



## Perception of Educational Environment among Undergraduate Medical Students

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### ABSTRACT

*The educational environment in a college is one of the most important factors in determining the success of the curriculum and the student. A conducive environment has a positive and significant impact on students' learning, academic progress and well being. The DREEM (Dundee Ready Educational Environment Measure) questionnaire is specific to the unique environment experienced by students on medical and healthcare-related courses. This instrument was developed by an international Delphi panel and has been applied to a number of undergraduate courses for health professionals worldwide. This study was undertaken in first year MBBS students & first year BDS students. The objective of the study was to compare the quality of educational environment in two different medical courses as perceived by the students. The overall mean DREEM score for MBBS and BDS was 60.5% and 66.5% respectively. Domains of SPL (Students' Perception of Learning, p value = 0.0007\*\*), SPT (Students' Perception of Teachers, p value = 0.0002\*\*) and SSSP (Students' Social Self Perception, p value = 0.0043\*) of BDS students are showing highly significant compared to MBBS students. Both MBBS & BDS students had positive views regarding knowledgeable teachers and confidence of passing this year. Both MBBS & BDS students had negative views about factual learning, teacher centered teaching, authoritarian teachers, teachers getting angry in class, students irritating teachers and problem of cheating. It is thus important that the educational environment is focused on learning rather than passive delivery of factual knowledge.*

**Keywords:** educational environment, DREEM, students

## INTRODUCTION

Medical education is considered as a complex, demanding and stressful program, on successful completion of which an undergraduate student is required to attain unique and diverse competencies. The educational environment in a college is one of the most important factors in determining the success of the curriculum and the student.<sup>1</sup>

It is no longer an acceptable idea in academia that a good or effective learning environment can be provided by just a teacher. Their possession of virtues such as good communication skills, knowledge, credibility and preparedness which contribute towards teaching excellence are to be backed by other aspects of effective learning. 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.

The educational environment as perceived by the students is the soul & spirit of the medical school curriculum. This in turn is related to their achievements, satisfaction and success. A conducive environment has a positive and significant impact on students' learning, academic progress and well being.<sup>2</sup>

Various methodologies have been utilised to investigate educational climate. Recent studies include qualitative approaches<sup>3</sup> or the use of questionnaires<sup>4, 5, 6</sup>. Of these, only the DREEM (Dundee Ready Educational Environment Measure) questionnaire<sup>5</sup> is specific to the unique environment experienced by students on medical and healthcare-related courses. This instrument was developed by an international Delphi panel and has been applied to a number of undergraduate courses for health professionals worldwide<sup>7</sup>. 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 in first year MBBS (Bachelor of Medicine and Bachelor of Surgery) students & first year BDS

(Bachelor of Dental Surgery) students who were admitted into the college in the year 2014. The objective of the study was to compare the quality of educational environment in two different medical courses as perceived by the students so that appropriate remedial measures could be taken to enhance the students' learning experience.

## METHODS

The institutional ethical committee approval was taken before start of the study. The DREEM questionnaire was administered to students of MBBS (n=247) and BDS (n=100).

DREEM is a 50 –item inventory consisting of 5 subscales:

- (a) Students' Perception of Learning (SPL) - 12 items. (Maximum score is 48).
- (b) Students' Perception of Teachers (SPT) - 11 items. (Maximum score is 44).
- (c) Students' Academic Self Perception (SASP) - 8 items. (Maximum score is 32).
- (d) Students' Perception of Atmosphere (SPA) - 12 items. (Maximum score is 48).
- (e) Students' Social self Perception (SSSP) - 7 items. (Maximum score is 28).

The total score for all subscales is 200.

The questionnaire was administered at the end of the year to both student groups on different occasions after a lecture class. Before the administration of the questionnaire the class was addressed regarding the purpose and process of collecting the data. It was explained that the data would be used for quality assurance as well as for research purposes and their cooperation was requested. Students not available on a particular day were asked to fill the questionnaire later. Anonymity of the students was maintained.

Each DREEM item was scored 0 to 4 with scores of 4,3,2,1 and 0 assigned for strongly agree, agree, uncertain, disagree and strongly disagree respectively. Reverse scoring was used for the negative items (9 items namely Item 8, 12, 15, 16, 21, 23, 34, 39 and 45).

To pinpoint more specific strengths and weaknesses within the learning environment at

our institute, items with a mean score of 3 and above were taken as positive points and items with a mean score of 2 and below were taken as problem areas. Items with a mean score between 2 and 3 were considered as aspects of the learning environment that could be enhanced.

The unpaired t test was used for statistical analysis.

## RESULTS

A total of 182 students of MBBS out of 247 completed the questionnaire giving overall response rate of 72.8%. A total of 87 students of BDS out of 100 completed the questionnaire giving overall response rate of 87%.

For MBBS students, 7 items (8, 12, 16, 21, 23, 34, 44) scored less than 2 and only 2 items (13, 25) scored more than 3.

For BDS students, 6 items (8, 12, 16, 23, 34, 49) scored less than 2 and 8 items (13, 17, 25, 26, 31, 37, 47, 48) scored more than 3.

**Table 1:** The mean, standard deviation and p value of the DREEM domains for students of MBBS and BDS

Domain	MBBS	BDS	P value
SPL Students' Perception of Learning	29.24(6.09)	31.25(4.07)	0.0007**
SPT Students' Perception of Teachers	25.80(4.79)	27.89(4.31)	0.0002**
SASP Students' Academic Self Perception	20.98(5.29)	23.66(4.75)	2.4750
SPA Students' Perception of Atmosphere	29.18(7.17)	32.62(5.72)	1.7038
SSSP Students' Social Self Perception	16.66(3.70)	17.98(3.85)	0.0043*
Total DREEM score	121.86(21.04)	133.39(15.96)	6.4987

Results are expressed as mean  $\pm$  SEM for normally distributed variables or as median and interquartile range when data was not normally distributed. Difference between groups was tested by Student's t-test, Mann Whitney test or Chi-square as appropriate.

\*p < 0.05, \*\*p < 0.001, \*\*\*p < 0.0001

**Table 2:** The mean, standard deviation and p value of items which showed statistically significant differences between MBBS and BDS students

Items of DREEM Questionnaire	MBBS	BDS	p value
I am encouraged to participate in class	2.45(1.06)	2.66(0.82)	0.037895*
The teaching is often stimulating	2.60(0.85)	2.82(0.64)	0.010339*
The teaching is student centered	2.51(0.94)	2.72(0.86)	0.030116*
The teaching helps to develop my competence	2.58 (0.98)	2.90(0.67)	0.000934**
The teaching is well focused	2.63(0.92)	2.90(0.74)	0.004459*
The teaching helps to develop my confidence	2.47(1.04)	2.72(0.86)	0.016673*
The teaching encourages me to be an active learner	2.58(1.05)	2.94(0.75)	0.000761**
The teachers are knowledgeable	3.34(0.74)	3.02(0.83)	0.001451*
The teachers ridicule the students	2.12(0.96)	2.39(1.02)	0.019658*
The teachers have good communication skills with students	2.69(1.01)	3.07(0.80)	0.000475**
The teachers are good at providing feedback to students	2.59(1.01)	2.80(0.80)	0.029523*
The teachers get angry in class	1.73(1.19)	2.07(1.16)	0.013868*
Learning strategies which worked for me before	2.20(1.18)	2.67(0.86)	0.000166**

continue to work for me now			
I am confident about passing this year	3.11(0.90)	3.41(0.76)	0.002132*
I feel I am being well prepared for my profession	2.77(1.03)	3.46(3.31)	0.030184*
Last year's work has been a good preparation for this year's work	2.48(1.00)	2.72(1.07)	0.040562*
Much of what I have to learn seems relevant to a career in healthcare	2.87(0.98)	3.10(0.79)	0.020589*
The atmosphere is relaxed during teaching	2.52(1.16)	2.93(0.91)	0.000979**
The atmosphere is relaxed during lectures	2.62(1.15)	2.87(0.96)	0.027523*
There are opportunities for me to develop my interpersonal skills	2.62(1.07)	2.87(0.99)	0.028891*
I feel comfortable in class socially	2.76(1.05)	3.01(0.88)	0.019995*
I am able to concentrate well	2.34(1.04)	2.69(0.89)	0.002165*
The enjoyment outweighs the stress of the course	2.32(1.23)	2.82(0.95)	0.000194**
The atmosphere motivates me as a learner	2.47(1.09)	2.76(0.89)	0.011412*
There is a good support system for students who get stressed	1.72(1.29)	2.28(1.18)	0.000281**
I am rarely bored on this course	2(1.23)	2.54(1.03)	0.000113**
I have good friends in this college	2.88(1.20)	3.20(1.09)	0.01619*
I seldom feel lonely	2.36(1.25)	1.92(1.33)	0.005497*

Results are expressed as mean  $\pm$  SEM for normally distributed variables or as median and interquartile range when data was not normally distributed. Difference between groups was tested by Student's t-test, Mann Whitney test or Chi-square as appropriate.

\*p < 0.05, \*\*p < 0.001, \*\*\*p < 0.0001

## DISCUSSION

The students were interested in completing the questionnaire giving good response rate. The overall mean DREEM score for MBBS and BDS was 60.5% and 66.5% respectively. This shows that the students positively evaluated the environment. Till date, very few Indian studies have been done on the students' perception of educational environment in medical college.<sup>1,8,9</sup>

The DREEM score for medical schools globally have been reported in Shrilanka as 54%<sup>9</sup>, in Nepal as 65%<sup>1</sup>, in Nigeria as 59%<sup>10</sup>, in Pakistan as 62.5%<sup>11</sup> and in UK as 69.5%<sup>12</sup>.

Both MBBS & BDS students had positive views regarding knowledgeable teachers and confidence of passing this year. In addition, BDS students had positive views regarding teacher's good communication skill with student, feeling of being well prepared for their profession, learning relevant to a career in healthcare, feeling socially comfortable in class, having good friends in their college and having good social life.

Both MBBS & BDS students had negative views about factual learning, teacher centered teaching, authoritarian teachers, teachers getting angry in class, students irritating teachers and problem of cheating. In addition, MBBS students had shown negative opinion about having good support system for students who get stressed and BDS students had negative view regarding lonely feeling.

This could be explained on the basis of batch size for both things about lonely feeling and good support system for stressed students. Small batch size for BDS (n=100) facilitated a better teacher – student interaction and students felt encouraged to participate in teaching sessions and experienced more relaxed atmosphere while teaching. But small batch has its drawback like students felt more lonely compared to MBBS students. Similar results have been reported by Tripathy S et al.<sup>1</sup>

This view has been reported by other studies as well.<sup>13, 14, 15, 16</sup> Health care system exposed to a diversity of pressures, many of which may cause

stress.<sup>13</sup> Guthrie et al.<sup>17</sup> reported that even in early years of health care education upto 50% of students' stress is related to aspects of course work. Bassaw et al.<sup>18</sup> have argued that students must be supported all the way through educational path, from entering school to qualifying and beyond. An educational institution requires a student-friendly atmosphere where academic support is effortlessly accessible. It has been further reported that innovative health care educational institution have a better support system for stressed students than traditional institutions.<sup>19</sup> Creating more accessible support system may help in diminishing the number of students who fail courses and attrition rate.

On the other hand, MBBS student felt that teachers are more knowledgeable and they did not report loneliness. Because of bigger batch size (n=247), they had more friends to interact with and develop interpersonal skills.

The impression of knowledgeable teachers, well preparation for their classes but too authoritarian and strict has also been reflected by another Indian study<sup>1, 8</sup>. They also reported about emphasized teaching on factual learning similar to this study. This may be due to "older type" of senior teacher who teaches by experience rather than by direction and may indicate that some teachers are still using conventional methods. This could simply reflect young adults being disaffected by any authority figure. Conversely, this could actually be an accurate assessment of the students' environment.

Since individual style of learning and preferences vary considerably, a more student-centric approach is to be adopted. Student should be encouraged to actively learn rather than being "taught" (passive learning). A single "one size fits all" approach may be modified and educational content could be made available to students through a variety of methods. Since the current medical college curriculum is overcrowded, inflexible and promotes memorization of factual knowledge over development of critical thinking skills and reasoning, students adapt themselves by adapting convenient strategies of passive learning

and get discouraged from critical thinking. This could possibly be due to the fact that focus of curriculum is on performance rather than on learning.

Another area of concern regarding time-tabling was not found in this study but have been detected by several other research groups.<sup>13, 15</sup> So good coordination, good resourcing and simplified schedule might be the assets for this.

When looking at the domain scores students' perception of teachers scored the lowest in this study. Similar finding is seen in many other studies.<sup>10, 16, 19, 20</sup> Hence it can be generically weak area of educational environment. Interestingly like other studies, students' perception of learning is not showing lowest score along with students' perception of teachers in this study which could be positive point about this institute.

On comparing domains, BDS students had shown statistically significant scoring in student's perception of learning, student's perception of teachers and student's social self perception compared to MBBS students. This again could be explained on the basis of smaller batch size.

Students, as the "consumers" of institute are valuable assets in providing feedback for curriculum revision and improvement of learning environment. Unfortunately, the student voice largely remains an untapped resource, as future directions often emanate from other stakeholders.

Investigating students' perception of the educational environment is a delicate matter. Student perception may be excellent even with a terrible program as a result of extraneous factors such as institutional marketing, relative student ignorance as to what constitutes educational quality and even campus morale.

DREEM creates an instantaneous portrait of student perception of their educational study climate, but cannot give specific data about concerns underlying poor scores.

Finally given the nature of study, there is a risk of the students not being honest to protect themselves and their peers and to avoid speaking against their teachers. More information may have

been revealed with the use of focus groups or independent one-to-one interviews.

## CONCLUSION

It has been observed that a large number of diverse and hidden factors ranging from class size, leisure time, assessment procedures, relations with peers and faculty, extracurricular opportunities influence the way the students perceive and experience their educational environment. In fact, the content and quality of education imparted may have little influence on the satisfaction of students. It is thus important that the educational environment is focused on learning rather than passive delivery of factual knowledge. An environment is to be created which emphasizes the students' own self directed learning.

The "environment" of the Medical College should be one which encourages academic excellence and psychosocial well being through motivation and positive inputs rather than stress generation so as to make the learning experience more enriching and fulfilling for the undergraduate student.

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