ORIGINAL ARTICLE

Learning Environment at CMH Lahore Medical College: Perspective of medical students

SHAISTA ARSHAD JARRAL[1], UZMA NASEER[2], AISHA ZEESHAN[3], AMNA LIAQAT[4], UMAR FAROOQ[5]
[1]Associate Professor Anatomy, CMH LMC, Lahore
[2]Professor of Anatomy, CMHLMC, Lahore.
[3,4]Senior Demonstrator, Anatomy, CMHLMC, Lahore.
[5]Final year MBBS student, RLMC, Lahore.
Correspondence to Dr. Shaista Arshad Jarral, Email: shaistaarshad24@gmail.com

ABSTRACT

Aim: To evaluate learning environment at CMH Medical College (CMH-LMC) as perceived by medical students.
Methods: An observational study was conducted at CMHLMC, Lahore from July,2020 till December, 2020, using DREEM survey tool. Feedback to five category questions on Likert scale were used to count DREEM scores.
Results: Mean DREEM count in our study came out to be 123.78±8.69. In respect of subcategories, Students' Perceptions of Learning (POL), the maximum value was 29.48; Students' Perceptions of Teachers (POT) showed a total score of 26.59; Students' Academic Self-Perception (ASP) reached the highest number of 18.15; Students' Perceptions Of Atmosphere (POA) attained total count of 32.38 and Students' Social Self-Perceptions (SSP) made up a highest score of 17.19.
Conclusion: Learning environment at CMHLMC, was perceived positive by medical students.
Keywords: Dundee Ready Education Environment Measure (DREEM), Learning environment (LE), Perception

INTRODUCTION

The learning environment (LE) describes all, what happens within the class-setting, a section of an institution, or university, and is detrimental for better quality of training of medical professionals[1]. Student's Perspective on the learning environment has a direct impact on the medical student's motivation, satisfaction, and effective learning[2].

The educational environment in a professional college has a long term influence on the students' knowledge, skills and practices, later in their professional life. With the paradigm shift of pedagogy, the teacher's role has taken a shape that of a facilitator, providing material and a positive learning environment[3]. The knowledge of students view point about their educational atmosphere is pivotal in the shaping and implementation of a well-rounded curriculum. This perception can be used introspectively by the teaching faculty and other stakeholders to make appropriate changes in their educational institutions to maintain higher standards[4].

Educational environment is one of key stake for students learning and for evaluation of medical educational program. Impact of educational atmosphere is essential and decisive in the regulation of medical students' knowledge, skills, attitudes and academic excellence[5].

The Learning environment of a medical institute is of profound significance during the undergraduate learning, and comprises of social interaction, structural organization and virtual spaces that contribute to the learners' experiences, perspectives, and academic attainments[6].

Positive Learning environments are believed to improve personal growth and quality of life, at the end of the internship year and/or at the end of the pre-clinical /basic learning years at medical schools[7].

The class rooms where students study, their interpersonal communications with their mentors and class fellows, the teaching methodologies used, facilitating their learning, their behavior towards their peers, and overall environment around the whole learning process, are all essential in defining the success of the learning process. A positive learning environment increases motivation level of students and their drive towards gaining knowledge and skills, maintaining a healthy perception of social well-being[8].

Many tools have been used by investigators to evaluate and analyze perceptions of students about their relevant learning environment in health care education facilities. The Dundee Ready Education Environment Measure (DREEM) is a validated servey instrument used globally to analyze students' perspectives on their educational environment[9].

It is made up of a set of fifty questions about five domains of learning environment, and response to each question is measured on a five point Likert scale. It is useful in identifying areas of strength and weakness in a certain educational setting and can be used to improve standards of teaching and learning according to the satisfaction of learner, the main stakeholder in a teaching /learning setting[10,11].

Although medical faculty has always been striving to take measures to uplift the quality of medical education or curriculum by making alteration in teaching methodologies, very sparce information is available on students' view points on these aspects. This was a trigger to collect the firsthand data on students' perspective about our institute's learning atmosphere and to recognize strengths and weaknesses of the system as well as the scope for improvements in the existing educational setup.

The objective behind this study was to evaluate the learning atmosphere prevailing in a private, Pakistan based medical college (CMHLMC, Lahore) with the help of the DREEM survey.

METHODOLOGY

The DREEM survey consists of fifty questions, each scoring 0–4 on a 5-point Likert Scale.
(0 = strongly disagree (SD) to 4 = strongly agree (SA)), For the nine negative statements, scoring was done in reverse. (0 = strongly agree, to 4 = strongly disagree). Average scores for each item were calculated with a maximum score of 4.0 for every item.
The 50 questions were subsequently analyzed within five subdomains created by combining a set of questions;
1) POL, Perceptions Of Learning (12 items,with highest possible value of 48)
2) POT, Perceptions Of Teachers (11 items, with highest possible value of 44)
3) ASP, Academic Self-Perceptions (8 items: with highest possible value of 32)
4) POA, Perceptions Of Atmosphere, POA (12 items, with highest possible value of 48)
5) SSP, Social Self-Perception (7 items, with highest possible value of 28).
Subscale 1: Perception of Learning (POL) by adding responses of questions 1, 7, 13, 16, 20, 22, 24, 25, 38, 44 and 47.

Subscale 2: Perception of Teaching (POT), by adding responses of questions 2, 6, 8, 9, 18, 29, 32, 37, 39, 40 and 50.
Subscale 3: Academic Self-Perception (ASP), was created by summary Items 5, 10, 21, 26, 27, 31, 41 and 45.
Subscale 4: Perception of Atmosphere (POA), by adding responses of items 11, 12, 17, 23, 30, 33, 34, 35, 36, 42, 43, 49.
Subscale 5: Social self-perception (SSP), was created by summing the responses of things 3, 4, 14, 15, 19, 28 and 46.
The sum of all responses from all domains gives us the net DREEM value.
The highest possible DREEM score is 200. An Overall score more than 120 is taken as satisfactory though there is room for considerable improvement. For individual items a score of 3 was taken as excellent, 2.5 as good, 2 as satisfactory and anything less than 2; an area that needs lot of improvement.
Statistical Analysis: Frequency and Percentage terms were used to describe the demographics of students. DREEM scores were given as mean and standard deviations.

RESULTS

This study was conducted in CMHLMC, Lahore in 2020, March-June. Due to the COVID-19 pandemic direct access to students was not possible so the questionnaire was sent via google forms. Total of 200 students of current and outgoing final year MBBS were approached to receive a response from students who have spent considerable time at the institution to give a reliable and genuine response. The response was taken as voluntary consent from the participants. Total of 145 responses were received.
Demographic Data: Out of 145 responses, 77(53%) were male students and 68(46%) female students. Age ranged from 23-29, with average of 24.5 ±2.5. 70 students were from FSc premedical qualification, 67 from A-level and only 8 from high school background. 135 students came from urban and only 11 from rural background (Table-1).
Dreem scores: The net DREEM score was summed up to reach a figure of **123.79**. Individual scores are given according to all five subscales of DREEM inventory.

Perception of Learning: POL, overall score was 29.48 out of maximum possible 48. Three items scored well above 2, including encouragement to participate in class, focused teaching, and clear

learning objectives of the course. However, two areas of concern were the teacher- centered teaching and the over-emphasis of the factual learning.

Perception of Teachers: POT, overall score was 26.59 out of possible 44. Three items scored excellent, teachers being knowledgeable (3), giving clear examples' and being well-prepared for the class. Three items which scored low regarding ridiculing the students, being authoritarian' and getting angry in the class.

Academic self -perception: ASP, the overall score in this domain was 18 out of possible maximum score of 32. One area scoring exceptionally well about being confident about passing this year. Two items which scored low were about lack of insight into the way scientific research is undertaken and problem-solving skills development.

Perception of atmosphere POA, overall score in this subscale was 32 out of possible 48. Three items scored high about the well time-tabled course and ability to concentrate well as well as freedom to ask the questions they wanted. Two low scoring items included cheating in the faculty and the stress of the course overweighed enjoyment of learning.

Social Self-Perception SSP, the overall score in this area was 17 out of possible maximum of 44. The best score was about accommodation being pleasant followed by good social life. The students perceived lack of a good support system for students who experience stress of work and are too tired to enjoy the course (Table 2, 3).

Table 1: Demographic characteristics:

Total	145		
Male	77=53.1%		
Female	68=48%		
Age	RANGE= 21-28	Average=22.9	
Premed-school system	FSC=70	A/o level=67	High school=08
Area of residence	URBAN=135	Rural=09	

Table-2: Description of five DREEM domains;

	Mean	SD
Perception of Learning (POL)	29.48	0.631223
Perception of Teachers (POT)	26.59	0.933381
Academic self-perception (ASP)	18.15	0.461935
Perception of Atmosphere (POA)	32.38	0.369123
Social self-perception (SSP)	17.19	0.641245
Total DREEM Score	123.79	8.690342

Table 3, DREEM Subscales

CODE	Questions- POL	SA	A	UN-SURE	DA	SDA	AVG
I	I am encouraged to participate in class	108	165	66	18	0	2.55
I	The teaching is often stimulating	52	129	100	24	0	2.51
I	The teaching is student centered	64	111	82	38	0	2.56
I	The teaching helps to develop my competence	72	120	64	40	0	2.02
I	The teaching is well focused	88	195	68	13	0	3.02
I	The teaching helps to develop my confidence	80	105	74	38	0	2.67
I	The teaching time is put to good use	82	126	70	34	0	2.95
I	The teaching over-emphasizes factual learning	0	55	37	36	20	1.01
I	I am clear about the learning objectives of the course	128	177	36	19	0	3.22
I	The teaching encourages me to be an active learner	88	123	78	27	0	2.75
I	Long term learning is emphasized over short-term learning	88	150	64	26	0	2.64
I	The teaching is too teacher centered	0	26	118	60	28	1.58
							29.48
						Mean	2.065
						SD	0.631223
CODE	Questions- POT	SA-4	A-3	UNSURE-2	DA-1	SDA-0	Average
II	The teachers are knowledgeable	232	207	20	8	0	3.15
II	The teachers deliver research-led teaching	56	96	150	36	0	2.31
II	The teachers ridicule the students*	0	33	80	105	64	1.93
II	The teachers are authoritarian*	0	57	56	60	24	1.84
II	The teachers help me to develop my practical skills	88	141	66	29	0	2.5
II	The teachers are good at providing feedback to students	72	120	70	33	0	2.51
II	The teachers provide constructive criticism here	64	117	82	31	0	2.61
II	The teachers give clear examples	108	177	72	17	0	3.21
II	The teachers get angry in class*	0	120	64	36	0	1.59
II	The teachers are well prepared for their classes	156	207	54	4	0	3.11
II	The students irritate the teachers	0	58	58	63	16	1.83
							26.59
						Mean	2.49
						SD	0.933381
CODE	Questions- ASP	SA-4	A-3	UNSURE-2	DA-1	SDA-0	average
III	Learning strategies which worked for me before continue to work for me now	72	162	52	34	0	2.19
III	I am confident about passing this year	272	144	44	4	0	3.17

CODE	Questions	SA-4	A-3	UNSURE-2	DA-1	SDA-0	average
III	I feel I am being well prepared for my career	88	108	104	20	0	2.19
III	Last year's work has been a good preparation for this year's work	84	150	78	24	0	2.3
III	I am able to memorize all I need	60	183	46	29	0	2.17
III	I have learned a lot about the way scientific research is carried out	48	90	62	42	0	1.65
III	My problem-solving skills are being well developed here	44	120	74	36	0	1.87
III	Much of what I have to learn seems relevant to a career in biological sciences	80	222	70	10	0	2.61
							18.15
						Mean	2.26875
						SD	0.461935
CODE	Questions- POA	SA-4	A-3	UNSURE-2	DA-1	SDA-0	average
IV	The atmosphere is relaxed during laboratory/practical/fieldwork classes	124	192	64	13	0	2.71
IV	The course is well timetabled	100	120	70	28	0	3.01
IV	Cheating is a problem in this faculty*	0	23	62	93	96	2.07
IV	The atmosphere is relaxed during lectures	64	159	66	31	12	2.91
IV	There are opportunities for me to de V velop my interpersonal skills	80	159	68	24	14	2.96
IV	I feel comfortable in class socially	144	204	40	13	0	2.74
IV	The atmosphere is relaxed during seminars/tutorials	92	180	66	16	0	2.44
IV	I find the experience disappointing*	0	28	82	111	0	2.66
IV	I am able to concentrate well	56	168	62	33	11	3.12
IV	The enjoyment outweighs the stress of the course	68	93	72	27	34	2.54
IV	The atmosphere motivates me as a learner	72	123	68	26	26	2.06
IV	I feel able to ask the questions I want	84	171	52	25	16	3.16
							32.38
						Mean	2.698333
						SD	0.369123
CODE	Questions- SSP	SA-4	A-3	UNSURE-2	DA-1	SDA-0	average
V	There is a good support system for students who get stressed	36	60	38	51	46	1.77
V	I am too tired to enjoy the course*	0	33	80	117	28	1.36
V	I am rarely bored on this course	60	87	52	42	0	2.65
V	I have good friends in this faculty	124	147	40	30	0	2.61
V	My social life is good	176	183	52	5	0	3.02
V	I seldom feel lonely	100	123	88	19	0	2.75
V	My accommodation is pleasant	204	198	34	7	0	3.03
							17.19
						Mean	2.455714
						SD	0.641245

SA= strongly agree, A= agree, DA=disagree, SDA= strongly disagree.   * Negative statements, scored in reverse.

DISCUSSION

Analysis of the learning atmosphere has been considered to be a vital element to the provision of good-standard medical education[12]. The analysis may be taken as a mirror image of the current standard of a curriculum and might be used to figure out its weaknesses that need some actions in order to improve.[13] The current advancements in medical curricula and also the increasing varieties of undergraduate medical courses have necessitated an increasing need to investigate the educational environment of medical colleges[14].

Our overall DREEM score was 123.79, that was comparable to many international studies. Reported literature shows an overall conclusion that DREEM scoring in traditional schools is, on average, close to 120. Similar studies conducted in other medical institutions in the region showed a total DREEM score in the 120-126 range. So the mean score at our institute classifies a more positive trend in the interpretation of learning environments.[15,16,17]

Our Subscale analysis showed highest score in domain of Perception of Atmosphere, POA (34 out of 48), followed by Perception of Learning, POL (29 out of 48), and Social Self-Perception, SSP (18 out of 32). Lowest score was seen in Academic Self-perception, ASP (18 out of 32).

Similar studies conducted in Pakistan have shown highest scores in POA and POL. Other studies using DREEM to assess the educational environment in Pakistani medical colleges have shown the highest response coming from areas related to Students' Self-perceptions and lowest scores in perceptions about learning and teachers. In this study, however, the highest reported score was in the category of 'Perception of Atmosphere and Academic Self Perception', which is in contrast to other studies that have reported higher scores in the domains related to social self-perception and lowest scores in the Perception of learning and Perception of teachers[18,19].

In POL, the overall score showed positive trend but two items were at the lowest scale, that teaching encourages factual learning and is too teacher centered. That clearly identifies the need for more work in the shifting of learning process towards being student centered with more active participation of students and less cramming of facts.

In POT, the overall score being 23 out of 44, was positive with highest response being for the question related to the teachers being knowledgeable as 3.03. and this is reflected by highly qualified teaching faculty at the college. The students gave positive response in referring to teachers being well-prepared for classes, giving positive feedback and giving clear examples.
Here at CMHLMC, faculty is periodically given various educational training workshops and courses to brush up their teaching capabilities and a concrete system of feedback is in place too. The lowest scoring areas were" the teachers are authoritarians" (1.34) and "students irritate teachers" (1.33). So, these areas need lot of improvement yet.

ASP, subscale showed that majority of students were confident about passing this year, and they believed their previous work is helpful for future exams. Moreover, they think that their learning seems to be relevant to a career in biological sciences. But two areas, the scientific research and development of problem-solving skills, need considerable improvement. As these skills are to very vital and basic attributes of a health care professional so need to inculcate more research culture and problem-based learning modalities in our curricula. [20] Though we have a hybrid, integrated system of teaching and learning but need to work more towards improving problem-solving skills of students.

POA, was the highest scoring domain overall which reflects a relaxed, well-paced, very organized, learning promoting, very conducive environment as a whole but there were some concerns regarding stress of the course and motivation as a learner that need to be revisited. what is lacking in incentives that can be incorporated to enhance the student's satisfaction. A worrying concern is the problem of cheating, that needs to be addressed and has been mentioned in earlier studies.[21]

In subscale of SSP, social self-perception, surprisingly we got lower total score of 15 out of possible 28 in comparison to other studies who have reported this as higher scoring domain.

The highest scoring item in this domain was students' satisfaction regarding the status of accommodation, while the lowest scoring area was having a good support system for

students who get stressed. This was an alarming finding as students in undergraduate medical school are under a constant stress to cope with study deadlines and huge volume of knowledge to assimilate, so there is a constant need for emotional and social support as well as counselling to deal with these pressures to avoid burnout. We do have student counselling department but that needs to be activated and abreast with strategies to deal with mounting student concerns. An organized mentorship programmes needs to be initiated for helping out student who are in need of academic, emotional and social support and help.

Though students are proud of their social life and enjoy the company of school friends, being too tired to enjoy reflects the fact that their stress levels overshadow their enjoyment. This can be treated by having more extracurricular and sports activities on campus on a regular basis to make sure the students become a wholesome multi-dimensional individuals rather than one-track, boring doctors.

Limitations: The study showed a wonderful response and is a primary measure of assessment of learning environment at our institute, though generalization cannot be done as its one institution data.

CONCLUSION

This study has shown overall positivity than negativity about the learning environment at CMHLMC, Lahore. Many areas of strength and weakness are identified for our set up, regarding teaching /learning and atmosphere. This is the first study at our institution which can be used while making strategies for future programmes, in order to enhance the quality standards and then subsequent improvements can be assessed by reconducting the similar studies over some time in future.

Conflict of interest: Nil

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