

Medical Students' Perception of Educational Environment of Teaching Hospitals of Guilan University of Medical Sciences in 2015

Mojtaba Mehrdad, MD¹; Lida Mahfoozi, MD^{1*}; Masumeh Samipoor, MSc¹; Forough Samipoor, MSc¹

¹ Medical Education Research Center, Guilan University of Medical Sciences, Guilan, Rasht, Iran

Abstract

Background and Purpose: The medical educational environment is increasingly becoming the focus of research globally. It is commonly understood that educational environments are an important factor for efficient learning. The present study was done with the aim to evaluation of clinical phase students' perception of learning environment of our teaching hospital and comparing it with the previous study and other similar studies of other medical teaching centers in Iran and other countries.

Methods: The Persian version of DREEM questionnaire was submitted to clinical phase medical students consisted of staggers and interns educating in internal medicine and infectious diseases, dermatology and urology wards rotations of Razi teaching hospital.

Results: Among 5 domains, the best scored domain by staggers and interns was "students' perception of teachers" (57.75%) and the least scored domain was "student perception of learning" (52.43%). The total mean score of our study (110.42±19.44) and the mean scores of all 5 domains in our study were higher than previous study. The increase of score in 1 domain: student perception of learning was statistically significant.

Conclusions: The present study shows that our clinical educational environment has improved as perceived by medical students in comparison to previous study, but we need more effort to improve our clinical educational environment to approach to other excellent education centers around the world.

Keywords: EDUCATIONAL ENVIRONMENT, DREEM, MEDICAL STUDENTS

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Introduction

The medical education environment is increasingly becoming the focus of research globally (1). The main mission of universities is to train qualified personnel needed by the community, promote and enhance knowledge, promote research and provide an appropriate context for developing countries (2). It is commonly understood that educational environments are an important factor for efficient learning (1). Medical education environment is one of the extraordinary complexities sharing on complexities with

working, specialized and training environments, however, with unique intellectual intricacies. This environment includes a host of areas that are specified by specific tasks assumed at specific times for specific objectives (3). Evaluating educational environments (both academic and clinical) is the key to achieve high-quality, student centered curricula (4). The Dundee Ready Education Environment Measure (DREEM) was published in 1997 as a tool to evaluate educational environments of medical schools and other health training settings and a recent review concluded that it was the most suitable such instruments (5). In 1998, the World Federation for Medical Education emphasized on the role of learning environment as one of the evaluation goals of medical education programs (6).

*Corresponding author: Lida Mahfoozi, Assistant Professor of Infectious Diseases, Infectious Diseases Specialist, Medical Education Research Center, Guilan University of Medical Sciences, Guilan, Rasht, Iran.
Email: drlidamahfoozi@gmail.com

Learning environment or educational environment of basic and clinical phases of Guilan university of medical sciences have been evaluated in 2009 (8) that compared basic science phase with clinical phase medical students. In this study we compared between two stages of clinical phase students and interns.

The educational environment is an ever changing subject. New educational technology and faculty member development programs are continuously running in our university. Persistent evaluation of educational environment is an important issue that every education development centers and offices must do.

Aim of present study was reevaluation of educational environment of our teaching hospital as perceived by clinical phase students and comparing it with the previous one and other similar studies available.

Methods

This is a cross sectional study. The study participants included medical students of years 4 and 5 and interns (years 6 and 7) in internal medicine and infectious diseases, dermatology and urology wards rotations. The sampling method was simple random sampling. The total number of these medical students was 130. They consisted of 48 interns and 82 clinical medical students. We used Persian version of DREEM questionnaire (3, 7) for measurement of medical students, perception of educational environment of clinical wards of Razi teaching hospital of Guilan University of medical sciences. Data was collected since April 21 to June 22, 2015.

The reliability and validity of the measurement tool of educational environment (Persian version of DREEM inventory) was approved in Iran in 2012 and 2014 (3, 7). The internal consistency coefficient (Cronbach's alpha) was calculated as 0.855.

In Iran, the DREEM questionnaire has been frequently used to evaluate the clinical learning environment (3). The DREEM

questionnaire consists of 50 items. Each item is rated based on five Likert-scales range between 0 and 4 (0= strongly disagree, 1= disagree, 2= unsure, 3= agree and 4= strongly agree). There are 9 negative items that must be scored in a reverse manner prior to analysis and interpretation; item 4, 8, 9, 17, 25, 35, 39, 48 and 50.

DREEM is a 50 items inventory, consisting of subscales.

- a) Students' Perceptions of Learning (SPL) - 12 items; maximum score is 48;
- b) Students' Perceptions of Teachers (SPT) - 11 items; maximum score is 44;
- c) Students' Academic Self-Perceptions (SASP) - 8 items; maximum score is 32;
- d) Students' Perceptions of Atmosphere (SPA) - 12 items; maximum score is 48;
- e) Students' Social Self-Perceptions (SSSP) - 7 items; maximum score is 28

The maximum total score for 50 items is 200 with 5 subscales. When the guide of Mc Aleer and Roff was used to interpret the mean scores (9); 1) students' perception of learning (SPL) with 12 items, maximum score 48 (Very poor: 0-12, Teaching is viewed negatively: 13-24, A more positive approach: 25-36, Teaching highly thought of: 37-48). 2) Students' perception of teaching (SPT) with 11 items, maximum score 44 (Abysmal: 0-11, In need of some retraining: 12-22, Moving in the right direction: 23-33, Model teachers: 34-44). 3) Students' academic self-perception (SASP) with 8 items maximum score 32 (Feeling of total failure: 0-8, Many negative aspects: 9-16, Feeling more on the positive side: 17-24, Confident: 25-32). 4) Students' Perceptions of Atmosphere (SPA) with 12 items maximum score 48 (A terrible environment: 0-12, There are many issues that need changing: 13-24, A more positive atmosphere: 25-36, A good feeling overall: 37-48). 5) Students' social self-perception (SSSP) with 7 items maximum score 28 (Miserable: 0-7, Not a nice place: 8-14, Not too bad: 15-21, Very good socially: 22-28). Items with a mean score of 3 and more were taken as positive points and items with a mean score of 2 and below were taken as

problem areas. Items with a mean score between 2 and 3 were considered as aspects of the learning environment that could be enhanced.

By means of the statistical package SPSS V21; Descriptive statistics was used to calculate means and standard deviations of DREEM variables, total DREEM, and the five domains. Normality test was done using Kolmogorov-Smirnov test ($P=0.20$). If data is normally distributed, Student's t test was used for the comparisons. $P<0.05$ was considered significant.

Results

Of the 130 students, 73 (56%) were females and 57 (44%) were males. The overall mean DREEM score for clinical phase medical students was 113.77 (56.8%) and for interns were 111.62 (55.8%) and for clinical phase medical students and interns together was

110.21 (55%). Table 1 shows the DREEM domain scores for interns and clinical phase medical students separately. Among 5 domains the best scored domain by clinical phase medical students and interns was students' perception of teachers (57.6%) and the least scored domain was student perception of learning (52%). Table 2 shows the mean (SD) DREEM items where significant differences were observed between clinical phase medical students and interns. In other items mean scores were between 2 and 3 and it means that more items results can be interpreted as areas that could be enhanced. Table 3 shows the mean DREEM item scores for interns and clinical phase medical students. It was observed that the interns scored less than 2 for 11 items (items 3, 4, 9, 13, 14, 17, 22, 25, 32, 42, 48) and higher than 3 for only 1 item (item 19). Clinical phase medical students scored less than 2 for 15 items (items 7, 8, 9, 11, 13, 14,

Table 1. Mean DREEM domain score for clinical phase medical students and interns

Domain	Clinical phase medical students	Interns	Mean (SD)	Percent
Students perception of learning (SPL) - max 48	24.95	25.41	25.17 (6.77)	52.43
Students perception of teachers (SPT) - max 44	25.16	23.73	25.41 (6.22)	57.75
Students academic self perception (SASP) - max 32	17.52	18.98	18.12 (3.68)	56.62
Students perception of atmosphere (SPA) - max 48	25.59	27.58	24.56 (4.73)	51.16
Students social self perception (SSSP) - max 28	20.55	15.92	15.34 (3.18)	54.78
Total DREEM item score max 200	113.77	111.62	110.42 (19.44)	55.21

Table 2. Mean (SD) DREEM Inventory items where significant differences were observed between clinical phase medical students and interns

Items	Stager	Interns	P value
	Mean (SD)	Mean (SD)	
8. The teachers ridicule the students	2.02 (1.04)	2.29 (1.09)	0.029
10. I am confident about passing this year	2.41 (0.77)	2.91 (0.57)	0.000
12. The course is well timetabled	2.24 (1.08)	2.75 (0.86)	0.007
17. Cheating is a problem in this course	2.45 (1.23)	1.93 (1.21)	0.023
19. My social life is good	2.89 (0.88)	3.33 (0.59)	0.003
28. I seldom feel lonely	1.96 (1.22)	2.43 (1.21)	0.034
42. The enjoyment outweighs the stress of studying medicine	1.36 (1.21)	1.81 (1.24)	0.047

Table 3. Mean (SD) DREEM item score for Interns and Clinical phase medical students

Domain	Items	Stager	Interns
		Mean (SD)	Mean (SD)
SPL	1.I am encouraged to participate in class	2.02 (1.04)	2.29 (1.09)
	7. The teaching is often stimulating	1.70 (1.01)	2.14 (0.94)
	13. The teaching is student centred	1.97 (1.12)	1.87 (1.16)
	16. The teaching helps to develop my competence	1.70 (0.96)	2.00 (1.07)
	20. The teaching is well focused	2.07(1.09)	2.04(1.03)
	21. The teaching helps to develop my confidence	1.95 (1.04)	2.18(0.91)
	24. The teaching time is put to good use	2.58 (3.3)	2.39 (1.02)
	25. The teaching over-emphasizes factual learning	2.12 (0.99)	1.85 (1.11)
	38. I am clear about the learning objectives of the course	2.43 (0.96)	2.27 (1.06)
	44. The teaching encourages me to be an active learner	1.98 (1.1)	2.16 (1.09)
	47. Long term learning is emphasized over short term learning	2.48 (1.12)	2.47 (1.14)
	48. The teaching is too teacher centred	1.95 (1.14)	1.75 (1.06)
	2. The teachers are knowledgeable	2.74 (0.92)	2.81(0.91)
	6. The teachers are patient with patients	2.53 (0.86)	2.54(1.12)
SPT	8. The teachers ridicule the students	1.67 (1.10)	2.14 (1.25)
	9. The teachers are authoritarian	1.74 (0.91)	1.81 (1.19)
	18. The teachers have good communication skills with patients	2.70 (0.89)	2.58 (0.98)
	29. The teachers are good at providing feedback to students	2.08(0.95)	2.20 (1.09)
	32. The teachers provide constructive criticism here	1.85 (1.70)	1.67 (1.11)
	37. The teachers give clear examples	2.67 (0.75)	2.68 (0.65)
	39. The teachers get angry in class	2.21(1.15)	2.06(1.26)
	40. The teachers are well prepared for their classes	2.58 (0.92)	2.64 (0.86)
SASP	49. The students irritate the teachers	2.39 (1.18)	2.60 (1.00)
	5.L earning strategies which worked for me before continue to work for me now	2.30 (0.92)	2.22 (1.09)
	10. I am confident about passing this year	2.41 (0.77)	2.91 (0.57)
	22. I feel I am being well prepared for my profession	1.51 (1.16)	1.86 (1.07)
	26.Last year s work has been a good preparation for this year s work	2.03 (0.97)	2.18 (1.02)
	27. Iam able to memorize all I need	2.02 (1.12)	2.12 (0.84)
	31. I have learned a lot about empathy in my profession	2.58 (0.91)	2.72 (1.04)

	41. My problem – solving skills are being well developed here	2.207 (1.00)	2.43 (0.98)
	45. Much of what I have to learn seems relevant to a career in healthcare	2.47 (0.80)	2.54 (1.12)
	11. The atmosphere is relaxed during the ward teaching	1.95 (1.17)	2.27 (1.21)
	12. The course is well timetabled	2.24 (1.08)	2.75 (0.86)
	17. Cheating is a problem in this course	2.45 (1.23)	1.93 (1.21)
	23. The atmosphere is relaxed during lectures	2.31 (1.13)	2.47 (1.11)
	30. There are opportunities for me to develop my interpersonal skills	2.56 (0.81)	2.70 (0.89)
	33. I feel comfortable in class socially	2.03 (1.15)	2.33 (1.01)
SPA	34. The atmosphere is relaxed during seminars/tutorials	2.40 (1.02)	2.62 (1.04)
	35. I find the experience disappointing	2.12 (1.04)	2.27 (1.23)
	36. I am able to concentrate well	2.29 (0.94)	2.39 (0.93)
	42. The enjoyment outweighs the stress of studying medicine	1.36 (1.21)	1.81 (1.24)
	43. The atmosphere motivates me as a learner	1.67 (1.17)	2.02 (0.97)
	50. I feel able to ask the questions I want	2.21 (1.04)	2.02 (1.08)
	3. There is a good support system for students who get stressed	0.92 (0.85)	1.02 (0.88)
SSSP	4. I am too tired to enjoy the course	2.01 (1.20)	1.93 (1.21)
	14. I am rarely bored on this course	1.86 (1.07)	1.60 (1.08)
	15. I have good friends in this course	2.71 (0.97)	2.91 (1.06)
	19. My social life is good	2.89 (0.88)	3.33 (0.59)
	28. I seldom feel lonely	1.96 (1.22)	2.43 (1.21)
	46. My accommodation is pleasant	2.60 (0.84)	2.70 (0.87)

16, 21, 22, 28, 32, 42, 43, 44, 48). None of the items was scored 3 or more by clinical phase medical students.

Discussion

In the present study the total DREEM item score was 110 out of 200 (55.21%). There is no accepted agreement on what is an acceptable DREEM score from published documents. There is a guideline for interpreting sub scales (9) (Table 3). According to this guideline our results at each subscale can be interpreted as follows: Students perception of learning (SPL: 25.17; as much positive approach), Students perception of teachers (SPT: 25.41; Moving

in the right direction), Students academic self-perception (SASP: 18.12; Feeling more on the positive side), Students perception of atmosphere (SPA: 24.56; there are many issues that need changing), Students social self-perception (SSSP: 15.34; not too bad).

We compared our results with the previous similar study done in our university in 2009 by Taheri (8) . The total mean score of our study was higher 110.42 ± 19.44 (55.21%) than Taheri study (47.1%) and the mean scores of all 5 domains in our study were higher than previous study. The increase of score in 1 domain: student perception of learning (SPL) was statistically significant ($P < 0.05$). Another study was conducted at Guilan University of Medical Sciences

(GUMS) in 2011. It compared the perceptions of clinical phase medical students (years 4 and 5) and interns (years 6 and over) regarding educational environment by using Dundee Ready Education environment measure (DREEM) found mean total score of 107.94 ± 22.29 (53.97%) that The overall score showed that Students were relatively satisfied towards the four sub-realms including total educational environment and learning, perceptions on teachers and atmosphere, and self-perceptions for academic (10). These results show that perception of educational environment of clinical students in Guilan University of medical sciences has improved generally. But if we regard the mean item score of 3 or more as acceptable then only one item mean was more than 3 for interns, item 19: my social life is good. We have problem in 16 items for clinical phase medical students and in 6 items for interns.

Other studies of clinical environment in Iran medical teaching centers are available. One study done on final year medical students of a tertiary pediatric center of Tehran university of medical sciences in 2012 using DREEM questionnaire showed that the mean total score was 95.8 (48%) and their problematic areas were learning academic self-perception and social self-perception (11). another study done on emergency department final year medical students in Imam- Khomeini hospital using DREEM questionnaire found mean total score of 134.79 that they concluded it was compatible with a modern university (12). There are some similar studies around the world. One study from Saudi Arabia in 2004 compared the perception of medical students about education environment of 3 medical schools in Saudi Arabia and Yemen with that of Dundee University. The total score for these schools were: 102, 107, 100 and 139, respectively (13) In another study from India the mean DREEM score for their medical school was 123/200. Progressive decline in scores with each successive semester was observed (14).

Another study was conducted at the Faculty of Medicine, King Fahad Medical City,

Riyadh, Saudi Arabia in the academic year 2009/2010 that Measure Was the perception of students of the overall educational environment by using Dundee Ready Education environment measure (DREEM) found mean total score of 111.5 (55.75 %) that The overall score showed that There were no individual areas of excellence (15). another study was conducted at the Management and Science University, Shah Alam, Malaysia in 2012. The perceptions of medical students in this study were assessed using the DREEM criteria that found mean total score of (87.6 %) that The overall score showed that the medical students' perceptions were positive (1).

Comparison of the total score of our study (110) with their results shows that although our results were better than some of the centers in the region however we must improve our clinical teaching and learning climate in our teaching hospitals to reach minimum standards for learning climate for clinical medical education.

Conclusion

The present study shows that our clinical educational environment as perceived by medical students has improved slightly in comparison to previous study but we need more effort to improve our clinical educational environment to approach to other excellent education centers around the world.

Conflict of Interest

The author declares no conflict of interest.

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