Evaluating the Students Perception of Academic Learning Environments in AL-Kindy Collage of Medicine

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ABSTRACT

Background: Educational environment is one of the most important determinants of an effective curriculum. Students' perceptions of their educational environment have a significant impact on their behavior and academic progress.

Objective: 1. To identify students' perception to the educational environment.2. To identify any gender or class level differences in the students' perception.

Type of the study: This is a descriptive cross-sectional study

Methodology: The study was carried out on convenient sample of 150 students of 2nd and 5th grade. This study was done in Al Kindy Medical College, Baghdad, Iraq and conducted during the period from the 1st of October 2013 till the end of March 2014, by using DREEM questionnaire a validated universal diagnostic inventory for assessing the quality of educational environment through direct interview. Inclusion criteria include any student from the 2nd and 5th class who agree to participate in the study. The data was entered into a Microsoft Excel spreadsheet and were analyzed using SPSS version 16. Student t test was done to find out the difference between the mean scores, $P<0.05$ was considered as statistically significant.

Results: For all students (n= 150) the total DREEM score of a maximum possible of 200 was 110.18 , it was more positive than negative overall domain score, which means that the students had positive perception and more positive scores than negative. Total DREEM scores were significantly higher for females (M = 138.8; SD = 17.2) than males (M = 132.3; SD = 20.7), although all domains mean scores were higher for female than male, there was statistical significant difference regarding Students' perception of learning, Students' perception of atmosphere and Students' social self-perception.

Regarding the class level, 5th year students gave significantly higher total DREEM ratings (M = 139.1; SD = 17.4) than 2nd year students (M = 135; SD = 18.8). Second year students also gave significantly higher Students' perception of learning (SPL) ratings than 5th year students and significantly higher Students' perception of atmosphere (SPA) ratings higher than 5th year students.

Conclusions: Students assessed the educational environment as more positive than negative;. The greatest difficulty was with 'students' perception of learning'.

Keywords: learning environment, medical student, perception, DREEM score.

C urriculum is a holistic and comprehensive entity in education which extends beyond classroom teaching to all interactions in the medical school [1] . Educational environment is one of the most important determinants of an effective curriculum [2, 3] .

Medical students experience a variety of learning activities in the environs of the medical college. The environment is usually complex and unique [3] .The educational environment is everything that happens within the classroom, departments, faculty, and institution both physically and psychologically [4]

Studies conducted in other parts of the world have shown that the educational environment affects students' achievement, happiness and motivation [3, 5] .

All over the world, medical educators are attempting to reform the educational environment so as to make it student friendly without compromising the standards and the quality of learning. Assessing educational environment is vital in determining the success or failure of any institute [4] .

Successful management of the curriculum is only possible with systematic feedback and assessment [3] .

From the day students enter into the medical institute, they face a change in environment. A positive environment leads to achievements, fun, and engagement in learning while a negative one would hinder their accomplishments [4,6] .It is no longer an acceptable principle in academia that a good or effective learning environment can be provided by just a teacher who possesses virtues such as good communication skills, knowledge, credibility and preparedness which contribute towards teaching excellence. An ideal academic environment may be defined as one that best prepares students for their future professional life and contributes towards their personal and psychosomatic development along with social well-being as well [7] .

The teaching pattern when modified from teacher-centered to student-centered teaching, where the teacher, instead of being an obligatory teacher, plays the role of a facilitator in the learning process, the educational atmosphere and the students' perceptions about the teaching pattern, and their own opinion about their performance becomes vital so as to make sure and keep up premium educational environment and optimal teaching to the students [8, 9] . Indeed, evaluation of the educational climate has been highlighted as key to the delivery of high quality medical education, therefore, to conduct such evaluation, a valid and reliable tool is vital [10] .Several instruments are available for assessing the environment of undergraduate medical institutions [4, 11] .

Many of these instruments are now outdated as they do not take into account the recent curriculum changes and educational strategies [4,12] .The Dundee Ready Education Environment Measure (DREEM) has been developed in Dundee to measure the undergraduate educational climate of the Health Professional Schools [4,13,14]. By 2005 the DREEM10 had been used in studies in dozens of countries across Europe, Asia, Africa, North America, South America, and the Middle East and has since been applied in many other countries [13] . It is highly reliable and validated tool and can be used for conducting comparison of students' perceptions of educational climate within an institution, between institutions or at different point of time within an institution [8, 15]. Moreover, it can be used to help alter the curriculum, comparing past and present curricula and evaluating the effectiveness of a university program [4, 16]. The present study aims are to identify student's perception to the educational environment in preclinical and clinical stage and to identify any gender or class level differences in the students' perception to this educational environment.

Subject and Method:

Design and setting: a descriptive cross-sectional study was conducted in Al Kindy Medical College, Baghdad, Iraq. The study was carried out from the period from 1st of October/2013 till the end of March 2014

Sample: a convenient sample of a medical student in AL-Kindy College of medicine, Inclusion criteria: any student from the 2nd and 5th class who agree to participate in the study.

Methods: After consent was sought and obtained from the students, data were collected using Dundee Ready Education Environment Measure (DREEM) [14], a validated universal diagnostic inventory for assessing the quality of educational environment. The study was approved by the Departmental review board. It was administered to 150 medical students (67% from 2nd stage) and (33% from 5th stage) as they responded.

The respondent information sheet (the questionnaire), was handed to all students present in the class (each class separately) during a routine lecture. The information sheet gave a brief introduction of the aim of the study and of DREEM. The questionnaire was anonymous; it was to be voluntarily self-administered, any unclear question was explained by the researcher immediately.

The DREEM was then refined into 50-item self-report questionnaire using a 5-point Likert scale, with scores reflecting a student's overall perception of the environment as well as their perceptions of 5 main aspects of this environment, namely: students' perceptions of learning, , students' perceptions of teachers, students' academic self-perception, students' perceptions of atmosphere, maximum score and students' social self-perception. Each domains include the following items and scores: [13].

Student perception of learning which include 12 items (maximum score 48).
Student perception of teacher which include 11 items (maximum score 44).
Student academic self-perception which include 8 items (maximum score 32).
Perception of atmosphere which include12 items (maximum score 48).
Social self-perception which include 7 items (maximum score 28).

Each 50 item is rated on a 5-point Likert scale from 0-4 where 0= strongly disagree, 1= disagree, 2= unsure, 3= agree, and 4= strongly agree. There are nine negative items (items 4, 8, 9, 17, 25, 35, 39, 48, and 50), for which correction is made by reversing the scores; thus after correction, higher scores indicate disagreement with that item.

The maximal global score for the questionnaire is 200, and the global score is interpreted as follows [6]: 0-50 = very poor; 51-100 = many problems; 101-150 = more positive than negative; 151-200= excellent

Each domain has a subtotal score that can be interpreted approximately as the following guide shown below [6].

Students Perception of Learning: (0-12 = Very Poor, 13-24= Teaching is viewed negatively, 25-36 = A more positive perception, 37-48 = Teaching highly thought of).

Students Perception of Course organisers: (0-11 = Bad, 12-22= In need of some retraining, 23-33= Moving in the right direction, 34-44= Model course organisers).

Students' Academic Self Perceptions: (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: (0-11= 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: (0-7= Miserable,8-14= Not a nice place, 15-21= Not too bad , 22-28= Very good socially)

The DREEM can also be used to pinpoint more specific strengths and weaknesses within the educational environment. To do this one needs to look at the responses to individual items. Items with a mean score of ≥ 3.5 are true positive points; those with a mean of ≤ 2 are problem areas; scores in between these two limits indicate aspects of the environment that could be enhanced.

Statistical Analysis: The data was entered into a Microsoft Excel spreadsheet and were analyzed using SPSS (Statistical Package for Social Sciences) version 16. The mean and standard deviation were calculated for all of the items. For each of the five domains, scores were calculated as the cumulative total of individual responses for all of the items in that domain; for comparison of the domain scores across gender and classes, the scores were expressed as a percentage of the maximum score possible. Thus, after conversion, 100 represented the best possible score (complete agreement) and 0 the worst score (complete disagreement). Student t test was done to find out the difference between the mean scores, $P \leq 0.05$ was considered as statistically significant.

Results:

Table (1) shows that the majority of the sample 66.6% were from the 2nd year, the remaining 33.4% were from 5th year. Female were 56.7% out of the total sample.

Table (2) shows the average mean score of 50 items and 5 domain of Dundee Ready Educational environment measure DREEM from total sample. For all students (n= 150) the total DREEM score of a maximum possible of 200 was 110.18 of 200 so it was more positive than negative overall domain score, that means that the students had positive perception than negative.

Table (2) also shows that the items with their average scores in different domains; 36 items scored between 2 and 3.3; 14 items scored less than 2. The three most

highly rated items were 'The teaching time is put to good use,' 'Last year's work has been a good preparation for this year's work' and 'The course organizers are well prepared for their teaching sessions'; three items that students had the greatest problem with were 'There is a good support system for registrars who get stressed', 'I am able to memorize all I need' and 'I am confident about my passing this year.

When individual domains were considered, for all of the students taken together, the subtotal score for the students' perception of learning was 23.8 which is considered as (Teaching is viewed negatively) , for the students' perception of teachers the subtotal score was 25 which is consider as (moving in the right direction), for students' academic self-perception the subtotal score was 18.6 which is consider as (Feeling more on the positive side); for the students' perception of the atmosphere the subtotal score was 26.6 which is consider as (A more positive attitude) and finally for the social self-perception the subtotal score was 16.18 which is consider as (not too bad).

Total DREEM scores were significantly higher for females (M = 138.8; SD = 17.2) than males (M = 132.3; SD = 20.7), although all domains mean scores were higher for female than male, there were statistical significant difference regarding Students' perception of learning, Students' perception of atmosphere and Students' social self-perception are shown in table (3).

Regarding the class level, 5th year students gave significantly higher total DREEM ratings (M = 139.1; SD = 17.4) than 2nd year students (M = 135.9; SD = 18.8). Second year students also gave significantly higher Students' perception of learning (SPL) ratings than 5th year students and significantly higher Students' perception of atmosphere (SPA) ratings higher than 5th year students. Subscale means, standard deviations and significant differences between year levels are presented in table (4).

Discussion: Undergraduate medical school curriculum requires ongoing improvement in order to keep pace with times, especially with medical practice. The older medical schools need to review their traditional curriculum. In this situation, it must be kept in mind that before shifting from the traditional curriculum to another, we need a series of studies that explore the educational environment to get the students' perceptions in the selection of an appropriate tool of teaching and learning [17].

This study originated from a desire to learn how students perceive the educational environment in this institution. AL-Kindy College of Medicine is one of the Iraqi medical college with a traditional curriculum. Despite the fact that a new integrated curriculum had been applied for the 1st year students, the present study was aimed to study the perception of the students to the traditional curriculum, DREEM was used, as it is reported to be culturally non-specific and reliable for the health professions [18,19,20] .

With a global score of around 110/200, the students rated the overall environment in this collage as more positive than negative. Most other institutions that run teacher-centered, traditional, discipline-based curricula report similar global scores[20, 21,22, 23, 24] ; however, scores reported from student-centered, integrated, problem-based curricula are higher, suggesting that institutions with innovative curricula are rated higher by students [2]. Sultan 2014 described the experience of medical students in College of Medicine, King Saud University, Riyadh, Saudi Arabia [17] in which he compare the students satisfaction between traditional learning and new problem based Learning(PBL), he reported that the PBL students were more satisfied compared to those with traditional curriculum students, but the overall rating was non-significant between the groups.

Similarly Studies have shown that students in a PBL setting have more positive perceptions towards their curriculum than do the students in a conventional class [19, 25, 26, 27] .

Another study on nursing school in China showed that the DREEM overall scores was 132.48 (66%) . In medical schools located in Sri Lanka, Saudi Arabia, Chili, Kuwait, Sweden, Jamaica, Yemen, and India, the scores were reported as 108, 130, 102, 127.5, 105, 145, 102.8, and 100, respectively [28] .

An item that scores 3.5 or more is considered to represent a positive aspect of the curriculum [27]. Only one item of student's perception scored above 3 (The teaching time is put to good use) which nearly considered a positive point ; nevertheless, we are inspired that many scores ranged between 2 and 3 which means that scores in between these two limits indicate aspects of the environment that could be enhanced.

Students' perception of learning:
Regarding students perception of learning, the lowest scores were reported for this domain which is a point of concern for the faculty and administration [4] .

Items that scored less than 2 points belong to student not stimulated to contribute during teaching sessions, the teaching is often not stimulating and the teaching not helps to develop the student competence or Long term learning is emphasized over short term learning. Many learning institutions worldwide report similar alarms these difficulties are not devastating and should be addressed [14, 17, 18, 19, 21, and 23]. Teachers should encourage the student to participate in the lecture, lectures should be changes from traditional to active lecture and the learning should be shifted to student-centered learning [14, 17, 25, and 26]. The medical education training of the faculty member on the modern learning styles, appropriate teaching and assessment methods might motivate active learning. The literature suggests that such a change might provide students with stimulating opportunities for learning, thereby building confidence as well [14, 17, 27] .

Practical teaching and good student-teacher interaction as the presentation of cases, seminars, etc., helps in boosting the confidence of the students. Also, the items such as swiftness in giving feedback to students, preparing for teaching sessions, and communicating with patients[1] . Fifth year students perceived the greatest difficulty. For these students, much of the learning is at the bedside or in the outpatient department with only a few hours a day spent in lectures.

Bed-side practical training is an effective instrument to teach clinical skills, communication, ethics, empathy, and professionalism; however, in overburdened government hospitals, teachers are overwhelmed with patient care responsibilities [20, 29, and 30]. Added to that, overcrowded, noisy wards and outpatient departments also serve as obstructions to clinical teaching [30]. Researchers suggest that the learning experience of clinical training can be improved by structured and systematic clinical teaching [18,26] ; teachers may be advised to plan clinical encounters that is specific to a

set of curricular objectives, rather than teaching roughly on whatever case comes along[6, 20].

Poor skill development teaching, particularly for clinical students, is unfortunate but by no means peculiar to this institution [18, 20, and 30].

Students' perception of teachers:

Often items in this domain that scored less than 2 points pertained to the teacher are knowledgeable, the teacher espouse a patient centred approach to consulting. With the current emphasis on self-directed and life-long learning, teachers are no longer simply providers of information, but should facilitate the acquisition of attitudes and skills necessary for learning [14].

Students' academic self-perception:

Items in this domain that scored less than 2 points pertained to students being unable to memorize everything, unconfident about passing this year. . Academic self-perception is related to the ability to cope with the academic workload; most studies have reported low scores in this domain, suggesting that curriculum overload is a universal problem, regardless of whether the curriculum is traditional or innovative [14, 19, 21, 26] .Clearly, the curriculum needs revision not only in methodological terms, but also by a judicious reconsideration of course content. Ability to give timely and specific feedback is an important skill that sets students on the right path to learning. Excessively harsh criticism, on the other hand, or absence of feedback of any kind, is considered to be discouraging and damaging to students' self-confidence [27].

Students' perceptions of atmosphere:

Students' perception of the educational environment has a significant influence on their behavior, motivation, and academic achievement [4]. Items in this domain that scored less than 2 points pertained to live in stress, lack of a motivating environment, lack social environment and lack of opportunities to develop interpersonal skills. Fifth year students perceived the least difficulty. This finding draws attention again to differences in the experience of pre-clinical and clinical batch students [18]. The clinical environment is rich with real-world exposure but tends to degenerate into a confused, stressful experience because patient overload ensures that teachers are kept busy; priority is given to patients first and students later [14]. A critical review of the current practice of clinical teaching at this institution is necessary, followed by implementation of contemporary recommendations for improving student learning in the clinics [18].

Entry in medical colleges produces stress among medical students, right from the beginning. The higher the merit, the more stress. Whenever there is stress, people tend to perceive their environment more negatively than when they are relaxed [4, 31].

Students' social self-perception:

Items in this domain that scored less than 2 points pertained to a poor support system for students who get stressed. 5th year students perceived the greatest difficulty. Poor support, especially for senior students, is a problem reported by others also (18, 19, 21, 32). The new curriculum applied in AL-Kindy college of medicinein to the 1st year students involve applying a mentoring program for the students , through this mentoring program the near-peer students and faculty engage with the students to reduce stress and provide support (13, 33, 34). Perhaps mentoring, as a means of providing academic and social support, could be extended to senior students as well. Students reported

that they were happy with their friends and had a good social life; the mentoring program could exploit this to generate more near-peer mentors for senior students.

When all of the students taken together, the social self-perception was not too bad. Which means that the social aspect of the curriculum should be considered and should prompt curriculum planners to target specific social issues in an attempt to improve the educational environment at this institution [4].

Comparing gender difference, females were more positive about their environment ,the present study showed that regarding Students' total DREEM scores were significantly higher for females than males ,beside all domains mean scores were higher for female than male, there were statistical significant difference perception of learning, Students' perception of atmosphere and Students' social self-perception. The same finding was reported by studies by Fidelma [35] and Bassaw [36] , females rated the educational environment higher than their male colleagues, there is long-standing evidence that males and females typically exhibit different learning styles, which could partly explain differences in the way learning, and the environments generally, are perceived in the present study [37, 38]. This is seen in all studies (Chile, Bangladesh, Srilanka) . This gender-based difference as discussed by Lokuhetty et al [31] may be due to better interpersonal skills among females compared to males [4]. This suggests that the female students perceived factors such as curriculum, structure, focus, and goals more positively than their male counterparts [28] .

In contrast a study in Iran held by Aghamolaei and Fazel 2010 showed, none of the subscales in their study indicated a significant difference with respect to students' gender [24, 39]. The present study shows that 5th year students gave significantly higher than total DREEM ratings. Fifth year students also gave higher subtotal mean score for each domain higher than the 2nd class , with significant statistical association regarding Students' perception of atmosphere (SPA) , this finding is consist with another studies which reported that Students on the clinical course rated the educational environment more highly than students in the basic sciences course [14] . One possible explanation is that the basic sciences and pathophysiology course students did not complete three items of DREEM questions related to clinical contact. In an Indian medical school, the total DREEM domain score was higher for first year students than students receiving clinical teaching [24].

Conclusions: students assessed the educational environment as more positive than negative and the greatest difficulty was with 'students' perception of learning'.

Table (1): the distribution of the studied sample according to class level and gender.

Variable	No.	%
Class level		
2nd	100	66.6
5th	50	33.3
Total	150	100
Gender		
Male	65	43.3
Female	85	56.7
Total	150	100

Table (2): Average mean score of 50 items and 5 domain Of Dundee Ready Educational environment measure DREEM from total sample.

Student perception of learning Question	Mean scores	SD
1. I am encouraged to participate during teaching sessions	1.98	1.2
7. The teaching is often stimulating	1.94	1.21
13. The teaching is student centred	2.2	1.1
16. The teaching helps to develop my competence	1.7	1.6
20. The teaching is well focused	2.1	1.1
22. The teaching helps to develop my confidence	2.02	1.2
24. The teaching time is put to good use	3.27	1.21
25. The teaching over emphasizes factual learning	2.12	1.1
28. I seldom feel lonely	2.01	1.01
44. The teaching encourages me to be an active learner	2.06	1.2
47. Long term learning is emphasized over short term learning	1.78	1.2
48. The teaching is too teacher centred	2.2	1.05
subtotal	23.8	7.1
Student perception of teacher Question		
2. The course organisers are knowledgeable	1.97	1.12
6. The course organisers espouse a patient centred approach to consulting	1.93	1.1
8. The course organisers ridicule the registrars	1.96	1.2
9. The course organisers are authoritarian	2.02	1.09
18. The course organisers have good communication skills with patients	2.2	1.1
19. My social life is good	2.14	0.9
32. The course organisers provide constructive criticism here	1.95	1.2
37. The course organisers give clear examples	2.09	0.9
39. The course organisers get angry in teaching sessions	2.2	1.1
40. The course organisers are well prepared for their teaching sessions	2.8	1.12
50. The registrars irritate the course organisers	2.13	1.23
subtotal	25.0	4.2

Table(2):continue:

Student academic self-perception Question	Mean scores	SD
5. Learning strategies which worked for me before continue to work for me now	2.27	1.0
10. I am confident about my passing this year	1.64	1.2
21. I feel I am being well prepared for my profession	2.18	1.2
26. Last years work has been a good preparation for this years work	2.44	1.1
27. I am able to memorise all I need	1.48	1.4
31. I have learnt a lot about empathy in my profession	2.12	1.1
41. My problem solving skills are being well developed here	2.0	1.2
45. Much of what I have to learn seems relevant to a career in healthcare	2.8	1.1
subtotal	18.6	3.8
Student Perception of atmosphere Question		
11. The atmosphere is relaxed during consultation teaching	2.41	1.2
12. This course is well timetabled	2.28	1.2
17. Cheating is a problem on this course	2.15	1.1
23. The atmosphere is relaxed during lectures	2.4	1.2
30. There are opportunities for me to develop interpersonal skills	2.24	1.1
33. I feel comfortable in teaching sessions socially	1.75	1.2
34. The atmosphere is relaxed during seminars / tutorials	1.7	1.2
35. I find the experience disappointing	2.04	1.1
36. I am able to concentrate well	2.4	1.2
42. The enjoyment outweighs the stress of the course	2.09	1.1
43. The atmosphere motivates me as a learner	1.9	0.3
49. I feel able to ask the questions I want	2.05	1.1
subtotal	26.6	2.8

Student Social self-perception Question		
3. There is a good support system for registrars who get stressed	1.69	1.05
4. I am too tired to enjoy the course	2.24	1.2
14. I am rarely bored on this course	2.03	1.31
15. I have good friends on this course	2.14	1.1
19. My social life is good	2.17	1.6
28. I seldom feel lonely	2.08	1.2
46. My accommodation is pleasant	2.06	1.1
subtotal	16.18	2.8

Table (3): Mean (SD) subscale and total DREEM scores for the students in by gender (N = 150)

Students' perception	Female	Male	t	p
	Mean (SD)	Mean (SD)		
Students' perception of learning	33.4 (4.8)	31.2 (6.7)	2.33	0.003
Students' perception of teachers	32.9 (4.9)	30.8 (5.3)	1.26	0.208
Students' academic self-perception	21.3 (3.7)	20.4 (4.5)	1.80	0.081
Students' perception of atmosphere	32.10 (5.5)	31.9 (6.7)	2.77	0.003
Students' social self-perception	19.2 (3.7)	16.2 (3.1)	3.09	0.0012
Total DREEM scale score	138.8 (17.2)	132.3 (20.7)	3.18	0.004

Table(4): Mean (SD) subscale and total DREEM scores for the students in by class level (N = 150)

Students' perception	2nd class	5th class	t	p
	Mean (SD)	Mean (SD)		
Students' perception of learning	32.5 (5.4)	33.3 (5.3)	1.79	0.075
Students' perception of teachers	31.2 (4.8)	32.0 (5.3)	1.92	0.056
Students' academic self-perception	21.0 (4.2)	21.5 (3.5)	1.43	0.152
Students' perception of atmosphere	32.3 (6.0)	33.4 (5.3)	2.11	0.035
Students' social self-perception	18.9 (3.7)	19.0 (3.6)	0.19	0.846
Total DREEM scale score	135.9 (18.8)	139.1 (17.4)	2.02	0.043

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