

## Evaluating the Educational Environment in a Private Medical College Through Students' Eyes: Insights from the DREEM Scale

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### KEYWORDS

Educational environment; DREEM scale; Medical Education; Student perception; Learning climate; Faculty assessment; Curriculum evaluation; MBBS students.

### ABSTRACT

Background: Medical students' learning experiences and success are greatly influenced by their educational environment. For this environment to be continuously improved and to be in line with changing educational standards, regular assessment is necessary. A validated instrument that is frequently used to assess educational climates in health science institutions is the Dundee Ready Education Environment Measure (DREEM). Aim and Objective: Using the DREEM scale, this study sought to evaluate the educational environment as perceived by PramukhSwami Medical College (PSMC) first-year MBBS students in order to pinpoint areas of strength and room for development. Methods: 86 first-year MBBS students at PSMC participated in a cross-sectional study. The 50 items in the DREEM questionnaire, which was divided into five domains—students' perceptions of learning (SPL), teachers (SPT), academic self-perception (SAP), atmosphere (SPA), and social self-perception (SSP)—were used to gather data. The mean scores for each domain were examined using descriptive statistics to pinpoint areas in need of development. To investigate disparities in perception, comparisons based on gender were also examined. Results: A generally positive educational environment was indicated by the overall mean DREEM score of  $145 \pm 11.45$  out of 200. SPL ( $37 \pm 2.7$ ), SPT ( $30 \pm 1.8$ ), SAP ( $23 \pm 2$ ), SPA ( $35 \pm 3$ ), and SSP ( $20 \pm 2$ ) were the subscale scores. Significant differences in SPT, SPA, and SSP scores were found by gender-based analysis, with female students reporting higher satisfaction in some domains ( $P < 0.05$ ). Conclusion: With high SPL and SPA scores, the results indicate that first-year MBBS students at PSMC have favorable opinions of their learning environment. To further improve student satisfaction and academic achievement, specific interventions could be beneficial in areas like SPT and SSP. These gaps might be successfully filled by putting peer support networks and faculty development programs into place. Frequent evaluation with DREEM can support ongoing.

### 1. Introduction

The phrase "Educational Environment" refers to all of the interactions, activities, and materials that affect how students learn in lecture halls, departments, faculty, and the university. The success of undergraduate medical education is significantly shaped by this environment (1,2). Research suggests that a supportive learning environment greatly boosts students' motivation, improving their overall success, satisfaction, and accomplishment in medical school (1, 3). Since this environment promotes academic success and meaningful learning experiences, its quality has a direct impact on how effective educational programs are (4,5).

The use of trustworthy assessment instruments is crucial for assessing and enhancing the learning environment. A validated tool designed especially for evaluating the educational environment of health science courses is the Dundee Ready Education Environment Measure (DREEM) questionnaire (6,7). DREEM is used as a diagnostic tool to determine an institution's strengths and weaknesses, compare students from different years, and evaluate gender-based disparities. The findings can direct curriculum improvements and changes, assisting in bringing the program into line with changing educational standards (8).

Academic achievement and student satisfaction are positively correlated with a supportive learning environment. Institutions can promote educational quality improvement and possibly improve student performance and engagement by routinely evaluating this environment using tools like DREEM (9, 10).

This model will help determine the curriculum's shortcomings and evaluate the effects of fresh curricular initiatives. It will shed light on the real learning environment that students can access as well as their expectations. This method will also be used to identify problem areas that need remediation and to recommend

learning settings that could improve academic performance.

## **2. Materials and Methods:**

Using the Dundee Ready Education Environment Measure (DREEM) scale, this study was carried out in the Department of Biochemistry at a medical college in western India to assess the educational environment as perceived by first-year MBBS students. A sample of 150 first-year MBBS students was chosen using a randomized cross-sectional prospective design. 86 of the 150 students who were invited to participate finished the survey, resulting in a 57.3% response rate. After the students' first-year results were made public, data was gathered, enabling them to offer unbiased assessments of their educational experiences.

Because of its extensive validation and reliability in evaluating the educational environments of medical and health professions, the DREEM questionnaire was chosen for this study (11, 12, 13). With a total score range of 0 to 200, this tool consists of 50 items, each of which is scored on a 5-point Likert scale (0 being strongly disagree and 4 being strongly agree). More favorable opinions of the learning environment are indicated by higher scores. Nine negatively phrased items (items 8, 12, 15, 16, 21, 23, 34, 39, and 45) were reverse-scored to ensure consistency in interpretation.

Five distinct domains are evaluated by the questionnaire: Social Self-Perceptions (SSP), which has a maximum score of 28; Academic Self-Perceptions (SAP), which has a maximum score of 32; Perceptions of Atmosphere (SPA), which has a maximum score of 48; Students' Perceptions of Learning (SPL), which has a maximum score of 48; and Students' Perceptions of Teachers (SPT), which has a maximum score of 44.

Items with a score of less than two were marked as "problem areas," indicating that certain elements of the learning environment needed to be improved. The following is how DREEM scores are interpreted: Excellent educational environments are indicated by scores above 150; more positive than negative environments are suggested by scores between 101 and 150; more areas of concern are indicated by scores between 51 and 100; and serious problems needing intervention are highlighted by scores below 50.

### **Exclusion Criteria:**

The analysis only included completed questionnaires. To preserve the reliability and quality of the data, incomplete responses were eliminated.

### **Data Analysis:**

SPSS version 20 was used for statistical analysis. The mean scores for each domain and the overall DREEM score were computed using descriptive measures. All domains' mean scores and standard deviations were computed, and results with p-values less than 0.05 were deemed statistically significant. To give an accurate assessment of the perceived quality of the learning environment, 95% confidence intervals were chosen. To provide information for future curriculum and policy changes, this analysis sought to identify areas of strength and improvement (12, 13). The study received ethical approval from the university's Institutional Ethical Committee (Approval No. IEC/HMPCMCE/2018/Ex.27/164/18), ensuring adherence to ethical standards for research involving human participants. Each participant gave written informed consent, affirming both their voluntary participation and the confidentiality of the study.

## **3. Result:**

Eighty-six first-year MBBS students successfully completed the DREEM questionnaire. Out of a possible 200, the average overall DREEM score was  $145 \pm 11.45$ , suggesting that participants had a generally positive opinion of the learning environment (Table 1). According to this score, even though students have positive opinions, there are still areas where their experience could be enhanced.

Further dissecting the findings, the Students' Perception of Learning (SPL) subscale yielded a mean score of  $37 \pm 2.7$  out of 48, indicating a generally favorable evaluation of the curriculum's teaching and learning strategies. To further raise student satisfaction and engagement, there is still room for improvement in this area. With a score of  $30 \pm 1.8$  out of 44 on the Students' Perception of Teachers (SPT) subscale, students generally have a positive opinion of their teachers. However, the findings suggest that in order to better satisfy student expectations, there are chances to enhance faculty interaction and instructional strategies. Students' Academic Self-Perception (SAP), which measures academic self-assessment, averaged  $23 \pm 2$  out of

32, indicating that they generally have confidence in their academic skills. However, there may be room for more tools or support networks to boost their academic self-assurance even more.

A generally supportive learning environment was indicated by the Students' Perception of Atmosphere (SPA) score of  $35 \pm 3$  out of 48; however, this implies that aspects like peer support and stress management could be further optimized. Lastly, a mean score of  $20 \pm 2$  out of 28 on the Students' Social Self-Perception (SSP) indicates a moderate level of satisfaction with the social environment, underscoring the need for better social support systems.

**Table 1: Overall DREEM Score and Subscale Scores of First-Year MBBS Students**

DREEM Subscale	Maximum Score	Score Achieved	Interpretation
Students' Perception of Learning (SPL)	48	$37 \pm 2.7$	More positive response regarding teaching-learning methods
Students' Perception of Teachers (SPT)	44	$30 \pm 1.8$	Moving in the right direction, but improvement is needed
Students' Academic Self-Perception (SAP)	32	$23 \pm 2$	Positive mindset of students
Students' Perception of Atmosphere (SPA)	48	$35 \pm 3$	More positive atmosphere
Students' Social Self-Perception (SSP)	28	$20 \pm 2$	Not too bad, but improvement is needed
All Items	200	$145 \pm 11.45$	More positive than negative



**Figure 1: Distribution of DREEM Subscale Scores Among First-Year MBBS Students**

Significant differences were found in a number of subscales by the gender-based analysis, as indicated in Table 2. Male students reported a higher average score ( $30 \pm 2.1$ ) on the SPT subscale than female students ( $29 \pm 1.4$ ), with a statistically significant difference ( $P = 0.0098$ ) between the two groups. This result suggests that there may be differences in how male and female students view faculty involvement. In the same way, male students scored higher ( $36 \pm 2.6$ ) than female students ( $34 \pm 3.4$ ) in the SPA domain, with a significant difference ( $P = 0.0036$ ). On the SSP subscale, however, female students reported greater satisfaction, with an average score of  $20 \pm 2.2$  compared to  $19 \pm 1.8$  for male students. This difference was statistically significant ( $P = 0.0261$ ).

As shown in Table 2, these results provide important new information about the different experiences of male and female students in the classroom. Furthermore, Figure 1 gives additional context to the areas of strength and those that need attention by graphically comparing the achieved versus maximum scores across the different domains. This information provides a foundation for focused interventions and enhancements that may improve each participant's overall educational experience.

**Table 2: Gender-Based Comparison of DREEM Subscale Scores Among First-Year MBBS Students**

DREEM Subscale	Maximum Score	Male (n=38)	Female (n=48)	Total	P-value
Students' Perception of Learning (SPL)	48	$37 \pm 1.8$	$38 \pm 3.6$	$37 \pm 2.7$	0.1217
Students' Perception of Teachers (SPT)	44	$30 \pm 2.1$	$29 \pm 1.4$	$30 \pm 1.8$	0.0098
Students' Academic Self-Perception (SAP)	32	$22 \pm 2.4$	$22 \pm 1.6$	$23 \pm 2$	1
Students' Perception of Atmosphere (SPA)	48	$36 \pm 2.6$	$34 \pm 3.4$	$35 \pm 3$	0.0036

Students' Social Self-Perception (SSP)	28	19 ± 1.8	20 ± 2.2	20 ± 2	0.0261
All Items	200	144 ± 10.7	143 ± 12.2	145 ± 11.45	0.6914

#### 4. Discussion:

This study used the Dundee Ready Education Environment Measure (DREEM) scale to assess how first-year MBBS students at PSMC perceived their educational environment. The findings show a favourable educational environment, with an average DREEM score of  $145 \pm 11.45$  out of 200, indicating a generally positive learning atmosphere. This score shows similar levels of student satisfaction, which is consistent with findings from similar studies conducted in medical schools in India and around the world (14–16).

The SPL score in this study was  $37 \pm 2.7$  out of 48, indicating a positive response to the teaching and learning methods. Other studies have reported comparable scores, such as Abraham et al., who discovered an average SPL score of 35 in a South Indian medical college, citing student-centered teaching reforms (14). Similarly, Roff et al. found SPL scores averaging around 34 in a UK study, indicating that institutions with updated educational strategies provide comparable teaching quality (15).

The Students' Perception of Teachers (SPT) score was  $30 \pm 1.8$  out of 44, indicating overall approval of faculty performance, with room for improvement. In Saudi Arabia, a study found that faculty development programs aimed at active student engagement resulted in slightly higher SPT scores of around 32 (16). This implies that similar training initiatives at PSMC may improve students' perceptions of teaching quality.

Gender differences were notable, with female students reporting higher satisfaction with SPT, SPA, and SSP scores. These findings are consistent with those of Khan et al., who reported higher levels of satisfaction among female students in Pakistani medical schools, possibly reflecting different expectations and experiences in the academic environment (17). This gender-based distinction emphasizes the importance of investigating gender-specific needs and how they influence perceptions of teaching and support.

PSMC has a supportive educational environment, as evidenced by an SPA score of  $35 \pm 3$  out of 48. This is consistent with Genn et al., who reported SPA scores of around 34 in Australian medical schools, emphasizing the value of a supportive, interactive environment for positive academic experiences (18). PSMC's slightly higher SPA score could reflect recent infrastructure improvements and efforts to foster a collaborative environment.

The students' Social Self-Perception (SSP) score was  $20 \pm 2$  out of 28, indicating moderate satisfaction and the need for more social support. Victoroff and Hogan discovered similar challenges in a study of dental students in the United States, observing that peer support programs significantly improved SSP scores, reduced stress, and improved students' overall well-being (19). Introducing mentorship and peer support groups at PSMC may improve students' social experiences and contribute to a more cohesive learning community.

The findings of this study highlight both strengths and areas for improvement in PSMC's educational environment. High SPL and SPA scores indicate effective teaching and a supportive environment, whereas low SPT and SSP scores indicate areas requiring targeted intervention. Expanding faculty development and implementing structured peer support could improve the educational experience and adapt to changing student needs.

Overall, this study sheds light on the educational climate of medical institutions and suggests potential areas for curriculum development and policy improvements. Future longitudinal studies could provide a more detailed understanding of how specific interventions affect student perceptions over time, allowing for continuous improvement of the educational environment.

#### 5. Conclusion:

According to the results, first-year MBBS students generally have a positive opinion of their learning environment, which suggests that it is a supportive setting that promotes learning. However, examining DREEM scale items may provide a more in-depth understanding of areas that might profit from focused enhancements, especially regarding student support and curriculum efficacy. In addition to identifying curriculum flaws, this kind of analysis would evaluate the long-term effects of any new curricular interventions. Furthermore, by establishing a framework for recognizing and resolving issues, this strategy might improve overall learning experiences by bringing the educational environment closer to what students expect.

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