Original Article

Comparison of Viewpoints of Residents in Different Courses at Babol University of Medical Sciences towards the Clinical Learning Environment Based on the DREEM Questionnaire

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Abstract

Introduction: Since the reformation of clinical education problems can improve the quality of medical services, one of the evaluation methods for learning environment at the medical universities is to use the DREEM (Dundee Ready Educational Environment Measure) standard questionnaire. This study aimed to compare the viewpoints of residents at Babol University of Medical Sciences towards the learning environment based on the DREEM pattern.

Methods: This cross-sectional study was performed in 2013 on 106 residents studying in educational institutions of Babol University of Medical Sciences. The research tools included 7 demographic questions and 50 questions related to the DREEM standard questionnaire.

Results: Totally, residents had favorable views for perceptions of learning and clinical professors (73%), social conditions (63%), their academic abilities (83%) and educational atmosphere (71%); there was a significant relationship between each of the five fields ($P<0.05$).

Conclusion: According to the findings, pediatrics and internal residents had a more favorable viewpoint toward their educational environment. So, paying more attention to problems in the clinical training environments in other courses needs to adopt a more comprehensive strategy.

Keywords: Clinical training environment, DREEM pattern, Residents

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Introduction

Clinical education is a process in which students gain experience with the patients and try to prepare their minds to solve the patients' problems (1). Identifying problems and taking actions to resolve them can improve the quality of medical services and will create an appropriate perspective in medical education (2).

So, it seems necessary to assess the present educational situation and identify its strengths and weaknesses using evaluation tools in order to achieve effective clinical education (3). Since the atmosphere and context of the training can vary in terms of learning and teaching, their assessment can be a diagnostic tool in this regard (4).

Many efforts have been made around the world to identify factors of educational environment and the questionnaires were designed for this purpose; for example, quality markers in Cleary educational institutions (5), learning climate questionnaire in conjunction with human motives of education (6) or CUES pattern to measure the educational environment of colleges and universities (1).

In 1997, Dr. Sue Roff at the University of Dundee, Scotland, based on Harden and Genn proposal in relation to the promotion of learning and change in careers related to the health care system, designed and developed an educational environment assessment pattern of the University of Dundee (Dundee Ready Educational Environment Measure-DREEM) with 50 listed items with five options in five areas of learning, teachers, student perceptions of academic ability, academic atmosphere, student perceptions of social conditions with the maximum score of 200, which can provide a very good scheme of educational environment with additional information such as age, training years and courses (4).

Many studies have employed this tool to evaluate the clinical education environment. For example, a study using DREEM pattern on anesthesia residents at a hospital in Brazil, found that they had a positive view toward the clinical setting, and this was more prominent in the area of perception of learning and scientific capabilities (7).

Arabshahi et al. used DREEM standard tools with changes consistent with national culture to investigate the viewpoints of residents and interns at four hospitals. The mean of scores was relatively desirable (8).

Fouladi et al. in a study at Ardebil University of Medical Sciences paid more attention by emphasizing training in the principles of instructional design and creating the perfect educational atmosphere using these tools (9).

Apart from medical residents, other studies on other groups of medical students and clinical faculty have also been performed. Some of them have tried to compare educational environments and assess the appropriateness of DREEM tools in order to evaluate the educational atmosphere, all of which have emphasized the effectiveness of these tools in terms of identifying strengths and weaknesses of clinical education environments. (10-15)

This study also aimed to compare the clinical teaching hospitals affiliated with the Babol University of Medical Sciences (BUMS) form the viewpoints of residents studying in 5 specialties based on DREEM pattern.

It should be noted that BUMS has six schools, seven hospitals, 326 faculty members and more than 3,400 students, and currently admits assistant professors in 12 fields (currently a total number of 159 people) (16).

Methods

This cross-sectional study was performed in the first semester of 2013 using 7 demographic questions about sex, marital status, years of residency, specialty and field hospital, executive record, undergraduate university level and questions related to the five areas of the DREEM standard questionnaire to evaluate the educational environment at internal Medicine, Pediatrics, gynecology, pathology and anesthesiology in three teaching hospitals of Shahid Beheshti, Ayatollah Rouhani and Amirkola Pediatrics Hospital from 106 residents' points of view. Criteria for the selection of residency programs included the courses in which students were being educated in a 4-year period.

Answers were determined in a Likert scale comprising of completely agree, agree, I'm not sure, disagree, and completely disagree. Items related to the perception of learning included 12 items with the highest score of the 48 points, 11 items for the perception of clinical professors with the highest score of 44 points, the 7 items for the perception of social conditions with the highest score of 28 points, 8 items for the perception of scientific capability with the highest score of 32 points, and 12 items for the perception of the educational atmosphere with the highest score of 48 points.

The maximum score of the questionnaire for all the questions was 200 and total scores were divided into four groups of undesirable (0 to 50 points), partially desirable (51 to 100 points), desirable (101 to 150 points) and very desirable (151 to 200 points). Also, reliability of 0.81was obtained in a pilot study on 15 residents with the implementation of this questionnaire.

Data collection was done through questionnaire completion including demographic data and 50 questions related to DREEM questionnaire in the five mentioned areas. Data were analyzed using spss16 statistical software. Statistical analysis methods used in this study included ANOVA, T-test, Chi-square analysis, Spearman correlation coefficient and multiple regression test with $P \leq 0.05$ as significant.

Results

From the total number of 106 residents, 100 persons participated in this study and answered the questions. Participants included 24 pediatrics residents, 12 pathology residents, 24 gynecology residents, 21 internal residents, and 19 anesthesia residents. 56% of participants were male and 78% were married.

The highest average of total score was in the areas related to pediatrics residents (141.1) and the lowest scores belonged to the perception of learning (25.7), social situation (12.6), educational atmosphere (24.9) of the gynecology, understanding the scientific capabilities of the Pathology (18.5) and the area of understanding clinical professor in anesthesiology and pathology departments (23.5) from the total score of 200 points (Table 1). The Spearman correlation test showed a significant relationship between the mean scores for each of the five areas and the total score in the clinical departments (P<0.05) (Table 2).

In terms of learning, multivariate regression method results showed that single residents, those based in educational institutions of Shahid Beheshti and Rouhani, residents of the internal and pediatrics departments as well as those who lived in personal homes had better feelings about their learning situation in the educational system (Table 3).

In connection with the learning of the situation, the results showed that marital status (ß = - 0/214), training centers (ß = - 0/554), clinical section (ß = - 0/562) and location (ß = - 0/261) variables were predictive factors (Table 3).

Chi-square test showed that the best viewpoints in the area of learning, educational atmosphere, scientific capabilities and social conditions belonged to the Department of Pediatrics (P<0.05) (χ^2=21.38), and for clinical professors belonged to internal residents (P<0.05) (χ^2=21.11).

Table 1. Comparison of mean scores of learning environments areas based on clinical departments

Departments	Perception of learning (1)	Perception of clinical professors (2)	Perception of social situation (3)	Perception of scientific capabilities (4)	Perception of educational environment (5)	Total score
Pathology	26.4	23.5	14.9	18.5	26.2	109.7
Gynecology	25.7	26.1	12.6	19	24.9	108.3
Internal	29.8	26.7	15.9	21.3	28.9	122.6
Pediatrics	35.2	28.8	18.7	24.6	34.8	141.1
Anastasia	27.9	23.5	15.3	20.7	28.9	116.4
P	0.001	0.005	0/001	0.001	0.001	0.001

Table 2. The correlation between areas of learning environment

Areas	2	3	4	5
1	0.393	0.624	0.605	0.568
2	--------	0.426	0.239	0.527
3		-------	0.444	0.671
4			-------	0.268

Table 3. Regression analysis of residents' viewpoints at BUMS in terms of learning and demographic factors

Criterion	Significant predictor	B	F	Unique variance due to predictor	P
Perception of learning	Marital status	-0.214	0.53	5%	**0.028**
	Educational center	-0.554	2.11	1.1%	**0.001**
	Clinical department	-0.562	5.84	4.7%	**0.001**
	Residence	-0.261	7.72	6.4%	**0.004**

(F= 6/58, df= 8, R2 = 31%, P= 0/001)

Discussion

According to the obtained results of the DREEM pattern, the clinical environment was reported desirable in this study, and the highest agreement in these areas belonged to the pediatrics which seemed desirable due to the highly specialized hospital facilities at Amirkola Pediatrics Hospital, appropriate physical space allocated for clinical

experience, and a good support system. These results were consistent with the results Ghaemi and collaborations in 2009 obtained from research on the residents in the three areas of social conditions, learning and clinical professors (17).

The lowest overall agreement was in the field of learning, social condition, and educational atmosphere for the pediatrics residents; these results were consistent with Gade et al. study (18). It seems that negative views of gynecology residents in relation to these areas were due to the low number of childbirths in these educational centers as there was less possibility of gaining more experience in midwifery decisions and dealing with less dangerous situations. In terms of the perception of clinical professors, similar to the study by Getúlio et al. (19), the lowest score belonged to the pathology and anesthesia residents, maybe because the residents were less involved in the process of treatment and long relationship with patients and literally had no close contact with them. Therefore, they had wrong perception of such questions and their answers were mostly negative.

Also, internal residents' satisfaction with clinical education environment of Shahid Beheshti Hospital was higher than Ayatollah Rouhani Hospital which had less physical space; Bennett et al. also emphasized that the residents' viewpoints in smaller hospitals were more likely to be positive (20).

There was a significant relationship between the perception of the educational environment, learning, and social conditions of each departments, so that residents enrolled in pediatrics and then internal departments had the best views.

The multivariate regression analysis showed that educational center and clinical departments were the predictors of educational atmosphere. As residents at internal and pediatrics departments of Rouhani and Amirkola hospitals had the most positive feelings for the educational atmosphere; these results were consistent with the study of Arabshahi et al (8).

The above results show that intrinsic motivation is not the only factor for effective learning, but the professors, educational atmosphere and social environment play an important role, too (4).

Therefore, workshops with new teaching methods and skills, also emphasized in Azizi et al.'s study, (11) and holding discussion meetings with students and teachers, the use of new educational strategies, and providing advice to students are recommended as effective factors in order to solve the problems inside and outside the university and create a peaceful learning environment for them, according to the results of this study.

Conclusion

According to the passage, strengthen support systems should provide affordable housing and improve living conditions for certain residents, improve residents clinical learning environment and also try to train and improve communication skills by medical sciences universities including those that can be effective in improving the perspective of residents of their clinical learning environment.

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References

1. Abdullazadeh F, Lotfi M, Aghazadeh A, Niknam F. The important effective factors on educational planning: the riew point of nursing students in Tabriz University. 7th national congress on education: 2005 Nov 12-15: Tabriz, Iran. [Persian]

2.Abedini S, Abedini S, Aghamollai T, Jomehzadeh, A. Kamjuo A, Problems in clinical education of nursing students of Hormozgan University of Medical Sciences. Hormozgan Medical Journal. 2009; 12(4): 249-253. [Persian]

3. Miles S, Swift L, Sam J. Leinster. The Dundee Ready Education Environment measure: A review of its adoption and use.Med Teach. 2012; 34(9):620-634.

4. Sue Roff. The Dundee Ready Education Environment measure a generic instrument for measuring students' perceptions of undergraduate health professions curricula. Medical Teacher. 2005; 27(4): 322-325.

5. Jamaiah I. Rreview of Research in Learning Environment. Journal of the University of Malaya Medical Centre.2008; 11(1): 7-11.

6. The Learning Climate Questionnaire (LCQ). Available from: http://www.psych.rochester.edu/SDT/measures/auton_learn.html.

7. de Oliveira Filho GR, Vieira JE, Schonhorst L. Psychometric properties of the DREEM applied to medical residents. Medical Teacher Journal. 2005; 27(4): 343-347.

8. Soltani Arabshahi K, Kouhpayezade J, Sobuti B. The Educational Environment of main clinical wards in educational hospitals affiliated to Iran University of medical sciences: learners' viewpoints based on DREEM model. Iranian Journal of Medical Education. 2008; 8(1): 43-50 [Persian]

9. Fouladi N, Alimohammadi H, Barghi A. Survey the educational environment of main clinical wards in educational hospitals affiliated to Ardabil University of Medical Sciences based on DREEM model. Dissertation of PhD. 2011. [Persian]

10. Kojouri J, Ebrahimi S, Shieh H, Farhad IP. Comparing the early exposure to patient in medical students, education program, based on DREEM, fear and hope, early exposure to patient 11th congress on medical education. 2010 May: 232. Tehran. Iran. [Persian]

11. Azizi F, Fazel Moghadam S, Khademlo M, Ghorbani Gholi Abadi S, Azizi B. Attitudes of pharmacy student to educational conditions in Mazandaran University of Medical. J Mazand Univ Med Sci. 2013; 23(1): 2-7. [Persian]

12. Motallebnejad M, Sheikhpour M. Evaluation of Babol Dental Universitys' educational environment from Students' Viewpoints by DREEM Model. Thesis Dental field. Dental School Babol University of Medical Sciences. Academic years 2010-2011. [Persian]

13. Edgren G, Haffling AC, Jakobsson U, McAleer S, Danielsen N. Comparing the educational environment (as measured by DREEM) at two different stages of curriculum reform. Med Teach. 2010; 32(6):233-238.

14. Rotthoff T, Martin Ostapczuk S, Judith T De Bruin, Kari Maria Decking U, Schneider M, Ritz-Timme S. Assessing the learning environment of a faculty: Psychometric validation of the German version of the DREEM with students and teachers. Med Teach. 2011; 33(11): 624-636.

15. Bakhshi H, Yaghouti M, Chalaki S. Dental learning environment from the perspective of meta-makers based on DREEM in Rafsanjan University of Medical Sciences. 10th congress on medical education: 2009 May. Shraz. Iran. [Persian]

16. History of Babol University of Medical Sciences Visible on the Site of Babol University of Medical Sciences .Up Date on 20015-Available from: http://education.mubabol.ac.ir/Default.asp?NP=537

17. Ghaemi-Amiri M, Mortazavi F, Sum Sh, Homayooni Zand R. The Viewpoint of residents studying in hospitals affiliated to Babol University of Medical Sciences and Health Services on Clinical Training Environment. Journal of Medical Education. 2015; 14(4): 150-158. [Persian]

18. Gade Sh, Chari Su. Students Perception of undergraduate Educational Environment in multiple medical Institutes of Central India using DREEM Inventory. National Journal of Integrated Research In medicine.2013; Vol4 (5) Sept-Oct: 125-131

19. Getúlio R, Joaquim EV. The relationship of learning environment, quality of life, and study strategies measures to anesthesiology resident academic performance. Journal of Anesthesia & Analgesia. June 2007; 104(6): 1467-1472.

20. Bennett D, Kelly M, O'Flynn S. Are the bigger hospitals better: DREEM on Irish journal of medical science. Ir J Med Sci. 2010; 179: 515–519.