



**ORIGINAL RESEARCH PAPER**

**Medicine**

**PERCEPTIONS OF MEDICAL STUDENTS ABOUT THEIR EDUCATIONAL ENVIRONMENT IN SAVEETHA MEDICAL COLLEGE, CHENNAI**

**KEY WORDS:**

**E Sri Charan Reddy**

**Dr. S. Porchelvan\***

Professor Of Biostatistics, Community Medicine Department, Saveetha Medical College, Chennai. \*Corresponding Author

**ABSTRACT**

**AIM:** The aim of the study is to evaluate the perceptions of medical students about educational environment in a medical college.

**OBJECTIVE:** To assess the perceptions of students about the teaching pattern and curriculum.

**METHODOLOGY:** This is a cross sectional study conducted among third and fourth year MBBS students of Saveetha Medical College & Hospital, Chennai using DREEM scale. Comparison of mean DREEM domain scores is done. The study is done for a duration of 6 months. A total of 255 students were given with DREEM questionnaire and data was analysed using SPSS version 15. P-value of < 0.05 was considered significant.

**RESULT:** The response rate was 85.33 percent. The total mean DREEM score was 108/200 (54%). The total score of SPL domain was 28.16/48 (58.66%). The total score of SPT domain was 22.21/44 (50.47%) and of SASP was 18.68/32 (58.37%). The

total score of SPA domain was 22.71/48 (47.31%) and that of SSSP was 14.77/28 (52.75%). For SPL, SPT, SASP and SSSP, the domain scores were > 50%. However for SPA domain the score was < 50%.

**CONCLUSION:** There was an overall positive response of total DREEM score. Certain problem areas and issues were identified which requires a further exploration and preparation of a new action plan.

**INTRODUCTION**

Medicine is a profession that requires the acquisition and mastery of a large body of knowledge and clinical skills as well as high standards of professionalism in both behaviour and attitudes demonstrated both within and outside the academic setting<sup>1</sup>. Medical students need to develop wide ranging skills and aptitudes to meet the health care needs of the patients and society that they intend to serve. Medical educational environment includes factors such as physical environment (e.g., classroom and equipment), teachers, colleagues and other student support systems that can motivate a medical student to engage in learning. Assessment of student's perception on educational environment may provide medical schools with barriers and opportunities for improvement of learning experiences in medical students. Hence, a study was undertaken to determine the association of scores with factors such as gender<sup>10,11</sup>, place of residence<sup>13</sup> and year of study<sup>12</sup> and to assess the medical educational environment.

**METHODOLOGY**

After obtaining approval from the institutional ethics committee, this cross sectional study was carried out over a period of 3 months. DREEM questionnaire has been used to collect the information about the educational environment.

**INCLUSION CRITERIA:**

- Medical students of third and final professional year
- Medical students who consented for participation

**EXCLUSION CRITERIA:**

- Medical students of 1<sup>st</sup> and 2<sup>nd</sup> professional year
- Medical students who didn't consent for participation.

DREEM questionnaire was admitted to all the selected students (via inclusion/exclusion criteria) after briefing for instructions. Information regarding demographic and other personal data such as year of study, gender, place of residence (hosteller /day -scholars) was collected in an anonymous manner. The DREEM instrument is a 50 item inventory, consisting of 5 sub-scales

- Students' Perceptions of Learning (SPL): 12 items (items

1,7,13,16,20,22,24,25,38,44,47 and 48) maximum score-48.

- Students' Perceptions of Teachers (SPT): 11 items (items 2,6,8,9,18,29,32,37,39,40 and 50) maximum score- 44.
- Students' Academic Self Perception (SASP): 8 items (items 5,10,21,26,27,31,41 and 45) maximum score-32. -Students' Perceptions of Atmosphere (SPA): 12 items ( items 11,12,17,23,30,33,34,35,36,42,43 and 49) maximum score-48.

Students' Social Self Perceptions (SSSP): 7 items (items 3,4,14,15,19,28 and 46) maximum score- 28.

Students are asked to read each statement carefully and to respond using a 5 point like ranging from strongly agree to strongly disagree. It is important that each student applies the items to his/her own current learning situation and responds to all 50 items. Items are scored as follows: Strongly agree- 4, Agree- 3, Uncertain- 2, Disagree- 1, Strongly disagree- 0. However, 9 of the 50 items (number 4,8,9,17,25,35,39,48 and 50) are negative statements and should be scored as: Strongly agree- 0, Agree- 1, Uncertain- 2, Disagree- 3, Strongly disagree- 4. Statistical package of social sciences (SPSS) version 15 was used for statistical analysis.

**Table 1: guide for overall score interpretation**

Score	Interpretation
0-50	Very poor
51-100	Plenty of problems
101-150	More positive than negative
151-200	Excellent

**RESULT**

A total of 300 questionnaires were distributed and 255 responses were collected. Response rate is 85.33%. Out of the 255 responses 126 were females (49.4%) and 129 were males (50.59%)

Day-scholars were 171 (67.05%) hostellers were 84 (32.94%). 3<sup>rd</sup> year students were 148 (58.03) and 4<sup>th</sup> year students were 107 (41.97%)

The total mean score of DREEM at Saveetha medical college and hospital, Chennai was 108/200(54%).Table 3 shows the analysis of total scores for all domains with reference to independent variables.The independent variables taken into consideration for the study are gender , year of study and the place of residence (hosteller/day scholar).

**Table 2:Total DREEM score with reference to gender**

Domain	Male	Female	P-value
SPL	28.19	28.09	0.838
SPT	24.21	24.46	0.608
SASP	19.09	18.31	0.444
SPA	20.97	21.45	0.731
SSSP	14.72	15.72	0.087

**Table3:Total DREEM score with reference to place of residence**

Domain	Hosteller	Day-scholar	P-value
--------	-----------	-------------	---------

SPL	28.38	27.94	0.064
SPT	23.32	24.44	0.854
SASP	18.84	18.50	0.071
SPA	23.10	21.60	0.795
SSSP	14.34	14.23	0.047

**Table 4: Total DREEM score with reference to year of study**

Domain	3 <sup>rd</sup> year	4 <sup>th</sup> year	P-value
SPL	27.89	28.95	0.033
SPT	24.41	24.45	0.061
SASP	18.17	19.19	0.026
SPA	22.60	22.81	0.886
SSSP	14.59	15.74	0.284

**Table 5: Individual score of SPL domain**

Item	Male	Female	Hosteller	Dayscholars	3 <sup>rd</sup> year	4 <sup>th</sup> year
1 I am encouraged to participate in teaching sessions	2.50	2.43	2.48	2.46	2.39	2.55
7 The teaching is often stimulating	2.45	2.37	2.39	2.42	2.37	2.45
13 The teaching is student centered	2.39	2.31	2.36	2.34	2.36	2.34
16 The teaching helps to develop my competence	2.83	2.85	2.90	2.78	2.78	2.90
20 The teaching is well focused	2.85	2.90	2.91	2.86	2.83	2.93
21 The teaching helps to develop my confidence	2.78	2.78	2.79	2.77	2.74	2.83
24 The teaching time is put to good use	2.05	1.98	1.96	2.04	2.04	2.00
25 The teaching over emphasises factual learning	2.96	2.92	2.91	2.95	2.90	2.98
38 I am clear about the learning objectives of the course	2.23	2.20	2.26	2.19	2.12	2.32
44 The teaching encourages me to be an active learner	1.19	1.96	1.94	1.94	1.78	2.10
47 Long term learning is emphasised over short term learning	1.74	1.82	1.90	1.72	2.12	1.96
48 The teaching is too teacher centred	1.50	1.55	1.58	1.50	1.46	1.60

**Table 6:Individual score of SPT domain**

No. Item	Male	Female	Hostellers	Dayscholars	3 <sup>rd</sup> year	4 <sup>th</sup> year
2 The teachers are knowledgeable	2.58	2.55	2.59	2.55	2.43	2.71
6 The teachers are patient with patients	2.34	2.20	2.30	2.34	2.36	2.30
8 The teachers ridicule the students	2.12	2.18	2.25	2.21	2.25	2.21
9 The teachers are authoritarian	2.11	2.20	2.16	2.15	2.17	2.15
18 The teachers have good communication skills with patients	2.08	2.26	2.22	2.12	2.24	2.10
29 The teachers are good at providing feedback to students	1.95	1.89	1.85	1.98	1.95	1.91
32 The teachers provide constructive criticism here	2.01	2.02	2.03	2.01	2.02	2.02
37 The teachers give clear examples	2.20	2.18	2.20	2.19	2.29	2.19
39 The teachers get angry in class	2.17	2.19	2.17	2.15	2.14	2.18
40 The teachers are well prepared for their classes	2.90	2.86	1.82	1.94	2.84	2.92
49 The students irritate the teachers	1.75	1.73	1.73	1.75	1.72	1.76

**Table 7:Individual score of SASP domain**

No. Item	Male	Female	Hostellers	Dayscholars	3 <sup>rd</sup> year	4 <sup>th</sup> year
5 Learning strategies which worked for me before continue to work for me now	2.43	2.38	2.48	2.34	2.43	2.39
10 I am confident about passing this year	2.48	2.49	2.54	2.44	2.29	2.69
22 I feel I am being well prepared for my profession	2.31	2.34	2.39	2.27	2.32	2.34
26 Last year's work has been a good preparation for this year's work	1.99	1.96	1.98	1.98	1.49	1.47
27 I am able to memorize all I need	1.38	1.82	1.60	1.60	1.48	1.72
31 I have learned a lot about empathy in my profession	3.40	3.47	3.40	3.48	3.21	3.67
41 My problem solving skills are being well developed here	2.50	2.41	2.45	2.47	2.54	2.38
45 Much of what I have to learn seems relevant to a career in healthcare	2.49	2.44	2.5	2.44	2.41	2.53

**Table 8:Individual score of SPA domain**

No. Item	Male	Female	Hosteller	Dayscholars	3rd year	4th year
11 The atmosphere is relaxed during consultation teaching	2.19	2.19	2,20	2.18	2.17	2.21

12	The course is well timetabled	1.28	1.22	1.23	1.27	1.23	1.27
17	Cheating is a problem in this course	2.15	2.08	2.13	2.11	2.10	2.14
23	The atmosphere is relaxed during lectures	2.03	2.00	2.02	2.02	2.04	2.00
30	There are opportunities for me to develop interpersonal skills	2.50	2.55	1.48	1.56	2.50	2.55
33	I feel comfortable in teaching sessions socially	1.96	2.00	1.96	2.00	2.00	1.96
34	The atmosphere is relaxed during tutorials	2.02	2.05	2.08	1.98	2.00	2.06
35	I find experience disappointing	2.31	2.27	2.29	2.29	2.28	2.30
36	I am able to concentrate well	1.19	1.07	1.03	1.23	1.11	1.14
42	The enjoyment outweighs the stress of studying medicine	2.04	2.06	1.80	1.80	2.04	2.07
43	The atmosphere motivates me as a learner	1.55	1.50	1.51	1.55	1.55	1.51
50	I feel able to ask the questions I want	1.55	1.47	1.57	1.61	1.58	1.60

**Table 9: Individual score of SSSP domain**

No. Item	Male	Female	Hosteller	Dayscholar	3 <sup>rd</sup> year	4 <sup>th</sup> year	
3	There is a good support system for students who get stressed	2.46	2.55	2.55	2.46	2.55	2.46
4	I am too tired to enjoy this course	2.44	2.53	2.60	2.39	2.44	2.52
14	I am rarely bored on this course	2.27	2.19	2.30	2.17	2.21	2.25
15	I have good friends in this course	1.99	1.93	2.01	1.91	2.16	2.26
19	My social life is good	1.87	1.81	1.85	1.83	2.07	2.11
28	I seldom feel lonely	1.66	1.66	1.58	1.74	1.63	1.69
46	My accommodation is pleasant	1.53	1.63	1.45	1.73	1.53	1.65

Table 2-4 indicate the total mean score of all independent variables with respect to each sub-scale. The total score of SPL domain was 28.16/48 (58.66%). The total score of SPT domain was 22.21/44 (50.47%) and of SASP was 18.68/32 (58.37%). The total score of SPA domain was 22.71/48 (47.31%) and that of SSSP was 14.77/28 (52.75%). For SPL, SPT, SASP and SSSP, the domain scores were > 50%. However for SPA domain the score was < 50%. The highest score was obtained by 4<sup>th</sup> year students for SPT domain and the score was 28.95/48. The lowest score was obtained by dayscholars for SSSP domain and the score was 14.23/28. Individual score of each item in each domain is listed in table 5 to 9. Table 10 gives the information about total score interpretation of each student for each domain and also gives the number of students falling in each category.

**Table 10: Guide for DOMAIN score interpretation**

Domain	Score	No Of Students
SPL	0 – 12 Very poor	5
	13 – 24 Teaching is viewed negatively	144
	25 – 36 A more positive approach	106
	37 – 48 Teaching highly thought of	0
SPT	0 – 11 Abysmal	5
	12 – 22 In need of some retraining	115
	23 – 33 Moving in the right direction	125
	34 – 44 Model teachers	10
SASP	0 – 8 Feeling of total failure	5
	9 – 16 Many negative aspects	127
	17 – 24 Feeling more on the positive side	121
SPA	25 – 32 Confident	2
	0 – 12 A terrible environment	10
	13 – 24 There are many issues that need changing	130
	25 – 36 A more positive atmosphere	110
SSSP	37 – 48 A good feeling overall	5
	0 – 7 Miserable	5
	8 – 14 Not a nice place	145
	15 – 21 Not too bad	100
	22 – 28 Very good socially	5

**DISCUSSION**

The main aim of the study is to compare the experiences of different groups of students with respect to their educational environment and to diagnose deficiencies in the curriculum. For this purpose, the DREEM questionnaire was

found to be an effective and accurate instrument and is used all over the world for measuring medical educational environment<sup>21,22-23,24</sup>.

The overall DREEM score was 109/200 which shows that the students have an overall positive perception towards their educational environment. However, it showed a lesser score when compared to studies conducted in Sweden<sup>20</sup>, Australia<sup>19</sup>, Saudi Arabia<sup>18</sup> and Canada<sup>17</sup>.

When individual scores are interpreted domain wise (Table 10), in SPL domain, teaching is viewed negatively by 144 students and 106 students have a more positive approach towards learning. In SPT domain, 115 students are in need of some retraining and 125 students are moving in the right direction. In SASP domain, 127 students scored between 9-16 which indicates many negative aspects while 121 students are perceiving more on the positive side. In SPA, 130 students say that there are many issues that need changing (13-24) and 110 students perceived a more positive atmosphere (25-36). In SSSP domain, 145 students perceived it as not a nice place (8-14) and 100 students feel that the educational environment is not too bad. When individual items are analysed, item no. 36 - 'I am unable to concentrate well' of SPA domain was scored least by the hostellers. This issue needs further exploration irrespective of the cause and corrective measures must be implemented<sup>8</sup>.

**CONCLUSION**

This study is used to determine the association of low scores with independent factors like gender, year of study and place of residence which helps the management to identify the problem areas which can be solved with further exploration.

**REFERENCE**

1. Cannon GW, Keitz S Q, Holland G J et al. Factors determining medical students and residents satisfaction during VA-based training: findings from the VA learner's perception Survey. *Academic Medicine* 2008; 83: 611-620.
2. H Linda. ABC of learning and teaching. *BMJ* 2003; 326: 810-812.
3. Cross V, Hicks C, Parle J, Field S. Perceptions of the learning environment in higher specialist training of doctors: implications for recruitment and retention. *Medical Education* 2006; 40: 121-128.
4. Genn J M, Harden R M. What is medical education here really like? Suggestions for action studies of climate of medical education environments. *Medical teacher* 1986; 8: 111-124.
5. Pololi L, Price J. Validation and use of an instrument to measure the learning environment as perceived by medical students. *Teaching and learning in Medicine* 2000; 12: 201-207.
6. Hasan T, Gupta P. Assessing the learning environment at Jazan Medical School of Saudi Arabia. *Med Teach* 2013; 35(suppl1): S90-6.
7. Roff S, McAleer S, Harden RM et al. Development and validation of the Dundee Ready Education Environment measure (DREEM). *Medical Teacher* 1997; 19:

- 295299.
8. Nijhuis J, Segers M, Gilselaers W. The interplay of perceptions of the learning environment, personality and learning strategies: A study amongst Internat.
  9. Al-Qahtani MF. Approaches to study and learning environment in medical school with special reference to the gulf countries. PhD Thesis. Faculty of Medicine, Dentistry and Nursing, University of Dundee. Education for Health 17:192-203.
  10. Bakhshialiabad H, Bakhshi M, Hassanshahi G. Students' perceptions of the academic learning environment in seven medical sciences courses based on DREEM. *Adv Med Educ Pract* 2015;6:195-203.
  11. 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. *Malaysian J Med Sci* 2010;17:40-47.
  12. Buhari MA, Nwannadi IA, Oghagbon EK, Bello JM. Students' perceptions of their learning Environment at the College of Medicine, University of Ilorin, Southwest, Nigeria. *West Afr J Med* 2014;33:141-5 [abstract].
  13. Avalos G, Freeman C, Dunne F. Determining the quality of the medical educational environment at an Irish medical school using the DREEM inventory. *Ir Med J* 2007;100:522-5.
  14. E. Gudrun et al. Comparing the educational environment (as measured by DREEM) at two different stages of curricular reform. *Med Tech* 2010;32: e232-e238.
  15. H. Denz – Penhey, JC Murdoch. A comparison between findings from DREEM questionnaire and that from qualitative interviews. *Medical Teacher* 2009;31: e449e453.
  16. Al-Qahtani MF. Approaches to study and learning environment in medical school with special reference to the gulf countries. PhD Thesis. Faculty of Medicine, Dentistry and Nursing, University of Dundee. Education for Health 17:192-203.
  17. Hettie T. Identifying the perceived weakness of a new curriculum by means of Dundee Ready Education Environment Measure (DREEM) inventory. *Med Tech* 2004;26:39-45.
  18. Bassaw B, Roff S, McAleer S, Roopnamesingh S, De Lisile J, Teelucksingh S, Gopal. Student's perspectives of the educational environment, Faculty of Medical Sciences, Trinidad. *Med Tech* 2003;25:522-526.
  19. E. Gudrun et al. Comparing the educational environment (as measured by DREEM) at two different stages of curricular reform. *Med Tech* 2010;32: e232-e238.
  20. H. Denz – Penhey, JC Murdoch. A comparison between findings from DREEM questionnaire and that from qualitative interviews. *Medical Teacher* 2009;31: e449e453.
  21. Hasan T, Gupta P. Assessing the learning environment at Jazan Medical School of Saudi Arabia. *Med Teach* 2013;35(suppl1):S90-6.
  22. Pierre RB, Branday JM, Pottinger A, Wierenga A. Students' perception of the 'educational climate' at the Faculty of Medical Sciences, The University of the West Indies, Jamaica. *West Indian Med J* 2010;59:45-9.
  23. Kossioni AE, Varela R, Ekonomu I, Lyrakos G, Dimoliatis ID. Students' perceptions of the educational environment in a Greek Dental School, as measured by DREEM. *Eur J Dent Educ* 2012;16:e73-8.
  24. Shehnaz SI, Sreedharan J. Students' perceptions of educational environment in a medical school experiencing curricular transition in United Arab Emirates. *Med Teach* 2011;33:e37-42.