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Research Article

**PERCEPTION OF MEDICAL STUDENTS ABOUT EDUCATIONAL
ENVIRONMENT IN A PAKSITANI MEDICAL UNIVERSITY****¹Dr. Rabia Javed, ²Dr. Samina Asghar, ³Dr. Hira Ahsan, ⁴Dr. Naima Umar**

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Abstract:

Objective: Assessment of educational environment in a medical college is important for optimal delivery of quality education to the students and producing competent medical professionals. The present study was carried out in Fatima Jinnah Medical University to find out the perception of medical undergraduates regarding their educational environment.

Material & Methods: It was a 4-month Observational descriptive cross-sectional study. After informed consent, DREEM questionnaire was distributed among 750 (150/year) medical undergraduates. Data was entered and analyzed using SPSS-22. Mean scores were calculated, and 2-way ANOVA technique was used to find out differences among the scores of different years.

Results: 695/750 completely filled the questionnaire giving an overall response rate of 92.66%. Mean age of the respondents was 21.038 ± 0.8957. 24.26% (182/750) respondents were day scholars while 75.33% (565/750) were boarders. The overall mean DREEM score was calculated as 108.0738 ± 21.202 (more positive than negative). 1st year students showed the lowest scores while 3rd year students showed the highest. Mean score of 25.84±5.98 was calculated for SPL (more positive perception), 22.990 ±4.761 for SPT (in need for some retraining), 18.46±5.099 for SASP (feeling more on positive side), 25.720±6.143 for SPA (more positive attitude) and 15.110±3.636 for SSSP (not too bad). These results show that the perception of all the sub-domains is more on the positive side and the learning environment is working well.

Conclusion: Educational environment was perceived as more positive than negative, the sub-domain scores also showed positive trends. However, there is still room for improvement. The medical educationists and curriculum planners should work to improve the educational environment. They should look into the strengths and limitations of the current working environment which will help them distinguish their priorities. This is the root of quality assurance of any health care teaching institution.

Key Words: Medical students, educational environment, quality assurance.

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INTRODUCTION:

According to definition proposed by American Medical Association, the learning environment is a social system which includes the person who learns and the people with whom he interacts, the purpose of interaction and the principles controlling it [1]. The assessment of educational environment in a medical college has become focus of research around the globe as it has key role in delivery of high standard education [2]. It is a major contributor towards students' learning motivation and his/her engagement in clinical work which will ensure production of good and efficient clinical practitioners [3]. Poor learning environment is also a major determinant of stress and burnout among medical students [4]. So if an optimal environment is not provided to the students, it may lead to depressed states and increased incidence of suicide among them [5]. Assessing any learning or educational environment means outlining its strengths and weaknesses, recognizing the domains where it can be rectified and implementing changes where required [6, 7]. Therefore, it is important to assess the students' perception of educational environment as it may help with quality assurance of the medical institute by improving curricular achievements of the students [8]. Numerous measures of environment of health professional educational programs have been published and discussed in literature to assess its perception. The examples are Clinical Learning Environment (CLE), Students' Evaluation of Clinical Educational Environment (SECEE), Clinical Learning Educational Diagnostic Inventory (CLEDI), Clinical Learning Educational Inventory (CLEI), Surgical Theatre Educational Environmental Inventory (STEEM), Postgraduate Hospital Education Environmental Measure (PHEEM) and Dundee Ready Education Environment Measure (DREEM) [9, 10].

DREEM questionnaire has been widely used in literature because of its generality as it allows comparisons between different courses and also within a course [11, 12]. A number of researches are available in literatures which have used DREEM questionnaire to assess educational environment [13-20]. For example, The DREEM was filled by all year students enrolled in the osteopathy program at Victoria University (VU), Melbourne, Australia giving a mean total DREEM score as 135.37 (+/- 19.33), interpreting it as more positive than negative [13]. A local study conducted in Sheikh Zayed Medical College, Rahim Yar Khan, Pakistan also showed similar perception with a mean score of 113.68[14]. Fatima Jinnah Medical College for Women affiliated with Fatima Jinnah Medical University is an old and prestigious medical college of Pakistan established in

1948. Every year, it offers undergraduate medical training to over 1500 female medical students from Pakistan as well as from over 20 other nations who are divided into five different years. The college was upgraded to the status of university in 2015 and is now the first and only Medical School for women in the SAARC (South Asian Association for Regional Cooperation) region. To the best of authors' knowledge, no research has been previously done on this domain in FJMU. There is need to conduct such a research in FJMC to give the faculty a better overview of the weaknesses and strengths of the learning environment of the institution to help them amend the curriculum and thus increase the standard of the education in the institution.

OBJECTIVES:

1. To assess the perception of educational environment among medical students of Fatima Jinnah Medical University
2. To compare the responses between students of different years of Fatima Jinnah Medical University

RESEARCH METHODOLOGY:

Study design: observational descriptive cross-sectional study

Setting: the present study was carried out at fatima jinnah medical college affiliated with fatima jinnah medical university

Study duration: january 2018 to april 2018

Study population: all medical undergraduates enrolled in 2018

Sample size: a sample size of 750 was calculated for the study with anticipated response rate of 80% and 7.5 margin of error with design effect = 1 and number of year-wise groups = 5

Adjustment for non-response n = 750

Sampling technique: convenience sampling

DATA COLLECTION TOOL:

Dundee Ready Education Environment Measure (DREEM) questionnaire is 50-item questionnaire which measures five sub domains of the educational environment: Students' Perceptions of Learning (SPoL), Students' Perceptions of Teachers (SPoT), Students' Perceptions of Atmosphere (SPoA), Students' Academic Self-Perception (SASP), and Student's Social Self-Perceptions (SSSP). Each item is scored 0-4 on a 5-point scale. 4 for Strongly Agree (SA), 3 for Agree (A), 2 for Uncertain (U), 1 for Disagree (D) and 0 for Strongly Disagree (SD). However, 9 of the 50 items (numbers 4, 8, 9, 17, 25, 35, 39, 48 and 50) are negative statements and were scored 0 for SA, 1 for A, 2 for U, 3 for D and 4 for SD.

It gives a global score of 200 which is interpreted as 'very poor' (0-50), 'plenty of problems' (51-100), 'more positive than negative' (101-150) and 'Excellent' (11-200). In the present study, the questionnaire was used completely without any modification

DATA COLLECTION PROCEDURE:

150 students from each year were invited to participate in this survey to fill the questionnaires during their free time. All the medical undergraduates who took participation in the research study were told about the purpose and objectives of the study. Confidentiality of the information was guaranteed and participants had an option of acceptance or refusal to participate in the survey. The questionnaire were distributed and the students were given a day time to fill the questionnaire and hand it over to the principal author the following day.

DATA ANALYSIS:

Data was entered and analyzed in SPSS version 22.. Quantitative variables (age, DREEM score, marks in last professional exam) were expressed as mean +- SD. Qualitative variables (year of study, day scholar/boarder, gender) were expressed as frequency and percentages. *p* Value lower than 0.05 was considered statistically significant. ANOVA technique was used to determine differences in the mean scores among different years.

RESULTS:

695 medical students out of 750 completely filled the questionnaire giving an overall response rate of 92.66%. (Year 1= 138/150, year 2= 141/150, year 3 = 135/150, year4 = 140/150, year 5 = 141/150). Mean age of the respondents was 21.038 +- 0.8957 (Table 1).

YEAR OF STUDY	MEAN AGE
1	18.899+-0.742
2	19.771+-0.780
3	21.040+-1.005
4	21.939+-1.091
5	23.543+-0.858
AVERAGE	21.0389+-0.895

TABLE 1: MEAN AGE OF THE RESPONDENTS

24.26% (182/750) respondents were day scholars while 75.33% (565/750) were boarders.

The overall mean DREEM score was calculated as 108.0738 +- 21.202 which is interpreted as "more positive than negative" (Table 2)

The sub-domain score were also calculated (Table 2)

Graph 1: Mean Total Dreem Score

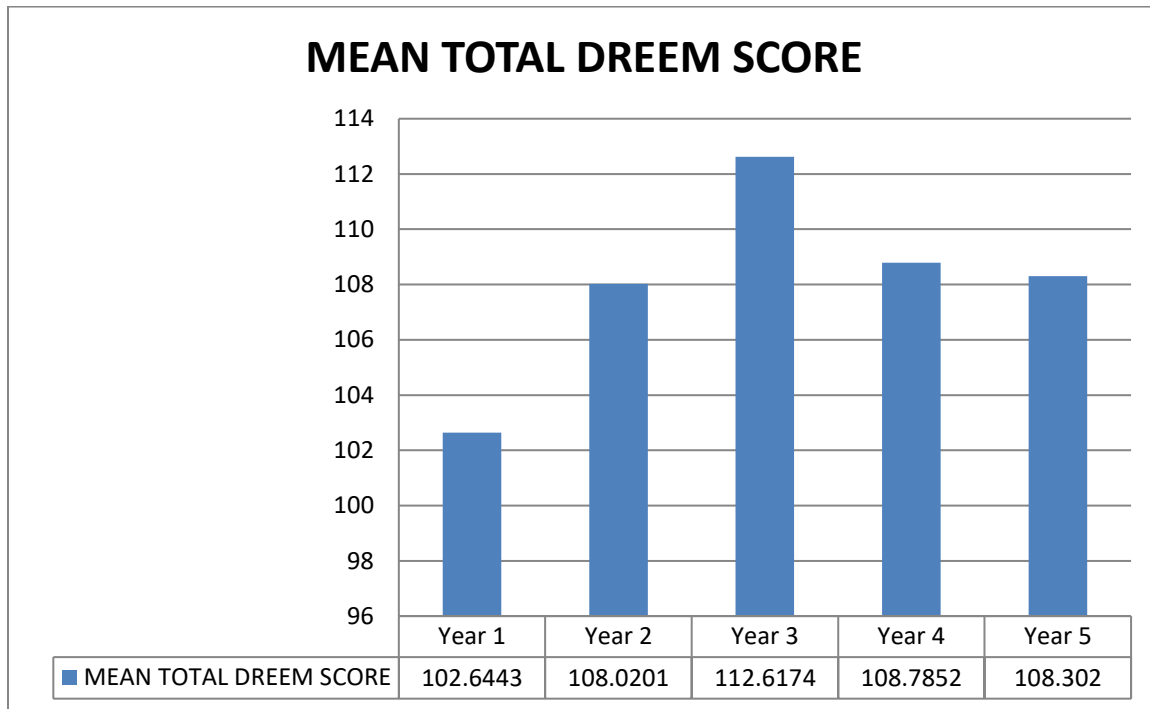


TABLE 2: SUB-DOMAIN SCORES

Mean scores of individual items were calculated. Most of the items had a mean score between 2 and 3 showing that ‘the climate can be enhanced’. The maximum scores were seen in the items D10, D15, D45, D19, and D31. (Table 3). 8 items scored less than 2 marking them as problematic areas which need to be examined. The items were D3, D4, D8, D9, D17,

D25, D39, D48 and D50. (Table 4)

Sub-Domain	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	TOTAL OVERALL	P-Value
Students' Perceptions of Learning (SPL)	24.885+- 6.329	25.718+- 5.560	26.677+- 5.626	25.966+- 5.752	25.959+- 6.662	25.841+- 5.986	0.0043
Students' Perceptions of Teachers (SPT)	21.731+- 4.633	23.147+- 4.881	23.369+- 4.504	23.651+- 4.208	23.053+- 5.577	22.990+- 4.761	0.008
Students' Academic Self-Perception (SASP)	17.684+- 5.014	18.268+- 5.090	19.073+- 4.949	18.543+- 4.892	18.738+- 5.550	18.461+- 5.099	<0.001
Students' Perceptions of Atmosphere (SPA)	24.402+- 6.086	25.463+- 5.522	28.040+- 6.551	25.154+- 6.454	25.543+- 6.102	25.720+- 6.143	<0.001
Student's Social Self-Perceptions (SSCP)	13.939+- 3.778	15.624+- 3.144	15.456+- 3.769	15.409+- 3.227	15.120+- 4.263	15.110+- 3.636	<0.001
TOTAL DREEM SCORE	102.644+- 21.082	108.020+- 19.687	112.617+- 21.493	108.785+- 19.938	108.302+- 23.809	108.073+- 21.202	<0.001

TABLE 3: ITEMS SCORING MAXIMUM SCORES.

QUESTION	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	OVERALL Mean+-SD
D10 I am confident about my passing this year	2.637584	2.718121	2.731544	2.604027	2.731544	2.684+- 0.059
D15 I have good friends on this course	2.268456	2.751678	2.637584	2.845638	2.644295	2.629+- 0.219
D19 My social life is good	2.449664	2.590604	2.550336	2.583893	2.281879	2.491+- 0.129
D31 I have learnt a lot about empathy in my profession	2.362416	2.42953	2.530201	2.57047	2.530201	2.484+- 0.085
D45 Much of what I have to learn seems relevant to a career in healthcare	2.483221	2.248322	2.798658	2.57047	2.550336	2.530+- 0.197

TABLE 4: MEAN SCORES OF PROBLEMATIC ITEMS

QUESTION	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	OVERALL Mean+-SD
D3 There is a good support system for registrars who get stressed	1.973154	2.053691	1.838926	1.718121	1.932886	1.903+-0.129
D4 I am too tired to enjoy the course	1.630872	1.496644	1.630872	1.765101	1.557047	1.616+-0.100
D8 The course organizers ridicule the registrars	2.04698	1.812081	2.080537	2.006711	1.85906	1.961+-0.118
D9 The course organizers are authoritarian	1.651007	1.704698	1.637584	1.771812	1.543624	1.661+-0.084
D17 Cheating is a problem on this course	1.986577	1.765101	2.026846	1.744966	1.879195	1.880+-0.126
D25 The teaching over emphasizes factual learning	1.838926	1.738255	1.677852	1.818792	1.442953	1.703+-0.159
D39 The course organizers get angry in teaching sessions	1.959732	1.66443	1.731544	1.798658	1.986577	1.828+-0.140
D49 I feel able to ask the questions I want	1.825503	2.114094	2.221477	2.268456	2.134228	2.112+-0.172
D50 The registrars irritate the course organizers	2.020134	1.778523	2.107383	1.832215	1.838926	1.915+-0.140

DISCUSSION:

Educational environment includes the physical infrastructure, the learning atmosphere, the course organizers and the students' social system [1]. Its assessment is important for quality assurance and optimal delivery of education [6, 15]. DREEM questionnaire was used in the present study to assess the perception of educational environment among medical undergraduates of FJMC. It is known for its specificity, generality and its multi-dimensional use by students in medical and health care related courses throughout the world which generates an overall score to mark it suitable for learning process or not and to help highlight the positive and negative aspects of the learning environment and help make appropriate amendments [11, 12].

The mean DREEM score of our study was 108.0738 +- 21.202 which is interpreted as "more positive than negative". This means that the environment is working better in many areas while there are a few areas which need to be worked upon to ensure provision of quality education. Similar perception was noted in various local and international studies. A mean DREEM score of 125.3+-19.5 was seen in Malaysian Medical

College [23], 113.5+-21.9 in Iran [6], 112.11+-23.9 in an Irish Medical College [7], 123.32+-21.2 in India [5], 115.0+-23.01 in Egypt [16], 121+-20.18 in Philippines [15], 105 +-2.8 in six colleges of Pakistan [17], 125.7+-16.8 in a Karachi medical college [18], 116.57+-24.96 in AMC, Rawalpindi [19], 131.77+-12.309 in CMH, Lahore [20] and 113.68 in SZMC, Rahim Yar Khan [14]. There are a few researches that have shown lower scores as compared to our study labeling their academic environment as problematic. 96.85+- 26.04 in Iran [21], 67.41+-24.06 in Malaysia [25] and 95.8 in Iran [21] were reported showing that their educational environment is perceived to have many problems which if not addressed in time might lead to poor performance by medical students which consequently may lead to production of incompetent medical professionals. There are also other researches in literature that showed better perception. For example mean score of 161.17 in Iran [22] which is interpreted as "excellent" marking their professional environment as flawless which needs no amendments.

The DREEM questionnaire is further sub-divided into 5 sub-domains namely SPL, SPT, SPA, SASP and SSSP

with a total score of 48, 44, 48, 32 and 28 respectively. Mean score of 25.84 \pm 5.98 was calculated for SPL (more positive perception), 22.990 \pm 4.761

for SPT (in need for some retraining), 18.46 \pm 5.099 for SASP (feeling more on positive side), 25.720 \pm 6.143 for SPA (more positive attitude) and 15.110 \pm 3.636 for SSSP (not too bad). These results show that the perception of all the sub-domains is more on the positive side and the learning environment is working well. However there is still room for some improvement and the institute should work to raise the standards of learning environment to higher levels. Similar perception was seen in research studies in Malaysia, Iran, India, Philippines, Egypt, Sri Lanka and Pakistan. [23,6,15,10,16,23,17,19,20,14]. Lower scores in sub-domains were also reported in literature. Studies in Iran, Malaysia and India showed such trends marking their learning environment as having many issues which need to be considered by the curricular planners [24, 25]. Higher score was seen in medical college of Iran showing that their sub-domains are working excellent and the learning environment is considered very suitable for learning [26].

2- Way ANOVA techniques was used to assess differences between total mean DREEM scores and the sub-domain scores between individual years. P-value of <0.05 was calculated for each case showing that there are statistically significant differences between scores of individual years. The scores of 1st year medical students were lower and statistically significantly different from other years. Sudden transition from college to university and from pre-medicine course to medical course, undue pressure of studies, the changed learning environment and hectic lecture routines might be possible reasons. The highest scores were seen in 3rd year medical students. It may be because of a transition from basic sciences, which are considered to be dry and uninteresting, to the more intellectually stimulating clinical subjects. Opposite trends were seen in study conducted in India where 3rd year students showed lower scores (118/200) as compared to other years [27]. The mean scores of 1st year were greater than from other years in study conducted in Pakistan [19]. An initial increase and later on a decline were also seen in a study in India [28].

The individual items with mean score with equal or more than 3.5 are considered really positive points, with less than 2 as problematic areas while those with scores between 2 and 3 suggest that climate can be enhanced. No item scored greater than 3.5 while 8 items scored less than 2 marking them as problematic areas which need to be examined. The items were D3,

D4, D8, D9, D17, D25, D39, D48 and D50. 'the teachers get angry in teaching', 'the students irritate the teachers', 'I find the experience disappointing' and 'I am too tired to enjoy the course' were problematic areas in a study conducted in Malaysia [23] while D8, 16,28,44,45,46 were problematic areas in an Indian Medical college [29].

FJMU is a medical university for women, so comparison of female and male population was not possible as the population comprised of only female undergraduates of FJMU. However there are examples in literature which show that the female population has better perception and have shown higher scores as compared to male population. However no gender inequality was seen in African medical college [30].

CONCLUSION:

Educational environment was perceived as more positive than negative. The sub-domain scores also showed more positive trends. However, there is still room for improvement. The medical educationists and curriculum planners should work to improve the educational environment. They should look into the strengths and limitation of the current working environment thus helping them in distinguishing their priorities. This is the root of quality assurance of the health care teaching institution.

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