

# Students' Perception of Educational Environment of Medical Colleges in Bangladesh

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## Abstract:

**Background:** Students' perceptions of their educational environment are a useful basis for modifying and improving the quality of educational environment. Educational environment is one of the most important factors determining the success of an effective curriculum. The quality of educational environment has been identified to be crucial for effective learning. Identifying the weakness of educational environment and understanding how students perceive the environment will help the institute to facilitate learning and to achieve better learning outcome. **Objective:** To explore students' perceptions of their educational environment and to find out gender differences in perception. **Methods:** It was a cross sectional descriptive study. Dundee Ready Education Environment Measure (DREEM) inventory was administered to 1903 medical students (studying in 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> year MBBS course) in 15 medical colleges of Bangladesh adopting purposive sampling. **Results:** The total mean score for all students was found positive (110/200). Students' perceptions of learning was positive (28/48), perceptions of teachers was moving in right direction (24/44), students academic self perception was positive (19.5/32). Students' perceptions of atmosphere was expressed as many issues need to change (24/48) and social self perceptions was not a nice place (14/28). Female students' perceptions were significantly higher than male students. **Conclusion:** Remedial measure should be needed in the subscales of students' perceptions of atmosphere and social self perceptions for further improvement. Findings from this study may give guideline to curricular planner and faculties/administrators of medical college for further improvement of educational environment.

**Key words:** perception, educational environment, medical college

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## Introduction:

Learning is influenced by the way in which the students goes about learning and studying as well as conduciveness of the learning environment<sup>1</sup>. A good learning environment is vital for the delivery of quality training<sup>2</sup>. Curriculum is considered to be the most holistic, inclusive and comprehensive entity and notion in education<sup>3</sup>. Curriculums most significant manifestation and conceptualization is the environment (educational and organizational) which embraces everything that is happening in the medical college<sup>4</sup>. Any curriculum generate and establishes environments and changes in curriculum are thus essentially changes in environment. There is a proven connection between the environment and the valuable outcomes of students' achievement, satisfaction and success<sup>4</sup>. It can be concluded that a study of the curriculum is largely dependent on a study of

the environment<sup>3</sup>. Positive environment and positive learning outcome appears to go together<sup>1</sup>. For higher quality of learning it is required to enrich learning environment by identifying the weakness of environment. So more importance should be given to the perception of students' to improve the educational environment as perceptions are associated positively with learning outcomes, learning approach and attitude toward studying<sup>5</sup>.

The undergraduate MBBS curriculum in our country is still in the traditional mode. Generally it is teacher centred, discipline based, information gathering and hospital based with no options or elective modules. The main part of the curriculum consists of lecture, tutorial, practical and ward teaching classes with a limited number of problem based session. The learning task is to reproduce the subject matter in the final examination.

In 2002, a new comprehensive curriculum was introduced for undergraduate medical education. Educational innovation, such as a new curriculum was about introducing

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and implementing changes but unfortunately it is also a fact that both students and faculty the a found curriculum stressful to implement<sup>6</sup>. However no study has been yet done to assess student's perception of educational environment. In order to manage changes successfully it is thus necessary to obtain regular evaluation and feedback, as it is only through information obtained in this way alteration can be made, mistakes corrected and momentum maintained.

Inventories measuring learning environment in medical education are widely being used. In the present study DREEM (Dundee Ready Education Environment Measure) was used. It is a reliable and validated instrument that identifies specific problem areas within an institution for different components of educational environment<sup>7</sup>. As DREEM is a unique inventory to measure educational environment so, the present study was intended to find out perceptions of educational environment using this inventory. This study also intends to identify and compare the perceptions of educational environment between male and female students and attempt was also made to identify problem areas in educational environment.

#### Methods:

The DREEM (Dundee Ready Education Environment Measure) is a validated inventory with proven high reliability that has been used in various countries around the world to assess the educational environment of health professional/ medical institute<sup>6</sup>. The inventory consists of 50 items and each item scored on a five-point likert scale with 4 = Strongly Agree, 3 = Agree, 2 = Unsure, 1 = Disagree and 0 = Strongly Disagree. Nine of the 50 items (4, 8, 9, 17, 25, 35, 39, 48, 50) were negative and scored in reverse so that a higher score indicates a more positive reading<sup>7</sup>.

The DREEM questionnaire was administered to 1903 medical students' of clinical phase (3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> year) of 15 medical colleges. The questionnaire was administered at the end of a scheduled lecture class on different occasions. Before administration, the questionnaire of the class was addressed regarding the purpose and different aspects of questionnaire for providing appropriate information, stressing the anonymity of the participants and the fact that the data could not be tracked to individual

participants. It was also explained that the data would be used for quality assurance as well as for research purpose and requested the students' cooperation, making it clear that participants would be entirely on volunteer basis. After distribution they were allowed 20 minutes to fill up the questionnaire and then the completed questionnaire were returned back in the same class.

The inventory yielded two types of information: mean total score for 50 items or each of its 5 subscales and individual item mean scores for each of the 50 item.

The 50-item DREEM has a maximum score of 200 indicating the ideal educational environment as perceived by the students<sup>8</sup>. A score of 0 is the minimum and would be a very worrying result for any medical educator and a score of 100 will be viewed with considerable ambivalence by the students and needs to be improved. Items that have a mean score of 3.5 or over are real positive points. Any item with a mean of 2 or less should be examined more closely as they indicate problem areas<sup>8</sup>. Items with a mean between 2 and 3 are aspects of the climate that could be enhanced.

Score for categorized domains, total score and each item were both expressed as mean and percent value. Data were analyzed using the statistical package SPSS (11.5 version) and independent sample t-test were used to determine statistically significant difference ( $p < 0.05$ ).

#### Results:

Total respondent were 1903, among them 940 were male 963 were female student.

Table I Shows the DREEM domain and total maximum score, mean score and percentage of score in all respondents. Students' perceptions of learning was 27.86/48 (56%) i.e. more positive perception, students' perceptions of teachers was 24.36/44 (55%) i.e. moving in right direction, students' academic self perceptions was 19.51/32 (61%) i.e. feeling more on positive side, students perceptions of atmosphere was 24.34/48 (50%) i.e. there are many issues need to change and students social self perception was 14.37/28 (50%) i.e. not a nice place. Highest score was found in domain 3 and lowest in domain 4 and 5. Total DREEM mean score was 110/200 and when percentage was done it was 55% and it can be expressed

**Table-I**  
*Subscale and total DREEM mean and percentage score in all students (n=1903)*

Domain of DREEM	Maximum score	Mean	Percent of perception
Domain 1: Student's Perceptions of Learning (SPL)	48	27.86	56%
Domain 2: Student's Perceptions of Teachers (SPT)	44	24.36	55%
Domain 3: Student's Academic Self-Perceptions (SASP)	32	19.51	61%
Domain 4: Student's Perceptions of Atmosphere (SPA)	48	24.34	50%
Domain 5: Student's Social Self Perceptions (SSSP)	28	14.34	50%
Total DREEM score	200	110.44	55%

**Table-II**  
*Item mean score in all students (n=1903)*

Domain	Item no.	Item	Mean
1.SPL	1	I am encouraged to participate in classes	2.89
	7	The teaching is often stimulating	3.21
	13	The teaching is student centred	1.33
	16	The teaching helps to develop my competence	2.92
	20	The teaching is well focused	2.19
	22	The teaching helps to develop my confidence	2.78
	24	The teaching time is put to good use	2.31
	25	The teaching overemphasizes factual learning	1.25
	38	I am clear about the learning objectives of the course	2.46
	44	The teaching encourages me to be an active learner	2.74
	47	Long term learning is emphasized over short term learning	2.60
	48	The teaching is too teacher centred	1.37
2.SPT	2	The teachers are knowledgeable	3.12
	6	The teachers are patient with patients	2.51
	8	The teachers ridicule the students	1.13
	9	The teachers are authoritarian	1.77
	18	The teachers have good communication skills with patients	2.21
	29	The teachers are good at providing feedback to students	2.19
	32	The teachers provide constructive criticism here	2.13
	37	The teachers give clear examples	2.52
	39	The teachers get angry in class	1.69
	40	The teachers are well prepared for their class	2.62
	50	The students irritate the teachers	2.59
3.SASP	5	Learning strategies which worked for me before continue to work for me now	2.19
	10	I am confident about my passing this year	2.58
	21	I feel I am being well prepared for my profession	2.33
	26	Last year's work has been a good preparation for this year's work	2.80
	27	I am able to memorize all I need	1.77
	31	I have learned a lot about empathy in my profession	2.81
	41	My problem-solving skills are being well developed here	2.30
45	Much of what I have to learn seems relevant to a career in medicine	2.80	
4.SPA	11	The atmosphere is relaxed during the ward teaching	1.66
	12	This college is well time-tabled	2.62
	17	Cheating is a problem in this college	1.55
	23	The atmosphere is relaxed during lectures	1.82
	30	There are opportunities for me to develop inter-personal skills	2.58
	33	I feel comfortable in class socially	3.00
	34	The atmosphere is relaxed during tutorials/seminars	2.01
	35	I find the experience disappointing	1.53
	36	I am able to concentrate well	2.32
	42	The enjoyment outweighs the stress of studying medicine	1.59
43	The atmosphere motivates me as a learner	2.12	
49	I feel able to ask the questions I want	1.64	
5.SSSP	3	There is a good support system for students who get stressed	1.19
	4	I am too tired to enjoy the course	1.37
	14	I am rarely bored on this course	1.82
	15	I have good friends in this college	3.15
	19	My social life is good	2.90
	28	I seldom feel lonely	2.28
	46	My accommodation is pleasant	1.74

SPL=students perception of learning, SPT= Student's Perceptions of Teachers, SASP= Student's Academic Self-Perceptions, SPA= Student's Perceptions of Atmosphere, SSSP= Student's Social Self Perceptions.

as more positive.

Table II presents the individual item mean score in all students. Seventeen items scored less than 2. Among them 3 items from domain 1, 3 items from domain 2, one item from domain 3, six items from domain 4 and 4 items from domain 5. All the students opined that learning is teachers centered (1.37) rather than students centered, more importance was given on factual information (1.25), teachers ridiculed them (1.69), teachers are authoritarian (1.12) and angry with students (1.77), they are not able to memorize what they need (1.72), atmosphere is not relaxed during ward teaching (1.66) or in lecture (1.81), cheating is problem (1.55), their experience is disappointing (1.53), they are not able to ask question in classes (1.64) and they are in stress (1.59). They feel tired to enjoy the course (1.37), they feel bored (1.82), support system not adequate ((1.19) and their accommodation is not pleasant. Among 50 items four items scored 3 or >3 i.e. sometimes teaching

is stimulating (3.21), teachers are knowledgeable (3.12), they feel comfortable in class socially (3.00) and they have good friend in the college (3.15). Others 29 items scored between >2 but <3.

Table III shows significant difference in perception between male and female students regarding individual items, subscale and total DREEM mean score. Item wise comparison shows that female scored high in most items. Among them significant difference were found in 17 items. Only in four items male students scored high than female i.e. teachers ridicule them, they are confident about their passing, they feel they are prepared for their future profession and they have good friends in the college. Subscales comparison shows that female students scored significantly high than male about perception of learning, teachers and atmosphere. Total DREEM mean score also significantly high in female than male students.

**Table-III**

*Item and domain mean score shows significant difference between male and female students'.*

Domain Item	Male (n=940) mean	Female (n=963) mean	p value
SPL 16. The teaching helps to develop my competence	2.86	2.98	.01
20. The teaching is well focused	2.05	2.32	.001
24. The teaching time is put to good use	2.14	2.52	.03
38. I am clear about the learning objectives of the course	2.41	2.51	.03
SPT 2. The teachers are knowledgeable	2.99	3.26	.001
6. The teachers are patient with patients	2.32	2.69	.001
8. The teachers ridicule the students	1.18	1.07	.02
9. The teachers are authoritarian	1.64	1.88	.001
18. The teachers have good communication skills with patients	2.09	2.32	.001
29. The teachers are good at providing feedback to students	2.03	2.36	.001
32. The teachers provide constructive criticism here	2.04	2.21	.001
37. The teachers give clear examples	2.42	2.61	.001
40. The teachers are well prepared for their class	2.44	2.80	.001
SASP 5. Learning strategies which worked for me before continue to work for me now	1.96	2.42	.001
10. I am confident about my passing this year	2.72	2.44	.001
21. I feel I am being well prepared for my profession	2.44	2.23	.001
31. I have learned a lot about empathy in my profession	2.71	2.91	.001
Students perception of learning (SPL)	27.31	28.42	.01
Students perceptions of teachers (SPT)	23.32	25.37	.001
Students perception of atmosphere (SPA)	23.78	24.88	.01
Total DREEM score	108.06	112.78	.001

**Discussion:**

This cross sectional descriptive study was done with a view to determine medical students' perceptions of educational environment in fifteen medical colleges of Bangladesh. Self administered structured questionnaire was used to collect data and DREEM inventory was used for this purpose.

The overall DREEM score for all students were found positive (110/200, 55%). There was no accepted agreement on what is an acceptable DREEM inventory score from published literature. Our total score is consistent with that of others<sup>3</sup> but some others<sup>5, 9, 10</sup> found low (102, 107) total score. On the other hand higher total score (117, 118) was found by other investigators<sup>11, 12</sup> in India and Turkey.

The DREEM domains are likely to be independent variables and may be less of an environment measure but more of a measure of the overall motivation and learning attitude of the individual. Five subscales or domains of DREEM were interpreted, which define the weakness or strength of educational environment. When we interpret<sup>8</sup> the five domain it can be stated that all students agreed a more positive approach regarding their perception of learning, moving in right direction for perception of teachers, feeling more on the positive side for their academic self perception, there are many issues which need to change for the perception of atmosphere and social self perceptions were not a nice place. In this study highest score was found in students' academic self perception and lowest score in students' perceptions of atmosphere and social self perceptions. Our findings regarding perceptions of five domains are consistent with others<sup>3, 10</sup>. Whereas some others<sup>9, 13</sup> found lowest score in students' academic self perceptions and in students' perceptions of learning and atmosphere. In another study others<sup>12</sup> found highest score in students' perceptions of teachers and lowest score in students' perceptions of atmosphere.

Gender wise comparison showed higher score in female (112.7/200) students' than male (108/200) and the difference was highly significant. Same observation was made by others<sup>3</sup> but some others<sup>11</sup> found no difference in perception between male and female students and some investigators<sup>5</sup> found lower score in female than male students. Female students perception was high may be due to the fact that they are more satisfied with learning, teaching and atmosphere of environment than male.

The DREEM can be used to pinpoint more specific strengths and weaknesses within the educational

environment<sup>7</sup>. Less (<2) score in individual item might be due to our curriculum content overload, teachers attitude towards student, stressful environment and too much formative assessment system. It is very well known that the atmosphere actually represents the real educational environment for learning of students and thus the dynamism of curriculum may influence atmosphere of learning<sup>12</sup>. The ineffective hidden curriculum in our course might be an important factor to explain the relatively low score in students' perception of atmosphere and social self perception. It has shown that hidden curriculum is associated with social and the physical environment and might be more effective than the manifest curriculum<sup>12</sup>.

Teaching learning must be promoted as a scholarly endeavor<sup>3</sup>. An educational climate that foster and rewards educational leadership, innovation and excellence in teaching is required in Bangladesh. Remedial measure should be taken to intervene the perceived problems for some items especially in the subscales of students' social self perceptions and perception of atmosphere respectively. We need to implement student centred learning, more practical oriented session in future to improve our environment. Consideration may be given to staff development, creation of cooperative and congenial teacher- students' relationship in near future for improvement. If we incorporate creative/ elective component in our curriculum we can reduce stress during the course. To improve their social perception issues may be addressed in future are- non threatening environment, good social and academic support, pleasant accommodation, less class time, more opportunity for self learning and scope of practice of informal curriculum.

**Conclusion:**

As the learning environment affects students' motivation and achievement<sup>4</sup>, it is important to get feedback from the students' on how they are experiencing their learning environment on a regular basis. The results obtained in this study were thus can be used to guide strategic planning and the institutional focus of available resources. Consequently contents of curriculum, teaching methods, teachers' behavior with students', the atmosphere during lecture/tutorial/ward teaching, the social and academic environment, support system during stress, commitment of the institute with students', favorable accommodation for students have come out to be the main intervention areas for the further development of our educational environment.



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