Original Article

Evaluation of Educational Challenges of General Medicine Students

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Abstract

Background & Objective: Medical education and training efficient human resources have always been among educational planners' concerns. Given the history of medical education in our country, identification of medical education problems, barriers, and challenges and attempting to eliminate or correct them will increase the chance of achieving educational goals and training expert, capable and efficient people. Therefore, the present study aimed to analyze the educational challenges of general medicine students at North Khorasan University of Medical Sciences.

Materials & Methods: This qualitative study was performed on 15 faculty members, medical students, the head of the medical education department, treatment vice-chancellors, and education and research vice-chancellors using conventional content analysis in 2020. The subjects were selected by purposive sampling.

Results: In this study, the most important educational challenges of medical students were classified into three categories of educational structures, training processes, and underlying components and seven sub-categories of human resources, physical space, equipment, planning, management, evaluation and monitoring, motivational causes and professionalism.

Conclusion: Our findings provided a deeper understanding of the educational challenges of medical students, comprehension of which helps develop the field of medicine and eliminate its barriers.

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Introduction

Medicine is one of the valuable and sacred professions that is crucial for the preservation, survival, and development of any society. Therefore, medical education and training efficient human resources have always been among educational planners' concerns (1). Meanwhile, the main goal of medical education is the imparting of the highest principles, knowledge, and skills in medical students. Society needs physicians who are not only compatible with the current health system but also attempt to change it (2-5).

Medical students follow the course and clinical experiences in the classrooms and departments of the university (6). As institutions that produce and transmit knowledge and provide specialized human resources in the community, universities are obligated to constantly assess their current status and propose practical solutions to improve their education quality by analyzing issues and finding bottlenecks and their causes (7). Therefore, it seems necessary to improve the educational environment in order to lay the proper foundation for achieving the educational goals of the medical field (9).

On the other hand, society and its needs are constantly changing. Accordingly, the education and goals of the educational system need changes and modifications to adapt to society. Given the rapid development of medical science, the country's education should be aimed at preventing quality loss at the global level. In

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this respect, continuous evaluation of training to identify the strengths and weaknesses of the system, giving feedback to the education system, and attempting to improve the quality and quantity of education are among the educational quality improvement techniques (8, 9).

Good medical education resembles evolution in that it advances by ensuring the advancement of students. Therefore, the identification of educational challenges of preparing the most efficient physicians has many benefits for both medicine and society (10-13). Results of various studies in universities of medical sciences in the country have shown a lack of fit between education quality and standards with students' expectations. Accordingly, continuous review of service quality is extremely effective in determining the level and promotion of universities (14). Greater attention to education quality as a factor that provides health care required by the country and improves health level in the society seems to be an important issue and the cause of all students' inefficiencies in this area (14). Meanwhile, university quality and its improvement have been overlooked in the past two decades despite the increase in the number of students (15).

Given that medical education has a long history in Iran, identification of the problems, obstacles, and challenges of medical education, as well as attempts made to eliminate and correct them will lead to the achievement of educational goals and the training of specialized, capable and efficient people at the national level. About the importance of this topic, the identification of medical education challenges will help eliminate or correct weaknesses in this area. With this background in mind, the present study aimed to analyze the educational challenges of general medicine students.

Materials and Methods

This was a qualitative study extracted from larger research (mixed research), performed with conventional content analysis. The research setting was the North Khorasan University of Medical Sciences. In addition, the statistical population included all medical students and the faculty of Bojnurd Medical School, selected by purposive sampling while observing maximum diversity. Notably, the subjects were selected from medical students, head of clinical education department, treatment vice-chancellor, and education and research vice-chancellor of hospitals of North Khorasan University of Medical Sciences.

The inclusion criteria were willingness to participate in the research, and being a medical student or faculty at Bojnurd Medical School. On the other hand, the exclusion criterion was an unwillingness to continue cooperation with the researcher.

Data were collected using in-depth, semi-structured interviews. In total, 15 subjects were enrolled in the study, and the interviews continued until reaching data saturation. It is worth noting that interviews were initiated following receiving the required permissions from the ethics committee and making the necessary arrangements.

First, the research objectives were explained to the subjects and they were ensured of the confidentiality terms regarding their personal information. In addition, consent was received from the subjects to record the interviews. Afterward, the interviews were initiated with a general question of "could you please explain the educational challenges of medical students?" The interviews were recorded individually, and the participants were appreciated after each interview.

In this study, data obtained from interviews were analyzed by conventional content analysis developed by Graneheim and Lundman. All interviews were carefully listened to and transcribed verbatim immediately after they were finished. In addition, the non-verbal features of the interview and its process were noted and added to the text of the interview. In the next stage, data were entered into MAXQDA12 software to carry out the initial coding process. To this end, the text of the interviews was first divided into semantic units, followed by comparing different codes

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based on their similarities and differences and classifying them into different categories. In addition, the four criteria of credibility, dependability, confirmability, and transferability were used to increase data accuracy and robustness. As the analysis progressed, additional codes were generated, and the initial code design was revised and refined. Notably, each interview lasted 30-40 minutes.

Ethical Considerations

Permission was received from the educational vice-chancellor of North Khorasan University of Medical Sciences. In addition, consent was obtained from the participants to record the interviews. Moreover, they were ensured of the confidentiality terms regarding their personal information. Notably, the subjects were allowed to withdraw from the research.

Results

Demographic characteristics of the subjects (n=15), who were within the age range of 18-60 years, are presented in Table 1. The in-depth and semi-in-depth interviews led to the extraction of 80 integrated codes. From the perspective of the subjects, the most important educational challenges of general medicine students were classified into three categories of educational structures, training processes, and underlying components and seven sub-categories of human resources, physical space, and equipment, planning, management, evaluation, and monitoring, motivational causes and professionalism. A summary of categories, sub-categories and a selection of extracted codes related to the educational challenges of general medicine students are presented in Table 2.

Table 1: Characteristics of the participants

Nub	Age(year)	Work Experience (Years)	Job
1	33	3	faculty members
2	35	5	faculty members
3	42	6	faculty members
4	40	13	faculty members
5	60	25	faculty members
6	24	5	student
7	18	2	student
8	25	7	student
9	20	3	student
10	22	4	student
11	23	5	student
12	25	6	student
13	42	15	Deputy Minister of Education
14	42	6	Deputy of Treatment
15	38	13	Vice President for Research

Table 2: Categories and codes of educational challenges for general medical students

Categories	Sub-Categories	A selection of codes
Educational Structure	Human Resources	restrictions on recruiting faculty members change in faculty members inexperience

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	Physical Space And Equipment	hospital's educational infrastructure audio-visual facilities amenities
Training Processes	Planning	semester arrangement course presentation quality and quantity teacher schedule educational objectives curriculum
	Management	department heads' scope of authority policy
	Evaluation And Monitoring	Evaluation Monitoring
Underlying Components	Motivational Causes	tired and bored not motivated
	Professionalism	professional ethics meritocracy

1. Educational Structures

Participants mentioned educational structures as an important learning challenge. In this regard, some of the subjects introduced human resources, and physical space and equipment as two important sub-categories of this category.

1.1. Human resources: According to the subjects, there was a shortage of faculty in some courses. On the other hand, there are restrictions on recruiting faculty members, which leads to the interim staffing workforce recruitment, which is associated with a constant change in faculty members of some courses and teachers' inexperience. In this respect, one of the subjects furiously said: "We have a shortage of teachers, which refrains the existing teachers from dedicating sufficient time to students. It would be better to have four-five faculty members instead of two or three because it would help students become familiarized with different educational methods and motivated." (Faculty member with 15 years of work experience)

They also mentioned: "there has been an increase in the number of faculty members but many disciplines still use medical personnel who do not have scientific or educational guarantees and are not sympathetic to students because their priority is treatment." (Faculty member with six years of work experience)

1.2. Physical space and equipment: Some participants described the challenges of physical space and equipment in the hospital's educational infrastructure, audio-visual facilities, and amenities. In this regard, one of the subjects expressed: "Hospitals do not have educational infrastructure at all. We do not have space for rounds, and there are a lot of noises in the conference hall because it is next to the warehouse." (Fourth-year medical student)

Another subject mentioned: "There are insufficient facilities in some departments. For example, the ENT ward, which is just a clinic, does not have chairs at all. Seven-eight students along with their teacher and a patient are in a room and there is no space for a new patient." (Last-year medical student)

2. Training Processes

Participants identified training processes as an important learning challenge and identified three sub-categories of planning, management, and evaluation and monitoring.

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2.1. Planning: The majority of participants said that there are challenges in areas of semester arrangement, course presentation quality and quantity, teacher schedule, educational objectives, and curriculum. In this respect, one of the subjects regretfully stated: "students have different curricula. For instance, a student might pass all modular courses in a year while another one passes different courses. Meanwhile, several major and minor courses should be distributed in each semester." Another subject marked: "Students must be in the hospital from morning to evening despite the absence of the teacher and waste their time without any plans." (Fifth-year medical student)

Moreover, another participant mentioned: "hospital wards have different qualities and quantities; the schedule changed in the pediatric ward three times. Some cases of skin problems only refer to the personal office of physicians and we do not see them at all." (Last-year medical student)

Another participant expressed: "the educational curriculum is not performed uniformly and teachers' taste is involved in this area. For instance, some course topics are removed or taught as teacher's desire. Teachers even teach the medical curriculum regardless of the medical curriculum. For example, students learn topics such as endoscopy and colonoscopy, which are only required for expertise, even though gastroenterology has many more routine diseases" (Fifth-year medical student)

2.2. Management: According to some of the subjects, challenges existing in the field of management are due to the department heads' scope of authority and policy. In this respect, one of the participants marked: "the head of the department lacks the necessary authority and solves the problems as the wisest person in the ward. The role of the head of the department is not formed properly and is hard to change." (Faculty member with three years of work experience)

Another subject affirmed: "There is no specific educational policy. Each teacher has their certain type of teaching. All hospitals mostly focus on treatment and play no role in the education of students. In other words, their priority is treatment and not education." (Faculty member with 13 years of work experience)

2.3. Evaluation and Monitoring: According to the viewpoints of the majority of subjects, there is no evaluation and monitoring. In this regard, one of the subjects expressed: "Teachers teach something but their exams include something completely different. Some courses involve no slides or voices and there is only a 3000-page book that must be studied by residents. Exam questions are at the specialization level. The highest score of students in the same year of the entrance was 13, and five of them failed the course, which shows that the questions were not standard." (Third-year medical student)

Another student mentioned: "The work of teachers is not monitored. They constantly change their schedule and their students' schedule. Stagers and interns have certain schedules, which are only on paper and not performed properly." (Fourth-year medical student)

3. Underlying Components

The participants introduced underlying components as one of the most important educational challenges and referred to two subcategories of motivational causes and professionalism.

3.1. Motivational Causes: The majority of participants stated that teachers and students are not motivated and most of them are tired and bored. In this regard, one of the subjects stated: "Students have low motivation because they have an unknown career future. (Faculty member with 15 years of work experience)

Another subject marked: "Students have low motivation levels, which might be due to teachers' evaluation and teaching methods. An attractive way of teaching increases students' motivation. There is also no healthy competition between students. Therefore, various educational challenges can be created in students and their motivation can be improved by holding different congresses." (Sixth-year medical student)

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3.2. Professionalism: Some of the participants believed that students and teachers do not consider meritocracy or professional ethics. In this respect, one of the subjects mentioned: "teachers do not have the same approach to job description, conscientious, and legal areas. They have a negative attitude. They constantly say that general and basic courses are not needed for students who want to continue their education, which is not true." (Fourth-year medical student)

Another subject affirmed: "students are not taught any professional ethics. They do not even know how to address their teachers. The way students should treat patients is not taught to them." (Faculty member with 13 years of work experience)

Discussion

Our findings could contribute to the comprehension of general medicine students' educational challenges. In this study, the categories identified were educational structures, training processes, and underlying components. Some students introduced educational structures as one of the important challenges of medical students' education. In a systematic review, students faced challenges in support structures, planning, management, and organization (16). Human resources play an important role in any activity in an institution, including educational institutions. Human resources must be managed accurately based on their responsibilities so that they could play their role in the institution. Overall, human resource management is a very important aspect of the education process. Therefore, it should be carried out favorably to meet the needs related to individual and organizational goals. Moreover, it is expected that the shortcomings and problems of training can be overcome with good human resource management practices (17). The availability of physical resources to facilitate needs and the emphasis on reviewing organizational policies to create a stress-free learning environment have been among strategies recommended to simplify student learning (18).

Some of the subjects considered the training process as one of the important challenges in the education of medical students. In a previous study, the results were indicative of a lack of clear instruction on determining the time, location, and evaluation of courses. In addition, an appropriate environment was required to achieve the goals of clinical courses for paramedical students (19). In another study, inadequate curriculum, inefficient assessment, and lack of effective teaching methods were recognized as factors affecting curriculum failure (20). The curriculum should be tailored to the needs of the community so that students can provide valuable insights into the curriculum, which affects the learning process that is essential for educational institutions (21). Curriculum development is an important issue at all levels of medical education from the education of medical students to the development of vocational education. A systematic approach to curriculum development and evaluation must be provided to maximize the potential of any medical education plan. Some of the participants considered underlying components as an important challenge of medical students' education. Most medical teachers have failed to play an effective role in the promotion and moral development of students (22).

The formation of professional ethics in medical students includes the role of modeling, education, environmental factors, and individual and intrinsic characteristics in the formation of professional ethics, which depend on the hidden curriculum. Medical education officials should act in line with the hidden curriculum to provide a conducive learning environment in which modeling, learning, and teaching conditions and a supportive environment conform to intrinsic and individual characteristics to ensure the formation of professional ethics in medical students (23). Any deficiency in education has a direct effect on the acquisition of clinical skills and, ultimately, community health. Challenges and

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shortcomings in education, lack of facilities, and shortcomings in planning and evaluation play an important role in preventing the achievement of the goals of the education system and reducing the motivation and self-confidence of students (24). One of the major drawbacks of the present study was the lack of explicitness and conservative responses of some of the subjects.

Conclusion

According to the results of the present study, the undesirable nature of educational structures, training processes, and underlying components could have detrimental effects on education. Therefore, the first step toward solving educational problems is to identify the challenges of this field. It is suggested that qualitative research be conducted by universities of medical sciences to recognize their educational challenges and make improvements.

Conflicts of interest

The authors have no conflicts of interest associated with the material presented in this paper.

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