



Evaluation of the Education System through Peers in Clinics

Mitra Amini¹, Javad Kojouri², Hekmat Allah Moradi^{3*}, Milad Ahmadi Marzaleh³

¹Department of Medical Education, Clinical Education Quality Improvement Research Center, Shiraz University of Medical Sciences, Shiraz, Iran

²Clinical Education Quality Improvement Research Center, Shiraz University of Medical Sciences, Shiraz, Iran

³Department of Health in Disasters and Emergencies, School of Management and Medical Informatics, Shiraz University of Medical Sciences, Shiraz, Iran

Abstract

Introduction: Peer Assisted Learning (PAL) is one of the several methods available for learning and teaching. Peer learning is an educational approach, in which people from the same social groups who are not professional teachers help each other to learn. This cross-sectional study aimed to evaluate the education system through peers in clinics in Shiraz, Iran in 2010.

Methods: This descriptive, cross-sectional study aimed to assess the effect of PAL on the knowledge, attitude, and practice of medical students in the pediatric and surgical departments of Namazi Hospital affiliated to Shiraz University of Medical Sciences. The data were collected using a researcher-made questionnaire and analyzed using the SPSS 22 software.

Results: This study was conducted on 100 participants: 70 in the pediatric group and 30 in the surgical group. Among the participants, 60% were female and 40% male. The results revealed a significant difference between the two departments regarding the quality of education, interaction, and time management. Yet, it should be noted that a large number of participants had not participated in the introductory sessions.

Conclusion: Defining the standard model of clinical education as well as making revisions during the training period are among the criteria for improving the quality of clinical education. Due to the excellent quality of education, interaction, and time management in the pediatric ward compared to the surgical ward, hospital managers are recommended to make the most of the experiences and strengths of this ward. Financial support can also help improve the quality of clinical education.

Keywords: Peer education, Collaborative learning, Cost-effectiveness, Student

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*Correspondence to:

Hekmatollah Moradi,
Department of Disaster and
Emergency Health, School
of Management and Medical
Information, Shiraz University of
Medical Sciences, Postal Code:
71336-54361, Shiraz, Iran
Tel: +98 71 32340776
Email: morad2063@yahoo.com

Introduction

The old concepts of school education and equality of teaching and learning are no longer valid. In fact, education does not end with the end of school or academic education (1). In other words, educational institutions such as schools, universities, and training centers are essential, but only as a Lifelong Learning (LLL) institution. Schools can be a platform for progress in LLL. In the field of LLL, the whole environment is the source of learning, with learning being considered a lifelong process (2). Everyone must be prepared throughout life to develop his/her knowledge, skills, and attitudes and adapt to a complex and changing world. Therefore, education should be organized around four basic types of learning, i.e. learning to know, learning to do, learning to live with each other, and learning to practice. Of course, these four methods form a whole since they have a lot in common. Collaborative learning is an

approach that emphasizes learning by working with each other (3). The term “participatory learning” refers to a learning method, in which learners work together in small groups at different levels of performance towards a common goal. Learners are just as responsible for their learning as they are for others’ learning. Thus, the success of one learner helps other learners succeed (4). According to Srinivas (as quoted by Johnson and Smitt), participatory learning is a training that engages learners in group work to achieve a common goal (5).

Peer assisted learning is one of the several methods available for learning and teaching. Peer learning is an educational format, in which people from the same social groups who are not professional teachers help each other learn and teach (6). This method has long been recognized in theory, research, and clinical education as an educational tool, through which students benefit as teachers and learners at the same

time (7). There are different types of peer learning that can be implemented. Peers can be academically and practically at the same or different levels. In one method, higher-level students teach theoretical or practical courses to lower-level ones. This method, called year-to-year teaching, has been considered an effective and positive method by medical students (8, 9) because it is a useful way to prepare students to perform their future roles as medical educators. Kelly Vazamura (2007) disclosed that peer-to-peer education gave students the ability to overcome their personal fears during lectures (8).

Referral clinics mainly focus on the appropriate number of patients with a wide range of different complaints. Therefore, the number and variety of patients as well as the time allocated to each patient are of great importance. In previous studies, most professors and students pointed to the large number of patients, which reduced the time devoted to educational activities for each patient. This issue might have been related to the imposed burden of treatment on educational clinics. For solving this problem, a specific strategy should be designed and implemented to select the patients and adjust the burdens of treatment and education (10). Regarding the diversity of patients in educational referral clinics as well as the need for bringing the clinical education environment close to the community environment, specific programs have been designed and implemented to expand the scope of clinics to all segments of the society. The success of these programs has been presented (11). Another axis of educational clinics is to determine the space, in which students interact with patients. In educational clinics, it is necessary to have separate spaces for examination and the lack of such spaces eliminates the opportunity to create a patient-based educational experience.

Any plan to improve the quality of clinical education depends on recognizing the problems, inadequacies, and shortcomings in the education system. Peer-assisted learning has not had the expected efficiency due to time-consuming planning, waste of energy, human resources, time, training environment, and direct and indirect costs. This study aimed to assess the effect of peer-assisted learning on increasing the knowledge, attitude, and skills of medical students in terms of clinical education at Shiraz University of Medical Sciences. Given the beneficial effects of peer-assisted learning including the feeling of happiness, skills, and scientific growth in learners who act as small groups of teachers, this teaching method has been considered an important achievement to improve the health of the community (as an impact) and solve the

problems of physicians in educational environments (as an output). It has also been found that by reducing students' stereotypes and teachers' imitative thinking and increasing students' independence in learning, this method can improve their clinical reasoning skills (12). Therefore, this cross-sectional study aimed at evaluating the education system through peers in clinics in Shiraz, Iran.

Methods

This descriptive, cross-sectional study aimed to assess the effect of peer-assisted learning on the knowledge, attitude, and practice of medical students in the pediatric and surgical departments of Namazi Hospital affiliated to Shiraz University of Medical Sciences, Shiraz, Iran.

Sampling Method

This study was conducted on 100 students in all education levels selected via purposive sampling. The inclusion criteria of the study were being a second-year to seventh-year medical student and being willing to participate in the study. The exclusion criterion of the study was the students' mental unpreparedness.

Data Collection

The data were collected using a researcher-made questionnaire designed according to the global standards of clinical education. The validity of the questionnaires was determined by medical education experts. Besides, its reliability was assessed in a pilot study and confirmed by Cronbach's $\alpha = 0.8$. A questionnaire was designed based on a review of texts and articles and interviews with medical education specialists. Then, its face and content validities were examined; at the end, the reliability of the questionnaire was determined.

At the beginning of the study, the participants were taught that completing the questionnaire was an optional input (Opt-In) as well as an optional output (Opt-Out). The questionnaire included 21 questions, which could be responded via two Likert scales, from always to never and from very good to very poor. The questions were divided into four dimensions, namely participation, quality of education, professional ethics, and interaction.

Ethical Considerations

This study was approved by the Ethics Committee of Shiraz University of Medical Sciences (ethics code: 97-6804). The participants' names and characteristics remained confidential, and the results were only used in academic forums.

Data Analysis

Due to the descriptive nature of the data, frequency and standard deviation were used. Comparison of the two groups was done using ANOVA and post-hoc tests. All data analyses were performed using the SPSS 23 software.

Results

This study was conducted on 100 participants: 70 in the pediatric group and 30 in the surgical group. Among the participants, 60% were female and 40% male. Most study participants were students followed by interns and residents. In both departments, professors were the main instructors. Moreover, the prevailing educational model was that each student visited patients separately and introduced them to the professors in the presence of other students. Thus, the students were only an observer. This model was more applicable to lower-level students. It is worth mentioning that 44% of the participants had a 15-day clinical training course and 53% had a 30-day training course.

This study evaluated the relationship between different factors and various dimensions of education quality in the two groups. After the initial investigation, the questionnaire items were divided into four groups, namely participation, quality of education, professional ethics, and interaction. The means of the four elements were higher in the pediatric group, which needs further investigations to make a better use of the strong points in this department. The results also revealed a significant difference between the two groups regarding the quality of education and interaction (Table 1).

According to Table 2, a significant difference was

observed between the two groups regarding the mean quality of education and interaction ($P < 0.05$).

In both pediatric and surgical departments, professors were the main instructors, and there was a high level of satisfaction with their main roles and responsibilities. In the surgical department, residents were mainly responsible for the training, which might be one of the strong points or drawbacks in some programs in this department. Further studies in this field are warranted.

Discussion

Although no comprehensive studies have been conducted on the quality of education in clinical settings, the existing experiences and some studies have shown the inadequacy of this very important area of medical education. The study performed by Khorasani et al. in Mazandaran and the one carried out by Amini et al. in Shiraz revealed the importance of active supervision of professors in the students' satisfaction with the course (11, 13). In the study by Amini et al., from the perspectives of professors and students, no specific model was used in clinical education environments, but students pointed to the beneficial role of two educational models that had a direct independent role in patient visits. A noteworthy point in the present study was that the educational model (students only had the role of an observer) was significantly observed in the pediatric ward, even at higher levels such as fellowships and residents. Nonetheless, the dominant educational model in both departments was in a way that the students visited patients independently and then introduced them to the professors in the presence of other students (14).

Table 1: Distribution of the questionnaire items in the pediatric and surgical groups

Variables	Nominal variables	Number	Mean	std. error of mean	Standard error
Participation	Pediatric	69	14.2174	0.31302	2.60017
	Surgical	30	13.7000	0.49631	2.71839
Quality of education	Pediatric	69	29.7826	1.78536	14.83028
	Surgical	30	21.6667	1.15801	6.34270
Professional ethics	Pediatric	69	10.6667	0.20404	1.69486
	Surgical	30	10.7667	0.23333	1.27802
Interaction	Pediatric	68	15.7206	0.41315	3.40695
	Surgical	30	14.3333	0.47786	2.61736

Table 2: Comparison of the pediatric and surgical groups regarding the study variables

Variables	Mean difference	Standard deviation	Confidence interval		P value
			Upper bound	Lower bound	
Participation	0.51739	0.57649	1.661	-0.626	0.372
Quality of education	8.115	2.8	13.711	2.520	0.005
Professional ethics	-0.1	0.34	0.586	-0.786	0.773
Interaction	1.38725	0.69	2.774	-0.0002	0.051

Community expectations from physicians, not having enough time to consult with patients, one-sided educational environments, changes from inpatient to outpatient treatment, lack of attention to patients and their companions, and low patient safety index were some of the problems faced by patients in educational settings (15). Thus, teaching clinical and outpatient medicine is vitally important today. There is also a large body of evidence showing its role in optimizing the performance of general practitioners in future. In the last two decades, medical students in the United States were educated in clinical settings. The important features of outpatient environments included the interactive educational environment, appropriate and tangible environment of physician-patient communication, independent activity of students in taking history and examination, students' clinical reasoning in the presence of professors, educational modeling, final evaluation, and direct and indirect feedback provision. In general, clinics, as the main centers of outpatient care training, are crowded environments, the processes of which are formed based on clients' needs (10). Hence, creating a balance between providing services to patients and educating students during the limited time available in clinics are the main obstacles against education in these environments.

Because outpatient training, like any other training, requires practice and repetition, the short duration of trainings in clinics causes them not to be as efficient as expected. Most participants in the current study believed that 15- or 30-day courses had to be designed on the basis of educational checklists. Although the existing standards have shown differences in the time required to educate students depending on the number of patients and the duration of hospitalization, the limited national surveys in Iran have come to contradictory results, making it difficult to draw conclusions. Burji et al. conducted a research in Zahedan and mentioned one reason for the inefficiency of outpatient medical training. In another study, Malabashi et al. demonstrated that the duration of teacher-learner interaction was below the standard level. In the present study, the students who had a 30-day course enjoyed higher scores and participation, which requires more attention to time management. However, the students in the pediatric group showed a significantly higher participation in the 15-day course. These results were supported by those of a similar study by Amini et al. at Shiraz University of Medical Sciences (15).

Introduction refers to getting acquainted with the physical environment, current procedures, and

rules, which is one of the sub-principles of proper employee management. It is also one of the standards of educational programs. In introductory sessions, a study guide is presented and the goals that students will achieve in the course are identified. In the current investigation, 51% of the surgical students and 32% of pediatric students (37% of all the participants) had not attended the introductory sessions at the beginning of the courses in order to get acquainted with the clinical education environment. This, in turn, resulted in improper planning, wasted energy, and reduced effectiveness, especially in the surgical department, which requires further attention.

In the current research, data transfer was mostly from top to bottom. In other words, the data were mostly transferred from higher-level to lower-level students, which was consistent with the findings of the study performed by Amini et al. at Shiraz University of Medical Sciences as well as those of the research carried out by Zamani.

Due to the high volume of information and high workload as well as the fact that the treatment department is one of the sensitive departments that deals with human health, re-experiencing the past experiences can only kill time. Yet, all these problems can be solved in part through time management, which is an integral part of each individual's life. The current study results revealed a significant difference between the two departments in terms of time management. Accordingly, more satisfaction in this area was observed in the pediatric group. Hence, these successful experiences are suggested to be shared with other wards.

In the present research, questions 20-24 of the questionnaire were analyzed separately. The null hypothesis was accepted in all questions, except for question 24 that was about time management. Accordingly, a higher satisfaction with time management was reported in the pediatric ward ($P < 0.05$).

Conclusion

The defined model and the standards of clinical education as well as revision of the duration of clinical education should be considered by the managers of all departments. In this context, special attention should be paid to co-planning and rotational management.

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Authors' Contribution

Javad Kojouri, Hekmat Allah Moradi, and Mitra Amini were responsible for the study conception and design. Javad Kojouri and Mitra Amini supervised the whole thesis. All authors prepared the first draft of the manuscript. All authors did the data analysis, made critical revisions to the paper for important intellectual content, and supervised the study. All authors read and approved the final manuscript.

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