Educational Environment in First Year BDS and BPT Students

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ABSTRACT

Introduction: Educational environment affects students' achievement, motivation, happiness and success. The learning environment is one of the targets for evaluating medical education programme. The foundation for improving health and safety of patients starts with competency of health care providers. Study aimed to measure and compare the viewpoints of first year students studying in BDS (Bachelore of Dental Surgery) and BPT (Bachelore of Physiotherapy) towards their learning environment.

Material and Methods: A cross-sectional study was conducted using a standardized self-report scale. The DREEM instrument first developed at the University of Dundee was used. The institutional ethical approval was taken before start of the study. All medical students of first year BDS and BPT were the target population. Unpaired 't' test was used for statistical analysis.

Results: Overall assessment of educational environment in first year BDS and BPT students was found to be positive. Total score of DREEM in BDS and BPT students was 133.39 ± 15.96 and 119.35 ± 23.18 respectively. Statistically significant difference was found in students' perceptions of learning (SPL), students' perceptions of teachers (SPT), students' academic self-perceptions (SASP), students' perceptions of atmosphere (SPA) and students' social self-perceptions (SSSP) as well as total score.

Conclusion: Factual learning, authoritarian teachers, problem of cheating, teacher centered teaching and students irritating the teachers were the problematic areas in both BDS and BPT colleges. Educational environment was more positive in BDS college compared to BPT.

Keywords: DREEM, domains, positive, problems

INTRODUCTION

In 1998 World Federation of Medical Education highlighted the learning environment as one of the targets for evaluating medical education programmes.[1-3] Academic and clinical environment influences the attitude, knowledge, skills, progress and behavior of medical students.[2,4] The students' perception of educational environment can be a basis for implementing modifications and optimizing the educational environment.

An ideal academic environment may be defined as one that best prepares students for their future professional life and contributes towards their personal and psychosomatic development along with social well being. A conducive environment has a positive and significant impact on students' learning, academic progress and well being.

Educational environment affects students' achievement, motivation, happiness and success.[5-7] The foundation for improving health and safety of patients starts with competency of health care providers. There is an increasing interest and concern regarding the role of learning environment in undergraduate medical teaching in recent years. However, studies done from India have been very few. This study was undertaken to study the viewpoints of first year students studying in BDS (Bachelore of Dental Surgery) and BPT (Bachelore of Physiotherapy) towards their learning environment.

MATERIAL AND METHODS

Throughout the world in different medical schools of both developed and developing countries, DREEM (Dundee Ready Educational Environment Measure) has been widely used as an instrument to collect information about the quality of educational environment.[8-17] DREEM is now globally valid generic diagnostic inventory for measuring the quality of educational environment.[18]

DREEM is a 50-items inventory, consisting of five domains as below:

1) Students' perceptions of learning (SPL)
2) Students' perceptions of teachers (SPT)
3) Students' academic self-perceptions (SASP)
4) Students' perceptions of atmosphere (SPA)
5) Students' social self-perceptions (SSSP)

Negative items were scored in reverse for analysis so that higher the score, more negative the feedback and the more incorrect perception.

This study was carried out at Dr. D. Y. Patil Medical college, Pimpri, Pune during period of 2013 to 2015. A cross-sectional study was conducted using a standardized self-report scale. The institutional ethical approval was taken before start of the study. All medical students of first year BDS and BPT were the target population. The total number of students participating was 160. The DREEM questionnaires were given to the students with duration of half an hour to complete them. The data was collected in March 2013-2014. Purpose of the study was explained. Every student gave consent for the study.

To focus on specific strengths and weaknesses within the learning environment, items with a mean score of 3 and above were observed as positive points and items with a mean score of 2 and below were observed as problem areas. Items with a mean score between 2 and 3 were concluded as aspects of the learning environment that could be enhanced.

STATISTICAL ANALYSIS

Students completed the questionnaire anonymously. The completed questionnaires were collected for further analysis. The data was analysed using primer of biostatistics. Unpaired

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't' test was used for statistical analysis.

RESULTS

Out of 100 BDS students 87 students completed the questionnaires with a response rate of 87%. Out of 60 BPT students 57 students could complete the questionnaires with the response rate of 95%. Incomplete questionnaires were excluded from the study.

Overall assessment of educational environment in first year BDS and BPT students was found to be positive. Total score of DREEM in BDS and BPT students was 133.39 ± 15.96 and 119.35 ± 23.18 respectively. Statistically significant difference was found in SPL, SPT, SASP, SPA and SSSP as well as total score on comparing BDS and BPT students as seen in Table 1.

Items showing statistically significant difference in domains SPL, SPT and SASP shown in Table 2. Items showing statistically significant difference in domains SPA and SSSP shown in Table 3.

In BDS students, 6 items (8, 12, 16, 23, 34 and 49) scored 2 and less than 2 and 8 items (13,17,25,26,31,37,47 and 48) scored 3 and above. In BPTh students, 9 items (8,12,16,19,21,23,34,44 and 45) scored 2 and less than 2 and only 2 items (13 and 25) scored 3 and above.

DISCUSSION

Educational environment refers to diverse physical locations, contexts and cultural background of the students. Qualities and characteristics of learning environment are determined by wide variety of factors like school policies, governance structures and other features. Its subscales correlate positively with academic success and satisfaction towards educational programme. The environment is an important determinant of behavior. Environment is perceived by students and the perception of environment determines behavior. The perceived environment is the soul and spirit of the medical school environment and curriculum. Students' experiences of the quality of their medical education environment are related to their achievements, satisfaction and success.

The medical school is a learning organization. Learning environment refers everything that is happening in the classroom, department, college and university.

The curriculum's most significant manifestation is the environment of education in the organization. It includes everything that is happening in the medical school. There is connection between the environment and the outcomes of students' achievement, satisfaction and success. Every

Domains		**BDS (mean ± SD)**	**BPT (mean ± SD)**	
SPL	Students' Perception of Learning	31.25 ± 4.06	28.46 ± 6.73	0.002*
SPT	Students' Perception of Teachers	27.88 ± 4.31	25 ± 4.36	0.000***
SASP	Students' Academic Self Perception	23.65 ± 4.75	20.67 ± 5.6	0.000***
SPA	Students' Perception of Atmosphere	32.62 ± 5.72	29.09 ± 8.01	0.002*
SSSP	Students' Social Self Perception	17.98 ± 3.85	16.11 ± 4.06	0.006*
Total DREEM Score		133.39 ± 15.96	119.35 ± 23.18	0.000***
*p < 0.05, **p < 0.001, ***p < 0.0001				

Table-1: Comparison of all domains and total score in BDS and BPT

Items of DREEM Questionnaire	**BDS (mean ± SD)**	**BPT (mean ± SD)**	
SPL			
I am encouraged to participate in class	2.66 ± 0.81	2.34 ± 1.09	0.01*
The teaching is often stimulating	2.82 ± 0.64	2.45 ± 0.9	0.001*
The teaching is student centered	2.72 ± 0.86	2.43 ± 1.02	0.02*
The teaching helps to develop my competence	2.9 ± 0.67	2.51 ± 0.98	0.001*
The teaching is well focused	2.91 ± 0.74	2.63 ± 0.87	0.01*
The teaching helps to develop my confidence	2.72 ± 0.86	2.37 ± 1.04	0.009*
The teaching encourages me to be an active learner	2.94 ± 0.75	2.53 ± 1.04	0.001*
SPT			
The teachers are knowledgeable	3.02 ± 0.83	3.34 ± 0.75	0.005*
The teachers ridicule the students	2.39 ± 1.01	2.13 ± 0.99	0.04*
The teachers have good communication skills with students	3.07 ± 0.8	2.63 ± 1.08	0.001*
The teachers are good at providing feedback to students	2.8 ± 0.8	2.4 ± 1.11	0.003*
The teachers provide constructive criticism here	2.28 ± 0.97	1.72 ± 0.99	0.0001**
The teachers get angry in class	2.07 ± 1.16	1.76 ± 1.2	0.04*
The students irritate the teachers	1.9 ± 1.14	1.01 ± 1.09	0.00***
SASP			
Learning strategies which worked for me before continue to work for me now	2.67 ± 0.86	2.14 ± 1.18	0.0006**
I am confident about passing this year	3.41 ± 0.76	3.04 ± 0.88	0.002*
I feel I am being well prepared for my profession	3.46 ± 3.31	2.6 ± 1.09	0.01*
Last year's work has been a good preparation for this year's work	2.72 ± 1.07	2.41 ± 0.91	0.02*
I am able to memorise all I need	2.7 ± 1.0	2.16 ± 1.09	0.0004**
*p < 0.05, **p < 0.001, ***p < 0.0001			

Table-2: Items of SPL, SPT and SASP with Significance

Items of DREEM Questionnaire	BDS (mean ± SD)	BPT (mean ± SD)	
SPA			
The atmosphere is relaxed during teaching	2.93 ± 0.91	2.65 ± 1,14	0.03*
There are opportunities for me to develop my interpersonal skills	2.87 ± 0.99	2.49 ± 1.1	0.009*
I am able to concentrate well	2.69 ± 0.89	2.33 ± 1.03	0.009*
The enjoyment outweighs the stress of the course	2.82 ± 0.95	2.36 ± 1.22	0.003*
The atmosphere motivates me as a learner	2.76 ± 0.89	2.47 ± 1.06	0.02*
I feel able to ask questions I want	2.86 ± 0.89	2.06 ± 1.16	0.00***
SSSP			
There is a good support system for students who get stressed	2.28 ± 1.18	1.57 ± 1.29	0.0001**
I am too tired to enjoy the course	2.31 ± 1.23	1.87 ± 1.32	0.01*
I am rarely bored on this course	2.54 ± 1.03	2.11 ± 1.19	0.006*
I have good friends in this college	3.2 ± 1.08	2.72 ± 1.31	0.005*
*p < 0.05, **p < 0.001, ***p < 0.0001			

Table-3: Items of SPA and SSSP with Significance

University should offer the best possible environment and learning experience. Students play a vital role in the development of the quality of this learning experience. DREEM score is a universal tool which transgresses the cultural boundaries. The DREEM inventory pinpoints the areas of concern in the educational environment.

In the present study, the educational environment in this institution was more positive than negative (Mean DREEM score: 133/200). The United Kingdom, Australia, and Sweden studies have reported higher total DREEM scores like our study (above 130).[19–22] Iran, Kuwait, Sri Lanka and Brazil studies have reported DREEM scores up to 130.[17,23-28] A study from India while comparing first year and clinical batches reported DREEM score of 119 and 114, respectively.[24] There are some studies which reported a more positive educational environment mostly after change in curriculum and making some reform. For instance, a study from Chile observed a score of 127.5 ± 20.9 (63.8%) after modification of curriculum.[29] Another study from UK reported mean DREEM score of 139 (70%)[8] after the curriculum was reformed with the recommendations of General Medical Council.[20] This highlights the importance of contemporary student centered curriculum modification and its positive effects on students perception of educational environment.

To focus on strengths and weaknesses DREEM domains were interpreted. When the guide of McAleer and Roff was used to interpret, all student's perception of learning was more positive (mean score: 31.25). Their perception of teachers moved in the right direction (mean score: 27.88). Their academic self-perception was more on the positive direction (mean score: 23.65). They had a more positive perception of atmosphere (mean score: 32.62) and their social self-perception was graded as not too bad (mean score: 17.98).[30] These results provide guidance for the curriculum planners to transform students' perceptions about their educational environment to a higher level.

Both BDS and BPT students had positive feelings regarding knowledgeable teachers and confidence of passing this year. In addition, BDS students had still more positive opinion about teacher's good communication skills with students and well preparedness for their profession. They felt that their learning was relevant to their career in healthcare. They felt socially comfortable in class. They had good friends and good social life in this college.

Both BDS and BPT students had negative views like factual learning, problem of cheating and authoritarian teachers. They felt that teaching was teacher centered and students irritate the teachers. In addition BDS students felt lonely more often than BPT students. BPT students had some more negative views regarding teacher's constructive criticism and teachers getting angry in the class. BPT students felt that there was lack of good support system for stressed up students. They were too tired to enjoy the course compared to BDS students.

The study highlighted few areas of the institute that need to be modified for student-centered educational atmosphere. The study showed over-emphasized factual learning, authoritarian teachers and teacher-centered teaching, pointing out traditional method of teaching.

On comparing BDS and BPT students it was found that educational environment of BDS students was more positive and statistically significant compared to BPT students. The reason behind this might be due to the fact that very few students would like to opt for BPT by choice. Few of the students who do not get admission to MBBS or BDS try BPT courses. This may contribute to their low self esteem and lack of confidence, especially during the early months of the course. Teachers can minimize this effect by inculcating positive approach and good moral values in these students. Counselling at the time of joining will go a long way in alleviating this problem.

The negative areas can be solved by including problem-based learning, structured bedside clinical teaching by faculties so that students feel more free in expressing their problems and things are tackled in a better way.

Earlier few studies have been conducted in India in government medical colleges to evaluate their educational environment using DREEM. These studies showed that considerable improvement is required across all domains of educational environment. The current study is the first to be undertaken in a large, nationally recognized private medical institution. The results of this study were positive with mean total score of 133.39 which showed that such educational environment can be created to fulfill the enormous requirement of physicians to serve the 1.3 billion people of India. There is a need to conduct similar studies in different institutions.

Though DREEM is widely used measure of educational environment, it cannot show the entire picture. There is need

to include some qualitative data with quantitative inventory which will help to improves the quantitative inventory and understand the common areas of student dissatisfaction.[8] Inspite of this limitation the DREEM inventory is still a very useful tool for appraising the educational environment of undergraduate medical institutes.

CONCLUSIONS

This study identified the problematic areas in both BDS and BPT colleges like more emphasis on factual learning, Students' perception of the teacher being authoritarian, cheating problem, teacher centered teaching and students irritating the teachers. Educational environment was more positive in BDS college compared to BPT College. The results obtained in this study can be used for strategic development of curriculum and the institutional focus on using available resources towards achieving a more positive learning environment.

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