

## ORIGINAL ARTICLE

## MEDICAL STUDENTS' PERCEPTIONS OF THEIR LEARNING ENVIRONMENT AT LAHORE MEDICAL AND DENTAL COLLEGE LAHORE

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**Background:** The present study was designed to assess medical students' perceptions of their learning environment at Lahore Medical and Dental College, Lahore. **Methods:** It was a cross-sectional descriptive study conducted at Lahore Medical and Dental College, Lahore. Five hundred and thirty-three students participated in this study. A questionnaire was used as a study tool, comprising of demographic information and the 'Dundee Ready Education Environment Measure' (DREEM) inventory. Data was entered and analyzed using SPSS 21 package. A comparison of scores between different MBBS classes was done by using ANOVA. Comparison of scores between gender and high school education was done by using Mann-Whitney U tests. **Results:** Study population included 62% females and 32% males. About 58% of the participants were between 18–21 years and 42% were between 22–25 years of age. The mean total DREEM score was 120.27/200. The mean score of the domains: 'Students' perceptions of learning' was 28.31/48, 'Students' perceptions of teaching' was 26.92/44, 'Students' academic self- perceptions' was 21.37/32, 'Students' perceptions of atmosphere' was 27.72/48, and 'Students' social self-perceptions' was 16.40/28. Total DREEM and its subclasses score was significantly higher in F. Sc. students than the students with A level/American board ( $p$ -value <0.001). When DREEM scores were analyzed according to gender, perceptions of both male and female were positive. Age had no significant bearing on the total DREEM scores or scores in its subclasses. **Conclusion:** Overall perceptions or experiences of the MBBS students of their learning environment at Lahore medical and Dental College, Lahore were more positive.

**Keywords:** Learning environment; DREEM inventory; Students' perceptions

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### INTRODUCTION

When students enter medical schools, they have to face a new and challenging environment. Positive environment enhances their learning, and gear them to be properly equipped for their forthcoming role of healers of humanity. On the other hand, a negative environment impedes their achievements.<sup>1</sup> Learning environment includes three institutional aspects namely; culture, curriculum and educational climate.<sup>2</sup> Healthy positive environment is essential for the success of an effective academic curriculum, for the gain and fulfilment of learning objectives and for evolving young enthusiastic students into mature professional health practitioners.<sup>3</sup>

In a medical school, students experience multidirectional exposure. They have to interact with the teachers, peers, patients and medical staff. They experience diverse social, cultural and moral values.<sup>4</sup> The perceptions of students about their environment can be assessed and quantified with the tool 'Dundee Ready Education Environment Measure (DREEM)'.<sup>5-8</sup> Responses or ideas of students are graded as per guidelines of DREEM and can be compared with those of the any other institute.<sup>9-11</sup> The DREEM inventory

depicts holistic and comprehensive snapshot of everything happening in the academic environment surrounding the students. It has high internal consistency ranging between 89–91%.<sup>12-15</sup>

Students are important stake-holders of any institute. Their perceptions about the educational environment significantly influence their academic progress and success of the institutional educational programs. Therefore, the main objective of the present study was to assess students' perceptions of the educational environment at Lahore Medical & Dental College, using DREEM inventory. Perceptions of students on the basis of different professional years, gender and high school background were also compared.

### MATERIAL AND METHODS

A cross-sectional study was conducted at Lahore Medical and Dental College, Lahore, from May to July, 2015. Study population included MBBS students of all five professional years ( $n=763$ ). Approval for the study was taken from Ethical Review Board (ERB). Informed consent was taken from the students prior to the study,

and they were reassured that confidentiality will be maintained.

A questionnaire was used as a study tool, comprising of demographic information and the 'Dundee Ready Education Environment Measure' (DREEM) inventory. The demographic information included gender, age group in years and entry qualifications. Present year of education was also noted. DREEM questionnaire has 50 items which are subdivided into the following five subclasses:

Students' perceptions of learning (SPL), 12 items, maximum score 48

Students' perceptions of teachers (SPT), 11 items, maximum score 44

Students' academic self-perceptions (SASP), 8 items, maximum score 32

Students' perceptions of atmosphere (SPA), 12 items, maximum score 48

Students' social self-perceptions (SSSP), 7 items, maximum score 28

Each item in the subclass is scored from 0 to 4 on a Likert scale. The option ranges from: 4 for Strongly Agree (SA), 3 for Agree (A), 2 for Uncertain (U), 1 for Disagree (D) and 0 for Strongly Disagree (SD)".

Nine items are scored in reverse pattern as they are negatively stated.

According to the DREEM guidelines provided by McAleer and Roff, the subclasses are graded as:

- 'Students' perceptions of learning' (SPL); 0–12 Very Poor, 13–24 Teaching is viewed negatively, 25–36 A more positive perception, 37–48 Teaching highly thought of
- 'Student's perceptions of teachers' (SPT); 0–12 Abysmal, 13–22 In need of some retraining, 23–33 Moving in the right direction, 34–44 Model course organizers
- 'Student' Academic Self Perceptions' (SASP); 0–8 Feelings of total failure, 9–16 Many negative aspects, 17–24 Feeling more on the positive side, 25–32 Confident
- 'Students' Perception of Atmosphere' (SPA); 0–12 A terrible environment, 13–24 There are many issues which need changing, 25–36 A more positive attitude, 37–48 A good feeling overall

- 'Students' Social Self Perceptions' (SSSP); 0–7 Miserable, 8–14 Not a nice place, 15–21 Not too bad, 22–28 Very good socially.

Total DREEM score is 200. Following guidelines are followed to interpret total DREEM score: "(1) 0–50 Very Poor. (2) 51–100 Plenty of Problems. (3) 101–150 More Positive than Negative. (4) 151–200 Excellent".<sup>16,17</sup> Data was collected by distributing questionnaires among the MBBS students of different professional years in the lecture theatres. They were briefed about the questionnaire and requested to complete it. The questionnaires were collected after about 20 to 25 minutes. Data was entered and analyzed using SPSS 21 package. A comparison of scores between different MBBS classes was done by using ANOVA. Comparison of scores between gender and high school education was done by using Mann-Whitney U tests.

## RESULTS

Among all registered 763 M.B.B.S., students 533 responded the questionnaire. Study participants included 61% (327) females and 39% (206) males; 58% (307) between 18–21 years and 42% (226) were between 22–25 years of age; 74% (396) had done F. Sc., while 26% (137) had foreign qualifications (A levels/American board).

Overall DREEM and subclasses score was depicted in table-1. As shown in table-2, scores of all five MBBS classes from 1st year to final year were also compared by ANOVA. There was no significant difference in total DREEM score and scores of the domains: SPL, SPT, SASP and SPA of all the five MBBS classes. However, there was difference in the subclass SSSP score. Score of 3<sup>rd</sup> year MBBS was significantly more positive as compared to that of the 1<sup>st</sup> year and 4<sup>th</sup> year ( $p = 0.001$  &  $p = 0.027$ ).

As seen in table 3, when DREEM scores were analyzed according to gender, perceptions of both male and female were positive. However, when results were analyzed on high school basis, experiences of students with F. Sc. were more positive as compared to those with A level/American board ( $p$ -value <0.001). Age had no significant bearing on the total DREEM scores or scores in its subclasses.

**Table-1: Total scores of DREEM and its subclasses of 533 participants**

Total score	Maximum score	Median score with IQR	Mean±SD	Percent of perception of mean score	Interpretation of mean score
Total DREEM score	200	123 (108–133)	120.27±20.56	60%	Positive perception (120/200)
Students' perceptions of learning	48	29 (23–33)	28.31±7.18	59%	Positive perception (28.31/48)
Students' perceptions of teachers	44	27 (24–30)	26.92±5.75	61%	Positive perception (26.92/44)
Students' academic self-perceptions	32	22 (18–24)	21.37±5.16	67%	Positive perception (21.37/33)
Students' perceptions of atmosphere	48	28 (24–32)	27.72±6.58	57%	Positive perception (27.72/48)
Student's social self-perceptions	28	17 (14–19)	16.4±4.23	58%	Not too bad (16.4/28)

**Table-2: Comparison of DREEM scores of 533 participants within five MBBS classes**

DREEM and its subclasses	1 <sup>st</sup> year (n=114)	2 <sup>nd</sup> year (n=99)	3 <sup>rd</sup> year (n=128)	4 <sup>th</sup> year (n=139)	Final year (n=53)	p-value
Total DREEM Score	121.58±23.37	120.72±21.34	122.51±18.36	116.27±19.91	121.70±18.61	0.109
Students' perceptions of learning	29.50±6.33	28.83±8.86	28.17±6.70	27.12±7.09	28.26±6.48	0.109
Students' perceptions of teachers	26.65±5.79	27.91±7.62	26.75±4.51	26.32±5.24	27.66±5.40	0.225
Students' academic self-perceptions	20.68±5.24	21.38±5.29	21.21±4.99	21.04±5.56	20.90±3.77	0.219
Students' perceptions of atmosphere	27.78±6.46	27.51±8.70	28.46±5.59	26.93±5.98	28.28±5.88	0.388
Student's social self-perceptions	16.04±4.21	16.55±3.73	17.63±3.99	15.54±4.31	14.86±4.80	0.001*

A p value of  $\leq 0.05$  is considered as \*significant

**Table-3: Comparison of DREEM scores of 533 participants with gender & entry qualifications**

DREEM and its subclasses	Males (n=206)	Females (n=327)	F. Sc. (n=397)	A-levels/American board (n=136)
Total DREEM Score	121.50 (32)	123 (22)	125 (23)	111 (28)
	$p=0.144$		$p=<0.001^*$	
Students' perceptions of learning	28 (11)	29 (8)	30 (8)	26 (11)
	$p=0.139$		$p=<0.001^*$	
Students' perceptions of teachers	26 (7)	27 (6)	28 (6)	25 (7)
	$p=0.016^*$		$p=<0.001^*$	
Students' academic self-perceptions	22 (7)	22 (6)	22 (6)	20 (7)
	$p=0.617$		$p=<0.001^*$	
Students' perceptions of atmosphere	28 (9)	29 (8)	30 (8)	25 (8)
	$p=0.047^*$		$p=<0.001^*$	
Student's social self-perceptions	16 (6)	17 (5)	17 (5)	15 (5)
	$p=0.102$		$p=<0.001^*$	

A p value of  $\leq 0.05$  is considered as \*significant. Scores are expressed in median (IQR)

## DISCUSSION

Healthy educational environment has now become a global priority. The mean DREEM score in this study was 120/200 and it was calculated to be 60%. Although this score is more positive than negative, still the score is not excellent. Excellent score as per DREEM guidelines is 151–200.<sup>15,16</sup> The mean score of this study was higher than the mean score (114.4) of the results of a study reported by Jawaid *et al* in 2013, conducted in three medical colleges affiliated with Dow Medical University.<sup>1</sup> The score in our study is also higher than the mean DREEM score of Madina University of Faisalabad which was 112/200.<sup>18</sup> Another study conducted by Khan *et al* reports mean score of 125 from various public and private medical colleges of Pakistan.<sup>13</sup> Score of these institutes is higher than the score of the present study, still it is not excellent. Students of Lahore Medical & Dental College perceived their environment positively as compared to the medical students of King Saud University and Hormozgan University of Medical Sciences in Bandar Abbas, South Iran. There the reported mean score is 89.9 and 99.6, respectively.<sup>4,9</sup> Total DREEM score of present study is comparable to the mean DREEM score of different medical institutes, in India as reported by Pai *et al*, Gade and Kohli.<sup>19–21</sup>

In the five subclasses of DREEM, highest calculated score 67% was for the subclass SASP and

lowest score of 57% was obtained for the domain SPA. Scores in all the five domains are above average and ranked as positive perceptions of atmosphere by the students. Satisfaction of the students from the atmosphere determines their success and fruitful outcome. Healthy environment of medical school is also essential for the academic curriculum to progress and flourish.<sup>2,3,9</sup>

There was no significant difference of perceptions of males and females in total DREEM and different subclasses score except the domains 'Students' perceptions of teaching' and 'Student's perception of atmosphere'. Most of these findings are similar to those of Indian and Iranian private institutes showing no significant difference in feedback of males and females.<sup>22,23</sup> However, in the present study, the perceptions of females were significantly more positive than that of the males in the two domains mentioned.

There was significant difference in perceptions when results were analyzed on entry qualifications. Total DREEM and its subclass scores were significantly higher in the group with F. Sc. background compared with the group with A-level/American board background. Perceptions of the students with F. Sc. were more positive and they were more confident. It has been observed that the students, who are better observers, have good communication and analytical skills opt for A levels; on the other hand, students of F.

Sc. are more hard working and have a better command on the subject. Time management skill is better developed in F. Sc. students. Different families with medical or engineering background prefer F. Sc. course for their children as they are of the opinion that in professional institutes courses taught are predominantly based upon Board of Intermediate and secondary examination course.<sup>24,25</sup> Results of the present study are in concordance with these observations.

## CONCLUSION

The atmosphere at Lahore Medical & Dental College was perceived positive by the students. Total DREEM score and points in the subclasses did not fall in the excellent category. They remained a step below the highest rank. Therefore, space for improvement is there in educational climate at Lahore Medical & Dental College, Lahore.

## AUTHORS' CONTRIBUTION

SD: Literature search, conceptualization, study design, write-up, proof reading. MM, FN: Data collection. RQ, AM: Concepts. UZ: Literature, Concepts, data collection, statistics, write-up.

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