The Viewpoint of Residents Studying in Hospitals Affiliated to Babol University of Medical Sciences and Health Services on Clinical Training Environment

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Abstract

Background and purpose: *Medical education programs' success depends on the efficiency and adequacy of clinical experiences, one of the most important factors recognized in this field is learning atmosphere and environment. Professor's features, students' learning experiences and characteristics of the program implementation environment are of those cases that vary in different universities. One of the most important resources for the evaluation of universities' educational atmosphere is students who interact directly with the process. The aim of this study was to investigating the viewpoint of residents of Babol University of Medical Sciences to educational atmosphere of education environment.*

Methods: *This was a cross-sectional study that was conducted on 100 residents studying in hospitals affiliated to Babol University of Medical Sciences. The tools used included 8 demographic questions and 30 questions related to the areas of a student perception of social conditions, clinical teachers and learning by DREEM standard questionnaire.*

Results: *Totally, residents have had desirable views toward perception of learning and clinical teachers (73%) and social conditions (63%). There was a significant relationship between all three areas (P=0.001). There was a significant relationship between clinical departments and residents' viewpoint of their learning (P=0.001). Pediatrics and internal medicine residents feel more positive towards their own learning environment. Residents with executive experience have had a more negative feeling to the university education status (P=0.05). Among all residents, those in the second year have had a more positive viewpoint towards the three areas in question (P=0.002).*

Conclusions: *According to the findings, residents have had a desirable viewpoint towards the university education environment. However, regarding problems in the clinical learning environments there is a need to adopt more comprehensive strategies.*

Keywords: *CLINICAL ENVIRONMENT, DREEM MODEL, SOCIAL CONDITIONS, LEARNING, TEACHERS*

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Introduction

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Clinical educations is a process by which students by being at a patient bedside and gradually gaining experience, prepare their mind using experiences and reasoning to solve a patient's problems (1). Medical training program's success depends on the effectiveness and adequacy of clinical experience. Training programs at every level

and stage, try to approach desirable and defined standards for each teaching and learning activity (2). Identifying problems in clinical training and taking measures to reform it will cause promoting quality of medical services. This makes the stakeholders of medical education obtain a true image of clinical environments and make a proper perspective (3). Jamaiah believes that a stable relationship is found between education environment and valuable results of success and satisfaction. He recommends studying clinical education environments associated with the program as necessary (4).

Today, due to the rapid changes occurring in the health care environments, clinical training is more fruitful for today students and will be more effective for tomorrow students (3). One of the factors of gaining basic skills and so-called becoming professional in medical science is educational clinical environments and improving the quality of clinical education requires continuous assessment of the situation, reinforcing strengths and eliminates weaknesses (5). Undoubtedly, realizing positive and negative factors affecting the learning clinical skills is effective on decreasing problems and strengthening positive points. The needs of a student and his problems outside of the university should be considered as critical factors in motivating and providing desirable education environment (6).

So, in order to achieve efficient clinical education it is necessary to evaluate available educational situation continuously and identify its strengths and weaknesses (7). One of the diagnostic tools in this field is measuring the educational environment and atmosphere. The educational atmosphere and environment can vary in each area of learning and teaching (2). So far, many efforts have been done to identify the factors affecting educational environment that promotes effective teaching around the world. Questionnaires have been designed to measure students' viewpoint of independency, quality of teaching and social support in their programs.

For example, a study has pointed out indicators of quality in educational institutions to determine responsibility for the students (4) and or questionnaires named learning climate questionnaire in educational institutions measure human motivations with regard to the learning atmosphere (8).

In 1963, a model was presented to measure School and University educational environment named CUES that measures cases such as environment friendly, facilitating scholarship, courtesy and creating social responsibility (1).

Dr. Susan Raph at University of Dundee, Scotland in 1997 designed and developed Dundee Ready Educational Environment Measure-DREEM with 50 items. This model is used as a diagnostic tool for problems in the program as well as the effectiveness of education change or identifying the difference between a real environment to the desirable environment and the results of it can help education authorities in planning.

DREEM tool is a graded list of five options in five areas of learning, teachers, student perceptions of his/her own academic ability, education atmosphere, student perceptions of his social conditions that maximum score of mentioned questionnaire for total questions is 200 and can provide a very good scheme of training atmosphere along with complementary information such as age, year and course of education. It has been translated into various languages, its validity and reliability has been confirmed by nearly 100 teachers and 1,000 students worldwide and is now widely used for the measurement of educational atmosphere in medical education settings (1). In Iran, the tool's validity and reliability has been confirmed by Medical Education Research Center, Iran University of Medical Sciences after adaptation to fit it with cultural and national specificities of the country, and can be used by researchers in Iran (12-14).

This study aimed to assess clinical education environment status in Babol University of Medical Sciences and Health Services from the perspective of residents in three areas of

learning, clinical faculties and social conditions.

Methods

This is a cross-sectional study. Using questions related to three of five areas that DREEM questionnaire assesses including areas such as understanding of learning, clinical teachers, social conditions, educational environment of departments of internal medicine, pediatrics and gynecology, pathology and anesthesiology in three training hospitals of Shahid Beheshti, Ayatollah Rouhani and Amir kola affiliated to Babol University of Medical Sciences in residency programs were assessed. The questionnaire consisted of two parts: demographic information including gender, level of education, clinical departments, training hospital, teaching experience and lodging, and 30 questions with five options answer in three areas of learning perception, clinical teachers and social conditions. Answers were scored in a 5- degree Likert scale, from strongly agree 4 points, agree 3 points, not sure 2 points, disagree 1 point and strongly disagree 0 point. The maximum score of the questionnaire was 120. Total score of the questionnaire was categorized in 4 groups as undesirable (0 to 30 points), moderately desirable (31 to 60 points), desirable (61 to 90 points) and very desirable (91 to 120 points).

Items related to learning perception area, a total of 12 items, and the highest score of the section is 48, the area of perception of clinical teachers, a total of 11 items and the highest score of this section is 44, the area of perception of social conditions, total of 7 items and the highest score of this section is 28.

In this study, also the questionnaire that its validity has been confirmed was used in Iran University of Medical Sciences and also reliability of each area in this study was obtained: in learning area 0.81, teachers' area 0.46 and social conditions 0.57, respectively.

Obtained Data was entered in the statistical software SPSS 16 and were analyzed. Statistical analysis methods used in this study included analysis of variance ANOVA, T-test, Spearman correlation test and multiple regression tests.

Results

Results showed that 66% of participants in this study were male and 34% were female, 38% were single and 62% were married. Ayatollah Rouhani hospital had the most residents (55%) and Anesthesia residents (29%) also assigned the most residents studying (Table 1). The average score was 69.97 of 100 that the average has been reported "desirable" based on the questionnaire scores' interpretation.

T-Test test results showed that men were the highest single population (38%) (t= 2.65, p=0/001) and also men had more executive experience than women (t= -1.35, p=0/005).

In terms of residence, the findings showed that women live in student dormitories more than men (t= -1.35, p = 0/008).

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In all three areas, the highest score was in Pediatric ward 81.7 and the lowest score was in the areas of understanding of learning as 26.1 and social conditions 12.1 of Gynecology departments and clinical professors' perception of anesthesiology and pathology departments was 23.3 of total 120. Also mean score for each of the three areas and total score in clinical departments indicated that in all areas there was a significant difference departments (p= 0.001, P= 0.005) (Table 3).

Clinical education environment of Shahid Beheshti Hospital received the highest score in all areas. In areas of understanding of learning and clinical teachers there was a significant difference between the hospitals (P≤0.05) (Table 4).

The results showed that marital status (ß=-0.214), education center (ß=-0.554), clinical departments (ß=0.562) and lodging (ß=-0.261) were predictive factors of the learning so that singles, residents in Shahid Beheshti and Ayatollah Rouhani training centers, residents of internal medicine and pediatrics departments as well as those who live in private homes have felt better to their learning status in the education system.

Also in the area of understanding of the university clinical teacher, regression results showed that marital status (ß=-0.220) and university degree in general medicine (ß=0.290) were predictive factors. It can be concluded that single people and those who had been studying medicine at the universities of type II have felt better about the university clinical teachers' function.

Multi-variable regression results showed that the most important predictor factor was the university educational atmosphere and environment, residents' view of clinical teachers' function so that performance and better function and behavior of clinical teachers reflect better educational atmosphere of the University (ß=0.427).

To examine the relationship between each of the areas Spearman correlation test was performed. The results showed a significant relationship between all areas. This means that social conditions are effective on residents' understanding of the university clinical teachers, learning and function level. No relationship was found between the area of clinical teachers' perception and residents' gender. A significant relationship was found between studied three areas and each of departments (P=0.001) (X^2=30.28).

The best view in the area of learning and social conditions was in Pediatrics departments (P=0.006) (X^2=21.38) and in clinical teachers was for internal medicine departments residents (P=0.007) (X^2= 21.11).

Table 1. Distribution of frequency percentage of demographic variables in residents studying at Babol University of Medical Sciences

Variable	Total frequency	Relative frequency
Male	66	56
Female	34	44
Single	38	38
Married	62	62
Shahid Beheshti	23	23
Ayatollah Rouhani	55	55
Amir kola	22	22
Pathology	9	9
Gynaecology	21	21
Internal medicine	20	20
Paediatrics	21	21
Anaesthesia	29	29
Type 1	36	36
Type 2	64	64
Type 3	0	0
Executive experience Yes	45	45
No	55	55
Private house	83	83
Student dormitory	17	17

Discussion

The study that was conducted on 5 groups of residents studying in three training hospitals affiliated to Babol University of Medical Sciences showed that the mean scores of the three areas, clinical education environment indicates the presence of positive attitude that is almost consistent with all studies conducted in other parts of the world (15). Based on DREEM model, clinical environment and atmosphere have been reported desirable in the study. Getúlio and Joaquim in their study

Table 2. The percentage of residents' agreement with each of the areas mentioned in DREEM questionnaire

Areas	Totally agree	Agree	Not sure	Disagree	Totally disagree
Learning perception	6	67	27	0	0
Teachers' perception	2	71	27	0	0
Social conditions' perception	6	57	32	5	0

point out that, residents who have positive viewpoint towards their education environment have more motivation to learn and promote than others (16).

Given the above, the highest agreement achieved by residents was in the area of clinical teachers' perception and the lowest agreement was in the area of understanding social conditions. Unlike Arabshahi et al. study (12), except the area of clinical teachers' perception there was no significant difference between residents' gender, in two

other areas men felt better than women. These results showed that considering residents' gender in determining educational needs should be considered. Lokuhetty also in his study pointed out the need of females for social support and considering this (17).

According to obtained scores, a move towards a positive direction in the area of learning perception, being in the right direction in the area of clinical teachers' perception and the presence of a bad to not so bad viewpoint in the area of social conditions'

Table 3. Comparison of mean score of areas of education environment based on clinical departments

Departments	Learning area	Clinical teachers' perception	Social conditions' perception	Total score
Pathology	26.3	23.3	14.9	64.5
Gynaecology	26.1	26.2	12.1	64.4
Internal medicine	28.7	27.8	15.9	72.4
Paediatrics	36.1	27.9	17.7	81.7
Anaesthesia	27.4	23.5	15.8	66.7
P	0.001	0.005	0.001	0.001

Table 4. Comparison of mean score of areas of education environment based on health centers

Areas	Learning areas	Clinical teachers' perception	Social conditions' perception	Total score
Shahid Beheshti	32.4	27.1	16.9	92.1
Ayatollah Rouhani	28.5	26.1	15.1	82.1
Amir kola	28.1	23.7	15.3	80.9
P	0.04	0.02	0.175	0.04

perception based on the interpretation of DREEM questionnaire scores was concluded. In connection with areas of understanding of the learning and clinical teachers' perception a significant difference was observed between hospitals where residents study so that Shahid

Beheshti residents had a more positive perception in these areas. The results of Bennet study showed that students' attitude in smaller hospitals was clearly toward a positive direction (18). This is probably

Table 5. DREEM questionnaire

Questions	Totally agree	Agree	Not sure	Disagree	Totally disagree
I have been encouraged to participate in teaching and learning meetings.					
Professors are familiar with education.					
There is a support system for a stressed student and resident.					
I am too tired to enjoy the course.					
Learning solutions used before are also applicable in this course.					
Professors have designed the course as patient- oriented.					
Education in the departments mostly encourages learning.					
The sector professors often humiliate a resident.					
The sector professors are opinionated.					
Teaching is student- oriented.					
In this course, I am rarely impatient.					
In this course, I have good friends.					
Professors' teaching helps create clinical competence.					
This course professor well communicates with patients.					
My social life is desirable.					
In the sector, teaching is well focused.					
I feel passing the course I am prepared for my future profession.					
Teaching time is well used.					
In the sector, teaching is focused on learning theories.					
I rarely feel loneliness (in the course).					
Professors provide a resident with good feedback.					
Professors provide useful criticism in the sector.					
I am socially relaxed in teaching sessions.					
In seminars and conferences, education environment is peaceful.					

My clinical experiences in the departments are not promising.
I can well focus in the sessions.
Professors provide clear examples in the departments and teaching.
Learning objectives of the course are clear.
Professors are often angry at teaching sessions.
Professors are well prepared for their teaching sessions.
Teaching is an active learning motivation.
My residence facilities are desirable.
Long- term learning is emphasized more than short- term.
Teaching is more professor-oriented.
I can ask whatever question.

because internal medicine residents studying in Ayatollah Rouhani and Shahid Beheshti have had the possibility to compare the two environments than other residents and clinical education environment characteristics of Shahid Beheshti hospital were more acceptable than Ayatollah Rouhani hospital because it has more construction history and lesser area. The highest agreement of residents was in the area of understanding of learning, the presence of teaching as an incentive to learn, and in area of clinical teachers' perception was also teachers' familiarity with teaching and provide residents with good feedback and constructive criticism, weaknesses of the area of learning were focused teaching in the departments and lack of clear learning objectives in the course, and in the area of clinical teachers' perception were lack of teachers' familiarity with education and failure to provide feedback to residents, that was raised mostly by pathology and anesthesia residents. The findings of the two areas show the importance of clinical professor role in teaching and learning process and the need to consider teaching methods. Studies show that the most important factors in creating training environment of training hospitals for training human resources are the professor's interest in teaching and student and ability to engage a student with the subject of the course to

gain learning experiences and also characteristics of the program implementation setting and learning atmosphere (19). Of course a professor's characteristics play a special role (12). Taheri et al. believe that faculty officials can achieve more efficient clinical education by emphasizing on students' interesting points in a clinical practice, the use of trained and ethical clinical teachers, providing a positive clinical environment and promoting the quality of students' education and their participation in teachers' evaluation and clinical planning (20).

Notably, in the area of understanding social conditions, high agreement (96%) of residents was due to good friends in this course that this shows residents' good interaction with each other, teachers, patients and staff. About the area, most Gynecology residents believed that during this course they are very impatient and tired; probably it is because most of them are not resident in Babol and live in the universities'' dormitories. These results are unlike Varma study et al. that the score of clinical educational atmosphere of Gynecology was calculated desirable (2).

Conclusion

The above results show that in addition to intrinsic motivation to learn, characteristics of

teachers and social environment of students play an important role. Also unlike desirable obtained status, reforms and changes in the areas of weakness, using indicators of education environment quality (12) to investigate clinical education environment and evaluation of reformed points, holding training workshops, new teaching methods and teaching and learning skills and holding meetings of students and teachers' discussion, using new solutions of education, providing students with consultation to solve problems in and out of the university and providing peaceful education environment are suggestions that seem according to the results of this study are effective on improving the educational process at the university.

Acknowledgement

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