

# Psychopharmacology teaching and learning methodology: Medical students feedback from a private medical school of Nepal

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## Background:

Psychotropic drugs that are taught in Pharmacology under the curriculum of Kathmandu university in fourth semester compromise of antipsychotics, antidepressants, antimanic and antianxiety medications. Medical student find it quiet difficult in the conceptualization. The main objective of the study was to research about the student's feedback about the teaching and learning methodology of Psychopharmacology with an aim to improve medical education of Pharmacology in future.

## Methods:

This observational questionnaire based cross sectional study was done at Manipal College of Medical Sciences, Nepal. Questionnaire validation tests showed that the Alpha Cronbach was 0.72.

## Results:

Out of 132 students 127 students filled the questionnaire properly with an overall response rate of 96.21%. 81.9% of the students replied that Psychopharmacology teaching and learning activity is an important lesson for MBBS curriculum. Antipsychotics were the most interesting part. 71.7% of the students found difficulty to understand the mechanism of action of antidepressants. It was found that Male student [OR 1.773 95% CI (0.712, 4.411)] Psychopharmacology is an important lesson for MBBS Curriculum as compared to females. Male students found it difficult to remember the generic names of anti manic drugs [OR 33.75 95% CI (4.023, 283.168)], antipsychotics [OR 19.091 95% CI (3.733, 7.627)] and [OR 8.017 95% CI (1.685, 38.148)] as compared to females.

## Conclusion:

Psychopharmacology teaching and learning methodology is an important aspect of Pharmacology. Antidepressants are the difficult most part. Thus with proper intervention and improvement in the teaching and learning methodology this problem can be solved in future.

**Keywords:** Drug, Students feedback, Nepal, Psychiatry, Psychopharmacology

## Background

In Nepal MBBS course is an integrated teaching for four and half years [1-3]. In the First and second MBBS curriculum under Kathmandu university seven subjects like Anatomy, Physiology, Biochemistry, Community Medicine. Pathology, Microbiology and Pharmacology are taught but Community Medicine is continued upto 7th semester. At fifth semester Medicine, Surgery, OBG and Paediatrics are introduced and continued up to ninth semester. ENT, Ophthalmology and Forensic Medicine are introduced in the 6th semester and are continued up to 7th semester [4]. Majority of the people in Nepal thinks that mental illness as a moral weakness caused by supernatural forces like bhoot (ghost), boksi (witches), mohani (black magic), paap (sins of previous life). The traditional way of managing mental illness is to seek the assistance of traditional faith healers like Dhama and Jhankri. These causes delay in seeking treatment [5].

Psychotropic drugs that are taught in Pharmacology under the curriculum of Kathmandu university comprise of antipsychotics, antidepressants, antimaniacs and anti-anxiety medications [6]. Psychotropic drug is taught in the fourth semester under Pharmacology. It is found that medical students find it quite difficult to understand the concepts of Psychopharmacology. The main objective of the study was to research about the student's feedback about the teaching and learning methodology of Psychopharmacology with an aim to improve medical education of Pharmacology in future.

## Material and Methods:

### Study Period

The study was undertaken from June 2012 to March 2013 at Manipal College of Medical Sciences, Pokhara Nepal.

### Study design and the participants

It was an observational cross sectional study was done at Manipal College of Medical Sciences, Nepal.

### Response Rate

Out of 132 students 127 students filled the questionnaire properly which has given an overall response rate of 96.21%. 44.9% of the students were females and 55.1% were males.

### Questionnaire design and Validity

A multi graded questionnaire was designed by authors. The internal validation tests of the Questionnaire showed that the Alpha Cronbach was 0.72.

### Data collection

The information and data collected includes demographic details such as gender (male and female), Nationality (Indian, Srilankan, and Nepali students).

### Inclusion criteria

A total of 127 medical students from the fourth semester participated in the study. The students were asked to fill the questionnaire confidentially. Out of 132 students 127 students filled the questionnaire properly which has given an overall response rate of 96.21%.

### Exclusion criteria

The students from other semester were excluded because data was collected only from the fourth semester students those who were studying psychopharmacology. Incomplete filled questionnaire were also excluded from the study.

### Sample size calculation

For 95% confidence interval and, significance level  $\alpha = 5\%$ ,  $P = 90\%$ ,  $Q = 10\%$ , allowable error = 10%, required sample size was 75.  $P$  = percentage of student who found that the lesson of psychopharmacology teaching and learning methodology is an important lesson for MBBS curriculum. Prior to the study a pilot study was done in 50 students. [7].

### Ethical committee approval

Prior to the study, approval was taken from the ethical committee.

### Data management and statistical analysis

Descriptive statistics were used for the analysis. The data collected was analyzed using Excel 2003, R 2.8.0 Statistical Package for the Social Sciences (SPSS) for Windows Version 16.0 (SPSS Inc; Chicago, IL, USA) and EPI Info 3.5.1 Windows Version. The Chi square test was used to examine the difference between different variables.  $p < 0.05$  is considered as statistically significant [8].

## Results

**Table 1** represents 44.9% of the students were females and 55.1% were males. 42.5% were Nepalese, 24.4% were Srilankan and 33.1% were Indians. 81.9% of the students replied that Psychopharmacology teaching and learning activity is an important lesson for MBBS curriculum. Antipsychotics were the most interesting part of Psychopharmacology 77.2%. Student found to remember the generic names of the drugs 47.2% in case of antidepressants followed by antipsychotics 30.7%. 71.7% of the students found difficulty to understand the mechanism of action of antidepressants.

Among the female students 77.2% students who found psychopharmacology as an important lesson of MBBS Curriculum and among the male student 85.7% found psychopharmacology as an important lesson of MBBS Curriculum. Among the females 50.9% female found it quite difficult to remember the generic names of antidepressants. In case of males it was found in 44.3% of all males. Among all the students 86% female student and 70% male student found the

most interesting part of psychopharmacology teaching and learning methodology is antipsychotic drugs [Table 2].

**Table 1: Frequency of Gender and Nationality of the medical students and Psychopharmacology Teaching and Learning Methodology (n= 127) [n(%)]**

Gender	Female	57(44.9)
	Male	70(55.1)
Nationality	Nepalese	54(42.5)
	Srilankan	31(24.4)
	Indian	42(33.1)
MBBS Curriculum	Important Lesson for MBBS Curriculum	104(81.9)
	Not an Important Lesson for MBBS Curriculum	23(18.1)
Most Interesting area of Psychopharmacology	Antimanics	6(4.7)
	Antianxiety	13(10.2)
	Antipsychotics	98(77.2)
	Antidepressants	10(7.9)
Difficult to remember the Generic names of Psychotropic drugs	Antimanics	11(8.7)
	Antianxiety	17(13.4)
	Antipsychotics	39(30.7)
	Antidepressants	60(47.2)
Difficulty to understand the mechanism of action	Antimanics	28(22)
	Anti anxiety	4(3.1)
	Antipsychotics	4(3.1)
	Antidepressants	91(71.7)

Most of the student found it difficult to understand the mechanism of action of antidepressants. It was found in 84.2% of all females and 61.4% in case of males [Table 3].

**Table 3: Association between Mechanism of action of psychotropic drugs Teaching and Learning Methodology and Gender of the students**

Psychopharmacology [n(%)]				
Gender	Difficulty to understand the mechanism of action			
	Antianxiety	Antimanics	Antipsychotics	Antidepressants
Female	0(0)	9(15.8)	0(0)	48(84.2)
Male	4(5.7)	19(27.1)	4(5.7)	43(61.4)
P=0.014†				

† p<0.05, statistically significant

**Determinants of Psychopharmacology teaching and learning methodology by logistic regression**

It was found that Male student [OR 1.773 95% (CI (0.712, 4.411))] Psychopharmacology is an important lesson for MBBS Curriculum as compared to females. Male students found it difficult to remember the generic names of anti manic drugs [OR 33.75 95% (CI (4.023, 283.168))], antipsychotics [OR 19.091 95% CI (3.733, 7.627)] and [OR 8.017 95% CI (1.685, 38.148)] as compared to females.

**Table 2: Association between Psychopharmacology Teaching and Learning Methodology and Gender of the students**

Psychopharmacology [n(%)]										
Gender	Not a Important Lesson for MBBS curriculum	Important lesson in MBBS Curriculum	Difficult to remember the Generic drug names				Most Interesting area of Psycho pharmacology			
			Antidepressants	Antianxiety	Antipsychotics	Antimanics	Antidepressants	Antianxiety	Antipsychotics	Antimanics
Female	13(22.8)	44(77.2)	29(50.9)	15(26.3)	11(19.3)	2(3.5)	0(0)	7(12.3)	49(86)	1(1.8)
Male	10(14.3)	60(85.7)	31(44.3)	2(2.9)	28(40)	9(12.9)	10(14.3)	6(8.6)	49(70)	5(7.1)
P=0.215x			P=0.000†				P=0.009†			

† p<0.05, statistically significant

x p>0.05, statistically not significant.

**Table 4: Logistic Regression table of Psychopharmacology drugs Teaching and Learning Methodology**

Odds Ratio and Confidence Interval														
Gender	Important lesson in MBBS Curriculum	Difficult to remember the Generic drug names				Difficulty to understand the mechanism of action				Most Interesting area of Psychopharmacology				
		Anti anxiety	Anti manics	Anti Psycho tics	Anti Depressants	Anti anxiety	Anti manics	Anti Psycho tics	Anti Depressant	Anti manics	Anti anxiety	Anti Depressants	Anti Psycho tics	
Female	1	1				1				1				
Male	1.773(0.712, 4.411) x		33.75( 4.023, 283.168)†	19.091(3.73, 7.627)†	8.017(1.685, 38.148)†		-	-	-		0.171(0.15, 1.915x)	-	0.2( 0.23, 1.775x)	

† p<0.05, statistically significant, x p>0.05, statistically not significant,

- cannot calculate

## Discussion

Around 81.9% of the students replied that Psychopharmacology teaching and learning activity is an important lesson for MBBS curriculum. This could be due to the fact the most of the student found Psychopharmacology as an important part of CNS drugs. About 2/3rd of the students found antipsychotic drugs are the most interesting part of psychopharmacology as compared to any other part. This could be due to the fact that it could be more interesting for them and easy to understand the various types of antipsychotic drugs like typical antipsychotics and atypical antipsychotic drugs [9, 10].

Antidepressants are classified into typical and atypical antidepressants [11]. There is also a long list of antidepressants are there in most of the text books that are commonly followed in Nepal. Most of the students found it difficult to remember the names of the antidepressants followed by antipsychotics. This could be due to the fact that the list of the antidepressants and antipsychotic drugs are too long and it is quite difficult for the medical students to memorise [12].

As far as the mechanism of action of the drugs are concerned student found it quite difficult to understand the mechanism of action of antidepressants [13, 14]. This could be due to the fact that with the discovery of lot of antidepressants viz. older antidepressants and novel/newer antidepressants it is confusing for the student to understand. This problem can be solved by using animation to explain the mechanism of action of the drugs by the faculty members and using a combination of teaching aids in teaching aids while teaching pharmacology will be beneficial [15].

## Conclusion

It is evident from this paper that Psychopharmacology teaching and learning methodology is an important aspect of Pharmacology. Some parts of Psychopharmacology student faces difficulty, mainly while studying about the antidepressants. Thus with proper intervention and improvement in the teaching and learning methodology this problem can be solved in future.

## Limitations & future scope of the study

Sample size was the limitation of the study. A multi centric institution based study with larger sample size will give better to idea regarding psychopharmacology teaching and learning for improvement of medical education in Nepal.

## Competing interests

The authors declare that they have no competing interests.

## Authors' contribution

IB designed the study, deduced the data, drafted the manuscript, and revised it. IB2, BR planned the study with IB, acquired the data, conducted the data analysis, interpreted the data, and revised the manuscript. IB2 and MM has also participated in the language editing along with IB. BS participated in statistical analysis, interpreted the data, and revised the manuscript. ACJ and PKC critically revised the manuscript. All the authors approved the final document.

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