students 75(48%) agreed that pharmacology has created a knowledge base that will help them indicate causations in prescription of drugs in special medical situations such as pregnancy, lactation, infancy and old age, while 30(19%) disagreed and 51(33%) maintained neutrality. Twenty eight (18%) agreed that pharmacology education had given them the capacity for integrating the concept of rational drug therapy in clinical pharmacology, 46(29%) of the students reported oppositely, and 82(53%) maintained a neutral response. More than half of the students 70(45%) agreed that pharmacology has created a knowledge base that will help them state the principles underlying the concept of essential drugs , while 36(23%) disagreed and 50(32%) maintained neutrality. Fifty one (33%) students agreed that the subject of pharmacology inculcated the capability to evaluate the ethics and modalities involved in the development and introduction of new drugs, whereas 41 (26%) disagreed and 64(41%) expressed neutrality. (Table 2)

The majority of students 111(71%) agreed that pharmacology created a knowledge base in prescribing drugs for common ailments, while 7(4%) students disagreed and 38(24%) maintained neutrality. More than half of the students 80(51%) agreed that knowledge of pharmacology helped them to recognize adverse reactions and interactions of commonly used drugs, while 26 (17%) students reported oppositely, and 50(32%) maintained a neutral response. Less than half of the students 21(13%) agreed that pharmacology has created a knowledge base to observe experiments designed for study of effects of drugs, bioassay and interpretation of the experimental data, other students 66(42%) maintained neutral while majority of respondents 69(44%) disagreed. Twenty three (15%) students agreed that pharmacology has helped them scan information on

common pharmaceutical preparations and critically evaluate drug formulations, while 65(42%) students disagreed and 68(44%) maintained neutrally. (Table-3).

TABLE 3: Perceptions about acquiring core knowledge in Pharmacology and Therapeutics in AMC[n=156]

S.No	Questionnaire	Agree	Disagree	Neutral
1.	Prescribe drugs for common ailments	111(71%)	7(4%)	38(24%)
2.	Recognize adverse reactions and interactions of commonly used drugs	80(51%)	26(17%)	50(32%)
3.	Observe experiments designed for study of effects of drugs, bioassay and interpretation of the experimental data	21(13%)	69(44%)	66(42%)
4.	Scan information on common pharmaceutical preparations and critically evaluate drug formulations	23(15%)	65(42%)	68(44%)

The majority of students 121(78%) agreed that practical knowledge of use of drugs in clinical practice will be acquired through integrated teaching with clinical departments and pre-clinical departments, while 17(11%) students reported oppositely and 18(12%) maintained neutrality (Table-4).

Table 4: Perceptions about acquiring integration skills in Pharmacology and Therapeutics in AMC (n=156)

S.No	Questionnaire	Agree	Disagree	Neutral
1.	Practical knowledge of use of drugs in clinical practice will be acquired through integrated teaching with clinical departments and pre-clinical departments.	**121(77%)**	**17(11%)**	**18(12%)**

V. Discussion

Pharmacology, like any other branch of medicine, is progressing by leaps and bounds. Consequently, reforms in undergraduate teachingare the need of the hour. 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[5]. In view of this, the present study was conducted to determine the perception and feedback of teaching/learning pharmacology using a pre-validated questionnaire among 3rd professional year M.B.B.S. students of a teaching hospital in Visakhapatnam.

Majority of the students were of the opinion that the present curriculum on experimental pharmacology i.e. experiments designed for study of effect of drugs , bioassay has not created a knowledge base to comprehend research and drug development. (Animal experiments) More than half of the students expressed neutrality in their opinion about the use of appropriate drug in a particular disease with consideration to its cost, efficacy and safety for mass therapy under national health programmes. (Pharmacoeconomics) The integration of the concept of rationaldrug therapy in clinical pharmacology is achieved by only a minor percent of students. Majority agreed that they were able to pick adverse drug reactions (Pharmacovigilance comprehension in medical undergraduates) concept of essential drugs is well understood ….. Prescribing drugs for common ailments was also accomplished by majority of the students. The curriculum needs to be revised based on the current perceptions of the MBBS students regarding pharmacology and therapeutics.
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VI. Conclusion

The traditional methods of teaching experimental pharmacology needs to be changed because of the ban on animal experimentation and the gaining importance of Translational Pharmacology. The teaching learning methods should include computer assisted laboratory(CAL) for comprehending experimental pharmacology and problem based learning, and bed side teaching for comprehending therapeutics. Moreover active involvement of students in Pharmacovigilance is also recommended. The limitation of the study is the sample size.

References

[1]. Bandopadhyay, DR Debasis. A study on the evaluation of perception of teachinglearning methods of pharmacology among the 2nd M.B.B.S. students in Burdwan medical college. Reviews of progress, 2013; 1(12): 1-11.
[2]. Sekhri K. Teaching methodologies in pharmacology: a survey of students'perceptions and experiences. J EducEthics Dent., 2012; 2(1): 40.
[3]. Bhosale UA, Yegnanarayan R, Yadav GE. Attitude, perception and feedback of second year medical students on teaching learning methodology and evaluation methods in pharmacology: a questionnaire based study. Niger Med J., 2013; 54: 33.
[4]. Garg A, Rataboli PV, Muchandi K. Students opinion on the prevailing methods of teaching methods in pharmacology and changes recommended. Indian J Pharmacol., 2004; 36(3): 155-58.
[5]. Jalgaonkar SV, Sarkate PV, Tripathi RK. Students' perception about small group teaching techniques: role play method and case based learning in pharmacology. Education in Medicine Journal, 2012; 4(2): 13-18.