



Received on 15 May 2023; received in revised form, 15 July 2023; accepted, 21 November 2023; published 01 January 2024

DUNDEE READY EDUCATION ENVIRONMENT MEASURE (DREEM) TOOL: PERCEPTION OF LEARNING ENVIRONMENT IN A MEDICAL COLLEGE OF INDIA

Monica Verma ^{*1}, Abhishek Soni ², Asha Kumari ³, Ashuma Sachdeva ¹ and Ramesh Verma ⁴

Department of Biochemistry ¹, Department of Radiation Oncology ², Department of Community Medicine ⁴, Pt BDS PGIMS, Rohtak - 124001, Haryana, India.

Department of Biochemistry ³, Shaheed Hasan Khan Government Medical College, Mewat - 122107, Haryana, India.

Keywords:

DREEM, Medical education, Learning, Teaching, Student-centered teaching, Mentor

Correspondence to Author:

Dr. Monica Verma

Associate Professor,
Department of Biochemistry,
Pt BDS PGIMS, Rohtak - 124001,
Haryana, India.

E-mail: monisoni26@gmail.com

ABSTRACT: Background: In the present era of quality accreditation, considering the quality of medical education is also very important, especially in developing countries. The present study was planned to understand the current state of medical education and explore medical students' perception of their learning environment so that problem areas can be identified both at the institutional and curriculum level. **Methods:** DREEM tool was circulated to all willing participants from first to final-year MBBS students. Data was collected and analyzed using recent SPSS software. Descriptive statistics were used to calculate mean, standard deviation, and minimum and maximum values. One-way analysis of variance (ANOVA) was calculated, and $p < 0.05$ was considered to be significant. **Results:** An overall score of 111.76 (55.88%) out of 200 was obtained indicating 'more positive than negative'. The overall mean score was 2.21 ± 0.58 , which is interpreted as an 'educational aspect that could be enhanced'. Out of five domains, students' perception of teachers scored the maximum (57.95 %) rating while students' social self-perception scored the least (49.35 %). The relationship between students and domain is insignificant for teachers, academics, and sociality (p -value = 0.088, 0.290, and 0.30) but significant for learning and atmosphere (p -value = 0.039 and 0.018). **Conclusions:** Overall institute is propagating in the right direction. There is an urgent need for training and retraining of teachers and the DREEM scoring survey should be adopted in all medical colleges as an annual scoring system so that the level of medical education could be elevated.

INTRODUCTION: The learning environment in medical education is affected by many factors and plays a major role in the life of learners ¹. Most of the time it is measured at the institutional level and the perception of students is always ignored. But nowadays the scenario is changing with the introduction of competency-based medical education.

Measuring the learning environment indicates the quality of the educational environment expressing the efficiency of the educational program which in turn depends upon three components – physical environment, emotional and intellectual climates ².

As per guidelines of the World Federation for Medical Education (WFME), improving the learning environment has been recognized as one of the objectives of the assessment of medical education programs ³. Worldwide many tools have been suggested for measurement of educational environment in health care professionals both at undergraduate and postgraduate levels like Dundee Ready Education Environment Measure (DREEM), Clinical Learning Environment Inventory (CLEI),

	<p style="text-align: center;">DOI: 10.13040/IJPSR.0975-8232.15(1).137-44</p>
	<p style="text-align: center;">This article can be accessed online on www.ijpsr.com</p>
<p>DOI link: https://doi.org/10.13040/IJPSR.0975-8232.15(1).137-44</p>	

Medical Education Environment Measure (MEEM), Postgraduate Hospital Educational Environment Measure (PHEEM), Surgical Theatre Educational Environment Measure (STEEM), Anesthetic Theatre Educational Environment Measure (ATEEM), etc⁴. Most widely used of all is DREEM. It is a widely accepted and globally validated instrument for assessing undergraduate curricula' educational environment, including medicine, dentistry, nursing, midwifery, anesthesiology, medical emergencies, paramedical sciences, and chiropractic learning environments⁵⁻⁸.

Since, our main target is to produce competent and well-educated Indian Medical Graduates. So, taking their opinion is also of utmost important⁹. Unintentionally neglected areas of students can be easily revealed by this anonymous feedback system by using the 50-item DREEM questionnaire and the areas of concern can be easily addressed. This will result in substantial amendments to the learning environment and consequently, students' performance. So, the present study was planned to explore the perception of medical students of their learning environment and to identify problem areas at the institutional and curriculum level.

MATERIALS AND METHODS:

Study Design: This is a prospective, descriptive, and cross-sectional study. The study was conducted at Pt B D Sharma, Post Graduate Institute of Medical Sciences (PGIMS) Rohtak in collaboration with Shaheed Hasan Khan Government Medical College, Mewat (SHKM). The MBBS undergraduate students studying at SHKM from 1st, 2nd, 3rd, and 4th year were included in the study after taking their due consent. Pre-validated DREEM inventory tool was used which is a well-proven certified and reliable tool and has been translated into various languages across the world⁵.

The proforma of the original English-language version of the 50-item DREEM tool was used. A Google form was prepared and a link to the survey was forwarded to all the willing participants. The students were assured that participation in the study is completely voluntary and non-participation would not adversely affect their academics. Response to the questionnaire submitted by them was collected and analyzed. Reminders to complete

the survey were also sent, as and when the need aroused.

Methodology: DREEM instrument was developed in Dundee, Scotland, UK by Delphi process¹⁰. It is a generic, non-culturally specific, multi-dimensional questionnaire consisting of 50 questions divided into five domains – Students' perceptions of learning/teaching (SPL; 12 items), Students' perceptions of teachers (SPT; 11 items), Students' academic self-perceptions (SASP; 8 items), Students' perceptions of the atmosphere (SPA; 12 items) and Students' social self-perceptions⁵.

Each item was scored 0–4 on a five-point Likert scale (4 = strongly agree, 3 = agree, 2 = neutral, 1 = disagree, and 0 = strongly disagree). However, 9 out of the 50 items (Q 4, 8, 9, 17, 25, 35, 39, 48, and 50) were negative statements and were scored in a reverse manner (0 =strongly agree, 1 = agree, 2 = neutral, 3 = disagree and 4 = strongly disagree) so that, the higher the score, the more negative the feedback, or the more incorrect perception. Individual items were analyzed by calculating the mean score as it enables the identification of specific strengths and weaknesses within the educational environment. The data which was adopted for interpretation of the overall score, domains score, and individual item mean scores are explained in **Table 1**^{11, 12}.

The data was compiled and analyzed using SPSS (v17; SPSS Inc., Chicago, IL, USA). Descriptive statistics were used to calculate mean, standard deviation, and minimum and maximum values. one-way analysis of variance (ANOVA) was calculated, and $p < 0.05$ was considered to be significant.

RESULTS: Only those questionnaire responses which were completed in all aspects were included in the study. **Table 1**, shows the number of students who participated in the study. A total of 204 students (out of 480) submitted their feedback, of whom, the maximum were male students, *i.e.*, 156 (76.4%) males vs 48 (23.5%) females. The number of students in the first, second, third and fourth years was 81, 75, 12 and 36 respectively. There was not much participation from third-year students. The mean age of the entire cohort was

19.67 years. The mean age of first, second, third- and fourth-year students were 17.56, 18.76, 20.34, and 21.33 years respectively.

No statistically significant difference was demonstrated between genders for the total DREEM score or subscale scores ($p > 0.05$).

TABLE 1: NUMBER OF STUDENTS WHO PARTICIPATED IN THE STUDY WITH A GENDER DISTRIBUTION

Year of MBBS	No. of students participated	Male (%)	Female (%)	Age years Mean (and SD)
First	81	66 (81.4 %)	15 (18.5 %)	17.56±0.43
Second	75	57 (76 %)	18 (24 %)	18.76±0.55
Third	12	09 (75 %)	03 (25 %)	20.34±0.87
Fourth	36	24 (66.6 %)	12 (3.4 %)	21.33±0.38
Total	204	156 (76.4 %)	48 (23.5 %)	19.67±1.23

Table 2, shows the interpretation of overall and domain scoring with the number of students for each category along with individual scoring criteria. **Table 3**, shows the mean domain and overall scoring with interpretation. An overall score of 111.76 (55.88%) out of 200 was obtained, which when analyzed as per the practical guide of McAleer and Roff^{5, 13} indicated ‘more positive

than negative’. The overall mean score was 2.21±0.58, which is interpreted as an 'educational aspect that could be enhanced'. 63.2% of students rated the education environment as more positive than negative. 27.9% think that there are plenty of problems in the current education system while only 7.4% rated the current education system as excellent.

TABLE 2: DREEM INTERPRETATION SCORING ALONG WITH NUMBER OF STUDENTS IN EACH CATEGORY

Section	Interpretation	No. of students (%) in each category
Overall score of Educational Environment (Out of 200)		
0-50	Very Poor	3 (1.5%)
51-100	Plenty of Problems	57 (27.9%)
101-150	More Positive than Negative	129 (63.2%)
151-200	Excellent	15 (7.4%)
Students' Perception of Learning (Out of 48)		
0-12	Very Poor	12 (5.9%)
13-24	Teaching is viewed negatively	45 (22.1%)
25-36	A more positive perception	132 (54.7%)
37-48	Teaching highly thought of	15 (7.4%)
Students' Perception of Teachers (Out of 44)		
0-11	Terrible	9 (4.4%)
12-22	In need of some retraining	57 (27.9%)
23-33	Moving in the right direction	120 (58.8%)
34-44	Model teachers	18 (8.8%)
Students' Academic Self-Perceptions (Out of 32)		
0-8	Feelings of total failure	9 (4.4%)
9-16	Many negative aspects	81 (39.7%)
17-24	Feeling more on the positive side	105 (51.5%)
25-32	Confident	9 (4.4%)
Students' Perception of Atmosphere (Out of 48)		
0-12	A terrible environment	12 (5.9%)
13-24	Many issues need changing	42 (20.6%)
25-36	A more positive attitude	129 (63.2%)
37-48	A good feeling overall	21 (10.3%)
Students' Social Self Perceptions (Out of 28)		
0-7	Miserable	24 (11.8%)
8-14	Not a nice place	84 (41.2%)
15-21	Not too bad	87 (42.6%)
21-28	Very good socially	9 (4.4%)
Individual items (n=50)		
Mean score ≥ 3	Strength areas	
The mean score between 2 and 3	Need improvement	
Mean score ≤ 2	Problem areas	

TABLE 3: OVERALL PERCEPTION OF THE EDUCATIONAL ENVIRONMENT AND DOMAINS OF THE DREEM QUESTIONNAIRE

Dreem	No. of items	Maximum score	Mean±SD (%)	Interpretation
Overall education environment	50	200	111.76 ±0.58 (55.88 %)	More positive than negative
Students' Perception of Learning	12	48	27.50 ± 8.18 (57.29 %)	A more positive perception
Students' Perception of Teachers	11	44	25.55 ±6.42 (57.95 %)	Moving in the right direction
Students' academic self-perception	8	32	17.45±4.85 (54.53 %)	Feeling more on the positive side
Students' perception of atmosphere	12	48	27.42±7.97 (57.12 %)	A more positive atmosphere
Students' social self-perception	7	28	13.82±4.71 (49.35 %)	Not a nice place

Out of five domains, students' perception of teachers scored the maximum (57.95%) rating while students' social self-perception scored the least (49.35%). 54.7 % of students had a positive perception of the learning environment while 22.1% observed teaching negatively. 58.8% of students believed that teachers are moving in the right direction but 27.9% perceived that they need some retraining. 51.5% of students had positive feelings about self-academic perceptions but 39.7% dealt with the negative side. Only 4.4% of students are confident of passing the exams and are sure of their bright careers. 63.2% felt a more positive college learning atmosphere and 20.6% faced many issues which need changes in the current system. 42.6% felt social self-perception was not too bad but an equally comparable percentage of students (41.2%) felt that it is not a nice place which is overall the most problematic area of the institute and to be looked at by authorities immediately. **Table 4**, shows year wise comparison of mean

domain and overall score (using one-way ANOVA) with statistically significant differences. The relationship between students and domain is insignificant for teachers, academics, and sociality (p-value = 0.088, 0.290, and 0.30) but significant for learning and atmosphere (p-value = 0.039 and 0.018) **Table 5**, shows year wise comparison of average of domain score among students of all years. **Table 6**, shows the average calculated for each item for all years accompanied by the overall mean. An average score ≥ 3 showed positive points and strength areas of the educational environment. Average between 2 and 3 are problem areas that should be taken care of and items with an average score ≤ 2 represented weaknesses of the education environment of the institute (Q-2, 8, 39, 27, 31, 3, 4, 14, and 28). Question no 6 (The teachers deliver research-led teaching) got the highest rating and question no 31 (I have learned a lot about the way scientific research is carried out) the least.

TABLE 4: YEAR-WISE COMPARISON OF OVERALL SCORES AND DOMAINS SCORES OF THE DREEM QUESTIONNAIRE

Domain	First-year (mean±SD)	Second year (mean±SD)	Third year (mean±SD)	Final year (mean±SD)	All students (mean±SD)	p-value
SPL	28.48 ±6.27	26.72±9.01	36.75±10.59	23.83±7.57	27.50±8.18	0.039
SPT	25.25±5.90	25.60±7.26	33.00±5.35	23.66±4.63	25.55±6.42	0.088
SASP	17.85±4.44	17.88±4.88	19.25±8.34	15.08±4.20	17.45±7.97	0.290
SPA	27.59±6.48	27.00±9.02	38.5±7.32	24.25±6.25	27.42±7.97	0.018
SSSP	13.40±4.85	13.80±4.32	18.50±8.50	13.25±3.22	13.82±4.71	0.230
Overall EE	112.59±24.77	111.00±32.68	146.00±39.33	111.08±22.77	111.76±29.49	0.049

TABLE 5: YEAR-WISE COMPARISON OF THE AVERAGE DOMAIN SCORE AMONG STUDENTS OF ALL YEARS

Domain	Overall (mean±SD)	First-year (mean±SD)	Second year (mean±SD)	Third year (mean±SD)	Final year (mean±SD)
Students' Perception of Learning	2.29±0.68	2.37 ±0.52	2.22 ±0.75	3.06 ±0.88	1.98 ±0.63
Students' Perception of Teachers	2.32±0.58	2.29 ±0.5	2.32 ±0.66	3.00 ±0.48	2.15 ±0.42

Students' academic self-perception	2.18±0.60	2.23 ±0.55	2.23 ±0.61	2.40 ±1.04	1.88 ±0.52
Students' perception of atmosphere	2.28±0.66	2.29 ±0.54	2.25 ±0.75	3.26 ±0.51	2.02 ±0.52
Students' social self-perception	1.97±0.67	1.91 ±0.69	1.97 ±0.61	2.64 ±1.21	1.89 ±0.46

TABLE 6: OVERALL AND YEAR-WISE AVERAGE SCORES OF INDIVIDUAL ITEMS OF THE DREEM QUESTIONNAIRE

Q	Domain	Question	Overall	First-year	Second year	Third year	Fourth-year
1	SPL	I am encouraged to participate in class	2.69±0.86	2.85±0.81	2.72±0.84	3.00±0.81	2.17±0.93
7	SPL	The teaching is often stimulating	2.28±0.99	2.30±0.77	2.32±1.03	3.25±1.50	1.83±1.03
13	SPL	The teaching is student-centered	2.04±0.99	2.07±0.91	2.00±1.00	3.25±0.5	1.67±1.07
16	SPL	The teaching helps to develop my competence	2.35±0.94	2.41±0.97	2.28±0.89	3.00±0.81	2.17±1.03
20	SPL	The teaching is well focused	2.56±0.85	2.78±0.75	2.40±0.86	3.50±1.00	2.08±0.66
22	SPL	The teaching helps to develop my confidence	2.31±1.02	2.33±1.00	2.40±0.91	3.25±0.95	1.75±1.13
24	SPL	The teaching time is put to good use	2.13±0.96	2.19±0.87	2.04±0.93	3.50±0.57	1.75±0.96
*25	SPL	The teaching over-emphasizes factual learning	2.12±0.83	2.07±0.78	2.08±0.95	2.50±1.00	2.17±0.71
38	SPL	I am clear about the learning objectives of the course	2.56±0.81	2.56±0.84	2.48±0.87	2.75±1.25	2.67±0.49
44	SPL	The teaching encourages me to be an active learner	2.26±0.90	2.41±0.74	2.00±0.91	3.50±1.00	2.08±0.90
47	SPL	Long-term learning is emphasized over short-term learning	2.35±0.90	2.44±0.97	2.24±0.92	3.00±0.81	2.17±0.83
*48	SPL	The teaching is too teacher-centered	2.35±0.92	2.07±0.87	1.76±1.05	2.25±1.50	1.33±0.77
2	SPT	The teachers are knowledgeable	1.84±0.98	2.96±0.58	3.12±0.72	3.75±0.50	3.00±0.42
6	SPT	The teachers deliver research-led teaching	3.07±0.63	2.00±1.03	1.76±1.09	3.25±0.95	2.17±1.03
*8	SPT	The teachers ridicule the students	1.91±1.11	2.30±1.20	2.16±0.85	3.75±0.50	2.17±1.03
*9	SPT	The teachers are authoritarian	2.31±1.06	2.11±0.89	1.92±0.81	2.00±1.41	1.92±0.99
18	SPT	The teachers help me to develop my practical skills	2.71±0.84	2.6±0.74	2.16±1.17	2.50±1.00	1.83±0.83
29	SPT	The teachers are good at providing feedback to students	2.19±0.96	2.33±0.78	2.16±1.17	2.50±1.00	1.83±0.83
32	SPT	The teachers provide constructive criticism here	2.03±0.91	2.04±0.80	2.12±1.09	2.50±0.57	1.67±0.77
37	SPT	The teachers give clear examples	2.72±0.73	2.89±0.50	2.48±0.82	3.75±0.50	2.50±0.67
*39	SPT	The teachers get angry in class	1.85±0.88	1.63±0.88	2.08±0.90	1.75±0.50	1.92±0.90
40	SPT	The teachers are well-prepared for their classes	2.65±0.91	2.52±0.97	2.80±0.86	3.50±0.57	2.33±0.77
*50	SPT	The students irritate the teachers	2.12±1.03	1.85±1.02	2.36±0.95	2.50±0.57	2.08±1.24
5	SASP	Learning strategies that worked for me before continue to work for me now	2.37±0.94	2.41±0.97	2.60±0.76	1.75±1.25	2.00±1.04
10	SASP	I am confident about passing this year	2.96±0.83	2.85±0.98	3.12±0.72	3.25±0.95	2.75±0.62
21	SASP	I feel I am well-prepared for my career	2.18±0.84	2.41±0.84	2.20±0.81	1.75±0.50	1.75±0.86
26	SASP	Last year's work has been a good preparation for this year's work	2.22±0.78	2.15±0.71	2.24±0.87	2.75±0.5	2.17±0.83
27	SASP	I am able to memorize all I need	1.72±1.03	1.93±0.95	1.64±1.07	2.25±1.70	1.25±0.75
31	SASP	I have learned a lot about the way scientific research is carried out	1.54±1.22	1.56±1.28	1.68±1.18	2.25±1.70	1.00±0.95
41	SASP	My problem-solving skills are being well developed here	2.06±0.94	1.96±0.80	2.08±1.11	2.75±1.25	2.00±0.73
45	SASP	Much of what I have to learn seems relevant to a career in biological	2.41±0.88	2.59±0.93	2.32±0.90	2.50±1.00	2.17±0.71

		sciences					
11	SPA	The atmosphere is relaxed during laboratory/practical/fieldwork classes	2.50±0.92	2.59±0.88	2.36±0.90	3.50±0.57	2.25±0.96
12	SPA	The course is well timetabled	2.28±1.17	2.37±1.04	2.12±1.30	3.50±0.57	2.00±1.12
*17	SPA	Cheating is a problem in this faculty	2.51±1.07	2.33±1.07	2.56±1.12	3.50±1.00	2.50±0.90
23	SPA	The atmosphere is relaxed during lectures	2.34±1.00	2.15±0.94	2.32±0.98	3.75±0.50	2.33±0.98
30	SPA	There are opportunities for me to develop my interpersonal skills	2.28±1.13	2.19±1.17	2.40±1.11	3.25±0.50	1.92±1.08
33	SPA	I feel comfortable in class socially	2.56±0.85	2.44±0.93	2.52±0.77	3.75±0.50	2.50±0.67
34	SPA	The atmosphere is relaxed during seminars/tutorials	2.25±1.04	2.37±1.00	2.20±1.04	3.50±0.57	1.67±0.88
*35	SPA	I find the experience disappointing	2.06±0.98	2.00±0.96	2.04±0.88	3.67±0.57	1.83±1.03
36	SPA	I am able to concentrate well	2.06±0.97	2.33±0.83	1.92±1.03	2.75±1.25	1.50±0.79
42	SPA	The enjoyment outweighs the stress of the course	2.21±1.11	2.22±1.15	2.16±1.17	2.50±1.00	2.17±1.03
43	SPA	The atmosphere motivates me as a learner	2.26±1.03	2.22±0.97	2.32±1.03	2.75±1.25	2.08±1.16
49	SPA	I feel able to ask the questions I want	2.15±1.06	2.37±0.96	2.08±1.07	3.00±1.41	1.50±0.90
3	SSSP	There is a good support system for students who get stressed	1.65±1.20	1.74±1.09	1.76±1.09	3.00±1.41	0.75±1.13
*4	SSSP	I am too tired to enjoy the course	1.93±0.96	1.93±0.91	1.88±0.88	2.25±1.25	1.92±1.24
14	SSSP	I am rarely bored on this course	1.63±1.13	1.44±0.97	1.48±1.08	2.50±1.73	2.08±1.24
15	SSSP	I have good friends in this faculty	2.09±1.12	1.89±1.05	2.28±0.98	3.00±1.41	1.83±1.40
19	SSSP	My social life is good	2.59±1.13	2.59±1.27	2.44±1.19	3.50±0.57	2.58±0.66
28	SSSP	I seldom feel lonely	1.90±1.13	1.81±1.17	1.96±1.02	2.50±1.73	1.75±1.13
46	SSSP	My accommodation is pleasant	2.04±1.17	2.00±1.30	2.00±1.15	1.75±1.25	2.33±0.98

*Items with negative statements. Items with a mean score below 2 were taken as problem areas needing remediable action. Items with a mean score of 3 and above were considered positives. Items with a mean score between 2 and 3 were considered as aspects that could be possibly enhanced.

DISCUSSION: In the present era of Quality accreditation, checking the quality of the educational environment is a need of the hour. Recently, the National Medical Commission has also shifted from the predominantly knowledge-based education system towards a competency-based medical education to create an Indian Medical Graduate, who is skilled, motivated, and ready to meet the health care needs of the country¹⁴. So, it is crucial to take feedback from students and watch over the quality of medical education, that we are providing to them, from their perspective. In the present study, a score of 111.76 out of 200 is obtained which indicates more positive than negative. Although, it's a good score indicating the progression of the institute in the right direction but also indicates some areas that require attention. If we compare the result with the range (101-150), it is towards the lower side only. 27.9% of students still think that there are plenty of problems in the current education system which need to be looked after. Our DREEM score of

111.76 is very much similar to those obtained by some studies conducted at Indian medical colleges like by Gupta *et al* (118/200), Abraham *et al* (117/200), and Kiran *et al* (120/200)¹⁵⁻¹⁷ but less than the scores obtained by Varma *et al* (139/200), Roff *et al* (130/200) and by Miles and Leinster (143/200)^{5, 13, 18}. The students had a very positive perception of learning (SPL) and of their atmosphere (SPA) with statistically significant results of 57.29% and 57.12% scores respectively. Among the four years, third-year students gave the highest rating for the SPL domain. First and second-year students felt a need for amendments but fourth-year students are facing some challenges. Their main concerns are Q 7, 13, 22, 24, and 48. Out of this most knotty area is teacher-centered learning. Numerous studies have reported the same problem in other institutes too, whether of Indian origin or not¹⁹⁻²². Although competency-based medical education had been introduced by the institute it seems that teachers are still wearing the traditional hats of factual learning. Our advice

is to introduce more of students centered learning methods like cooperative learning, inductive learning, gamified learning, flipped classroom, *etc*²³. As per the majority of students, teachers of the college are well knowledgeable, which is a very strong suit. But as per their feedback obtained, they are authoritarian too, get angry in class very often, and are not able to provide constructive criticism. Fourth-year students are interested in getting feedback from their teachers. It seems as if the institute needs training and retraining of teachers. A study done by Yilmaz, very well explains, how lack of training and fear of change from the norm among teachers can affect learning a lot²⁴. There is a need for a replacement for the role of a teacher as a facilitator who can supervise their students and provide guidance. 21st-century teaching is not about how the teacher teaches but how the students can imbibe their best²⁵.

Students from almost all years felt that they are not able to memorize and there is a lack of scientific research knowledge among them. Students' perceptions of atmosphere declined in the final year. Final-year students had significantly lower scores than other students. The main tricky areas which need consideration are, 'There are opportunities for me to develop my interpersonal skills', 'The atmosphere is relaxed during seminars/tutorials', 'I find the experience disappointing', 'I am able to concentrate well' and 'I feel able to ask the questions I want'. These all reflect a lack of learner-centered teaching methods and a lack of bonding between teacher and student. As defined by McCombs, the five fundamental domains of learner-centered practices may prove beneficial in this condition. These domains include creating positive relationships and learning climate, adapting to class learning needs, facilitating the learning process, encouraging personal challenge and responsibility, and providing for individual and social learning needs²⁶.

In the last domain, students' social self-perception scored the least and suggested "not a nice place". Many of the negative perceptions in this domain centered on the lack of a support system for students who get stressed and the course being boring and tiring. Also, there is a feeling of loneliness among students. Medical student mentoring program is key to this glitch²⁷.

Mentors play different roles than supervisors. This is a kind of informal relationship which focuses on achieving specific goals. Positive mentoring could prove beneficial not only for the personal and professional growth of students but can help them in research and academics tool^{28, 29}. With increasing awareness of the potential value of mentoring, many medical colleges and even new competency-based medical education curriculum support mentor-mentee culture worldwide^{30, 31}.

The study had its share of certain limitations too. There is a lack of full participation of students. Input from third-year students was the least. Also, the questionnaire is too long with 50 questions. It needs patience and dedication for students to fill out the entire questionnaire. Although we tried to make it striking and eye-catching by integrating pictures with every question. Still, it could be one of the reasons for the dearth. We have also decided to share the results of the study with the medical education unit of the institute so that corrective actions can be taken. Indeed, medical colleges should conduct such kind of scoring surveys, at least annually, to improve the quality of the medical education system.

CONCLUSION: The institute is propagating in the right direction. Some areas need more attention. DREEM scoring could be helpful and should be adopted for the annual scoring system so that the level of medical education possibly be improved in Indian medical colleges.

ACKNOWLEDGEMENTS: The authors would like to acknowledge the contribution of all the MBBS students in completing the questionnaire.

Funding: None

CONFLICTS OF INTERESTS: The authors report no competing interests

REFERENCES:

1. JM G: AMEE medical education guide no. 23 (part 2): curriculum, environment, climate, quality, and change in medical education - a unifying perspective. *Med Teach* 2001; 23: 445-54.
2. Bakhshialiabad H, BG and HZea: Improving students' learning environment by DREEM: an educational experiment in an Iranian medical sciences university (2011-2016). *BMC Med Educ* 2019; 19: 397.
3. Roff SMS: What is educational climate. *Med Teach* 2001; 4: 333-4.

4. SUSAN MILES LS & SJL: The Dundee Ready Education Environment Measure (DREEM): A review of its adoption and use. *Me Teach* 2012; 34: e620–e634.
5. Roff S MSHRAQMAADHGGPP: Development and validation of the Dundee-ready education environment measure (DREEM). *Med Teach* 1997; 19: 295-9.
6. Lizzio A WKSJ: University students' perceptions of the learning environment and academic outcomes: implications for theory and practice. *Stud High Educ* 2002; 27: 27-52.
7. Zawawi AH EM: Using DREEM to compare graduating students' perceptions of learning environments at medical schools adopting contrasting educational strategies. *Med Teach* 2012; 34: 25–31.
8. Khan JS TSYU: Determination of medical education environment in Punjab private and public medical colleges affiliated with University of Health Sciences. Lahore-Pakistan *J Ayub Med Coll Abbottabad* 2009; 14: 162-70.
9. Jacob KS. Medical Council of India's New Competency-Based Curriculum for Medical Graduates: A Critical Appraisal. *Indian J Psychol Med* 2019; 41: 203-9.
10. Salih KMA IMEOONSEH: Measurement of the educational environment in MBBS teaching program, according to DREEM in College of Medicine, University of Bahri, Khartoum, Sudan. *Advances in Medical Education and Practice* 2018; 9: 617-22.
11. ATaF. Medical student's perceptions of the educational environment at an Iranian medical sciences. *BMC Med Educ* 2010; 10: 87.
12. Roff S MSIOBS: A global diagnostic tool for measuring educational environment: comparing Nigeria and Nepal. *Med Teach* 2001; 23: 378-82.
13. Miles S SLLS: The Dundee Ready Education Environment Measure (DREEM): A review of its adoption and use. *Med Teach* 2012; 34: e620–34.
14. TV C: Improving quality of medical education in India: The need to value and recognize academic scholarship... *J Pharmacol Pharmacother*. 2013; 4: 171-3.
15. Abraham R R KVPTS: Students' perceptions of the learning environment in an Indian medical school. *BMC Med Educ*. 2008; 8: 20.
16. Kiran H S GB: DREEM" comes true - Students' perceptions of educational environment in an Indian medical school. *J Postgrad Med* 2013; 59: 300-5.
17. Gupta M LSSR: The Educational Environment of the Indian Undergraduate Medical Students: Is it good enough? *Journal of the Association of Physicians of India* 2018; 66: 20-6.
18. Varma R TEGJ: Determining the quality of educational climate across multiple undergraduate teaching sites using the DREEM inventory. *BMC Medical Education* 2005; 5: 8.
19. Edgren G HACJUMSDN: Comparing the educational environment (as measured by DREEM) at two different stages of curriculum reform. *Med Teach* 2010; 32: 233–238.
20. Tripathy S DS: Students' perception of the learning environment in a new medical college by means of the DREEM inventory. *International Journal of Research in Medical Sciences* 2013; 1: 385-91.
21. Avalos G FCDF: Determining the quality of the medical educational environment at an Irish medical school using the DREEM inventory. *Ir Med J* 2007; 100: 522-5.
22. Dunne F MSRS: Assessment of the undergraduate medical education environment in a large UK medical school. *Health Educ J* 2006; 65: 149-158.
23. M O: The Learner-Centered Method and Their Needs in Teaching. *IJMRE* 2021; 1: 64-9.
24. Yilmaz K: Social studies teachers' views of learner-centered instruction. *European Journal of Teacher Education* 2008; 31: 35-53.
25. Derebssa D: Tension between traditional and modern teaching-learning Approaches in Ethiopian primary schools. *Journal of International Cooperation in Education* 2006; 9: 123-140.
26. McCombs BL: Learner-centered online instruction. *New Directions for Teaching and Learning* 2015; 144: 57-71.
27. Nimmons D GSRJ: Medical student mentoring programs: current insights. *Advances in Medical Education and Practice* 2019; 10: 113-23.
28. Frei E SMBFB: Mentoring programs for medical students-a review of the PubMed literature 2000–2008. *BMC Med Educ* 2010; 10: 32.
29. S. S: Of mentors, apprenticeship, and role models: a lesson to relearn? *Med Educ Online* 2014; 19: 25428.
30. Elliott DD MWSPea: Shaping professionalism in preclinical medical students: professionalism and the practice of medicine. *Med Teach* 2009; 3: e295–e302.
31. Zuzuárregui JR HA: Comprehensive opportunities for research and teaching experience (CORTEX): a mentorship program. *Neurology* 2015; 84: 2372-6.

How to cite this article:

Verma M, Soni A, Kumari A, Sachdeva A and Verma R: Dundee ready education environment measure (dreem) tool: perception of learning environment in a medical college of India. *Int J Pharm Sci & Res* 2024; 15(1): 137-44. doi: 10.13040/IJPSR.0975-8232.15(1).137-44.

All © 2024 are reserved by International Journal of Pharmaceutical Sciences and Research. This Journal licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License.

This article can be downloaded to **Android OS** based mobile. Scan QR Code using Code/Bar Scanner from your mobile. (Scanners are available on Google Playstore)