

ORIGINAL ARTICLE

EVALUATION OF LEARNING ENVIRONMENT IN FIRST TWO YEARS
AT WAH MEDICAL COLLEGE

Aneeqa Rashid, Sadia Mubarak*, Sumaira Iqbal**, Muhammad Alamgir Khan***

Department of Physiology, HITEC Institute of Medical Sciences, Taxila, *Islamabad Medical and Dental College, Islamabad,

Wah Medical College, Wah Cantt, *Army Medical College, Rawalpindi, Pakistan

Background: The recent trends of assembling student friendly health professional education systems have stirred the need of continuous scientific monitoring of the teaching institutions. Current study was planned to evaluate the perception of learning environment by the medical students of Wah Medical College, Wah Cantt and to assess the effect of gender and academic year on this observation. **Methods:** It was a cross sectional comparative study carried out at Wah Medical College, Wah Cantt, Pakistan from Jan–Dec 2016. Data collection tool was the ‘Dundee Ready Educational Environment Measure’ (DREEM) questionnaire that was given after consent to 200 students of 1st and 2nd year MBBS. Data was analysed using SPSS, and $p \leq 0.05$ was considered significant. **Results:** Out of total 200 students, 163 retorted (response rate= 81.5%). According to the students the overall DREEM scores were towards positivity (total score 115.28 ± 19.17). When the sub-scores were compared on the basis of gender discrimination we found that all the scores were equal except the ‘students perception of teaching’ which was significantly rated better ($p=0.006$) by the female students. Among all the sub-scores the students’ perception about the atmosphere of learning at WMC was greatest (31–38/48) which depicts an awesome atmosphere for the fresh medicos. Overall, total DREEM score when compared with gender was not statistically significant among male and female students ($p > 0.05$). Total DREEM score was statistically similar between the students of 1st and 2nd years ($p > 0.05$). However, the sub themes of perception of students about teachers and atmosphere were rated better by 1st year students as compared to the students of 2nd year ($p=0.03$ and 0.001 respectively) Whereas academic self-perception was rated significantly higher by the students of 2nd year ($p=0.03$) **Conclusion:** The medical students of first two years at Wah Medical College enjoy a healthy educational environment. Most students feel confident about their growth and social well-being. The institutional atmosphere, self-learning and co-operation from teachers is also rated excellent by the young medical undergraduates.

Keywords: Dundee Ready Educational Environment Measure, DREEM, undergraduate, medical education

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INTRODUCTION

Continual quality assessment of educational structure of every institute should be scrutinized.¹ It should be done on regular basis to monitor the performance built outcome and appraisal of student’s perception about the learning atmosphere.² Most of our local institutes tend to enhance their quality assurance by integrated curriculum and student centred learning.³ These recent trends of assembling student friendly health professional education systems have stirred the need of continuous scientific monitoring of the organizations.⁴ In reference to this need, an imperative insight of student’s perception about learning atmosphere is determined.⁵ An educational environment is defined as everything that is sensed by the students during their activities in the classroom, department or in the institute.⁶ Recent studies logically ascertained that for effective intellect, the status of educational environment plays a vital role which can be improved by changing according to student’s perception based assessments.⁷

The Dundee Ready Education Environment Measure (DREEM) is a survey-based investigation method which can be used for quantitative assessment of students’ opinion about the learning environment of medical colleges and training institutes.⁸ It was acknowledged in late 90s.⁹ This diagnostic tool has been used by several international studies as a reliable tool for determining educational environment of various medical institutions.¹⁰ It has been used for comparing different curricula and comparison between different medical educational climates and their gender based differences.¹¹

Pakistan is a nation with constrained assets and has a training framework requiring significant changes. We have to distinguish the elements which influence the instructive conditions that bear a key part in the learning air of an institution. In such manner, it is helpful to have an instrument to recognize factors which assume part in making the instructive atmosphere positive, inspiring, beneficial and conducive.

The current study was planned to conclude the impression of 1st and 2nd year medical students studying

at Wah Medical College, Wah Cantt, in respect of educational environment of the institution and to determine any gender based distinctions.

MATERIAL AND METHODS

This cross-sectional comparative study was done at Wah Medical College (WMC), Wah Cantt, Pakistan from Jan–Dec 2016. An approval was taken from the institution for conduction and publication of the study. All the participants were voluntarily included with written and informed consent. Only the fresh medical students of 1st and 2nd year were included in the study. The sampling technique was non-probability convenience type. The aggregate number of students was about 200 but only 163 of them attempted the questionnaire. ‘DREEM’ designed feedback form was constructed and printed. The students were counselled about the study purpose and procedure of data collection. They were assured about the secrecy of the data. They were also allowed to be anonymous in the survey. The questionnaire was class-wise filled with in 45–50 minutes in one session. They were beforehand explained about the terms like ‘factual learning’ and ‘empathy’. Only 163 questionnaires were completely filled and the incomplete questionnaires were excluded from the study. DREEM inventory comprised of 50 questions. All of which were scored as five points on Likert scale that is 0 was for strongly disagreed (SD), 1=disagreed (D), 2=not sure (NS), 3=agreed (A), 4=strongly agreed (SA). Nine of the questions were of negative impact so likewise the statements were marked as SD=4, D=3, NS=2, A=3, SA=0. Other than the negative statements the higher scores of each question was perceived as healthier sign.

According to the DREEM inventory an aggregate score of 51–100 represents ‘a lot of issues’ about the teaching environment, a score of 101 to 150 shows ‘more positive than negative’ while an aggregate score over 150 specifies ‘great’ and most extreme score of 200 specifies ‘perfect’ instructive condition. In DREEM, there are five sub scales which included perception of learning by student, perception of teachers by students, academic self-perception by students, perception of atmosphere by students and social self-perception by the students.

Data were analysed using SPSS-24 for overall DREEM score as well as for the sub themes. Effect of age and gender was calculated using independent *t*-test. Alpha value was kept at 0.05.

RESULTS

Out of total 163 students, 68 (41.7%) were males and 95 (58.3%) were females with mean age 19.9±0.99 years.

Table-1 shows mean values of total DREEM score and sub themes. Comparison of total DREEM

score and sub themes between males and females is shown in Table-2 along with the p-values. Table-3 shows comparison of total DREEM score and sub themes between 1st and 2nd year students.

Table-1: Mean values of total DREEM score and subthemes

Variables	Mean±SD
Total DREEM score	115.28±19.177
Perception of learning by student	28.8957±5.03398
Perception of teachers by students	24.4908±4.70142
Academic self-perception by students	20.3252±4.20594
Perception of atmosphere by students	31.8896±7.13278
Social self-perception by students	16.1902±3.51812

Table-2: Effect of gender on total DREEM score and subthemes

Variables	gender	Mean	SD	<i>p</i>
Total DREEM score	Male	111.63	22.73	0.053
	Female	117.88	15.77	
Perception of learning by student	Male	28.07	6.06	0.09
	Female	29.48	4.07	
Perception of teachers by students	Male	23.23	5.31	0.006*
	Female	25.38	3.99	
Academic self-perception by students	Male	19.91	4.41	0.29
	Female	20.62	4.04	
Perception of atmosphere by students	Male	30.82	8.11	0.12
	Female	32.65	6.27	
Social self-perception by students	Male	15.89	3.82	0.38
	Female	16.40	3.28	

*Significant

Table-3: Effect of academic year on total DREEM score and subthemes

Variables	gender	Mean	SD	<i>p</i>
Total DREEM score	2 nd year	117.18	20.53	0.19
	1 st year	113.30	17.56	
Perception of learning by student	2 nd year	28.73	5.45	0.68
	1 st year	29.06	4.58	
Perception of teachers by students	2 nd year	23.74	4.77	0.03*
	1 st year	25.26	4.52	
Academic self-perception by students	2 nd year	20.98	4.65	0.03*
	1 st year	19.63	3.58	
Perception of atmosphere by students	2 nd year	33.74	6.74	0.001
	1 st year	29.96	7.05	
Social self-perception by students	2 nd year	16.49	3.80	0.26*
	1 st year	15.87	3.19	

*Significant

DISCUSSION

In our study we tried to evaluate the student’s perspective of the learning environment of 1st and 2nd year at Wah medical college. Our total result of DREEM scores (115.28±19.17) depicts that the learning environment is favourable for beginner students. Our total score when compared within the two classes was not statistically significant neither was it significant between male and female students.

Amongst DREEM sub categories the student’s perception of learning at Wah medical college was affirmative overall with no gender discrimination. Perception of teachers by the fresh medical undergraduates was also more on positive deflection. A

great sense of accomplishment was found when we saw the results of student's academic self-perception. Their scores were more on the positive side. The perception of both male and female students of each class was satisfactory. Among all the sub-scores the students' perception about the atmosphere of learning at the WMC was greatest (31–38/48) which depicts an awesome atmosphere for the fresh medicos. As far as the parameter of students' social self-perception was concerned, it showed normal average score. Both, male and female students indicated that institution 'not a bad place socially' as interpreted by the DREEM standard guidelines.

Dividing the separate questions, we found out that students wanted to have better provision in stress management. Also, they surmise that they cannot retain all they require. The DREEM sub-scores showed that there was opportunity to get better in various areas particularly in social environment of the institution as scores were 63–65% of the maximum scores.

Although when we compared the sub-scores on the basis of gender discrimination we found that all the scores were equal except the "students perception of teaching" which was significantly rated better (p -value=0.006) by the female students. When we critically further explored the sub scores within the two years we also found that the 2nd year students rated the 'students' perception of teaching' ($p=0.039$) 'academic self-perception' ($p=0.039$), and 'academic atmosphere perception' ($p=0.01$) significantly better than 1st year students. This difference between 1st and 2nd year students may be because the 1st year students are not used to the new academic changes and learning environment difference.

Our result of total DREEM score (115.28±19.17) is comparable with many international institutes scores like 117.9/200 in a Malaysian medical school¹², 127.5/200 in a medical university of Spain^{13,14}, 111.3/200 in a West Indian Medical University¹⁵. In Indian Medical Schools it was 114/200. It was 108/200 in Sri Lanka, 118/200 in Nigeria¹⁶, 130/200 in Nepal, 108/200 in King Saud University of Medical Sciences^{16,17}, and 139/200 in a United Kingdom Medical University that was the maximum DREEM total score registered till now¹⁸. Roff reported that the advanced institutions have better scores than conventional types of medical institutes.¹³

The overall DREEM as well as our best sub score of academic self-perception and least score of social self-perception was similar to Spanish studies.^{10,13} The comparable difference between the two total DREEM scores may be due to the fact that in our study the sample size was less than theirs ($n=297$) and also we investigated the results only in first two years of medical students.

A study conducted in two private and four public medical colleges under University of Health Sciences Lahore (overall DREEM score=125/200)^{19,20} concluded that study atmosphere for female students was less pleasing compared to males. Our findings are comparable with a recent local study done in Army Medical College, Rawalpindi.²¹ Their overall DREEM score was 116.6/200 that was similar to our results. They compared the results of all 5 years of MBBS ($n=647$) while we limited our study to the students of 1st and 2nd year only ($n=163$). Their gender-based results were also not significant which is also comparable to our results.

The findings of our study are more towards the positive side concerning the learning environment but it shows the Institute's ability to improve in various departments particularly in terms of student's social self-perception area. The new comers of the medical sciences are considered as the most stressed students of all undergraduate degree programs. Building a student-centred, promising and pleasant education atmosphere must be the ultimate goal of the institution.

CONCLUSION

The overall and sub scores of DREEM in Wah Medical College show an ambient educational environment for the new comers of MBBS where most of the students are optimistic about their academic achievements, learning environment, institutional atmosphere, as well as their social well-being. Female as well as male students are equally comfortable, depicting it a friendly and calm setting.

RECOMMENDATIONS

This analytical tool should also be used in clinical years as well as it can be utilized to perceive the students' perception of the learning environment between high and low achievers, between different departments of same institute or between different institutes.

REFERENCES

1. Hamid B, Faroukh A, Mohammadhosein B. Nursing students' perceptions of their educational environment based on DREEM model in an Iranian university. *The Malaysian J Med Sci: MJMS* 2013;20(4):56.
2. Pai PG, Menezes V, Srikanth, Subramanian AM, Shenoy JP. Medical students' perception of their educational environment. *J Clin Diagn Res* 2014;8(1):103–7.
3. Jawaid M, Raheel S, Ahmed F, Aijaz H. Students' perception of educational environment at a Public Sector Medical University of Pakistan. *J Res Med Sci* 2013;18(5):417–21.
4. Colbert-Getz JM, Kim S, Goode VH, Shochet RB, Wright SM. Assessing medical students' and residents' perceptions of the learning environment: exploring validity evidence for the interpretation of scores from existing tools. *Acad Med* 2014;89:1687–93.
5. Wayne SJ, Fortner SA, Kitzes JA, Timm C, Kalishman S. Cause or effect? The relationship between student perception of the medical school learning environment and academic performance on USMLE Step 1. *Med Teach* 2013;35:376–80.

6. Christensen CM, Raynor ME, McDonald R. Disruptive innovation. *Harvard Bus Rev* 2015;93(12):44–53.
7. Asch DA, Weinstein DF. Innovation in medical education. *New Engl J Med* 2014;371:794–5.
8. Kossioni AE, Varela R, Ekonomu I, Lyrakos G, Dimoliatis I. Students' perceptions of the educational environment in a Greek Dental School as measured by DREEM. *Eur J Dent Educ* 2012;16(1):e73–8.
9. Soemantri D, Herrera C, Riquelme A. Measuring the educational environment in health professions studies: a systematic review. *Med Teach* 2010;32(12):947–52.
10. Miles S, Swift L, Leinster SJ. The Dundee Ready Education Environment Measure (DREEM): a review of its adoption and use. *Med Teach* 2012;34(9):e620–34.
11. Hammond SM, O'Rourke M, Kelly M, Bennett D, O'Flynn S. A psychometric appraisal of the DREEM. *BMC Med Educ* 2012;12:2. doi: 10.1186/1472-6920-12-2.
12. Arzuman H, Yusoff MSB, Chit SP. Big sib students' perceptions of the educational environment at the School of Medical Sciences, Universiti Sains Malaysia, using Dundee Ready Educational Environment Measure (DREEM) Inventory. *Malays J Med Sci* 2010;17(3):40–7.
13. Roff S. The Dundee Ready Educational Environment Measure (DREEM) —a generic instrument for measuring students' perceptions of undergraduate health professions curricula. *Med Teach* 2005;27(4):322–5.
14. Tomás I, Millan U, Casares M, Abad M, Ceballos L, Gómez-Moreno G, *et al.* Analysis of the 'Educational Climate' in Spanish public schools of dentistry using the Dundee Ready Education Environment Measure: a multicenter study. *Eur J Dent Educ* 2013;17(3):159–68.
15. Clapham M, Wall D, Batchelor A. Educational environment in intensive care medicine —use of Postgraduate Hospital Educational Environment Measure (PHEEM). *Med Teach* 2007;29(6):e184–91.
16. Roff S, McAleer S, Ifere O, Bhattacharya S. A global diagnostic tool for measuring educational environment: comparing Nigeria and Nepal. *Med Teach* 2001;23:378–82.
17. Al-Hazimi A, Zaini R, Al-Hyiani A, Hassan N, Gunaid A, Ponnampereuma G, *et al.* Educational environment in traditional and innovative medical schools: a study in four undergraduate medical schools. *Educ Health (Abingdon)* 2004;17(2):192–203.
18. Dunne F, McAleer S, Roff S. Assessment of the undergraduate medical education environment in a large UK medical school. *Health Educ J* 2006;65(2):149–58.
19. Khan JS, Tabasum S, Yousafzai UK, Fatima M. DREEM on: validation of the Dundee Ready Education Environment Measure in Pakistan. *J Pak Med Assoc* 2011;61(9):885–8.
20. Khan JS, Tabasum S, Yousafzai UK. 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;21(4):160–70.
21. Nadeem A, Iqbal N, Yousaf A, Daud B, Ahmed M, Younis A. Students' perception of educational environment at Army Medical College, Rawalpindi: assessment by DREEM (Dundee-Ready Education Environment Measure). *Pak Armed Forces Med J* 2014;64(2):298–303.

Address for Correspondence:

Dr Aneeqa Shahid, Department of Physiology, HITEC Institute of Medical Sciences, Taxila Cantt, Pakistan.

Cell: +92-323-5154555

Email: dr.aneeqa@hotmail.com