Learning Environment in a Medical College - A Students Perspective

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Abstract

Background: Students are major stakeholders in curriculum delivery, and positive student learning outcomes can only be expected in a learning environMent (LE) conducive to learning. LE experienced by students includes all conditions affecting teaching and learning activities. As the EE of students is responsible for nurturing competent medical graduates, assessment of students' perceptions of LE can highlight issues affecting student learning. These perceptions can also serve as a valuable tool for identifying lacunae at the institutional level in terms of how students perceive their learning, teachers, academic self-perception. Educational atmosphere and their social self-perception.

Methods: The DREEM inventory was used to assess perceptions regarding various domains of LE by the undergraduate students of a medical college. Median total, domain, and individual statement scores were compared between students of all phases using Wilcoxon rank-sum test.

Results: the overall environment in this institution was more positive than negative, Perceptions of students decreased across all phases in the domains of Learning, teaching, academic self-perceptions and social self-perceptions which was found to be statistically significant.

Conclusions: Strengths and weaknesses of the LE from the learners' point of view provide important feedback to curriculum planners, which can be used to improve the learning environment of the students.

Keywords: Curriculum, Learning environment, learners, DREEM inventory.

Introduction

Medical students experience a variety of experiences during the course of their medical education. The learning environment in a medical college is unique and dynamic and extremely complex. Physical environment (e.g., classroom and equipment), teachers, colleagues and other student support systems are some of the factors that can motivate the engagement of the learner.[1]

It has been reported to be associated with student's satisfaction, academic achievement and effectiveness of learning, happiness, motivation and success. Poor satisfaction and poor performance levels among the students leads to a medical graduate who is not competent enough to serve the health needs of the society.

Aims & Objectives

Aim

To study the Learning Environment of students of a medical college**.**

Objectives

1. To study the perceptions of medical students regarding their learning environment in a medical college.

2. To identify the perceived barriers to medical training with respect to learning, teaching, academic self-perception, and social environment.

3. To study the correlation of the perceived barriers to students' gender, Year of MBBS course, and high school background (medium of instruction).

4. To identify opportunities for improvement of learning experiences in medical students

Materials & Methods

A cross sectional study was carried out among the students of a medical college in Navi Mumbai from Nov 19 – May'20. Data was collected using a validated, anonymous, self-administrated questionnaire, delivered in a written form to our study participants, after explaining the voluntary nature of the questionnaire and obtaining a verbal consent from the study participants. Students perceptions about their learning environment and perceived barriers, was studied. The response to the perceptions was assessed using the DREEM -Dundee Ready Education Environment Measure (DREEM)[*]. DREEM has 50 items, each rated from 0-4 (Likert scale: 0- strongly disagree to 4-strongly agree). Measures five domains

1. students' perceptions of learning; (SPoL - 12 items/48 marks)

2. perceptions of teachers; (Spot - 11 items/44 marks)

3. academic self-perception; (SASP - 8 items/32 marks)

4. perceptions of the atmosphere; (SPoA - 12 items/48 marks)

5. social self-perception. (SSSP - 7 items/28 marks)

Domain	Score	Interpretation	Domain	Score	Interpretation
SPoL	0 -12	Very poor	SPoA	0–12	A terrible environment
	13-24	Teaching is viewed negatively		13–24	There are many issues that need changing
	25 -36	A more positive approach		25–36	A more positive atmosphere
	37 - 48	Teaching highly thought of		37–48	A good feeling overall
SPoT	0 – 11	Abysmal	SSSP	0–7	Miserable
	12 - 22	In need of some retraining		8–14	Not a nice place
	23 -33	Moving in the right direction		15–21	Not too bad
	34- 44	Model teachers		22–28	Very good socially
SASP	0 -8	Feeling of total failure			
	9 -16	Many negative aspects			
	17 - 24	Feeling more on the positive side			
	25 -32	Confident			

Mean item scores, domain scores, and global scores were computed. The maximal global score for the questionnaire is 200, and the global score is interpreted as follows

0-50=very poor; 51-100=many problems;101-150=more positive than negative;151-200=excellent

The results were analyzed considering the students' gender, Year of MBBS course, and high school background (medium of instruction). Sample Size: a total of 230 students across all phases participated in the study. Data Analysis was done using SPSS software version 21.0 package.

Results

One fourth of the study participants were from I MBBS (25.2%), about another quarter of the study subjects were from II MBBS, and nearly half of them were from the III MBBS; 29 % from III MBBS and 19% from IV MBBS. Ÿ 65% were females and 35 % were males. Nearly all the students (95%) had studied in English medium. Only a small number (5%) had studied in the vernacular medium. 172 i.e., 74.8% were living in the hostel while 58 students i.e., 25.2% were staying locally and commuting daily to college.

Table 1: Global scores of DREEM Inventory

Global score	Interpretation	Number	Percentage
0-50	Very Poor	0	0.0
51- 100	plenty of Problems	68	29.6
101-150	More positive than negative	160	69.6
151-200	Excellent	2	0.9
Total		230	100

Global scores taking into consideration all the above parameters revealed that 69.6% viewed their learning environment as more positive than negative, nearly 30% felt that there were many problems, while hardly 0.9% viewed it as excellent.

Table 2: Average Dundee Ready Educational Environment Measure (DREEM) scores (in percent) for comparison among four different semesters

Domain	1st MBBS (2nd Semester) (n=58) Mean ±SD	2nd MBBS (4th Semester) (n=64) Mean ±SD	3rd MBBS (I) (6th Semester) (n=68) Mean ±SD	3rdh MBBS (II) (8thSemester) (n=40) Mean ±SD	Kruskal Wallis Test	P-value	Sig. at 5% level
I SPoL	29.00±6.73	27.02±5.63	24.34±5.48	25.15±6.55	22.293**	<0.001	Yes
II SPoT	24.95±3.48	23.84±3.83	23.66±3.03	22.85±3.52	11.231*	0.011	Yes
III SASP	17.90±4.93	16.45±4.15	15.37±4.19	16.75±5.07	8.112*	0.044	Yes
IV SPoA	27.36±5.62	26.31±5.32	25.76±4.85	26.03±6.16	3.293	0.349	Not
VSSSP	15.52±2.27	14.94±3.01	13.99±3.05	14.68±3.21	8.146*	0.043	Yes

*Statistically Significant at 5% level i.e., P<0.05

**Statistically Significant at 0.1% level i.e., P<0.001.

Perceptions of students decreased across all phases for SPoL, SPoT,SASP, SSSP which was found to be statistically significant except for SPoA.

Gender, Medium of high school instruction and place of residence of the students were not found to be statistically significant across all the domains of the DREEM inventory.

Table 3: Average scores of 50 items and Five domainsof Medical College Students (N=230)

Questions No.	Domains	Mean	±SD
	DOMAIN – I SPoL		
1	I am encouraged to participate in class	3.2957	0.8961
7	The teaching is often stimulating	3.0261	0.9388
13	The teaching is student centered	3.0174	0.9437
16	The teaching helps to develop my competence	3.2174	0.9231
20	The teaching is well focused	3.3217	0.9209
22	The teaching helps to develop my confidence	3.1130	0.9958
24	The teaching time is put to good use	3.0957	0.9154
25	The teaching over-emphasizes factual learning	**2.2348**	**0.8393**
38	I am clear about the learning objectives of the course	3.3826	0.8102
44	The teaching encourages me to be an active learner	3.1043	0.9746
47	Long term learning is emphasised over short-term learning	3.2870	0.9509
48	The teaching is too teacher centred	**2.4087**	**0.9147**
	DOMAIN – II SPoT		
2	The Teachers are knowledgeable	3.8696	0.6545
6	The teachers deliver research led teaching	**2.6348**	**0.9283**
8	The teachers ridicule the students	**2.8000**	**1.0834**
9	The teachers are authoritarian	**2.2957**	**0.9058**
18	The teachers help me to develop my practical skills	3.3304	0.9413
29	The teachers are good at providing feedback to students	3.0000	1.0573
32	The teachers provide constructive criticism here	3.0870	0.9115
37	The teachers give clear examples	3.4522	0.7620
39	The teachers get angry in class	**2.4870**	**1.0521**
40	The teachers are well prepared for their classes	**2.0348**	**0.2935**
50	The students irritate the teachers	*2.3217	0.9671
	DOMAIN – III SASP		
5	Learning strategies which worked for me before continue to work for me now	**2.7565**	**0.9493**
10	I am confident about passing this year	3.9478	0.8130
21	I feel I am being well prepared for my career	**2.9565**	**0.9747**
26	Last year's work has been a good preparation for this year's work	3.2174	0.8645
27	I am able to memories all I need	**2.6000**	**0.9694**

31	I have learned a lot about the way scientific research is carried out	**2.6696**	**0.9777**
41	My problem-solving skills are being well developed here	**2.8870**	**0.9323**
45	Much of what I have to learn seems relevant to a career in biological sciences	3.5130	0.9379
	DOMAIN – IV SPoA		
11	The atmosphere is relaxed during laboratory/ practical/fieldwork classes	3.6087	0.9031
12	The course is well timetabled	3.2087	1.0021
17	Cheating is a problem in this faculty	*2.7304	1.1622
23	The atmosphere is relaxed during lectures	3.3130	0.8186
30	There are opportunities for me to develop my interpersonal skills	3.3043	0.9362
33	I feel comfortable in class socially	3.4174	1.0321
34	The atmosphere is relaxed during seminars/tutorials	3.4609	0.9648
35	I find the experience disappointing	*2.8957	1.1087
36	I am able to concentrate well	3.1565	0.8420
42	The enjoyment outweighs the stress of the course	**2.9826**	**1.0736**
43	The atmosphere motivates me as a learner	3.0870	1.0200
49	I feel able to ask the questions I want	3.2000	0.9364
	DOMAIN – V SSSP		
3	There is a good support system for students who get stressed	**2.7652**	**1.1471**
4	I am too tired to enjoy the course	**2.7478**	**1.1661**
14	I am rarely bored on this course.	**2.6000**	**1.0721**
15	I have good friends in this faculty	3.4435	1.0834
19	My social life is good	3.4783	1.0926
28	I seldom feel lonely	**2.8870**	**1.1580**
46	My accommodation is pleasant	3.6522	0.9065

SPoL

Factual learning and teacher centric learning were the main items with poor scores in the domain related to SPoL.

SPoT

With regards to SPoT out of 11 items, 6 items were given poor scores by the students with teachers getting angry and being ill prepared,ridiculing students and being perceived as authoritarian and not stimulating research led teaching.

SASP

Regarding their perceptions about their academics, out of 8 items, 5 items were perceived negatively by students namely not being prepared to handle current year studies, unable to memories, unable to develop

Problem solving skills or learning how to carry out scientific research and being prepared for their careers.

SPoA

students perception of their college/academic atmosphere was positive for all items except that they felt that the course was too stressful.

SSSP

Out of 7 items, 4 items were scored negatively by students i.e., lack of support system, being lonely, getting bored and being too tired to enjoy the course.

Discussion

With a global score of around 101/200, the students rated the overall environment in this institution as more positive than negative. Most other institutions that run teacher-centered, traditional, discipline-based curricula report similar global scores [2,6,7,12,15]; however, scores reported from student-centered, integrated, problem-based curricula are higher, suggesting that institutions with innovative curricula are rated higher by students [1,4,9,10]. An item that scores 3.5 or more is considered to represent a positive aspect of the curriculum [14]

Conclusions

Improvement is required across almost all domains of the educational environment at this institution. Students, particularly of the 6th and eighth semester, perceived the teaching negatively. The lowest scores were given to the support system, burdensome course content, and factual learning;

Recommendations

- Training of all teaching faculty in CBME to be mandatory so that it is more student centric and includes problem-based learning so that students are stimulated to learn.

- structured clinical teaching with specific curricular objectives.

- mentoring of senior students by faculty

- provision of extracurricular activities, sports and other recreational activities would serve as a useful coping mechanism.

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