Perception of Anesthesiology Students of Zahedan University of Medical Sciences from Clinical Learning Environment

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Abstract

Introduction: An appropriate learning environment is crucial for delivering quality education. Students' expectations from the clinical learning environment differ from the real environment. The purpose of this study is to determine the perception of anesthesiology students of Zahedan University of Medical Sciences from clinical learning environment in the academic year of 2016–2017.

Methodology: This is descriptive, cross-sectional study in the academic year of 2016–2017 on 100 anesthesiology students of Faculty of Paramedics of Zahedan University of Medical Sciences, Iran. They all had passed at least two courses of internship in the operating room. A researcher-designed questionnaire of clinical perception was employed to evaluate the students' perception. To develop the questionnaire, the questionnaire for nursing students' perception of clinical learning environment by Mirzaee *et al.* (2009) was used.

Findings: Evaluations show that 53% of the students are female and 47% are male. 26.8% of the participants were married, while 73.2% were single. The age of the students ranged from 18 to 23 years. In terms of gender, 55 were female and 45 were male. From the perspective of the students, the most effective factor in clinical training is supported learning by the trainer. "Ward's environment," "supervisory relationship," "personalization," and "independence" are also found to be important.

Discussion: Research shows that students claim that clinical training is the most stressful course. Most medical students believe that clinical experiences are the cause of anxiety. In this study, trainer is the most important factor in clinical training from the perspective of students. 41.29% of students believe that the clinical trainer is on time in clinical environment and 97.3% state that trainers care about the students' timely presence in the clinical environment.

Key words: Anesthesiology, Clinical, Students

INTRODUCTION

All majors engaged with practical activities are experiencing the changing paradigm from emphasizing theoretical knowledge to valuing practical training. The output of

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Month of Submission : 03-2018 Month of Peer Review : 03-2018 Month of Acceptance : 03-2018 Month of Publishing : 04-2018 such change is better understanding of practical training and the coherence with theoretical knowledge. Its purpose is to enrich the theoretical knowledge and professional identity. On the other hand, clinical environment is of great importance in the training process of medical professions. [1-3] An appropriate learning environment is crucial for delivering quality education. A proven relationship is found between the environment and the student's academic progress, satisfaction, and success. [2] Students' expectations from the clinical learning environment differ from the real environment. They are always looking for better learning environment. Therefore, finding the factors affecting the clinical learning is of vital importance

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in clinical training programs.^[4] In this regard, learning environment can be divided into academic and clinical. Clinical environment covers all items surrounding students including clinical ward, equipment and tools, personnel, patients, and teachers. The academic environment covers only students and teachers, controlled by latter. Learning in clinical environments creates challenges, which cannot be found in the classrooms such as less control over the environmental condition in the clinical environment, the necessity to mix cognitive, psychomotor and emotional skills to respond the help seekers, and the maintenance of patients' safety in the care process, and fact that teachers need to maintain both patients' and students' needs.^[8]

Studies show that students recall the clinical training as the most stressful course. Many medical students claim their clinical experiences as the factor of creating anxiety. Some of the stressors reported by students are the first clinical experience, lack of clinical knowledge and attention to carry out the tasks as students, the use of equipment and tools, responsibility and mistakes, care of dying patients, fear of unknowns, fear of hurting patients, limited time for carrying out duties, ward's unfriendly environment, interaction with teachers, the feeling of being abandoned by the patient, clinical performance evaluation, self-evaluation, exposure to dying, and very sick patients. [18,19]

Shin (1972) defines the clinical work as "exposing students in conditions with real problems." He concludes that the nature of clinical environment provides students with opportunities to apply both theory and real clinical problems. However, clinical work is beyond the provision of opportunity to take advantage of opportunity in reality. Bener (1983) states that theory states what can be shaped explicitly. However, clinical work is always more complicated and introduces numerous realities which cannot be covered by theory. [21]

Learning and training process for becoming anesthesiology technicians is a multi-dimensional process requiring long time spent with patients and a supportive-supervised relationship by the trainer. The emphasis on clinical practices accounts for over half of training experience for bachelor anesthesiology program.^[2] Therefore, the clinical performance is a vital component of medical and paramedical curricula, located in a complicated social context.^[5]

Considering the fact that anesthesiology students need to be trained in clinical environment due to the nature of their course leads educational centers to strengthen their students' clinical skills to have better clinical performance in their future jobs. In fact, anesthesiology students are trained in clinical wards such as operating rooms and intensive care unit rather than classrooms. According to Masarore, the clinical learning environment is a clinical classroom. Therefore, working environment is a key factor for anesthesiology students. Taking clinical training into account leads educational centers to care about promoting the quality of students to provide better performance in their jobs. As a result, the purpose of this study is to examine the anesthesiology students' (bachelor program) perception.

METHODOLOGY

This is descriptive, cross-sectional study in the academic year of 2016-2017 on 100 anesthesiology students of Faculty of Paramedics of Zahedan University of Medical Sciences, Iran (Ethic code: IR. ZAUMS. REC. 1396.6). They all had passed at least two courses of internship in the operating room. A researcher-designed questionnaire of clinical perception was employed to evaluate the students' perception. To develop the questionnaire, the questionnaire for nursing students' perception of clinical learning environment by Mirzaee et al. (2009)[20] was used. An 80-question questionnaire was developed and forwarded to the lecturers and faculty members of Zahedan University of Medical Sciences, Iran. Their opinions were then collected. Finally, the number of questions reduced to 69 assigned into 12 items (10 questions for support provided by lectures from the student's learning, 4 questions for the support provided by hospital personnel from the student's learning, 5 questions for feedback-based relationships, 6 questions for supervisory relationship, 7 questions for hospital environment, 6 questions for innovation and creativity, 5 questions for focus on task, 5 questions for clinical training personalization, 6 questions for satisfaction with clinical learning, 5 questions for student's involvement, 5 questions for student's involvement, and 5 questions for independence).

The opinions of 10 faculty members working in Zahedan University of Medical Sciences were taken to ensure the content validity. It was reported 0.8. For the reliability, the questionnaires were forwarded to 20 anesthesiology students out of the statistical population. After 10 days, they were asked to recomplete the questionnaire. Correlation was reported 0.47 using the test-retest method. The items are scored on six scales (fully appropriate, appropriate, almost appropriate, almost inappropriate, inappropriate, and fully inappropriate). The items are scored from 0 to 5. Finally, the total score of each item is divided by the number of questions. As a result, the score of each item is calculated out of 5. The scores between 0 and 1.66 are considered weak. Those between 1.67 and 3.32 are medium and 3.33–5 are good. The questionnaires are to be forwarded in the last

session of internship and they are then asked to carefully fill them in. They are also ensured regarding the confidentiality. The questionnaires are collected after 3 min. The data are collected by a two-section questionnaire (demographic section [gender, course of study, type of program, age, and semester] and 69 questions). After collecting the data, they are analyzed using descriptive statistics, central and dispersion indicators. Analytical methods are also used including independent *t*-test (mean comparison), ANOVA, and correlation coefficient (the correlation among the total score).

Findings

Findings in terms of the individuals' characteristics of anesthesiology students show that 53% of participants are female and 47% are male. In this study, 26.8% are married, while 73.2% are single. No significant difference is found between two groups in terms of demographic variables. The participants are 18–23 years old. In terms of gender, 55 are female and 45 are male. From the perspective of the students, the support from the students' learning provided by the trainer is the most important factor in the clinical training. The other important areas are "ward's environment," "supervisory relationship," "personalization," and "independence" [Table 1].

The mean and standard deviation of *support from students'* learning by trainer and Zahedan students' perception of clinical environment experienced a minimum and maximum of 14 and 59, respectively. Statistically, it has the greatest mean score (41.29) compared to other variables. It means that the mean score self-efficacy in greater in the obese group than other two groups and the different is statistically significant using ANOVA (P = 0.04). In terms of supervisory relationship, ward's environment, satisfaction, involvement of students, independence, learning opportunities, and Zahedan anesthesiology students' perception of clinical environment, the difference was statistically significant using ANOVA (P < 0.05).

Concerning the support from students' learning by personnel, feedback-based relationship, innovation and creativity, focus on task, personalization, and Zahedan anesthesiology students' perception of clinical environment, the difference was not statistically significant using ANOVA (P > 0.05) [Table 2].

In this study, 64.7% of had a medium level of perception from their major. According to the Goal 13, determining mean and standard deviation of total score of the questionnaire of Zahedan anesthesiology students' perception from clinical environment; medium perception was found to be almost 60% among these students [Table 3].

Table 1: Comparing total scores of Zahedan anesthesiology students' perception according to questionnaire variables

Area	Minimum	Maximum	Mean±SD	Result
Support from students'	14	59	41.29±9.5	0.04
learning by trainer				
Support from students'	6	23	21.18±4.14	0.2
learning by personnel	_	20	04.45.4.00	0.4
Feedback-based relationship	5	30	21.15±4.88	0.4
Supervisory relationship	9	36	25.63±6.03	0.02
Ward's environment	15	42	28.69±5.97	0.02
Innovation and creativity	11	30	19.65±4.40	0.3
Focus on task	12	30	21.90±3.68	0.4
Personalization	7	30	19.62±5.02	0.1
Satisfaction	6	36	21.80±6.08	0.01
Involvement of students	9	30	20.40±4.57	0.02
Independence	12	30	21.18±4.30	0.02
Learning opportunities	5	30	21.04±5.09	0.02

SD: Standard deviation

Table 2: Relative frequency distribution of "anesthesiology students' perception" in the faculty of paramedics of Zahedan University of Medical Sciences

Frequency/perception	Number	Relative frequency (%)
Low	11	7.4
Medium	60	64.7
High	29	28.2

Table 3: Mean and standard deviation of anesthesiology students from the clinical training status quo in each area

Area	Mean±SD
Shaping student's personality in clinical environment	23.65±5.39
Student's satisfaction with clinical training	21.38±6.71
Students' participation in clinical activities	21.28±3.43
Paying attention to differences among students during clinical period	17.62±3.91
Clear task description for students during clinical period	23.16±4.78
Using educational innovation during clinical period	17.20±5.10

SD: Standard deviation

DISCUSSION

From the perspective of the students, trainer is the most important factor in clinical training. 41.29% of students believe that clinical trainer is punctual. 97.3% of students' state that the trainer cares about the punctuality of students in the clinical environment. Peyman reports that most clinical trainers want the punctuality. [11] 75.8% of students believe that the trainer plays a key role in reducing stress in the clinical environment while dealing with patients and increasing self-confidence and efficiency. The role of trainer in empowering trainees is the most important factor in clinical training. Such effect was verified in the study by

Wilcox and Lewis. [12] The study by Zahraee *et al.* concludes that trainer is an important factor in clinical training, [13] which is consistent with the results of our study. Student's reduced stress in clinical wards leads to better learning and performance. Concerning the student's perception in clinical learning environment using different experiences, Quinn *et al.* stated that despite the benevolent intentions of curriculum planners, several factors might block the efforts made by teachers to optimize the learning environment. First of all, students sometimes misunderstand the materials and the second more complicated issue is that not only does a difference exists between teachers and trainers in terms of learning environment perception but also certain differences are observable among the students. [11]

In terms of the support from the student's learning by the personnel, 15% of students rated the cooperation undesirable. In the study by Aghvami, students were satisfied with the staff cooperation in various clinical wards. [4] From the perspective of students in Hamedan, Iran, nursing staff rarely cooperates. Henderson believes that the optimal clinical support leads to skill and empowerment.[1,16] The study by Rahimi et al. shows that trainers believe that inappropriate dealing blocks clinical training.[17] The study by Hadizadeh shows that most students rated the cooperation of staff with students between good and medium.^[15] The cooperation of clinical staff with educational trainers and students leads to better performance of students in the students' future jobs. The authors of this research believe that inappropriate support by the staff is a feature if teaching hospitals affiliated to Zahedan University of Medical Sciences. Frequent clients, massive numbers of students in the operating room, and staff's sensitive responsibilities have led to the failure of support in the working environment.

In terms of learning opportunities, 21% of students believe that there is enough number of patients in clinical training, from the perspective of Waton, when there are few numbers of patients, students cannot achieve the educational goals. In such cases, films and clinical training centers can help increase learning and facilitate the educational goals.^[9]

Jafari *et al.* stated that theoretical lessons delivered in classrooms are not fully transferred to clinical situations. Therefore, students are not able to fully take advantage of their lessons directly. On the other hand, limitations in clinical environment and the rights of patients have given importance to clinical and communicative skills and attitudes among students. ^[12] Therefore, learning opportunities need to be equally divided among students. In clinical centers, theories are linked to the clinical skills, leading to reduced stress while dealing with patients. ^[14]

The study by Wern *et al.* (1999) on the effect of tracheal intubation training in the progress of medical students concludes that 70% of cases were successful in the experiment group, while it was 29% in the control group, showing the role of practice in helping students for learning tracheal intubation.^[17] In our study, learning opportunities are of great importance from the perspective of students.

As far as supervisory relationship is concerned, 25% of students claim that a supervisory relationship is found in operating rooms. The study by Peyman et al. shows that 28.9% of students rated the supervision in the clinical process medium and only 18.9% of students are aware of the clinical evaluation at the beginning of the internship, which is consistent with our study. [6] 48% of students state that insufficient supervision is found in the clinical training. Knowing about the evaluation leads students to try their best in line with learning to achieve the training goals. Students were almost satisfied with the clinical evaluation, associated with higher scores given by trainers. This is mainly because most students believe that good evaluation means higher scores. The study by Abedini et al. shows that inappropriate evaluation is a problem of clinical training. Almost all students were satisfied with the evaluation.[33] From the perspective of students, effective communication is influential in performance. When students are welcomed by the staff, they are more willing to provide care. Therefore, they try their best in this regard.

For the ward's environment, 28% of students were satisfied with the relationship between the staff and students. The trainer also showed maximum responsibility regarding the assigned patients to the students. In this regard, operating rooms have provided a positive learning environment. An important reason associated with the satisfaction is taking advantage of experienced trainers and sometimes staff as trainers in the clinical center. Compared to the traditional methods, taking advantage of experienced trainers provided greater acceptability and sufficiency among students and trainer.[33] On the other hand, friendship is seen in operating rooms, evident while dealing with the students. Another factor is that operating rooms suffer from lack of personnel and students are believed to be helpers.^[34] The qualitative study by Morkami et al. (2009) conducted in a medical university, on the effect of learning environment on medical training among six paramedical students with the content analysis approach shows that six criteria are of importance, namely, relationship with colleagues, positive and negative patterns, underestimation of attitudes, perception from training as the lowest priority, overfocus on medical knowledge and skills, sexual attitudes, and emphasis on trainer's features. [23] As stated earlier, relationship with colleagues is an important factor, also stated in the study Morkami in learning environment. It

is also consistent with our study. In terms of the support from learning by the trainer, emphasis on the trainer's features is consistent with our study. For the involvement of students, 20% of students were able to provide appropriate opportunities for students regarding planning in operating rooms. In these wards, students follow the instructions provided by the trainers and skillful staff, leading to obtaining experience and satisfaction with the clinical environment. The qualitative study by Borhani et al. (2011) on the perception of nursing students from sensitive barriers of professional ethics with the content analysis approach among six master's nursing students led to the discovery of personality traits, educational planning, and clinical environment. If the moral sensitivity is stimulated among students, it leads to the increased presence, showing the compatibility of the dimensions.^[25]

For the independence, students feel responsible and accountable to care the patients. This dimension accounts for 21% of the total score. Based on the trainer's decisions, students were classified. All the operation procedures and responsibilities were supervised by the trainer, creating a sense of self-confidence and independence. The qualitative study by Mirzaee et al. (2014) on the perception of nursing students from clinical learning environment reached four dimensions (experience, imagination experience and processing and initial expectations; planned environment experience and processing; clinical learning environment processing and experience; and the feeling nurturing talents and professional and personal competencies).[29] According to these dimensions taken from the study by Mirzaee et al., greater nurturing of student's talents and competencies leads to responsibility and accountability, which is consistent with the results of our study.^[30]

When it comes to satisfaction, students are willing to participate in clinical environment, and they enjoy such a kind of presence.

In terms of the effect of clinical learning environment on students' tastes, Dale states that this environment teaches hope to students and provides the motivation for coping with the problems of help seekers. Since our study focuses on anesthesiology students, this willingness provides satisfaction among students, leading to increased responsibility, sensitivity, and accountability.

The least favorite dimension was innovation and creativity, accounting for 19%. The most adverse condition stated by anesthesiology students was clinical facilities and equipment. From the perspective of operating room students, modern innovations were the lowest. From the perspective of students, facilities and equipment in the clinical environment was not optimal in terms of quality

and quantity. Other studies in Iran also reported clinical training problems including the study in Yazd where almost half of the students believed that qualitative and quantitative facilities were not optimal. [24] The study by Del Aram in Shahr-e Kord also indicates that the educational environment was not optimal from the perspective of most students as a result of lack of equipment and low technology. [26]

Focus on task was another less favorite dimension. It mainly covers task determination and classification. In teaching hospitals, students are sometimes overwhelmed due to the frequent number of patients, leading to reduced focus on task and responsibility.^[24,31] The study by Helen Edward *et al.* in England shows that the change of internship center leads to significant differences in learning and acquired skills. They concluded that numerous factors are effective in the quality of learning in clinical environment.^[35] They also found out that acquiring practical skills in local and rural hospitals were more than the large hospitals in the capital. This study shows that fewer number of patients leads to better accuracy, responsibility, and quality of medical services.

CONCLUSION

Clinical training is medium for the anesthesiology in Zahedan University of Medical Sciences. Compared to previous years, this major has experienced greater promotion in terms of educational space, faculty members, clinical wards, and postgraduate programs, linked to the efforts made by faculty members. This study can help students in terms of nurturing talents and professional and personal competencies. According to the aforementioned issues, various factors are effective in learning environment. They act like stimuli. Using these stimuli, students judge the clinical environment. If these stimuli are optimal, then the environment is rated optimal by the students and they take advantage of nurturing their talents and competencies. Therefore, teachers and planners can identify these stimuli and examine the effects on students' perception. This leads to the perception improvement and enhancement of learning motivation and academic progress. The study shows that the perception of student from clinical environment is not a sudden phenomenon but develops gradually over time through a 4-stage process. Students have certain perception and expectations regarding the clinical environment and interaction with various people. These initial imaginations and expectations are, in fact, the initial and immature core of student's perception from the clinical environment. In the second stage, before the exposure to real stimuli affecting the perception, students develop their perception by exposure to clinical environment stimuli. In the third stage, students enter the real clinical environment. In the fourth stage, students meet their concerns based on the stimuli in previous stages. The main concern of all students is nurturing talents and personal and professional competencies. When students are exposed to numerous stimuli in line with the clinical learning environment, if they are positive or interpreted positively, they feel that their personal and professional talents are nurtured and have obtained them. Otherwise, they feel being suppressed. Since this study was conducted only among anesthesiology students, more studies are recommended among other majors including medicine, midwifery, and operation.

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