



# Survey of Midwifery Students' perception of the Educational Environment Based on the DREEM Model at Islamic Azad University of Mashhad in the Academic Year 2014

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## Article info

### Article Type:

Original Research

### Article History:

Received: 8 Feb 2015

Accepted: 23 Jun 2015

ePublished: 4 July 2015

### Keywords:

Evaluation educational environment, Midwifery students' perception, DREEM

## Abstract

**Introduction:** The educational environment is one of the fundamental considerations that affect the quality and effectiveness of an education. The purpose of this study is to evaluate the educational environment in general and to compare the environment before and during clinical education.

**Methods:** This descriptive cross-sectional study was performed on 138 midwifery students in 2014. The data was randomly collected from among the students based on their "student number." This study used the Persian version of the DREEM questionnaire, and the questionnaires were filled out anonymously. The range of the scores is 0-200. The data were analyzed statistically with SPSS software (version 20), by the use of a t-test and the significance level less than 0.5.

**Results:** In total, 138 students with an average age of  $21.5 \pm 2$  participated in this study. The general average score of the students was  $114 \pm 23$ , which shows a positive perception. Findings indicate that 76.1% (N=138) of students believe that the educational environment needs to be developed and improved, and 23.9% (N=138) believe that there are more negative points of the educational setting than positive ones. There was no significant difference between the scores of 5 of the domains among the clinical and non-clinical students.

**Conclusion:** The findings in the present study reveal that the students have more positive than negative perceptions of the midwifery educational system. The weak points should be considered and new educational strategies should be implemented that lead to effective learning and training.

## Introduction

The educational environment is one of the fundamental considerations that affect the quality and effectiveness of an education. Students of medical sciences necessarily encounter different educational settings during academic years. These settings can be considered as the essence and the basic nature of educational programming. In this way, educational environment is whatever affects the educational programming in the classroom and in different sections of the university.<sup>1</sup> The physical setting includes factors such as light, air, instructional implements and facilities. It's quite natural to say that better learning will take place in better facilities. In a university with a suitable atmosphere, laboratory, library, equipped hospital and different scientific sources, the learning capabilities of

the students are higher than the capability of those who do not possess these facilities. Other environmental factors that affect the quality of instruction are the interpersonal relationships between students and teachers, the parents' view of education and the economical/cultural conditions of the family.<sup>2</sup> Every year thousands of students of medicine and paramedicine graduate from universities, and many of them start working in health systems as nurses, midwives or other healthcare providers.<sup>3</sup> The students' educational environment is identified as an effective factor in the students' learning processes, perception of the environment in which they are taught, behavior, educational development and sense of satisfaction.<sup>4</sup>

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One way of examining the educational environment is to evaluate the students' perception of that environment. The most commonly used criterion for evaluating the educational environment, especially for medical educational settings, is the Dundee Ready Educational Environment Measure, or DREEM, questionnaire. This instrument is implemented to display the strengths and weaknesses of the educational environment of an institution. It has sufficient reliability and validity and is used to examine the appropriateness of educational settings in medical schools. This instrument can also be used for comparative analysis of different educational settings, students studying for different degrees and faculty members at different levels and genders. Like other variables it provides more detailed information about the university and the trained participants.<sup>1</sup> Because DREEM compares the real, tangible educational setting that the students are experiencing with the ideal setting, the findings of this study can be fruitful for students of medicine and paramedicine all around the world.<sup>5</sup> The design of this questionnaire is based on the Delphi method, which employs 30 faculty members from around the world to determine criteria for acceptable educational environment in the fields of medical sciences concerning modern educational standards. DREEM is a 50-item Likert scale questionnaire that assesses the students' general perception of the educational environment, i.e., students' perception of the learning process, the instructors, their own practical capabilities, general educational atmosphere and the social encounters of the students. Until the year 2005 DREEM was implemented in 12 countries in Europe, Asia, Africa, North and South America and the Middle East. This questionnaire can be used for identifying weak and strong points, comparatively analyzing one's own educational setting and those of others and testing and predicting the practical capacity of the students.<sup>6</sup> Internationally, there have been a number of studies conducted in this area; for example, Sri Lanka, Nepal, Nigeria, Chile, Kuwait, Jamaica, Yemen, Canada and India reported more positive points than negative ones.<sup>7-9</sup> Similar results were achieved based on the average scores in Gadjah Mada University of Indonesia (117) and Shay Yang Nursing faculty of China (132).<sup>9-11</sup> The average scores of Tehran medical faculty (133.7), Saudi Arabia Nursing faculty (143.9) and Gilan Medical faculty (107.94) demonstrate more positive points than negative ones.<sup>12-14</sup> The DREEM total score in Saudi Arabia and Iran (Hormozgan Medical faculty) display the existence of many difficulties in educational systems. This study is performed to evaluate the educational environment by distributing DREEM questionnaires among midwifery students. On one hand it evaluates the overall educational environment, and on the other hand it investigates the students' perception about that environment both before entering and during the clinical instructions.

### Materials and Methods

This descriptive cross-sectional study was performed at the Mashhad Islamic Azad University midwifery department

in 2014. The purpose of it was to examine the educational environment from the students' point of view. There was no ethical barrier in this study because students only completed anonymous questionnaires voluntarily. The data was randomly collected from among the students based on the "student numbers." The names of the selected students were given to the department's educational clerk. He explained to the students what the purpose of the study was, that stating their names was not necessary and filling out the questionnaires was optional. He then distributed the questionnaires. The instrument used in this study was the Persian version of the DREEM questionnaire whose reliability and validity has already been examined and confirmed in various studies. This instrument contains 50 items on a Likert scale from 0-4 (strongly agree, agree, no idea, disagree and strongly disagree). The maximum score of the questionnaire was 200 and was divided into 5 areas:

1. Students' perception of learning; contains 12 questions = maximum 48 points
2. Students' perception of the teachers; contains 11 questions = maximum 44 points
3. Students' academic self-perceptions; contains 8 questions = maximum 32 points
4. Students' perception of atmosphere; contains 12 questions = maximum 48 points
5. Students' social self-perceptions; contains 7 questions = maximum 28 points

The general scoring of the questionnaire is as follows: 0-50 (weak), 51-100 (plenty of problems), and 101-150 (more positive than negative) and 151-200 (perfect). For example, the score 100 indicates a setting that the students are not sure about with an environment that needs modification. More specifically, if the average of the items is 3.5 or more then it shows more real positive points, but if the average of the items is 2 or less, there are problems that need more accurate examination. The items with an average of 2-3 indicate that some aspects of the educational environment should be developed. The DREEM inventory was distributed by hand between students that were selected randomly based on their "student numbers." The importance and confidentiality of data were explained and emphasized for the students; their consent was obtained before data collection. These questionnaires were completed and collected, and then the data was analyzed using SPSS (version 20). Descriptive statistics were used to describe the sample. Reliability of questionnaires was determined by Cronbach's alpha coefficient of the first 20 questionnaires (Cronbach's alpha: 0.88). Due to the lack of change in questionnaires, the students of the pilot study were added to the samples. The data was examined and compared at two levels: once before and once during the clinical education. In order to compare the average scores of clinical and nonclinical groups, a t-test was implemented. The level of significance was considered less than 5%.

### Ethical Issues

There was no ethical barrier in this study because students

only completed anonymous questionnaires voluntarily.

## Results

In total, 138 midwifery students ranging between 19-23 with an average age of  $21.5 \pm 2$  participated in this study. Ninety-three (67.4%) were single and 45 (32.6%) were married. Eighty-four (60.9%) were at the pre-clinical level and 54 (39.11%) were studying at the clinical education level. The average score of the first domain of the questionnaire (perception of learning MAX=42) was  $25.5 \pm 6.9$ . The highest score obtained in this domain was 40 and the lowest was 8. In other words, 44.2% identified it as a domain with problems that can be examined and 55.8% evaluated this domain as having potential for improvement. The average score of the second domain (perception of teachers MAX = 44) was  $25 \pm 6$ . The highest score in this domain was 41 and 4 was the lowest; 29% of the students evaluated it as having problems that could be examined, 70.3% evaluated it as having opportunities for improvement and 0.7% had a positive view.

The average score of the third domain (academic self-perception, MAX = 32) was  $18.9 \pm 5$ . The highest score in this phase was 32 and 2 was the lowest; 31.9% of students evaluated it as having problems that could be examined, 62.3% see it as improvable and 5.8% reported it as having real positive points.

The average score of the fourth domain (student's perception of atmosphere, MAX = 48) was  $27.9 \pm 7$ . The highest score was 45 and 8 was the lowest; 37% of the students evaluated it as having problems that could be examined, 60.1% evaluated it as improvable and 2.9% had a positive view. In the fifth domain (student's social self-perception, MAX = 28) the average score was  $16 \pm 4.3$ . The highest score was 26 and 4 was the lowest; 33.3% see this domain as having problems that could be examined, 62.5% see it as improvable and 1.4% had an actual positive point of view. (Table 1)

As a whole, the total score of the DREEM questionnaire for midwifery students at Islamic Azad University of Mashhad was  $114 \pm 23$ . The highest score was 164 and 39 was the lowest; 76% of the students believe that the educational environment needs to be developed and improved and 23.9% believe that there are more negative than positive points of the educational setting.

In examining the items of the questionnaire, in the first domain, which is about the students' perception about learning, question 2 (The method of teaching increases

my self-confidence), question 9 (The teaching method is student-centered), question 11 (The teaching method is excessively teacher-centered) and question 12 (The educational method mostly insists on memorization) got a score less than 2, and the rest of the questions got a score higher than 2.

In the second domain, which involves the students' perception of the teacher, item 19 (Teachers make fun of the students), item 20 (Teachers get angry in the class) and item 21 (The teachers dictate their opinions in the class) got a score less than 2 and the rest received a score higher than 2.

In the third domain, which was about the students' academic self-perception, all the questions got a score higher than 2.

In the fourth domain concerning the students' perception of educational atmosphere, item 41 (Time scheduling is good in this faculty) received a score lower than 2 and the rest received a score higher than 2.

In the fifth domain, which is about the students' social self-perception during the academic year, item 45 (There is a suitable supportive system for the stressful students) and item 46 (I'm so tired that I can't enjoy this course) received a score of 2 and the rest got a score higher than 2.

In this study, item 44 from the fourth domain received the highest score of  $3.2 \pm 0.9$  (Has good friends in the university) and item 41 from the fourth domain received the lowest score of  $1.4 \pm 1.18$ .

The findings of the study indicate that the average scores on the 5-domain DREEM questionnaire among the midwifery students in clinical and non-clinical groups did not show significant a difference ( $t = 0.98$ , P value = 0.34). (Table 2)

## Discussion

This survey was conducted to evaluate the midwifery students' perception concerning the educational environment in the Islamic Azad University of Mashhad School of Medicine. The average score that the students gave to their own educational environment was  $114 \pm 23$ . According to the scoring criteria, the scores between 101-150 display a positive view toward the educational setting. The results show that 76.1% of students believe that the educational environment needs to be developed and improved and 23.9% believe that there are more negative than positive points of the educational setting.

Montazeri et al. investigated the senior students' and the clinical teachers' perceptions concerning the educational

**Table 1.** The Average and Standard Deviation of the Scores in Different Phases

Phase	Average	Standard Deviation	Highest Score	Lowest Score
Phase 1: Students' Perception of Learning (MAX=48)	25.5	6.9	46	9
Phase 2: Students' perception of the teachers (MAX=44)	25	6	41	8
Phase 3: Students' Academic Self-Perception (MAX=32)	18.9	5	28	0
Phase 4: Students' Perceptions of Atmosphere (MAX=48)	27.9	7	40	8
Phase 5: Students' Social Self Perceptions (MAX=28)	16.4	4.3	26	5
Maximum Score DREEM=200	114	23	172	35

**Table 2.** A Comparison between the Scores on the DREEM Questionnaire among Clinical and Non-clinical Midwifery Students

The Evaluated Phases	Maximum Score in each Phase	Average Score±Standard Deviation Before the clinical Instruction	Average Score± Standard Deviation during the clinical Instruction	T	P value
<b>Phase 1:</b> Students' Perception of Learning	48	25.5±6.6	25.5± 7.3	-0.025	0.98
<b>Phase 2:</b> Students' perception of the teachers	44	25.3±6	25±6.4	-0.153	0.87
<b>Phase 3:</b> Students' Academic Self-Perception	32	19±5.5	18.6±4	0.555	0.58
<b>Phase 4:</b> Students' Perceptions of Atmosphere	48	27.7±7.7	28.3±6.8	0.467	0.64
<b>Phase 5:</b> Students' Social Self Perceptions	28	15.9±4.7	17±3.7	1.53	0.12
<b>(Total)</b>	200	113.6±24.4	114.7±21.5	0.263	0.79

setting at the medical university of Yazd.<sup>1</sup> The results showed that the senior students of medicine had a positive view concerning their educational setting. This indicates that applying a student-centered method leads to better feedback from the students. In this study, the score concerning the midwifery students' perceptions was 114.6, in the learning domain it was 26.9, in the teachers' domain it was 24.3, in the domain of student's academic self-perceptions it was 21.9, in the domain of student's perception of atmosphere was 25.5 and in the last domain, which is students' social self-perception, it was 16.<sup>1</sup> These results are similar in comparison with the scores of midwifery students at Islamic Azad University of Mashhad, which indicates the positive perception of midwifery students concerning their educational environment. In government-held universities, better instructional facilities and the educational policymakers' views assist the application of modern educational strategies.

Ousey and colleagues' study in Birmingham at the University of Huddersfield was done using the DREEM model among 6 groups of medical science students of nursing, midwifery, surgery, physiotherapy and rehabilitation.<sup>15</sup> The reported score was between 101-150, which indicates the positive view of all the students toward the educational environment. In the aforementioned study the score of the midwifery students was 135. In the learning domain it was 27, in the teachers' domain it was 33.9, in the student's academic self-perception domain it was 22.2, in the atmosphere domain it was 33.5 and in the students' social self-perception domain it was 18.5.<sup>15</sup> In comparison with the present study, a higher score was achieved. Since this university has a modern and high-quality educational system, it could present a more positive view to its students. Brown, Williams & Lynch performed a study in this regard at Monash University, which is the main medical science university in Australia.<sup>6</sup> It was done among 8 groups of students who were majoring in emergency medicine, midwifery, radiology & imaging, occupational therapy, pharmacology, nutrition and diet therapy, physiotherapy and social work. The general average score was 137.3 and the score related to midwifery students was 135.5. In this study, the scores were as follows: 33.3 in the learning domain, 31.2 in the teachers' domain, 21.0 in the student's academic

self-perceptions domain, 31.6 in the atmosphere domain and 18.4 in the students' social self-perception domain.<sup>6</sup> In comparison with midwifery students in the present study, these students gave higher scores. This reveals that there are more positive points in that university in comparison with the medical school of Islamic Azad University of Mashhad. One reason is because of the implementation of new educational strategies in instructing medical sciences at the Monash University, while the medical school of Islamic Azad University of Mashhad still uses a traditional instructional system.

The results of a similar study done by Aghamolaei & Fazel based on the DREEM model at the Hormozgan University of Medical Sciences in Bandar Abbas revealed that the general average score of the questionnaire was 99.6 out of 200. In the learning domain it was 21.2, in the teachers' domain it was 24.2, student's academic self-perception score was 15.8, student's perception of atmosphere score was 23.8 and students' social self-perception score was 14.5. The results are lower than the results of the present study.<sup>4</sup> The similarity between the results reveals the prevalence of the traditional educational system in most of the medical science universities in Iran. In universities with traditional educational systems, the general average score is lower than 120. In the present study, the majority of the students (44.2%) believed that serious problems exist in the first domain concerning students' perception about learning (points less than 2).<sup>4</sup> In a study performed by Al-Ayed & Sheik in Saudi Arabia, the lowest scores were related to the first domain (19.5) too.<sup>16</sup> This was reported (22.48) in studies by Al-Hazimi *et al.*, with a score of 22.48,<sup>17</sup> a score of 25.8 in a study by Masood *et al.* in Pakistan<sup>18</sup> and with a score of 25.5 in the present research. It can be concluded that in the traditional medical education system, the students' perception concerning learning was low. In the present study, 76% of the students believed that promoting changes and improvements were necessary in all the domains. Accordingly, the educational policymakers should design and apply new educational strategies to motivate the students in a social setting with positive interactions and effective learning. These strategies can lead to training healthcare professionals that are able to give appropriate services to the people in society.



## Conclusion

The achieved scores in the present study reveal positive views of the students toward the midwifery educational system at Islamic Azad University of Mashhad. There are of course some weak points that should be considered in the evaluation phase of the curriculum review cycle, and the necessary modifications should be applied for the promotion of the educational system. According to the average score of the students in all the domains, the positive points were very much more than the negative ones. However, modification is also obviously necessary in all domains. The attribution of the lowest score to the item "Time scheduling is good in this university" shows that time management and student-centered educational programming have not been given enough attention by policymakers. According to the positive points achieved in this study concerning the educational setting, the educational system can hold educational workshops for faculty members and receive effective feedback from the students in order to promote educational skills and learning by implementing new educational strategies. In this way better training will be achieved in this field of study.

## Competing Interests

There isn't any conflict of interest.

## Acknowledgements

Researchers would like to thank Mrs. Samaneh Sarveghad Moghadam who works in EDC Center of the Shahinfar Medicine School for her sincere cooperation in steps of the study. They also appreciate students for their friendly participation and cooperation.

## References

1. Montazeri H, Beigzadeh A, Shokoohi M, Bazrafshan A, Esmaili M. Perceptions of students and clinical instructors of academic learning environments at Yazd University of Medical Sciences. *Research and Development in Medical Education* 2012;1(2):65-70. doi:10.5681/rdme.2012.014
2. Bazrafshan L. 10 steps in curriculum planning. Shiraz:Irsa; 2009. [In Persian].
3. Dent J, Harden RM. A practical guide for medical teachers. 4th ed. London: Churchill Livingstone, 2009.
4. Aghamolaei T, Fazel I. Medical students' perceptions of the educational environment at an Iranian Medical Sciences University. *BMC Medical Education* 2010;10:87. doi:10.1186/1472-6920-10-87
5. Roff S, McAleer S, Harden RM, Al-Qahtani M, Ahmed AU, Dezah H, et al. Development and validation of the Dundee Ready Education Environment Measure (DREEM). *Med Teach* 1997;19(4):295-299. doi:10.3109/01421599709034208
6. Brown T, Williams B, Lynch M. The Australian DREEM: evaluating student perceptions of academic learning environments within eight health science courses. *International Journal of Medical Education* 2011;2:94-101. doi:10.5116/ijme.4e66.1b37
7. Whittle SR, Whelan B, Murdoch-Eaton DG. DREEM and beyond; studies of the educational environment as a means for its enhancement. *Educ Health (Abingdon)* 2007;20(1):7.
8. Till H. Identifying the perceived weaknesses of a new curriculum by means of the Dundee Ready Education Environment Measure (DREEM) inventory. *Med Teach* 2004;26(1):39-45. doi:10.1080/01421590310001642948
9. Mohd Said N, Rogayah J, Hafizah A. A study of learning environments in the kulliyah (faculty) of nursing, International Islamic University Malaysia. *Malays J Med Sci* 2009;16(4):15-24.
10. Rahayo GR. Educational climate at nursing study program Gadjah Mada University as measured using DREEM. *The Indonesian Journal of Medical and Health Profession Education* 2006;1(1):23.
11. Farahmand S, Bagheri-Hariri S, Moghanloo S, Basir GH, Saeedi M, Afzalimoghadam M, et al. Evaluating the quality of the educational environment for medical interns in an emergency department using the DREEM Inventory. *Acta Med Iran* 2014;52(8):631-637.
12. Sayed HY, El-Sayed NG. Students' perceptions of the educational environment of the nursing program in faculty of applied medical sciences at Umm Al Qura University, KSA. *Journal of American Science* 2012;8(4).
13. Taramsari MR, Badsar A, Seyednejadb R, Maafib AA. Assessment of students' perceptions of educational environment in clinical wards of university hospitals at an Iranian Medical Sciences University. *Procedia - Social and Behavioral Sciences* 2012;46:715-720. doi:10.1016/j.sbspro.2012.05.187
14. Makhdoom NM. Assessment of the quality of educational climate during undergraduate clinical teaching years in the college of medicine, Taibah University. *Journal of Taibah University Medical Sciences* 2009; 4(1):42-52. doi:10.1016/S1658-3612(09)70080-0
15. Ousey K, Stephenson J, Brown T, Garside J. Investigating perceptions of the academic educational environment across six undergraduate health care courses in the United Kingdom. *Nurse Educ Pract* 2014;14(1):24-29. doi:10.1016/j.nepr.2013.06.012
16. Al-Ayed IH, Sheik SA. Assessment of the educational environment at the College of Medicine of King Saud University, Riyadh. *East Mediterr Health J* 2008;14(4):953-959.
17. Al-Hazimi A, Zaini R, Al-Hyiani A, Hassan N, Gunaid A, Ponnamparuma G, et al. Educational environment in traditional and innovative medical schools: a study in four undergraduate medical schools. *Educ Health (Abingdon)* 2004;17(2):192-203. doi:10.1080/13576280410001711003
18. Jawaid M, Raheel S, Ahmed F, Aijaz H. Students' perception of educational environment at Public Sector Medical University of Pakistan. *J Res Med Sci* 2013;18(5):417-421.