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Original Research Article

Questionnaires Based Evaluation of teaching learning methods among MBBS, BDS and Nursing students of Indira Gandhi Medical College, Shimla

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Abstract

Objective: Futures healthcare services depend upon today's medical education. Modern Medical education technology has important role for the skill development of medical student in India. We tried to demonstrate the perception of medical student (MBBS, BDS and Nursing) toward current teaching and learning methods.

Methods: The study was cross sectional survey carried out at Indira Gandhi Medical College, Shimla, Himachal Pradesh, India. Total 359 students were enrolled in this study. The majority of students were females. SPSS was used for descriptive analysis with chi square test to find any association.

Results: We observed that, the traditional method of teaching was not popular among medical student and most of student prefer group discussion as a best tool for understating the topic. Most of the student concurred that 45 minutes was the ideal time for lectures. Significant percentage of students concurred that, enthusiasm as well as ability to teach was the best qualities for good teachers.

Conclusion: In modern era, medical teachers should have to improvise themselves to fulfill the requirement of students for better outcome. We have to incorporate new and advance technique to make teaching more interactive, interesting and understandable, which can reach to every single student in the lecture theater. Making pre and paraclinical subject clinical oriented with the involvement of case presentation, small group discussion with the incorporation of audio-video aid for the benefit of our future doctors, dentist, and nurses.

Keywords: Medical Education Technology, Medical students, Questionnaire, Group discussion, teacher.

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1. Introduction

Futures healthcare services depend upon today's medical education. The main hurdles for better medical education may be lack of training facility, ignorance towards innovation and accountability. The Medical Education Technology (MET) has been directed towards imparting education to the learner. [1] The aim of MET to improvise learning as well as teaching by incorporating numerous teaching methods into the medical syllabus for producing reliable and competent doctors who can handle

the critical scenario which is only done by the improving the medical education system in medical colleges.[1]

In the modern era, the information, and communication technology has transformed the medical teaching and learning, with multiple resources and data, it is easy to teach students current scenario of diseases patterns, new innovation and intervention.[2] Student feedback was the best way to understand and improve the lacking area of medical teaching methodology and it is also very important for further development of medical education in the

future.[3] We aim to find out the most and least methods of teaching among MBBS, BDS and Nursing students; secondly, prefer timing and sessions for classes; thirdly, what are the quality of the teacher.

2. Material methods

This study was cross sectional survey and conducted at Indira Gandhi Medical College, Shimla. Total of 387 students enrolled in this study out of which 359 gave consent to participate in this study in which 94 was MBBS, 52 was BDS and 243 were Nursing student. All students were in the age group 17-23. Questionnaire regarding various methods of teaching, understand toward the teaching methods, prefer timing and sessions of classes and the quality of teacher were included in this study (Annexure-1). A pre-designed questionnaire was administered to medical students (n=359). All students were briefed about the purpose of this study and the questionnaire. The study was approved by the Institutional Ethics Committee. Anonymity was maintained.

2.1 Statistical analysis

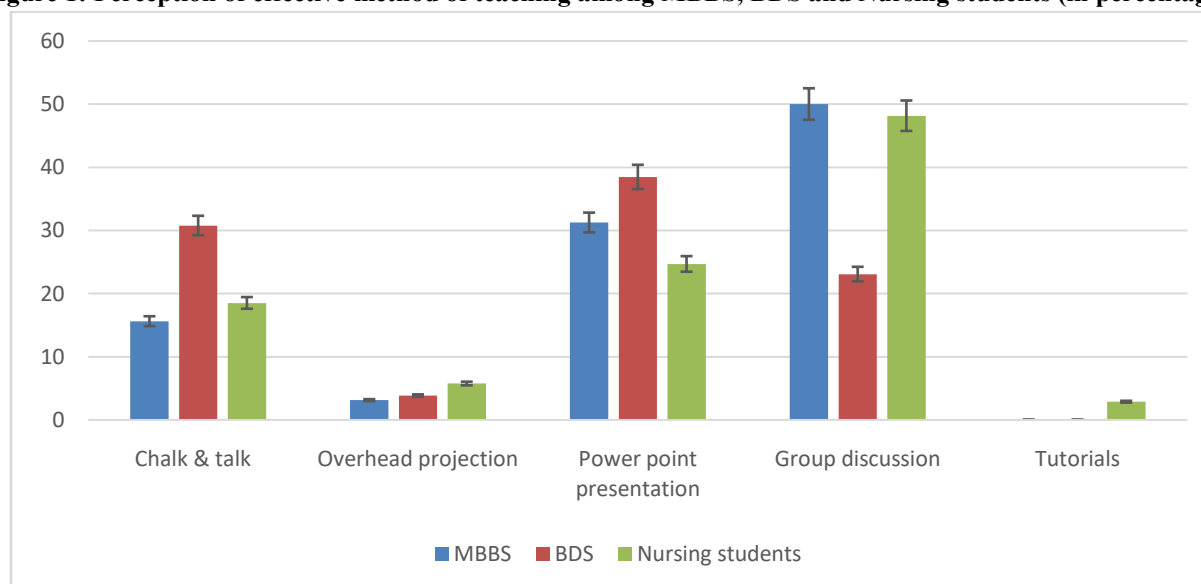
Data were entered in Statistical Package for Social Sciences (SPSS) version 23 for Chicago Inc. and considered for descriptive analyses. Associations were tested using the Chi-square test. A priori p-value of 0.05 was used throughout the analyses and the results were considered statistically significant at $p < 0.05$.

3. Result

Three hundred fifty-nine students participate in this study, the majority of student were nursing students followed by MBBS then BDS. It was observed that a total number of 28 students didn't participate in this study. In this study, 48 students were male and 311 were female, and the mean age was 19.0 ± 1.35 and 19.33 ± 1.63 years ($p < 0.1$), respectively.

In response to the question regarding awareness about various teaching methods, the majority of students knows the various types of teaching methods while only 2.2% in MBBS, 2.78% in BDS and 2.32% in nursing student doesn't aware of various teaching methods ($p < 0.5$). A significant percentage of students among MBBS (50%), and Nursing (48.15%) concurred that the group discussion is the more effective methods of teaching while BDS student agreed on power-point presentation (38.46), and least were tutorials ($p < 0.001$) (figure-1). The best understanding upon the topic, group discussion was again the most preferable among MBBS (51.56%) and BDS (38.46%), while nursing students preferred all methods as best understanding tool for the topic (36.63%). The least method of teaching for the best understanding of the topic was over-head projector and tutorials which was concurred by all students ($p < 0.008$); table-1.

Figure 1: Perception of effective method of teaching among MBBS, BDS and Nursing students (in percentages).



Majority of the MBBS (45.31%) and nursing students (29.63%) concurred that the chalk and talk method of teaching consume more time while BDS students concurred on power point presentation ($p < 0.01$);

furthermore, chalk and talk method of teaching leads the majority of students to lose interest in the topic which was observed 31.35% in MBBS, 28.85% in BDS and 32.51% in nursing students ($p < 0.005$); table-1.

Table 1: Perception of medical students regarding various teaching methodologies

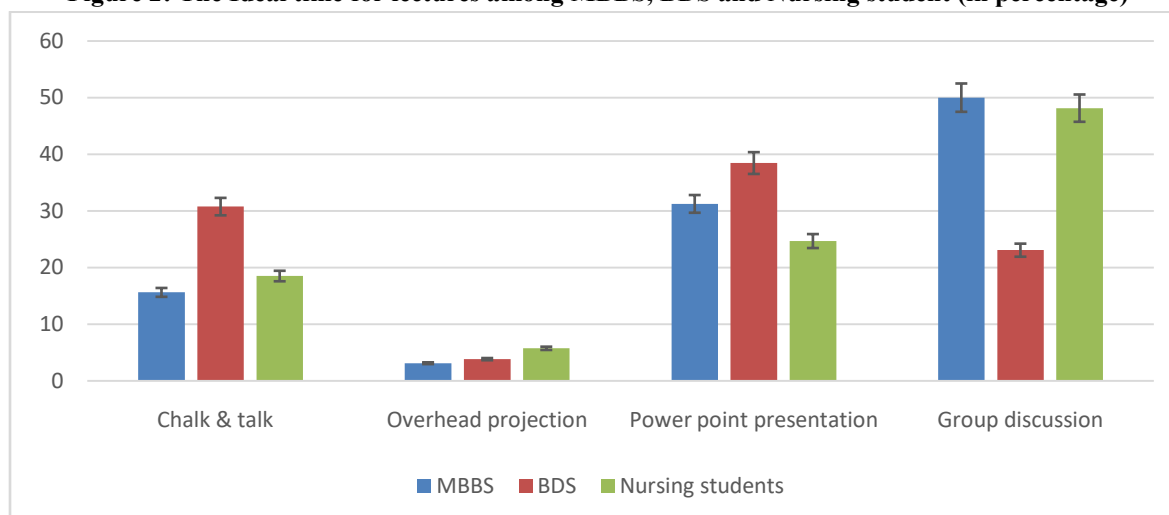
Characteristics		MBBS (n-94)	BDS (n-52)	Nursing (n-213)	2 tail-significant
Awareness about various teaching method/ methods	Chalk & talk	16.48%	15.28%	16.28%	0.5
	Over-head projection	7.69%	5.55%	5.23%	
	Power-point presentation	15.39%	12.5%	13.95%	
	Group discussion	9.89%	13.89%	17.15%	
	Tutorials	2.20%	1.39%	3.49%	
	All of the above	46.15%	48.61%	41.57%	
	None of the above	2.20%	2.78%	2.32%	
which is more effective method of teaching	Chalk & talk	15.63%	30.77%	18.52%	0.001
	Overhead projection	3.13%	3.85%	5.76%	
	Power point presentation	31.25%	38.46%	24.69%	
	Group discussion	50%	23.08%	48.15%	
	Tutorials	0	0	2.88%	
Out of these, in which method of teaching, the student gets best understanding of the topic	Chalk & talk	7.81%	7.69%	13.99%	0.008
	Over-head projection	1.56%	0	2.06%	
	Power-point presentation	7.81%	13.46%	20.58%	
	Group discussion	51.56%	38.46%	25.1%	
	Tutorials	0	1.92%	1.65%	
	All of the above	29.69%	36.54%	36.63%	
	None of the above	1.56%	1.92%	0	
Out of these, which is more time consuming method of teaching, according to you?	Chalk & talk	45.31%	23.08%	29.63%	0.01
	Over-head projection	14.06%	13.46%	20.99%	
	Power-point presentation	23.44%	26.92%	23.05%	
	Group discussion	4.69%	19.23%	10.29%	
	Tutorials	6.25%	13.46%	8.64%	
	All of the above	3.13%	1.92%	7.41%	
	None of the above	3.13%	1.92%	0	
Out of these methods, In which type of teaching did you get loose interest in the topic?	Chalk & talk	31.25%	28.85%	32.51%	0.005
	Over-head projection	7.81%	17.31%	27.16%	
	Power-point presentation	10.94%	9.62%	11.52%	
	Group discussion	3.13%	7.69%	7%	
	Tutorials	20.31%	15.38%	13.99%	
	All of the above	1.56%	0	0.41%	
	None of the above	25%	21.15%	7.41%	

In response to ideal time of the lecture, 45 minutes were preferred by BDS (69.23%) and Nursing students (44.86%), while MBBS student (48.44%) preferred 30 minutes ($p < 0.001$); figure-2. More than 85% of students for all three disciplines concurred, that morning session was the best time to get the best concentration during the lecture and least was evening session, but was not statistically significant ($p = 0.08$). 67.19% MBBS, 50% BDS and 47.74%

Nursing students concurred that they attend lectures for the better understanding of the topic (Table-2). It was also observed that, 44.23% BDS, 29.22% Nursing and 17.19% MBBS students concurred that they attend the lecture because it was a mixture of knowledge from multiple books and 3.13% in MBBS and 3.7% in Nursing student attend the lecture only for attendance ($p < 0.003$).

Table 2: Perception of medical student regarding timing and purpose of lecture

Characteristics		MBBS (n-94)	BDS (n-52)	Nursing (n-213)	2 tail-significant
What should be the ideal time of lecture	30 min	48.44%	25%	32.1%	0.001
	45 min	42.19%	69.23%	44.86%	
	01 hour	9.38%	5.77%	22.63%	
	>1 hour	0	0	0.41%	
Sessions in which you get best concentration during the lecture.	Morning sessions	90.48%	98.08%	86.42%	0.08
	Afternoon sessions	4.76%	0	10.29%	
	Evening sessions	3.17%	0	1.23%	
	No answers	1.59%	1.92%	2.06%	
what is the basic purpose for attending lectures?	For Attendance	3.13%	0	3.7%	0.003
	For Better understanding of topic.	67.19%	50%	47.74%	
	To get lead about the questions; that usually asked in the examination.	10.94%	3.85%	10.29%	
	Lecture is a mixture of knowledge from multiple books.	17.19%	44.23%	29.22%	
	You like the teacher.	1.53%	1.92%	8.64%	

Figure 2: The Ideal time for lectures among MBBS, BDS and Nursing student (in percentage)

In response to a question, factors which can improve examination results, higher trend ($\geq 40\%$) was observed for regular test followed better lectures in all three groups, but was not statistically significant ($p=0.4$). Similarly, most of the students (MBBS & Nursing) concurred that, written examination was the better mode for examination, while BDS student preferred MCQ ($p=0.07$).

Responding to the questionnaire regarding the qualities of a teacher, 31.63% MBBS, 17.81% BDS and

31.76% of Nursing students agreed that the teacher should have the ability to teach the topic ($p<0.02$), similarly enthusiasm of a teacher to teach the topic was also found to be statistically significant ($p<0.0001$). Non-significantly but the higher trend was observed among MBBS (41.84%), BDS (36.99%) and Nursing students (37.27%) that having knowledge of the subject is very important as a quality of a good teacher ($p=0.4$); table-3.

Table 3: Perception of medical student regarding qualities of teacher

Characteristics		MBBS (n-94)	BDS (n-52)	Nursing (n-213)	2 tail-significant
In your opinion, what should be the qualities of a teacher?	Having ability to teach	31.63%	17.81%	31.76%	0.02
	Rapport with the students	10.2%	8.22%	12.6%	0.7
	Having knowledge of the subject	41.84%	36.99%	37.27%	0.4
	Personality of the teacher	4.08%	5.48%	4.99%	0.9
	Enthusiasm for teaching	4.08%	23.29%	8.4%	0.0001
	No answer	8.16%	8.22%	4.99%	0.4

4. Discussion

As the educational atmosphere strongly affects students success, satisfaction, and triumphs. Student feedback is a very good tool for evaluation of various parameters in our medical education methodology and it will also bring the light on the area of improvement. The information can be obtained by either the designed questionnaire or non-formal mutual communication. This will improve the medical education system and also counter the requirements of students who are the beneficiaries of the teaching programs in our institute.

In our study, we tried to compare the understanding of teaching methodologies between MBBS, BDS and Nursing student. The majority of the student among all three disciplines aware of all forms of teaching methods ($\geq 40\%$). The best method of teaching was group discussion preferred by MBBS and Nursing student while BDS student preferred Power-point presentation ($p<0.001$). Similarly, group discussion was the best tool for MBBS and

BDS student for better understanding the topic, while nursing student preferred all methods of teaching, we found the similarity with the study done by Fischer *et al.* who compares traditional teaching methods with small group discussion,[4] another study done by costa *et al.* they observed that in undergraduate students didactic lectures were not popular as interactive teaching technique.[5]

In our study, chalk and talk method of teaching was neither more effective nor the best method for understanding of the topic and we also found that it was more time consuming and a significant percentage of student got lose interest in the topic ($p<0.005$), but a study done by Mohan *et al* & Banerjee *et al* shows that chalk and board methods were most preferred method among the medical students for best teaching aid.[6,7]

We also observed that, $\geq 45\%$ students from BDS and Nursing disciplines preferred 45 minutes as an ideal time for lecture while 30 minutes preferred by MBBS students ($p<0.001$), similar study was done by Noreen *et al*

among 120 MBBS student in Lahore, Pakistan, found that 54% of students preferred the ideal time for the lecture was 30 minutes while 43% agreed on 45 minutes.[8]

We also found that, $\geq 47\%$ students from all disciplines attended the lecture for better understanding the topic and also stated that it was a mixture of knowledge from multiple books ($p < 0.003$), while less than 3% of students attend lectures only for attendance, similarly, Dhaliwal *et al*[9] found similar correlation between higher attendance with better examination performance while contradictory result observed by Hammen, *et al* between lecture attendance and course grades.[10]

In our study, $\geq 40\%$ of students preferred regular test as a tool to improve their examination performance than better lectures and group discussion ($p = 0.4$) and written examination was the preferred tool by MBBS and Nursing students to evaluate them during the examination while BDS students preferred multiple choice questions (MCQ) as the best tools for evaluation during examination. Although, these observations were in high trend but found to be statistically insignificant ($p = 0.07$). In the year 2000, According to Oyebola, *et al* student agreed that MCQ was the preferred method for assessment, [11] while Abraham, *et al* stated that the single assessment modality was not enough to assess the medical students.[12]

Quality of teachers is also an important factor for MET. In our study, we found that, having ability to teach ($p < 0.02$) and enthusiasm for teaching ($p < 0.0001$) had a greater impact on medical teaching, which was comparable between MBBS, BDS, and Nursing student, while higher trend was observed that teacher should have good knowledge of subject ($p = 0.4$). The quality of teacher is always directly proportional to excellent students and better examination as well as the behavioural result.

5. Conclusion

In this present study, we ask students about the recent scenario of the medical education system and we found that most of our traditional methods were out of dated. We have to improvised our self with the help of new science and technology. We have to incorporate new and advance technique to make teaching more interactive, interesting and understandable, which can reach to every single student in the lecture theater. Making pre and paraclinical subject clinical oriented with the involvement of case presentation, small group discussion with the incorporation of audio-video aid for the benefit of our future doctors, dentist, and nurses.

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