

# Comparative analysis of education environment perception of 1<sup>st</sup> and 2<sup>nd</sup> year MBBS students of medical college using Dundee ready education environment measure



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## ABSTRACT

**Background:** The Dundee ready education environment measure (DREEM) inventory is a useful tool to identify the student's perception of the educational environment at the medical colleges. **Aims and Objectives:** This study aimed to evaluate and compare the perception of educational environment of 1<sup>st</sup> and 2<sup>nd</sup> year undergraduate medical students of SBH Government Medical College Dhule, using DREEM inventory. **Materials and Methods:** Eighty-six students of 1<sup>st</sup> year and 92 students of 2<sup>nd</sup> year MBBS participated in this study. DREEM questionnaire was given to the students in a classroom after the scheduled routine teaching sessions by the teachers. Students were instructed to indicate best response for each item given in DREEM questionnaire. Statistical analysis was performed using Microsoft Excel. **Results:** The mean score of 1<sup>st</sup> year student for each domain was comparatively higher than the score of 2<sup>nd</sup> year students. Items that have a mean score of 3.5 or over were considered to be real positive points. Items with a mean between 2 and 3 were aspects of the great concern that could be improve. Items with a mean of 2 or less indicate problem areas. The overall DREEM score was 141.96 (70.87%). However, there were no significant differences in the overall DREEM score of 1<sup>st</sup> and 2<sup>nd</sup> year students. The overall DREEM score of 1<sup>st</sup> and 2<sup>nd</sup> year students was 141.96 (70.87%). However, there were no significant differences in the overall DREEM score of 1<sup>st</sup> and 2<sup>nd</sup> year students. **Conclusions:** DREEM is a useful tool to assess the educational environment and to give a clear indication of the education environment perception of medical students. The DREEM questionnaire reflects the realistic situation in medical colleges and can be utilized in a variety of situations to obtain baseline information.

**Key words:** Dundee ready education environment measure; Medical student; Educational environment

## INTRODUCTION

Educational environment is one of the most important determinants of an effective curriculum. Educational environment influences how, why, and what student learn, there is a proven connection between the educational environment and valuable outcome of students achievement, satisfaction, and success.<sup>1-4</sup>

The Dundee ready education environment measure (DREEM) inventory identifies the student's perception

of the educational environment at the medical colleges. The DREEM questionnaire, based on a Likert scale, was developed by sir Roff and Sean McAleer with several other researchers in 1997.<sup>3-8</sup> It has been tested on student's populations in various countries to assess the educational environment and climate of medical institutions. It constituted 50 items, categorized into five domains as given below:

1. Students perception of learnings
2. Perception of teacher

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3. Self-perception
4. Students perception of Atmosphere
5. Students self-perception.

First and 2<sup>nd</sup> year undergraduate students have a different perception of learning environment than final year undergraduate (MBBS) students; hence, they were included in this study.

### Aims and objectives

The aim of the present study was to evaluate and compare the perception of educational environment of 1<sup>st</sup> and 2<sup>nd</sup> year undergraduate medical students of SBH Government Medical College Dhule, using DREEM inventory.

## MATERIALS AND METHODS

Eighty-six students of 1<sup>st</sup> year and 92 students of 2<sup>nd</sup> year MBBS were participated in this study. DREEM questionnaire was given to the students in a classroom after the scheduled routine teaching sessions. Students were instructed to indicate best response for each item given in DREEM questionnaire. Data were collected anonymously, students mentioned only their year of study. DREEM scale allows the users to report a total environment score as well as score for the five domains.

DREEM questionnaire comprise 41 positive items and each item was scored on Likert Scale (0–4) with 4 – strongly agree, 3 – agree, 2 – uncertain, 1 – disagree, and 0 – strongly disagree. Nine of the 50 items (4, 8, 9, 17, 25, 35, 39, 48, and 50) (Table 1) were negative and scored in reverse manner 0 – strongly agree, 1 – agree, 2 – uncertain, 3 – disagree, and 4 – strongly disagree. Higher score indicates positive result. The inventory gives two types of scores, a) individual item mean score for each of the 50 item and b) mean total score for 50 items or for each of its domain.<sup>9,10</sup> The mean and percentage score of 1<sup>st</sup> and 2<sup>nd</sup> year students for DREEM inventory was calculated. Statistical analysis was performed using Microsoft Excel.

### Ethical approval

The ethical approval was obtained from the Institutional Ethical Committee before the start of the study. The

number was IEC/2021/Physiology/78, dated October 21, 2021. Informed consent was taken from student's before enrolling them in the present study.

## RESULTS

Table 2 shows the mean score for each of the 50 item. Items that have a mean score of 3.5 or over were considered to be real positive points. Items with a mean between 2 and 3 were aspects of the great concern that could be improve. Items with a mean of 2 or less indicate problem areas.

Table 3 shows the mean score of 1<sup>st</sup> year student for each domain is comparatively higher than the score of 2<sup>nd</sup> year students. This table also shows total mean and percentage scores of 1<sup>st</sup> and 2<sup>nd</sup> year students. The overall DREEM score was 141.96 (70.87%). However, there were no significant differences in the overall DREEM score of 1<sup>st</sup> and 2<sup>nd</sup> year students.

## DISCUSSION

The primary goal of medical education is to create a curriculum that will prepare medical students to become effective healers in the future. The education environment is the most critical deciding element in the effectiveness of complete curriculum implementation at medical colleges. According to the adult learning concept, education should be learner-centered, and the function of the teacher should be altered from information transmitter to facilitator. Teachers should not mock their pupils; rather, they should actively involve them in learning and reflect on what they learn.

The DREEM is a validated measure developed to assess the educational environment of trainee health professionals. It has been utilized in a variety of contexts across the world, mostly with medical students but also with other healthcare organizations. The literature on the DREEM's use clearly indicates that those who have used it have found it to be a useful tool for a variety of evaluation-related purposes, such as diagnostic, comparison of different groups, comparison of the same group under different conditions, and examining the relationship of the educational environment with other measures. The DREEM inventory was utilized in the current research to “diagnose” the educational environment of 1<sup>st</sup> and 2<sup>nd</sup> year MBBS students at SBH Government Medical College, Dhule.

Lectures are regarded the primary method of teaching technique at our institution since they are primarily teacher-centered and oriented on the transmission of factual knowledge. Adult learning theory states that teaching

**Table 1: Various domains of DREEM inventory**

Domain	Items	Maximum score
SPL	12	48
SPT	11	44
SAP	08	32
SPA	12	48
SSP	07	28
Total	50	200

SPL: Students perception of learning, SPT: Students perception of teaching, SAP: Students academic self-perception, SPA: Students perception of atmosphere, SSP: Students social self-perception

**Table 2: Mean DREEM scores per item and students year of the study**

Domain	Item	1 <sup>st</sup> year	2 <sup>nd</sup> year
Students perception of learning			
1	I am encouraged	3.3	2.73
7	The teaching is often stimulating	3.1	2.91
13	The teaching is student centered	3.2	2.69
16	The teaching helps me to develop my competence	3.5	3.02
20	The teaching is well focused	3.3	2.73
22	The teaching helps to develop my confidence	3.3	3.06
24	The teaching time is put to good use	3.3	2.91
25	The teaching over-emphasizes factual learning	1.4	1.5
38	I am clear about the learning objectives of the program	3.0	2.8
44	The teaching encourages me to be an active learner	3.4	2.76
47	Long-term learning is emphasized over short-term learning	2.8	2.6
48	The teaching is too teacher centered	2.4	1.9
Students perception of teaching			
2	The teachers are knowledgeable	3.6	3.4
6	The teachers are patient with patients	2.7	2.9
8	The teachers ridicule the students	3	2.9
9	The teachers are authoritarian	2	1.6
18	The teachers have good communications skills with patients	2.7	3.2
29	The teachers are good at providing feedback to students	3.4	2.9
32	The teachers provide constructive criticism here	2.6	2.4
37	The teachers give clear examples	3.2	2.9
39	The teachers get angry in class	3	2.3
40	The teachers are well prepared for their classes	3.4	2.6
50	The students irritate the teachers	3.1	2.8
Students academic self-perception			
5	Learning strategies which worked for me before continue to work for me now	2.5	1.86
10	I am confident about my passing this year	3.7	3.39
21	I feel I am being well prepared for my profession	3.4	2.93
26	Last year's work has been a good preparation for this year's work	2.8	2.95
27	I am able to memorize all I need	2.4	2.60
31	I have learned a lot about empathy in my profession	2.8	2.65
41	My problem solving skills are being well developed here	3.0	2.65
45	Much of what I have to learn seems relevant to a career in Medicine	3.1	2.82
Students perception of atmosphere			
11	The atmosphere is relaxed during the ward teaching	3.21	2.9
12	This college is well timetabled	3.5	2.5
17	Cheating is a problem in this college	2.28	2.6
23	The atmosphere is relaxed during lectures	3.29	2.8
30	There are opportunities for me to develop interpersonal skills	3.23	3.1
33	I feel comfortable in class	3.19	2.8
34	The atmosphere is relaxed during seminars/tutorials	3	2.5
35	I find the experience disappointing	2.9	2.5
36	I am able to concentrate well	2.9	2.8
42	The enjoyment outweighs the stress of the program	2.6	2.9
43	The atmosphere motivates me as a learner	3.2	2.4
49	I feel able to ask the questions I want	3.1	3.0
Students social self-perception			
3	There is a good support system for students who get stressed	2.88	2.73
4	I am too tired to enjoy the course	2.9	2.9
14	I am rarely bored on this program	2.3	1.6
15	I have good friends in this college	3.44	3.28
19	My social life is good	3.51	3.34
28	I seldom feel lonely	2.41	2.15
46	My accommodation is pleasant	3.0	2.54

**Table 3: Mean and percentage of scores for the DREEM domains**

Domain	I year score mean (%)	II year score mean (%)	Total (%)
Perception of Learning	36.0 (75)	31.6 (65.85)	34.09 (71.02)
Perception of teaching	32.7 (74.31)	29.8 (67.72)	31.25 (71.02)
Academic self-perception	23.7 (74.06)	21.8 (68.28)	22.7 (70.96)
Perception of atmosphere	36.0 (75.0)	32.8 (68.33)	34.4 (71.66)
Social self-perception	20.45 (73.03)	18.54 (66.21)	19.52 (69.71)
Total	148.85 (74.28)	134.54 (67.27)	141.96 (70.87)

should be founded on the idea of active learning, in which the learner actively participates in the learning process. The impression of learning score ranges from 25 to 36, indicating a more positive attitude. In their research, Noreen *et al.*,<sup>11</sup> discovered that the students perspective about learning score was determined to be 25.45/48, which is on the boundary of “more favorable view.” The focus is on developing pupils’ skills rather than just transmitting factual information.<sup>12</sup> Several studies have shown that active learning strategies such as small group discussions, case-based learning, and problem-based learning are more effective modes of instruction.

Score of perception of teaching is ranging between 23 and 33, which shows that teaching is moving in the right direction. Noreen *et al.*,<sup>11</sup> in their study, observed that students perception about teachers again response (23.33/44) is at border line of “more positive perception.”

Score of academic self-perceptions is 17–24 indicates feeling more on the positive side. Score of the perception of atmosphere for 1<sup>st</sup> year students is 25–36 indicates more positive attitude and that for 2<sup>nd</sup> year students is 13–24 indicates that there are many issues that need to be changed. Score of the social self-perception is 15–21 that indicates that social self-perception is not too bad.

The score of 1<sup>st</sup> year students for each domain was high 148.85 (74.28%) as compared to 2<sup>nd</sup> year students 134.54 (67.27). This score indicates that the position of the qualities of both the year students to be placed just on the 3<sup>rd</sup> grade (one step below the best), that is, more positive than negative.

The overall mean DREEM score of the present study was 141.96/200 and this was found to be higher than other studies. A larger scale study conducted in the medical schools of Nigeria and Nepal showed DREEM score of 118/200 and 130/200 respectively.<sup>8</sup> In Trinidad, DREEM score of final year medical students was 109.9/200.<sup>13</sup> Our higher score is reassuring, and is perhaps an indicator of better teaching environment. In their research, Noreen *et al.*,<sup>11</sup> discovered that the overall DREEM score of 107.5/200 is lower than the previous study done by Rehman *et al.*<sup>14</sup> The lowest score given was 89/200 from Saudi Arabia’s College of Medicine at King Saud University, followed by 97/200 from a Canadian Memorial Chiropractic College research.<sup>15,16</sup>

### Limitations of the study

Total numbers of participants in this study were relatively small.

## CONCLUSION

DREEM is a useful tool to assess the educational environment and to give a clear indication of the education environment perception of students of 1<sup>st</sup> and 2<sup>nd</sup> year. The DREEM questionnaire reflected the realistic situation in medical colleges and can be utilized in a variety of situations to obtain baseline information.

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## DIRECTIONS FOR FURTHER RESEARCH

Further studies are needed to compare the educational environment at the final year and internship level with 1<sup>st</sup> and 2<sup>nd</sup> year, as well as the same students as they progress in higher classes.

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