



## Medical Student's Perception of Educational Environment

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### ABSTRACT

**Introduction:** The importance of educational environment in any medical institute cannot be ignored. Medical students should be provided a healthy environment so as to maximize their learning. Also understanding their perception about the educational environment can be used tactfully to evaluate and address the deficiencies and to make necessary changes required accordingly. **Aims & Objectives:** To assess students' perception regarding educational environment in a medical college of Lahore. **Place and duration of study:** This cross-sectional study was conducted from September 2019- December 2019 in CMH Lahore Medical College. **Material & Methods:** 450 students of M.B.B.S from first year to final year (90 students / year) were included by simple random method after taking written informed consent. DREEM questionnaire was used having 5 subscales including students' perception of learning (PoL), perception of Teachers (PoT), students' academic self-perception (ASP), students' perception of atmosphere (PoA) and students' self-perceptions (SSP). Statistical analysis was performed using SPSS version 22. Data was presented as mean  $\pm$  s.d, normality assessed with Shapiro-Wilk's test followed by Spearman's correlation analysis. **Results:** Reliability of the scale was found to be 96%, indicative of excellent consistency of the responses provided by students. Mean scores of subscales from both male and female students; PoL, PoT, ASP, PoA and SSP were found as  $29.89 \pm 7.36$ ,  $28.07 \pm 7.21$ ,  $19.50 \pm 5.17$ ,  $28.78 \pm 7.36$  &  $16.97 \pm 4.55$  respectively. Total DREEM score came out to be  $123.21 \pm 29.48$ . **Conclusion:** It is concluded that students perceived a positive learning environment in this medical college's experience.

**Key words:** DREEM, Learning Environment, Undergraduate students

### INTRODUCTION

It has been documented that outcome based education is a powerful way of improving medical education. Young doctors should be well-prepared during their studies so they can deal with complex situations during their career.<sup>1</sup> The process of learning is dependent on various factors especially commitment of a learner. It is seen that past experiences of the learner and their preferred style of learning can also affect the process of learning along with suitable environment.<sup>2</sup> Effective learning mainly depends upon quality of educational environment.<sup>3</sup> It is said that the educational environment has a strong influence on what and how students will learn and also determines the success of curriculum.<sup>4</sup> Dundee Ready Education Environment Measure (DREEM) has been used in various studies for the diagnosis of the environment of medical institutions and is thought to be a reliable and validated tool that is specific to undergraduate medical teaching environment.<sup>5</sup> DREEM is also considered to be non-specific and also it does not

focus only on one culture.<sup>6</sup> DREEM was invented by Delphi process which involved input of many medical and health professionals from all over the world. The items generated are considered to be good for evaluating learning environment of undergraduate programs.<sup>7</sup> Applying DREEM provides help in understanding the learning environment, it can also play a beneficial role in comparing different educational strategies.<sup>8</sup> Training of undergraduate medical students is dependent on their engagement during lectures therefore, the importance of educational environment can be stressed. The educational environment provided in a medical school is considered to be most significant indication for the formulation of a curriculum since it embraces all aspects of happenings that are going on in a medical school.<sup>9,10,11</sup> This tool can be useful for educators to access and ensure that a high quality of educational environment is maintained in an institute.<sup>12</sup> Other factors such as different coping styles, individual personality profiles and level of student's burnout along with DREEM scores can be used to

comprehend longitudinal changes in education after interventions are made in an institution.<sup>13</sup> It is said that education is not just collection of knowledge, it is accretion of experiences from one's environment.<sup>14</sup> World Federation for Medical Education has stressed on the assessment of educational environment. Positive learning environment leads to positive attitude of students towards their studies.<sup>15</sup> Limitation of another study conducted suggested the need for year wise analysis and detection of gender differences regarding educational environment.<sup>16</sup>

Aim of this study was to assess students' perception regarding educational environmental in a Medical College in Lahore.

### MATERIAL AND METHODS

This was a cross-sectional study, conducted from September 2019- December 2019 in CMH Lahore Medical & Dental College. Prior ethical approval was taken from ethical review board of CMH Lahore. Sample size came out to be 450.<sup>17</sup> Students were included in the study by simple random method. Roll numbers of all 150 students from each class were written on small pieces of paper and 90 roll numbers were selected randomly by lottery method. DREEM questionnaire was handed over to the selected students, it took almost 15-20 minutes for each student to fill the questionnaire. Confidentiality and anonymity of the students was maintained. DREEM is designed and constructed as such that it quantitatively measures the perception of students' regarding their educational environment. This tool has been validated and used by many to assess the educational environment of any institute. 50 items in total are present in it which were scored on Likert Scale from 0-4 (0= strongly disagree – 4 = strongly agree). 9 (Q4, 8, 9, 17, 25, 35, 39, 48, 50) out of total 50 items were scored in reverse order (0= strongly agree – 4 = strongly disagree). These 50 items were analyzed by creating 5 sub-groups which were as follows:

Subscales	Question No from DREEM	Maximum score
Students 'perception of Learning (PoL)	1, 7, 13, 16, 20, 21, 24, 25, 38, 44, 47 & 48	48
Students' perception of Teachers (PoT)	2, 6, 8, 9, 18, 29, 32, 37, 39, 40 & 49	44
Students' academic self-perception (ASP)	5, 10, 22, 26, 27, 31, 41 & 45	32
Students' perception of atmosphere (PoA)	11, 12, 17, 23, 30, 33, 34, 35, 36, 42, 43 & 50.	48
Students social self-perceptions (SSP)	3, 4, 14, 15, 19, 28 & 46	28

### Statistical analysis:

Entry and compilation of data was done on SPSS version 22.0. Socio-demographic characteristics in terms of frequency & percentages were calculated. For description of statistics of responses mean with standard deviation was calculated. Before performing the inferential analysis, normality of the data was assessed with Shapiro-Wilk's test and was found to be normal. Spearman's correlation analysis was done. Level of significance was set at  $p < 0.01$ .

### RESULTS

Our sample size consisted of 450 M.B.B.S students. Out of these respondents 210 (46.7%) were females whereas 240 (53.3%) were males. Total DREEM score was found to be almost same in both male and female students. (Table-1)

DREEM & its Subscales	Male (n=240)	Female (n=210)
PoL	29.87±7.50	29.92±7.22
PoT	27.80±7.67	28.39±6.66
ASP	19.55±5.23	19.44±5.12
PoA	28.94±7.09	28.59±7.68
SSP	16.93±4.66	17.01±4.43
<b>Total DREEM</b>	123.09±29.96	123.34±29.0

**Table-1:** Gender wise mean scores of Total DREEM & its Subscales.

Mean scores of all subscales and total DREEM were calculated separately for all 5 years of study (First year to Final year) with highest total DREEM score received from final year students i.e. 132.93±23.75. (Table-2)

DREEM & its Subscales	First Year (Mean±SD)	Second Year (Mean±SD)	Third Year (Mean±SD)	Fourth Year (Mean±SD)	Final Year (Mean±SD)
PoL	32.33±6.81	29.2±8.48	29.55±6.2	27.16±7.87	31.2±6.18
PoT	30.18±6.5	26.9±8.22	27.38±6.6	25.84±7.43	30.05±6.17
ASP	20.9±5.2	18.97±5.17	18.4±4.5	17.9±5.3	21.26±4.7
PoA	30.4±7.5	27.55±7.49	27.8±5.96	26.1±8.25	31.9±5.84
SSP	17.8±4.6	16.6±5.04	16.37±4.13	15.48±4.46	18.5±3.83
<b>Total DREEM</b>	131.75±29.19	119.27±32.3	119.58±25.03	112.50±31.35	132.93±23.75

**Table-2:** Year wise mean scores of Total DREEM & its Subscales. (n=90)

Mean score of all items was calculated which came out to be 123.21±29.48. Mean of all sub scores was calculated which showed the mean of PoL, PoT, ASP, PoA & SSP as 29.89±7.36, 28.07±7.21, 19.50±5.17, 28.78±7.36 & 16.97±4.55 respectively. (Table-3)

DREEM and its subscales	Max. score	Mean	Standard Deviation	*Interpretation
All Items of DREEM	200	123.21	29.48	More positive than negative perception
PoL	48	29.89	7.36	A more positive perception
PoT	44	28.07	7.21	A more positive perception of teachers
ASP	32	19.50	5.17	Feeling more on the positive side
PoA	48	28.78	7.36	More positive atmosphere
SSP	28	16.97	4.55	Not too bad

**Table-3:** Descriptive Statistics of Scores.

\*Interpretation based on Bakhshi H, Bakhshialiabad MH, Hassanshahi G. Students' perceptions of the educational environment in an Iranian Medical School, as measured by The Dundee Ready Education Environment Measure. Bangladesh Medical Research Council Bulletin. 2014 Sep 5; 40(1):36-41.

Correlation analysis revealed that students' perception of learning environment and student perception of teachers was strongly positively associated with the overall educational environment ( $r = 0.933$  &  $0.923$  respectively). ASP and PoA had the least but significant role ( $r = 0.889$  &  $0.888$  respectively) ( $p = 0.001$ ). Amongst the subscales, the highest positive correlation was found between students' perception of learning & their perception of teachers ( $r = 0.850$ ). The positive correlation coefficients of all subscales indicated that there was a statistically significant relationship between subscales ( $p = .001$ ). (Table-4)

	PoL	PoT	ASP	PoA	SSP
PoT	0.850***				
ASP	0.794***	0.784***			
PoA	0.806***	0.786***	0.779***		
SSP	0.789***	0.798***	0.770***	0.787***	
Overall DREEM	0.933***	0.923***	0.889***	0.914***	0.888***

**Table-4:** Correlation of subscales and overall scale.

\*\*\*Correlation was said to be significant at the 0.01 level (2-tailed).

## DISCUSSION

Assessment of educational environment can be considered as a key tool for ensuring quality and for identifying areas that need to be improved. This study contributes to the areas of strength of the under study medical institute. Results of our study indicate that the educational environment provided at this institute is more positive than negative. A study done in Agha Khan University (AKU) medical college, Karachi (which is considered as one of the best medical institute in private sector in Pakistan), total DREEM score was 125.68±18.79 which is comparable to total DREEM score of this study i.e. 123.21±29.48. Similarly, our subscale scores of PoL, PoT, ASP, PoA & SSP were 29.89±7.36, 28.07±7.21, 19.50±5.17, 28.78±7.36 & 16.97±4.55 which are almost same as of AKU, medical college, which are 29.73±6.48, 27.13±5.6, 20.93±4.01, 31.70±6.9 & 17.63±15.27.<sup>17</sup> A study conducted in six medical institutes from four provinces of Pakistan showed mean DREEM score was 105.0±25.8. In the same study overall DREEM score for male and female students was 98.8±28.9 and 108.6±23.0 respectively. Female students' perception was more positive which indicated their satisfaction in most areas.<sup>12</sup> Another research conducted in a private medical school showed an average educational environment.<sup>18</sup> In our study the total DREEM score was better but the difference in male and female students' perception was minimal. A study conducted in a public sectors university of Pakistan showed that female medical students were more satisfied as compared to male students.<sup>19</sup> The reason for this gender wise difference could not be ascertained. Learning environment in context of atmosphere, teaching and learning environment along with its positive influence on the medical students was revealed in a study done in Australia.<sup>20</sup> Yet another study in a private medical college of Lahore found the learning environment more positive than negative.<sup>21</sup> An overall average educational environment was also determined in a local research where all five domains of students' perception needed improvement.<sup>22</sup> A positive learning environment was reported in another private medical college of Lahore.<sup>23</sup> University Medical and Dental college, Faisalabad, Pakistan recorded a total mean score of DREEM of 112/200 (56%), which was much lower than our study. In the same study, it was found that highest value obtained by 4<sup>th</sup> Professional year students of SASP & lowest value for SSSP by first and final professional year students.<sup>24</sup> The results of our research showed that highest total DREEM score was obtained from final

year students 132.93±23.75 and lowest from fourth year students 112.50±31.35. Unfortunately, this scale does not dig into the reasons for such differences.

Continuous monitoring of the educational environment of all medical institutes should be done routinely and areas receiving low scores should be addressed by both administration and faculty of the medical institutes.

This study was conducted in only one medical institute so the results cannot be generalized. Large sample size could be considered as strength of this study. In future in-depth interviews should be conducted as part of the study so that the underlying reasons can be identified and addressed.

### CONCLUSION

Students showed a positive perception of educational environment in current study. Continuous quality improvement and innovations are required for maintaining standards of any medical institute. Enhancement in educational environment can be considered as a key to effective learning and the issues regarding the satisfaction of students' need to be addressed sensitively.

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