

# EDUCATIONAL ENVIRONMENT IN PUBLIC AND PRIVATE MEDICAL COLLEGES OF PESHAWAR: UNDERGRADUATE MEDICAL STUDENT'S PERCEPTIONS

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## ABSTRACT

**Objectives:** To explore student's perceptions of the educational environment in their respective medical colleges.

**Materials and Methods:** A cross sectional study was conducted at two medical colleges (one public sector and one private sector medical college), both affiliated with Khyber Medical University, Peshawar from January 2020 to March 2020. Dundee Ready Education Environment Measure (DREEM) was used to measure the educational environment of both public sector and private sector medical colleges.

**Results:** The overall mean score with standard deviation was  $113 \pm 22$  SD for private medical college and  $109 \pm 25$  SD for public sector medical college, which means more positive than negative perception. Private sector college overall score was better than public sector college but with no significant difference. Private sector medical college score was better in all DREEM subscales except Student's Academic Self-Perception in which public college scored  $18 \pm 5$  and private college scored  $16 \pm 5$ .

**Conclusion:** There is significant margin for improvement for all domains of educational environment in both public and private sector medical colleges, especially the low scores in the domain of Students' Social Self Perceptions need attention.

**Key words:** DREEM, Educational Environment, Perception, Undergraduate.

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## INTRODUCTION

Educational environment can be defined as everything in an institute that has an effect on the learning of its student<sup>1</sup>. This predominantly is affected by the curriculum of the institute. Teachers and the overall process of teaching are another important factor contributing to student's perception of their educational environment. The well-being and performance of students is affected by the educational environment of an institute influencing their performance in their selected courses as well<sup>2</sup>. The collection of institutional data regarding the educational environment and its analysis highlights the perception and satisfaction level of the students<sup>3</sup>.

The Dundee Ready Education Environment Measure (DREEM) is a validated test composed of fifty items

that was developed to measure the perception of students regarding their educational environment. It has shown reliability across students from diverse social and cultural backgrounds<sup>4</sup>.

The measure can also be utilized for the comparison of the perception of students regarding educational environments among the departments of the same institute or among two different institutes. One major consideration is to ensure that the groups of students are adequately similar to make comparisons among the institutes<sup>5</sup>.

The objective of our study was to measure the perception of students regarding educational environments of their medical colleges. This study was undertaken in two medical colleges under a public sector medical university. A validated tool DREEM was used to assess the educational environment of a public sector medical college with a private sector medical college. No modifications were made in this tool as it was already been utilized in multiple institutes in Pakistan and across the world. This would provide students perspective of the educational environment in both public sector and private sector medical colleges and would highlight the areas that need improvement. This in turn would prove beneficial to design and

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provide optimum learning environments for undergraduate medical students in both the public and private sectors.

## MATERIAL AND METHODS

A cross sectional study was conducted at two medical colleges (one public sector and one private sector medical college), both affiliated with Khyber Medical University, Peshawar from January 2020 to March 2020.

Data was collected from 424 undergraduate medical students (sample was calculated on the basis of 50% prevalence and 10% was added for missing data). Both colleges take 100 students' enrolment every year, so we divide sample equally in two colleges and collected data from 212 students from each medical college. Out of 212, data was collected randomly from 53 students each from first, second, third and fourth year MBBS. Final year students were not included in the study as they have clinical rotation in hospital and no classes at college. After obtaining ethical approval (ref no Nwgh/EC/25), DREEM questionnaire<sup>4</sup> was distributed to all students willing to participate in the study. Before data collection, all participants were given description of the aim of study and any ambiguity was addressed, especially with regards to their voluntary participation and anonymity. Questionnaire was distributed at the end of lecture by senior faculty member. Students were requested to fill the questionnaire within 20 minutes and give it back to the faculty member. Students were instructed to avoid discussion in order to avoid bias and timely completion of questionnaire. SPSS version 20 was used to analyse the data. Descriptive analysis was done by calculating mean  $\pm$ SD. Mean scores were calculated for individual items, domains, sub scales and scales of DREEM inventory.<sup>4</sup>

The 50-item DREEM-inventory<sup>4</sup> has a maximum score of 200, which indicates in ideal environment at educational institute. The 5-point Likert scale indicates 4=strongly agree, 3=agree, 2=unsure, 1=disagree and 0=strongly disagree. Nine items (4, 8, 9, 17, 25,35,39,48 and 50) are negatively expressed in the inventory and are scored in reverse order. If an item had mean score of 3.5 and above, they are considered positive points. If the item had a mean score of 2 or less, they were considered as problem and needed attention. If the item had mean score between 2 and 3, they were considered as areas which can be enhanced or improved.

## RESULTS

A total of 424 student's responses were collected via DREEM inventory. Out of 424 students, half data was collected from students in public sector medical college and half from students in private sector medical college. The overall mean score with standard deviation was  $113 \pm 22$  SD for private medical college and  $109 \pm 25$  SD for

public sector medical college, which means more positive than negative. Private sector college overall score was better than public sector college by a small margin. Private sector medical college score was better in all DREEM subscales except Student's Academic Self-Perception in which public college scored  $18 \pm 5$  and private college scored  $16 \pm 5$ .

Variations were observed in responses to individual items while identifying specific strengths and weaknesses within the learning environment. The mean subscale score on Student's Perceptions of Learning (SPL) was  $29 \pm 6$  in private sector medical college and  $27 \pm 8$  in public sector medical college which indicates more positive perception in both medical colleges.

The mean DREEM item- score on Students Perception of Course teachers was  $25 \pm 5$  in private sector medical college and  $23 \pm 7$  in public sector medical college which shows both colleges are moving in the right direction.

The mean subscale score on Student's Academic Self Perceptions was  $16 \pm 5$  in private sector medical college which indicates many negative aspects, and the private sector medical college should take it into consideration while Student's Academic Self Perceptions was scored  $18 \pm 5$  in public sector medical college which indicates students are feeling more on the positive side.

According to mean DREEM item- score on Student's Perception of Atmosphere was  $27 \pm 7$  in private sector medical college and  $26 \pm 8$  in public sector medical college which shows a more positive attitude. According to mean DREEM item- score on Student's Social Self Perceptions was  $16 \pm 5$  in private sector medical college and  $15 \pm 4$  in public sector medical college which indicates not too bad.

In DREEM subscale "Students' Academic Self-Perception", item no 27 "I am able to memorise all I need" was scored less than 2 in private sector medical colleges which indicates problem area. While In DREEM subscale "Students' Perceptions of Atmosphere" item no 42 "The enjoyment outweighs the stress of the course" was scored less than 2 in public sector medical colleges and in DREEM subscale "Students' Social Self Perceptions" item no 3 "There is a good support system for students who get stressed" and item no 14 "I am rarely bored on this course" was scored less than 2 in public sector medical colleges which indicates problem areas and public sector medical college should take this into consideration.

## DISCUSSION

A great educational environment in a medical institution can be a great enabler for its medical students to develop the necessary competencies for their chosen profession<sup>6,7</sup>. DREEM as a tool can be effectively utilized

**Table 1: Guideline to interpret the DREEM scores**

Overall Interpretation	
Score	Interpretation
0-50	Very poor
51-100	Plenty of problems
101-150	More Positive than negative
151-200	Excellent
Subscales Interpretation	
Students' Perception of Learning	12-0 Very Poor
	24-13 Teaching is viewed negatively
	36-25 A more positive perception
	48-37 Teaching highly thought of
Students' Perception of Course teachers	11-0 Abysmal
	22-12 In need of some retraining
	33-23 Moving in the right direction
	44-34 Model course teachers
Students' Academic Self Perceptions	8-0 Feelings of total failure
	16-9 Many negative aspects
	24-17 Feeling more on the positive side
	32-25 Confident
Students' Perception of Atmosphere	12-0 A terrible environment
	24-13 There are many issues which need changing
	36-25 A more positive attitude
	48-37 A good feeling overall
Students' Social Self Perceptions	7-0 Miserable
	14-8 Not a nice place
	21-15 Not too bad
	28-22 Very good socially

**Table 2: Overall Mean Scores with Standard Deviation on Subscale**

DREEM Subscales	Private Medical College		Public Medical College	
	Mean	Std. Deviation	Mean	Std. Deviation
Students Perception of Learning	29	6	27	8
Students Perception of Course teachers	25	5	23	7
Students' Academic Self-Perception	16	5	18	5
Students' Perceptions of Atmosphere	27	7	26	8
Students' Social Self Perceptions	16	5	15	4
Overall Mean & Standard Deviation Score	113	22	109	25

**Table 3: Year-wise Mean Scores with Standard Deviation on Subscale**

DREEM Subscales	Private Medical College				Public Medical College			
	1st Prof	2nd Prof	3rd Prof	4th Prof	1st Prof	2nd Prof	3rd Prof	4th Prof
	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean
Students Perception of Learning	29.2	30.0	27.9	29.8	26.7	26.5	28.7	25.6
Students Perception of Course teachers	24.9	25.1	24.7	25.3	23.5	23.1	24.2	22.5
Students' Academic Self-Perception	15.5	16.2	17.3	14.7	20.5	21.0	19.1	21.1
Students' Perceptions of Atmosphere	27.0	27.6	25.6	27.8	26.3	26.0	28.0	24.9
Students' Social Self Perceptions	16.0	16.5	15.4	16.6	14.2	14.4	15.7	14.2

to objectively measure the educational environment of a particular institution and works well in both undergraduate and post graduate setting. It can also be used cross-sectional to assess the education environment of two institutes catering to similar programs and level of students as demonstrated by the study undertaken in India <sup>8,9</sup>.

In our study the overall score mean was  $113 \pm 28$  SD for private medical college and  $109 \pm 33$  SD for public sector medical college, which means more positive than negative but was far from excellent <sup>10</sup>. A corresponding study undertaken in six medical colleges across Pakistan also found that their Overall mean score  $105.0 \pm 25.8$  was more positive than negative <sup>11</sup>. The results are also favorably comparable to another study undertaken in public sector medical colleges of Punjab where a mean score of 115 was reported <sup>12</sup>.

There is no clear cutoff of recommended DREEM score for an institution in literature but clearly higher is better and should be strived for. The DREEM score from the medical institutes relates favorably to the published studies from medical colleges of Pakistan.

DREEM mean scores from our neighboring countries have been reported as 99.6 from Iran and 107.4 from Sri Lanka <sup>13-15</sup>. While the institutes with student centered programs from countries like United Kingdom have reported good perception of educational environment with scores of 139 <sup>16</sup>.

Literature shows that the burden of studies needs to be better managed to cope well with the cognitive load of the students <sup>17,18</sup>. A mix of teaching strategies maybe adopted to keep the students engaged and interested during sessions. Co-curricular activities during the academic session may also help to alleviate the stress related to medical education <sup>18</sup>. Steps to improve upon these issues will enhance the educational environment of medical institutions.

## CONCLUSION

There is significant room for improvement for all domains of educational environment in our study. Especially the low scores in the domain of Students' Social Self Perceptions need attention. The data reflects that the support mechanisms present for the students need to be improved.

This cross sectional study gave us a snap shot view at one point of time of educational environment of an institute. Due to limited time and resources the study was conducted at two medical institutes. Involvement of more medical institutes and data collected across the time would enhance the understanding of factors that are affecting educational environment of medical institutes at Pakistan.

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**AUTHOR'S CONTRIBUTION**

Following authors have made substantial contributions to the manuscript as under

**Mahsood N:** Study idea, concept, design and drafting.

**Khan NA:** Study supervision and critical revision.

**Khattak A:** Data collection, Statistical Analysis.

**Ahsan A:** Data collection, Proof reading.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.