

A study to assess the perception of the medical education environment among first year medical students

Satish S. Patil^{1,*}, Roopa S. Mathapathi²

^{1,2}Assistant Professor, Dept. of Physiology, Mahadevappa Rampure Medical College, Kalaburagi

***Corresponding Author:**

Email: drsatishpt14@gmail.com

Abstract

Introduction: Students' perception of their educational environment has shown to have an impact on their academics as well as on their behaviour. Also there is a need to evaluate the perceptions of the medical educational environment as part of any assessment of quality standards for education. The study was undertaken to assess the perceptions of medical education environment among first year medical students, so as to improve the quality of medical education.

Materials and Method: Study conducted in the Department of Physiology, in a private medical college in Kalaburagi. First year students of MBBS 2015-2016 batch were included in the study. The Dundee Ready Education Environment Measure (DREEM) questionnaire was administered to the students after they were briefed about the purpose of the study and about the questionnaire in detail. DREEM questionnaire consists of 50 statements concerning a range of topics relevant to the educational environment. The students were asked to respond to each statement using a 5 point Likert scale.

Results: The results obtained under various domains of DREEM subscale scores are as follows: Students Perception of Learning (SPoL): A more positive approach (mean score 29.91). Students Perception of Teachers (SPoT): Model teachers (mean score 27.07). Students Academic Self-Perception (SASP): Feeling more on positive side (mean score 21.12). Students Perception of Atmosphere (SPoA): A more positive environment (mean score 28.37). Students Social Self-Perception (SSSP): Not too bad (mean score 17.12).

Conclusion: The study showed that first-year MBBS students positively perceived their learning environment. This study also provides guidelines for further improvement of educational environment.

Keywords: Medical Education Environment, DREEM.

Introduction

The medical educational environment depends upon the curriculum and on the behaviour of the students and teachers.⁽¹⁾ In the recent years, there is an increase in concern regarding the role of the learning environment in medical school.⁽²⁾ Students perception of their educational environment has shown to have an impact on their academics as well as on their behaviour.⁽³⁾ The goal of any medical educational curriculum is to bring out graduates who possess knowledge, skills and attitude to practice as a doctor.⁽⁴⁾ The medical educational environment attempts to develop in a student, a caring and compassionate attitude towards the sick.⁽⁵⁾ The learning outcome of any curriculum depends upon how the students perceive their educational environment.⁽⁶⁾ Measurement of the educational environment helps to identify the areas of strengths and also areas of weaknesses, for which remedial measures can be implemented.⁽⁷⁾ Rapidly changing trends in medical education necessitates it to measure and compare the standards of educational institutions as perceived by the students.⁽⁸⁾ The Dundee Ready Educational Environment Measures (DREEM) questionnaire, specific on medical and healthcare-related programs was introduced in 1990s.⁽⁹⁾ DREEM questionnaire can be used to highlight the strengths and weaknesses of an educational institution, compare the performance of different institutes, make comparisons among students in different years of study and identify

differences in perceptions between the genders.^(10,11) Among the instruments available to measure the undergraduate medical educational environment DREEM was found to be the most appropriate instrument.⁽¹²⁾

Aims & Objectives

To assess the perceptions of medical education environment among first year medical students so as to improve the quality of medical education.

Materials and Method

Instrument for Data Collection: DREEM is an internationally accepted questionnaire to measure the medical educational environment.⁽¹³⁾ It is a 50 item questionnaire relating to a range of topics directly relevant to education climate. It consists of the 5 subscales: Students perceptions of learning (SPoL) (12 questions, maximum score: 48), Students perceptions of teachers (SPoT) (11 questions, maximum score: 44), Students academic self-perceptions (SSSP) (8 questions, maximum score: 32), Students perceptions of atmosphere (SPoA) (12 questions, maximum score: 48) and Students social self-perceptions (SSSP) (7 questions, maximum score: 28). Each item is scored on a five-point Likert scale as: 4 for Strongly Agree (SA), 3 for Agree (A), 2 for Uncertain (U) and 1 for Disagree (D) and 0 for Strongly Disagree (SD). However, 9 of the 50 items (number 4, 8, 9, 17, 25, 35, 39, 48 and 50) are

negatively phrased statements and scored 0 for SA, 1 for A, 2 for U, 3 for D and 4 for SD. For thenine negative items correction is made by reversing the scores; thus, after correction, higher scores indicate disagreement with that item. 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 and 151–200 = excellent. The resulting scores for domains are interpreted using the guide proposed by McAleer and Roff. Individual items with a mean score of 3 and above reflect a positive educational climate and are considered areas of strength for a school and items with a mean score below 2 are considered areas of weaknesses. Items with a mean score between 2 and 3 reflect areas that are neither strengths nor weaknesses but identify areas that could be enhanced.⁽¹⁴⁾

Subjects and Settings: The study was conducted in a private medical college in Kalaburagi, Karnataka, India. Study participants included 149 students of 1st year MBBS of 2015-2016 batch. Study conducted at the end

of the term. The study was approved by the Institutional Ethics Committee. Before administration of the questionnaire; students were briefed about the purpose of the study, about questionnaire in detail. Participants were also told to provide appropriate information, assuring anonymity and also confidentiality of the data. Written consent was obtained from the participants.

Statistical Analysis: Data collected and entered into a Microsoft Excel sheet. For statistical analysis of the data, for the whole 50 item inventory, scores for categorized domains and each item were both expressed as Mean \pm Standard Deviation (SD). Data were analysed using the statistical package SPSS (version 16.0). ANOVA test were used to determine statistically significant difference ($p < 0.05$).

Results

The response rate was 91.94% (total 137 out of 149 students). The global and the domain subscale DREEM score for the overall sample are as follows:

Table 1: Global and Subscale DREEM Scores (n = 137)

SI No	DREEM Domain Subscale	No of Items	Maximum Score	Mean \pm SD	% of Perception
1	Students Perception Of Learning (SPoL)	12	48	30.51 \pm 4.95	63.58%
2	Students Perception Of Teachers (SPoT)	11	44	26.27 \pm 4.80	59.70%
3	Students Academic Self-Perception (SASP)	8	32	22.04 \pm 4.38	68.87%
4	Students Perception Of Atmosphere (SPoA)	12	48	29.07 \pm 5.89	60.56%
5	Students Social Self-Perception (SSSP)	7	28	17.30 \pm 3.97	61.78%
	Total (Global Score)	50	200	125.10 \pm 23.99	62.55%

The individual item analysis (Mean \pm SD) in the different domains is as follows (Table 2).

**Table 2: Individual Item Analysis in the Five Domains of DREEM
I. Domain: Students' Perception of Learning (SPoL)**

Q. No	Item	Mean \pm SD	Interpretation
1	I am encouraged to participate during teaching sessions.	2.60 \pm 0.86	Needs enhancement
7.	The teaching is often stimulating.	2.55 \pm 0.90	Needs enhancement
13	The teaching is student-centred.	2.55 \pm 0.90	Needs enhancement
16	The teaching helps to develop my competence.	2.63 \pm 0.82	Needs enhancement
20	The teaching is well-focused.	2.63 \pm 0.82	Needs enhancement
22	The teaching helps to develop my confidence.	2.66 \pm 0.91	Needs enhancement
24	The teaching time is put to good use.	2.75 \pm 0.94	Needs enhancement
25	The teaching over-emphasizes factual learning*.	1.81 \pm 0.80	Area of Weakness

38	I am clear about the learning objectives of the course.	2.82 ± 0.80	Needs enhancement
44	The teaching encourages me to be an active learner.	2.72 ± 0.86	Needs enhancement
47	Long-term learning is emphasized over short-term learning.	2.47 ± 0.88	Needs enhancement
48	The teaching is too teacher-centred*.	2.05 ± 0.96	Needs enhancement

II. Domain: Students' Perception of Teachers (SPoT)

Q. No	Item	Mean ± SD	Interpretation
2	The teachers are knowledgeable.	3.27±0.57	Area of Strength
6	The teachers are patient with patients.	2.61±0.88	Needs enhancement
8	The teachers ridicule the students*.	2.30±0.93	Needs enhancement
9	The teachers are authoritarian*.	2.01±0.92	Needs enhancement
18	The teachers have good communication skills with patients.	2.82±0.85	Needs enhancement
29	The teachers are good at providing feedback to students.	2.62±0.97	Needs enhancement
32	The teachers provide constructive criticism here.	2.16±0.88	Needs enhancement
37	The teachers give clear examples.	2.77±0.87	Needs enhancement
39	The teachers get angry in class*.	1.77±1.13	Area of Weakness
40	The teachers are well-prepared for their teaching sessions.	2.97±0.85	Needs enhancement
50	The students irritate the teachers*.	1.64±1.08	Area of Weakness

III. Domain: Students' Academic Self-Perception (SASP)

Q. No	Item	Mean ± SD	Interpretation
5	Learning strategies that worked for me before continue to work for me now.	2.50±1.02	Needs enhancement
10	I am confident about my passing this year.	3.08±0.87	Area of Strength
21	I feel I am being well prepared for my profession.	2.86±0.88	Needs enhancement
26	Last year's work has been a good preparation for this year's work.	2.54±0.89	Needs enhancement
27	I am able to memorize all I need.	2.29±1.04	Needs enhancement
31	I have learnt a lot about empathy in my profession.	2.72±0.81	Needs enhancement
41	My problem-solving skills are being well developed here.	2.59±0.93	Needs enhancement
45	Much of what I have to learn seems relevant to a career in medicine/healthcare.	2.97±0.97	Needs enhancement

IV. Domain: Students' Perception of Atmosphere (SPoA)

Q. No	Item	Mean ± SD	Interpretation
11	The atmosphere is relaxed during ward (practical) teaching.	2.71±1.06	Needs enhancement
12	This school is well time-tabled.	2.55±1.12	Needs enhancement
17	Cheating is a problem in this school*.	2.01±1.10	Needs enhancement
23	The atmosphere is relaxed during lectures.	2.54±1.11	Needs enhancement
30	There are opportunities for me to develop my interpersonal skills.	2.63±0.91	Needs enhancement
33	I feel comfortable in class socially.	2.86±0.84	Needs enhancement

34	The atmosphere is relaxed during class/seminars/tutorials.	2.55±0.95	Needs enhancement
35	I find the experience disappointing*.	2.36±0.97	Needs enhancement
36	I am able to concentrate well.	2.35±0.99	Needs enhancement
42	The enjoyment outweighs the stress of the course.	2.45±0.95	Needs enhancement
43	The atmosphere motivates me as a learner.	2.43±0.96	Needs enhancement
49	I feel able to ask the questions I want.	2.26±1.14	Needs enhancement

V. Domain: Students' Social Self-Perception (SSSP)

Q. No	Item	Mean±SD	Interpretation
3	There is a good support system for students who get stressed.	2.16±1.09	Needs enhancement
4	I am too tired to enjoy the course*.	2.18±1.20	Needs enhancement
14	I am rarely bored in this course.	2.02±1.08	Needs enhancement
15	I have good friends in this course.	3.27±0.81	Area of Strength
19	My social life is good.	3.13±0.87	Area of Strength
28	I seldom feel lonely.	2.06±1.23	Needs enhancement
46	My accommodation is pleasant.	2.60±1.25	Needs enhancement

Discussion

This study was done to learn the perceptions of their educational environment by first year medical students in a private medical college in Kalaburagi, Karnataka. DREEM is an internationally accepted questionnaire to measure the medical educational environment.⁽¹³⁾ In this study the response rate was very good (91.94%), in spite of the participation in the study being voluntary. With a total score of 125.10±23.99 (Mean ± SD)(62.55% perception), the students perceived the educational environment in this institution as more positive than negative.⁽¹⁴⁾ Majority of the institutions that follow teacher-centered, vertical, teaching and learning methodology report similar scores.^(15,16) However, scores reported from institutions that follow student-centered, integrated, teaching and learning methodology are comparatively higher.^(17,18) The score of Students Perception of Learning (SPoL) was (30.51± 4.95) (Mean ± SD). Item 25 (the teaching over-emphasizes factual learning) reported a score of mean score of < 2 (area of weakness). Studies done globally in medical institutions also report similar concerns.^(1,15) This could be because this study was performed on first-year medical students wherein, in the pre-clinical subjects they are required to learn many facts. Also the present pattern of formative and summative assessments makes it necessary for the students to learn many facts.⁽¹⁸⁾ The score of Students Perception of Teachers (SPoT) was 26.27± 4.80 (Mean ± SD). Item 2 (the teachers are knowledgeable) scored > 3 (area of strength). The students felt that the teachers had the knowledge to guide them in this course and were well prepared for the teaching sessions. The items that scored < 2, (areas of weaknesses) are item 9

(teachers are authoritarian), item 39 (teachers get angry in class). Similar view has also been echoed by another Indian study.⁽¹⁵⁾ This indicates that teachers are still following the teacher-centered, traditional method of teaching.⁽¹⁹⁾ Teaching that is student-centered, wherein the student is given due importance is crucial to the process of learning.⁽²⁰⁾ Another important area of weakness is item 50 (the students irritate the teachers). Steps to analyse the cause, followed by effective counselling and mentoring along with small group teaching provides the much needed impetus learn.⁽²¹⁾ The score of Students Academic Self-Perception (SASP) was 22.04± 4.38 (Mean ± SD). Item 10 (I am confident about my passing this year) scored > 3 (area of strength). None of the items in this domain exhibited area of weakness. Positive academic self-perception reflects the ability of the students to overcome the academic stress. Studies have reported low scores in this domain, implying that the academic stress is encountered globally.^(15,16) The score of Students' perceptions of atmosphere (SPoA) was 29.07±5.89 (Mean ± SD). It is heartening to note that none of the items in this domain reflected areas of weakness. Students' perceptions of atmosphere represents the true educational environment and dynamic nature of the curriculum.⁽²²⁾ The score of Students' social self-perception (SSSP) was 17.30 ± 3.97 (Mean ± SD). Item 15 (I have good friends in this course) and item 19 (my social life is good) report score of > 3 (areas of strength). Our institution has a mentoring program for the students wherein the faculty advise and train the students and also provide support for peer learning. Several studies also reported similar interpretation of results in all the five domains.^(23,24,25)

Limitations and Recommendations

1. The results of the present study could not be generalized for the medical institute as the DREEM questionnaires were distributed only to first-year medical students.
2. Some factors that are specific to the educational environment in our institution may have been left out in the questionnaire used.

Conclusion

The interpretations of the DREEM scores for the five subscales are shown below.⁽¹⁴⁾

- Students' Perception of Learning (SPoL): A More Positive Approach.
- Students' Perception of Teachers (SPoT): Model Teachers.
- Students' Academic Self-Perception (SASP): Feeling More on Positive Side.
- Students' Perception of Atmosphere (SPoA): A More Positive Environment.
- Students' Social Self-Perception (SSSP): Not Too Bad.

This study has provides information on student perceptions of their learning environment. The students perceived the learning environment to be more positive than negative. Some areas of weakness were identified that need to be overcome. Many areas were identified that could be improved.

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