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Measuring the learning environment of the competency-based undergraduate medical curriculum at Mansoura school of medicine using DREEM.

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Abstract

Introduction:

Medical school course completion is a demanding, lifelong endeavor. The years spent in school are particularly demanding for the students affecting their physical and mental health. [1] One of the most crucial elements in evaluating whether a curriculum is successful; is its educational environment. The relationship between the learning environment and students' satisfaction, success, and achievement has been demonstrated. [2]

Evaluation of the educational environment emerged as early as the 1960s. Assessing this environment from the perspective of the students is essential to provide crucial components for subsequent improvements at the management level.[3] There has been an increase in attention and concern in assessing the learning environment in undergraduate medical education in the past two decades. [2, 4–9]

Learning environment is usually described in terms of pedagogical philosophy, curriculum design, and social climate.[10] It refers to the social interactions, organizational culture and structures, and physical and virtual spaces that include the learners' experiences, perceptions, and learning,

Learning environment has two dimensions: the psychosocial dimension and material dimension. The psychosocial dimension comprises three components: the personal, social, and organizational. Intertwined with the psychosocial dimension at each level is the material dimension, which encompasses physical and virtual spaces. [11]

Learners flourish in environments where they are welcomed, engaged, encouraged, and challenged. High levels of depression, burnout, marginalization, and/or tiredness are often the result of learners perceiving the LE as exclusive, unsupportive, and/or abusive. [11] Several instruments have been used to assess the undergraduate learning environment in medical schools, such as the medical school learning environment survey [12], Dundee Ready Education Environment Measure [13], and Johns Hopkins Learning Environment Scale. [14]

Researchers designed several techniques and tools to assess areas for improvement in the medical learning environment. Some of these are in the form of qualitative measures [15] or quantitative questionnaires such as the Dundee Ready Education Environment Measure [DREEM] [13, 16], Undergraduate Clinical Education Environment Measure [17], and the Medical Student Learning Environment Survey. [18] DREEM is the most widely used and recognized validated reliable questionnaire to assess the educational environment that students in medical and healthcare-related courses encounter [8]; and it has been translated into different languages including Arabic. [19] The conventional Knowledge-based curriculum dissatisfied most countries as its products were too academic, but lacking skills and knowledge in the applicability as required by the demands from the workplace. Curriculum reform in medical education now is a worldwide-practiced phenomenon that is involved in striving for the best educational practices, primarily with the demands of the twenty-first-century. [1]

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Egypt was not away from this reform as it has been going through a major educational transition as the Government of Egypt has adopted a new Education Strategic Plan for 2014-2030 resembling those in other developed countries. It needs to manage that transition in ways that bring about greater capacity to build a more competitive and sustainable medical economy. [20] Effective education is the key to both these challenges. In 2018, all medical schools were asked to change their curricula from outcome-based to competency-based with changing the timeline from six years of studentship and one-year internship to five years and two years, respectively.[20] However, what works in developed countries may fail in developing countries due to different social, economic, cultural, and infrastructure factors that affect how the change is implemented and the outcome of change. Therefore, follow up after implementation of new curricula is mandatory to assess success of new curricula and remediation if necessary. For this reason, this study was conducted to determine the impact of this change on the academic environment at the Faculty of Medicine, Mansoura University. [20]

In Egypt, there is no much research conducted to assess undergraduate medical education environment from a student point of view. There are currently no studies evaluating the educational environment of students in earlier year levels of this new innovative medical curriculum, none that compare responses between year levels, nor any that investigate changes over the students' entire time within a program of study. [17,21,22]

The present study aims to evaluate whether the educational learning environment supports each of the newly innovative [5+2] competency- based conventional and Mansoura-Manchester medical programs in Mansoura Faculty of Medicine; using the DREEM, in all 5-year levels of programs. In addition, we aim to explore if there are differences in students' perception between clinical and preclinical years in both programs.

Keywords:

DREEM, Educational learning environment, Medical program, Students' satisfaction.

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Material & methods

1-The study group

Both programs offered by the Mansoura Medical Faculty [conventional and Mansoura- Manchester] preclinical and clinical phases including semesters 1, 3, 5, 7, and 9 between the 1st of November 2023 to the end of February 2024.

Mansoura Faculty of Medicine delivers two different curricula both [5+2]: one Bachelor Conventional [integrated lecture-based] 5-year integrated program: the first two years represent mainly the preclinical phase is devoted to basic medical sciences while the last three years represent the clinical phase during which students rotate between different clinical departments. There is also another completely different curriculum which is the Mansoura-Manchester program 5-year integrated PBL - program.

1.1 Sample size:

The calculated sample size of the study was 298 participants at a 5% level of significance and 80% power of the study using G*Power 3.1.9.7 [2020] sample size calculator based on the study conducted by Helal and colleagues in 2013 [21]. The mean DREEM score was 92.6, SD=23.37; and this number was multiplied by 1.5 to compensate for the design effect of the cluster sampling technique. Thus, the least sample size is 431 undergraduate medical students from Mansoura Faculty of Medicine during the academic year 2023/2024 after fulfilling exclusion criteria during the studied period from 1st of November 2023 to the end of February 2024.

1.2 Inclusion criteria:

The target group included the students in all the 5 grades of both programs including preclinical and clinical students. The students were selected from all five grades in proportion to their total numbers. Students were also assured of their anonymity and the confidentiality of their responses.

1.3 Exclusion criteria:

Those students were are not willing to participate were excluded from the study. Incomplete questionnaires were also excluded from the study. If more than 3 questions of DREEM were not answered, the questionnaire was considered invalid. If there are <2 questions that are not answered, the question would be assigned average scores for each question.

2- Study design:

A cross-sectional observational descriptive study, after explaining the aim and objectives of the research, supervised electronic Google form was constructed and distributed to students. An agreement statement was presented at the beginning of the questionnaire and the students were allowed to respond and participate having right to withdraw with assurance of confidentiality and anonymity of the data.

3-Data collection:

The following data were collected:

3.1 Socio-demographic data:

The questions were developed by the researchers to identify the student's personal and academic data such as age, gender, nationality, semester, and student's academic grades.

3.2 DREEM questionnaire in English and Arabic were used without modification [Annex 1]. [23]

Scoring the DREEM [24]:

The DREEM comprised of fifty items estimating five components of the learning environment: perceptions of learning (SPL) (items 1–7), teachers (SPT) (items 2, 6, 8, 9, 18, 29, 32, 37, 39, 40, 50), academic self-perception (SAS). In addition, (items 5, 10, 21, 26, 27, 31, 41, 45), Students' perceptions of atmosphere (SPA) (items 11, 12, 17, 23, 30, 33, 34, 35, 36, 42, 43, 49), and social self-perception (SSS) (items 3, 4, 14, 15, 19, 28, 46)

.

There are fifty items on the DREEM, with scores ranging from 0 [strongly disagree] to 4 [strongly agree]. Items 4, 8, 9, 17, 25, 35, 39, 48, and 50 required reverse coding and were scored on a scale of 0 [strongly agree] to 4 [strongly disagree]. As a result, the DREEM received a total score of 200. The educational environment was divided into four levels based on the total scores; 0–50: extremely poor setting; 51–100: learning environment has a lot of issues; 101–150: more positive than negative; 151–200: phenomenal climate.

4- Ethical consideration:

Approval of Institutional Research Board [IRB] at Faculty of Medicine, Mansoura University, was obtained [Number R.23.07.2270.R1].

5- Statistical analysis

Data were analyzed using the Statistical Package of Social Science [SPSS] program for Windows [Standard version 26]. The normality of data was first tested with a one-sample Kolmogorov-Smirnov test. Gender, academic level, and previous training experience were treated as categorical variables. Perception scores DREEM domains were treated as continuous variables. Qualitative data were described using numbers and percentages. Continuous variables were presented as mean ± SD [standard deviation] for normally distributed data. The two groups were compared with independent t- test as regards age, gender and nationality, while ANOVA test was used to compare more than two groups as regards DREEM domains and gender, educational phase and educational programs. Based on statistical tests, the threshold of significance is fixed at a 5% level. The results were considered significant when $p \leq 0.05$.

Results

Table [1]: Socio-demographic data of participating Mansoura Faculty of Medicine undergraduate students evaluating the learning environment [n. = 431]

Participants' characteristics	The studied group (n=431)
Age Mean ± SD (Years)	20.15±1.58
Gender	
Male	257 (59.6%)
Female	174 [40.4%]
Semester	
Sem1	15 (3.5%)
Sem3	190 (44.0%)
Sem5	95 (22.1%)
Sem7	74 (17.2%)
Sem9	57 (13.3%)
Medical Program	
Conventional	401 (93.0%)
Manchester	30 [7.0%]
Nationality	
Egyptian	274 (63.6%)
Non-Egyptian	157 (36.4%)

Table [2]: Socio-demographic data of participating Mansoura Faculty of Medicine undergraduate students evaluating the learning environment according to their cluster distribution [n. = 431].

Participants' characteristics	Total (n=431)	Preclinical (n=205)	Clinical (n=226)	Test of significance (p value)
Age Mean ± SD	20.15±1.58	19.19± 1.32	21.03± 1.27	t=14.68 p≤0.001*
Gender				$\chi 2$ =2.32
Male	257 (59.6%)	130 (63.4%)	127 (56.2%)	P=0.127
Female	174 (40.4%)	75 (36.6%)	99 (43.8%)	
Nationality				$\chi 2$ =0.444
Egyptian	274 (63.6%)	127 (62.0%)	147 (65.0%)	P=0.505
Non Egyptian	157 (36.4%)	78 (38.0%)	79 (35.0%)	

Tables (1, 2) shows that the majority of students [around 60%] were Egyptian males, conventional medical program and from semester (3). A significant difference between preclinical and clinical phases regarding age.

Table [3]: Means of DREEM domains for evaluating learning environment for Mansoura Faculty of Medicine undergraduate students [n. 431]

DREEM domains	The studied group (n=431)
Students' perception of learning (SPL) [Mean ± SD]	27.66±3.64
▪ Teaching viewed negatively	81 (18.8%)
▪ A more positive perception	346 (80.3%)
▪ Teaching highly thought of	4 (0.9%)
Students' perception of Teachers (SPT) (Mean ± SD)	26.59±2.64
▪ In need of some retraining	21 (4.9%)
▪ Moving in the right direction	409 (94.9%)
▪ Model teachers	1 (0.2%)
Students' Academic Self-perception [SAS] (Mean ± SD)	21.96±5.15
▪ Many negative aspects	70 (16.2%)
▪ Feeling more on the positive side	219 (50.8%)
▪ Confident	142 (32.9%)
Students' Perception of Atmosphere (SPA) (Mean ± SD)	29.32±6.04
▪ There are many issues which need changing	95 (22.0%)
▪ A more positive attitude	278 (64.5%)
▪ A good feeling overall	58 [13.5%]
Students' Social Self-perception (SSS) (Mean ± SD)	17.80±2.19
▪ Not a nice place	28 (6.5%)
▪ Not too bad	388 (90.0%)
▪ very good socially	15 [3.5%]
Total DREEM (Mean ± SD)	123.35±14.83
▪ Plenty of problems	16 (3.7%)
▪ More positive than negative	393 (91.2%)
▪ Excellent	22 (5.1%)

In table (3) The main area of strength with median score 4 was in SAS domain (Q26 Last year's work has been a good preparation for this year's work) while the main area of weakness with median score =1 was in SSS (Q15 I have good friends in this school, and Q19 My social life is good) and SPL domain (Q16 The teaching helps to develop my competence).

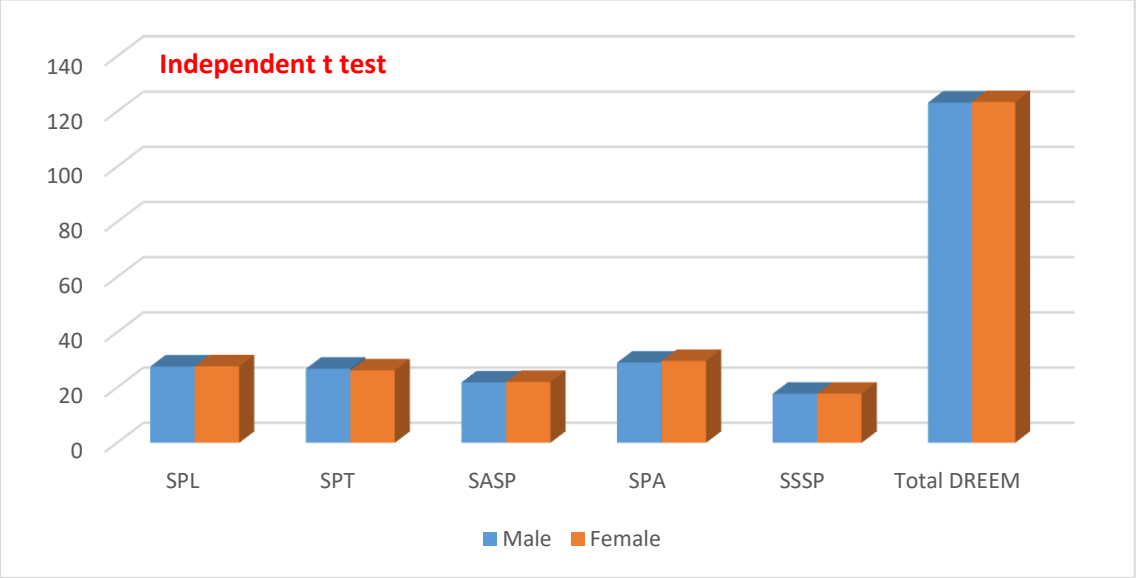

Fig.(1): Association between DREEM domains and gender of Mansoura Faculty of Medicine undergraduate students evaluating learning environment (n. 431)

Figure (1) shows SPT domain was the only one showed significant difference (P =0.02)

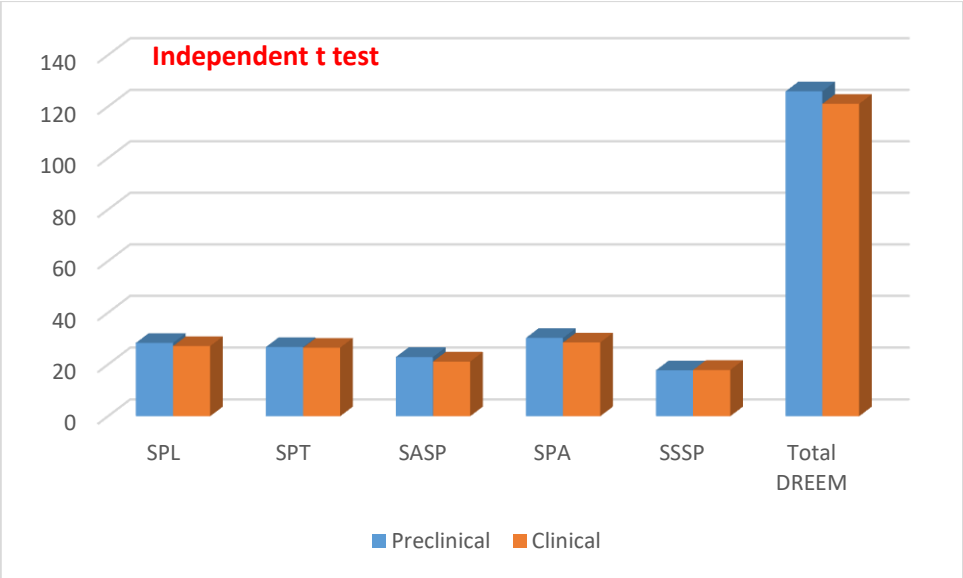

Fig.(2): Association between DREEM domains and educational phases of Mansoura Faculty of Medicine undergraduate students evaluating learning environment (n. 431)

In figure (2), Domains SPL, SAS, SPA showed significant differences between preclinical and clinical students(P = 0.001, 0.001, 0.002 respectively)

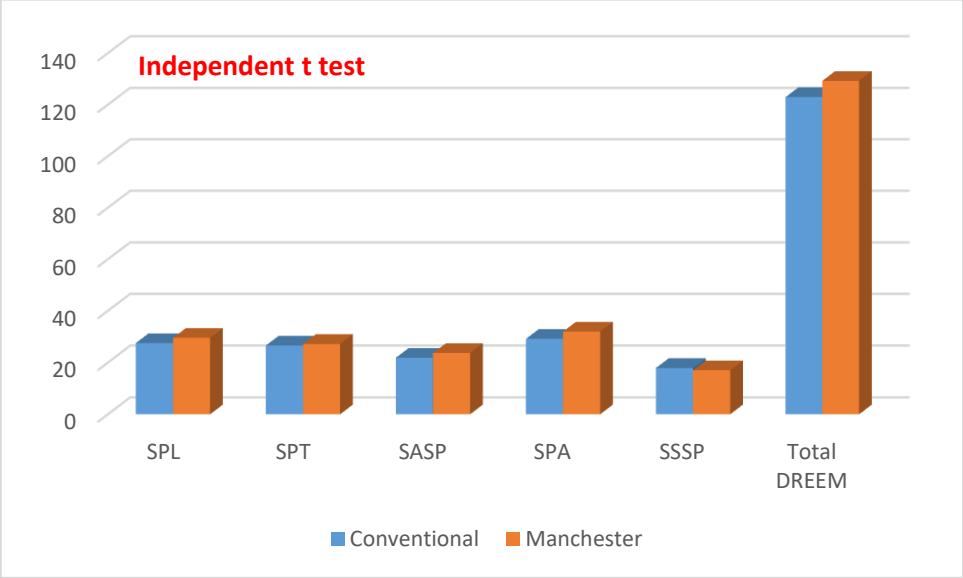

Fig. (3) Association between DREEM domains and both of Mansoura Faculty of Medicine undergraduate students evaluating learning environment in both medical programs (n. 431)

In figure (3), Domains SPL, SPA, SSS showed significant differences between students from conventional program and those from Manchester program (0.004, 0.014, 0.03 respectively).

Table (4): Correlation between DREEM domains and nationality of Mansoura Faculty of Medicine undergraduate students evaluating learning environment (n. 431)

	Nationality		Test of significance	P value
	Egyptian	Non Egyptian		
Students' perception of learning (SPL)	27.54±3.76	27.73±3.58	t=0.509	0.611
Students' perception of Teachers (SPT)	27.17±2.52	26.26±2.65	t=3.49	0.001*
Students' Academic Self -perception (SAS)	22.19±5.22	21.82±5.11	t=0.70	0.483
Students' Perception of Atmosphere (SPA)	28.78±6.20	29.62±5.94	t=1.38	0.168
Students' Social Self-perception (SSS)	17.92±2.40	17.74±2.07	t=0.831	0.406
Total DREEM	123.63±15.01	123.19±14.75	t=-0.294	0.769

Table (4) shows that only domain SPT showed significant difference between Egyptian and non- Egyptian students(P=0.001) by independent t test.

Discussion

One of the most important aspects of medical school training is the learning environment (LE). It affects doctor conduct, future results, and academic achievement in the medical field. Therefore, evaluating medical schools' learning environments is crucial for ongoing program evaluations and a requirement for educational change.(25)

In this study, the mean Total DREEM was 123.35±14.83, where only 16 (3.7%) of students had many environment problems, while most students 393 (91.2%) perceived LE as more positive than negative, and 22 (5.1%) perceive it as Excellent.

This score was higher than that the score reported in a previous study of the learning environment by DREEM inventory and Mansoura Faculty of Medicine by Helal and her colleagues in 2013 showing that the mean overall score was 92.6/200. The current study showed the efficiency of a new innovative curriculum in 2018 depending on the behaviorist learning theory. This theory focused on instruction prevailed(10), involved the marked reduction of the curriculum especially the preclinical phase and the implementation of case-based group discussions seeking to decrease the potential problems of the previous (6+1) old curriculum which was changed to (5+2) since 2018 in Egypt. Talaat et al.(22) used the DREEM inventory to assess the learning environment in Suez Canal University for undergraduate students of six years medical program and supervised the total score that was 113.8. Moreover, Suez Canal University adopted an innovative PBL curriculum (6+1 form). Although many schools adopting PBL curriculum were superior to those who apply conventional educational strategies as they are based on Constructivist learning theory where student–centered curricula, and PBL assumes that learning is a process of constructing knowledge rather than acquiring it.(10) Although 6+1 curriculum added a burden on students who perceive learning environment a lower. In addition, the faculty adopted case-based discussion, which has a comparable effect to PBL. Given the dense medical curriculum and the need for efficient use of student and faculty time, CBL presents an alternative model to traditional PBL small-group teaching.(26) The factor that might explain these differences is the variability in students' admission criteria to medical schools and students' expectations of the learning environment in their schools. In addition, cultural perceptions can logically modify the students' response in some subscales. Finally, the different DREEM versions might be also considered a factor explaining these differences.(22)

In medical schools with a traditional lecture-based curricula, scores are lower than 120 as reported in Saudi Arabia (102/200) by Al-Hazimi et al.(4), Sudan (99.5/200) by Hassan and Sharaf-Eldin,(27), Iran (99.6/200) by Aghamolaei and Fazel,(28). In addition, Sri Lanka (107.43/200) by Lokuhetty et al. (29), in Bangladesh (110/200) by Nahar et al.(30), in India 111.76/200 (31) Algotar et al.(32) in India reported a score of 124.58/200. The similarity of the results could be due to similarity in the educational environments. Pakistan Riaz et al.(33) reported a score of 123/200. However, in modern, student-centered systems, the mean score is much higher as in Chile (127.5 /200) reported by Riquelme et al.(34), Ireland (130 /200) Avalos et al.(35), United Arab Emirates (135/200) Shehnaz et al.(36) indicating relative satisfaction with the environment but with room for improvement.

The highest score was in chiropractic training institutions in Sweden (156.1/200) as reported by Palmgren and Chandratilake (37) and the United Kingdom (144.4/200, 153/200) by McKendree,(38), Miles and Leinster (6) respectively. These high scores refer to these universities having modern systems and an excellent educational environment.

Tontuş (39) in Turkey compared medical faculty adopting the PBL curriculum and other ten faculties adopting classical or integrated curriculum and found the total DREEM score was 104.05/200 and 115.55/200 respectively. This shows that the sample was 149 students from PBL faculties and only 55 students from the other ten faculties which may not reflect the real students' perception of the environment.

In this study, the mean Students' Perception of Learning (SPL) was 27.66±3.64, Students' Perception of teachers (SPT) was 26.59±2.64, Students' Academic Self Perceptions (SAS) was 21.96±5.15, Students' Perception of Atmosphere (SPA) was 29.32±6.04, and Students' Social Self Perceptions (SSS) was 17.80±2.19. Those scores were higher than that reported by Helal et al.(21) where the scores of the subscale were: students' perceptions of learning 20.03/48, perceptions of teachers 22.96/44, academic self-perceptions 14.43/32, perceptions of atmosphere 20.45/48 and social-self perceptions 14.75/28.

In Talaat et al.(22)the interpretation of the five subscales of DREEM revealed a perception which was directed more towards the positive side, except for subscale 5 (social self-perception); with a mean score of 14.2; which was interpreted as the social environment was not a nice place. Also, the College of Medicine, King Saud University reported that students' social self-perception subscale was the lowest with a mean score of 13/28.(40) These findings were agreed with the results reported by the majority of similar studies as in Nigeria where the lowest marks were given to the subscales, students' perceptions of atmosphere and social self-perceptions whereas in Nepal and in the UK academic self-perceptions were rated worst.(11). These findings are similar to that reported by Al Hazimi etal.,(4) in Saudi Arabia. Although the interpretation of the social self-perception subscale was the worst, it was almost in the upper zone of the interpreted level (8-14/28).

These findings could be referred to the tough, overloaded curricula in most medical schools. Similar to previous studies, these results indicate the need for a supportive environment, entertainment ,and refreshments with the availability of facilities for religious, sporting ,and cultural activities. Also, a study conducted by Al-Hazimi et al.(4) on three traditional and one innovative medical schools: King Abdul Aziz University (KAU), Umm Al-Qura University (UQU), Sanaa University (SU) and Dundee University (DU) reported the following mean scores for subscales: for Perceptions of learning 23, 25, 24, and 34 respectively versus 28.2 in this study. In addition, for Perceptions of course organizers 23, 24, 22, and 29 versus 25.9 in this study, for Academic self-perceptions 17, 18, and 23 versus 19.3 in our study, for Perceptions of atmosphere 23, 25, 23, and 35 versus 26.3 in our study and for Social self-perceptions 14, 15, 14, and 20 versus 14.2 in our study. Verma et al.(31) reported that out of five domains, students' perception of teachers the scored maximum (57.95%) rating while students' social self-perception scored the least (49.35%). Algotar et al.(32) reported SPL 30.09/48, SPT 27.87/44, SAS 20.60/32, SPA 30.31/48, and SSS 15.72/28 indicating varying perceptions across different aspects of the educational environment.

This is in agreement with Humanistic learning theory. Abraham Maslow, a humanistic theorist, explained that every person is born with a set of basic needs such as biological and physiological, safety, belongingness or love, self-esteem, and self-actualization needs. When lower needs are fulfilled, the higher-level needs emerge.(41) Medical schools following this theory should provide these needs of pupils. The environment should provide the biological and physiological needs such as clean air; comfort should be safe for students to feel emotionally secure. Student can feel belonging to his class-school if he is allowed to personalize his environment allowing the independence. Further, different groups students also can work on different issues in at the same time, observe what others are doing, learn from one another, and make interpersonal relationships.(10) In addition, Social- situational learning theory can explain that learning takes place in social relationships. Most human behavior is learned observationally through modeling: by observing other ones, they conceive idea about how new behaviors are performed, and eventually, this coded information serves as a guide for action.(42)

Lower scores were reported by Al-Hazimi et al.(4) in Saudi Arabia and Aghamolaei and Fazel,(28) in Iran, which may be explained by the traditional system that was adopted in these universities. However, Abraham et al.(43) reported higher scores in an Indian medical school with a traditional system. Lokuhetty et al.(29) in Sri Lanka and Shehnaz et al.(36) in the United Arab Emirates found that most of the subscales were in the right position, and this is due to the innovative curriculum used in these universities. Al-Hazimi et al.(4) conducted a study on three traditional and one innovative medical school, the mean scores for the traditional medical school were lower than the innovative one.

Individual domain scores showed that there is an area of improvement in SAS and SSP in public sector medical schools. The learning strategies, problem-solving, and memorization skills need to be improved by including more collaborative learning strategies besides what is present as case-based learning (CBLs) and small group discussions (SGDs) in traditional style teaching methodology in Mansoura faculty of medicine. CBL and SGDs had been implemented to improve long-term learning capabilities. The current study includes more CBL sessions and other strategies as team-based learning to augment CBL. In addition, support groups should be provided for the students. (29)

In this study, there were females did not significantly perceive learning environment better than male students except in Perception of Teachers (SPT)

This in agreement with Abraham et al.(43) in India and Aghamolaei and Fazel,(28) in Iran and Al Moaleem et al.(44) in Jazan University in Saudi Arabia found no significant difference concerning the gender.

This is also agreed with Helal et al.(21) who reported more positive perception were observed for females than males for the total educational environment and most of the subscale scores, but Students' perception of Teacher was the only significant one. Also, Dunee et al.(45) in UK and Nahar et al.(30) in Bangaladish found that females is higher than their male counterparts the educational milieu. On the other hand, Mayya and Roff,(46) in India reported lower scores among females than males. Also, Talaat et al.(22) reported a no significant gender difference has been noted in his study where female students' perception of the learning environment is more positive than that of males (overall DREEM mean score 114.5 for females versus 112.5 for males).

The curricula are student -centered and based on integration where males and females are on equal feet in the learning process. In comparative studies, a more traditional didactic course is still taught. Also, male and female students are separated in learning sessions (in some countries especially Saudi Arabia), the latter often being taught via video-link.(47)

Also, in Australia Female health science students indicated a more positive perception of their environment than males.(48) The curriculum, staff, and/or student cohort at Australian universities may have more similarities to those in the UK than in many other parts of the world. Regarding the individual subscales, the perception of learning was the area that showed the greatest disparity between genders in their study. Mean scores on this subscale were more than two points higher for females than males. They suggested that the female students perceived factors such as curriculum, structure, focus, and goals more positively than their male counterparts did. The extent to which this trend, and indeed the trend that females perceived their course environments more favorably overall, can be other institutions is not clear. The fact that males and females typically exhibit different learning styles

(49) which could partly explain differences in the way learning, and the environments generally, are perceived. Brown and his colleagues (48) stated that the key difference with the health sciences is the higher proportion of females in this industry in Australia. That is more females than males trained in health science professions in recent decades, and most teaching in the classroom and/or clinical setting, it is possible there is an unconscious but natural leaning towards the learning needs of females. In other words, there may be a gender bias, whereby female students respond more favorably to female teachers. Such a theory might not be too far-fetched, given past academic discourse about the existence of gender bias in student evaluations of teachers.(50)

In this study, preclinical perceive learning environment is better than clinical regarding total DREEM, Perception of Learning (SPL), Academic Self Perceptions (SAS), Perception of Atmosphere (SPA)

This result is in concordance with Riaz et al.(33) who reported that the median score was highest for year 2 (135) and lowest for year 4 (87.5) indicating that final-year students perceived the educational environment as having “plenty of problems.” Similarly, at Jazan University, Saudi Arabia(44), in an Indian dental school, the scores given by final-year students were lower than those from 1st-year students.(51) The same trend was observed for medical students in India(52) for which the decline in DREEM scores after the 3rd year of the program coincided with the students’ active involvement in the clinical courses.

In clinical settings, maintaining a friendly, motivating, and non-humiliating educational environment for students is more challenging for the person who performs a dual role as a teacher and clinician.(33) This on contrary to other studies conducted in Egypt as Helal et al.(21) in Mansoura and Talaat et al.(22) in Suez Canal who reported that clinical stage students showed more positive perception than preclinical stage students regarding the majority of the subscale scores. This was also viewed by Aghamolaei and Fazel,(28) in Iran.

The lower perception of the learning environment by clinical students may be explained by higher expectations (46) at the time of admission, gradual loss of interest over time, and increased stress secondary to involvement in clinical activities, often leading to depression.(7) Unsatisfactory or unpleasant clinical placement experiences, attitudes of placement staff, workload, students’ perceived unpreparedness secondary to inadequate knowledge and skills expected, and lack of support in the care of patients have been factors identified as reasons for stress after involvement in clinical activities. (53) All of this may cause the loss of interest among students and affect their academic achievement and ultimately their patient care, often resulting in dropout from semesters or programs.

In this study Manchester students perceive learning environment better than the Conventional students regarding Total DREEM, Perception of Learning (SPL),. Perception of Atmosphere (SPA) and social Self Perceptions (SSS) can be explained by the hybrid PBL curriculum they utilized, lower number/batch, and several facilities offered to students traveling to the UK to complete their studies

In Taibah University, Medina, Saudi Arabia Alquliti et al.(54) reported that PBL curriculum students showed a significantly higher overall DREEM than traditional curriculum (136.98 ±21.45 vs. 111.59 ±27.93) as well as all its subscales. Zawawi and Elzubeir,(7) also reported that students of a PBL curriculum would evaluate their learning environment more positively than their counterparts experiencing a primarily conventional curriculum.

Problem-based learning curricula provide a learning environment in which competence is fostered not by teaching to impart knowledge, but also through encouraging an inquisitive style of learning.(7) Preliminary discussion in small groups, contextual learning, integration of knowledge, and an emphasis on patient problems, have several cognitive effects on student learning. These effects increased retention of knowledge, enhanced the integration of basic science concepts into clinical problems, developed self-directed learning skills, and enhanced students' intrinsic interest in the subject matter. PBL, based on constructivist theory, is a widely accepted active learning strategy in health sciences education. It is a problem-triggered, student-centered, and tutor-facilitated pedagogy that aims to foster active lifelong learning.(55)

In this study, non-Egyptian students perceived learning environment to be lower than Egyptian with non-statistically significant difference except Students' perception of Teachers (SPT)

This is agreed by Dávidovics et al.(56) who reported the total score of the international student population was slightly lower when compared with their national Hungarian peers (118.1 for international students and 122.6 for Hungarian students). Both were interpreted as “more positive than negative”, based on the DREEM guidelines with significant differences between the two student groups in terms of perceptions of teachers ($p < 0.001$) and perceptions of atmosphere ($p < 0.004$).

Foreign students frequently have different perceptions of their professors than local students which can be attributed to cultural differences, language hurdles, and varying educational experiences. These variations may cause misconceptions in the classroom that impact student learning and the relationships between teachers and students. As well, varying educational backgrounds, international students may have varied expectations for their instructors and the classroom environment. Disparities in language and culture can cause miscommunications and disputes in the classroom. It's possible that foreign students are exposed to distinct teaching philosophies back home, and these philosophies might not necessarily coincide with the approaches their lecturers take in a new setting. Also, foreign students may find it difficult to adapt to the power dynamics in the new classroom since

various cultures have different expectations about the relationships between teachers and students (57).

Studying abroad presents access to high-quality education and skills that may be less accessible in their home countries, such as adaptability and international networking. Economic and political stability also influence students' decisions to study abroad. Addi¬tionally, studying abroad enhances job prospects and competitiveness in the globalized labour market.(58)

Limitations

• No open-ended questions in the DREEM inventory, and subsequently we had no qualitative data to analyze and report.

• Inflated scores from the convenience sampling which was used for ethical reasons [depended on the voluntary participation of participants and therefore sampling bias]

Conclusion

The median DREEM score of students, at Mansoura faculty of medicine, was higher than that reported before by the previous study. Moreover, Helal et al [2013] discovered that conventional 5+2 curriculum is better than 6+1 curriculum. Preclinical students perceive the learning environment better than clinical students do. There was no significant effect of gender on the DREEM score except in the Perception of teachers [SPT]. Manchester program students perceive the learning environment better than conventional program students. There was a non-significant lower value in learner environment perception between non-Egyptian and Egyptian students except in Social Self Perceptions [SSS]. The study showed that the main strength area is the integrated case based on the character of new innovative curriculum [Last year's work has been good preparation for this year's work]. In addition, the weak areas of the educational environment include the social aspect [I have good friends in this school, my social life is good] and teaching [The teaching helps to develop my competence] indicated critical need for faculty training. Also, improving teacher-student interaction, ensuring constructive feedback to students, rescheduling of timetable by redistribution of teaching and working hours, restructuring clinical experience, and developing a support system for the students. Program managers need to take steps to improve the quality of the educational environment and thus the program by addressing the areas identified.

Both national and international students complained about a decrease in social well-being. Medical students are particularly vulnerable to stress and often need assistance, so they need good support systems, counseling, and stress management programs.

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