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Explaining the Learning Experiences of Clinical Procedures of the Internal Medicine Residents at Department of Gastroenterology

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ABSTRACT

Introduction: the method and way of learning and teaching are effective in acquiring clinical skills, and identifying the shortcomings of learning and teaching will lead to better planning. The purpose of this study was to explain the experiences of the learning clinical procedures of the internal medicine residents in gastroenterology department. ***Methods:*** qualitative study using content thematic analysis was done. Six fourth-year residents were selected and interviewed considering purposive sampling. The data of the interviews were transcribed and analyzed after rereading. ***Results:*** the collected data are divided into three categories: learning and experience with the following four categories (learning time and experiencing, leaning and experiencing times, learning and experiencing opportunities), training and the lack of the training of some procedures. These categories are explained by using some quotes derived from the data. ***Conclusion:*** the results of this study suggest that the administrative management of internal residency is poor and should get seriously in implementation and application of intended instructions existing in the prepared program of Medical Education and Specialized Council of internal residency period. The attending physicians and residents must be aware of the content of education program at the beginning of the residency periods and the trainers must try to supervise the residents' education.

Introduction

The aim of medical education is to acquire knowledge, skill and attitude for patient care.[1] Medical education is an opportunity for training professionals to acquire necessary qualifications for patient care.[2] The role of residents after graduation is much broader than the general practitioners in the society. As a clinical decision maker, intersectoral collaborator, health promoter, administrator and trainer, it is necessary for them to achieve these qualifications as better as they can.[3] But studies related to the revision of education program of residency period and examining of skill and competency of the residents and specialists suggest that there are either deficiencies in the education program of residency period or the administrative officials do not supervise the implementation of the program properly which impede the residents to learn and acquire the necessary skills.[4-11] The main goal of residency training is that the learners are continually exposed to clinical experiences to acquire sufficient skill to provide patient care in the relevant specialty and to be a trainer who can train his/her juniors. Residency training and structured educational processes in residency period particularly in the course of the development of clinical and practical skills are vital. But residency training is encountered with problems such as lack of time, reduction of the period of hospitalization, high volume of the medical content and knowledge and the changes in the responsibilities of the physicians in the structures of the out-patients and hospitalization. Reduction of the number of the patients leads to the reduction of the practice necessary for acquiring skills. Learners' self-sufficiency and practicing medicine without supervision are two other educational challenges in residency period. But due to the need for controlled care, necessity of maintaining health and considering patients rights, the independency of the residents faces with problems.[12] On the other hand, what a patient expects from doctor is skill and carefulness. Sometimes lack of these two factors could cause some events and worsen the disease and sometimes it leads to death. The reports of the medical errors show that some the errors are due to the lack of skills (scientific or prac-

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tical). If diagnosis and treatment are free of errors, the healthcares will be done as best as possible.[13] But it is only possible under the condition that the residents have proper learning opportunities during the residency period. A study titled "Teaching procedural Skills during Emergency Medicine residency" was done in Colorado Medical University in the US in 2008. In this study 12 procedures including (spinal fluid, tendon suture, measuring intraocular pressure, peritoneal lavage, Ultrasonography and CT scan interpretation, etc.) were selected and the results have shown that the preparation for the interpretation of CT scans, measurement of intraocular pressure and some other procedures, was low. This study has stated that the residency training period is the main learning period of clinical procedures.[14]

Due to the lack of comprehensive collected data about the learning of the residents during residency period and since the interview with the participants offered more comprehensive information about the existing situation, this qualitative study was conducted. Findings from this study can be used in the future studies. Since it was not possible to review all medicine specialties because of time limitation, internal medicine was selected for this study. During the reviews, it became apparent that the field of gastroenterology has more procedures compared to other fields and the rate of gastrointestinal diseases is high compared to the other diseases as well. For example, according to Medical News Information Center in Iran, 50% of common cancers in Iran is related to gastrointestinal tract[15] which represent the importance of the gastroenterology and internal medicine. Therefore, this study aimed to achieve the experiences of the residents in learning the clinical procedures in gastroenterology department.

Methods

This qualitative study used content thematic analysis methodology. Since the qualification and competency of the fourth-year residents is a reflection of the performance of the program in residency period, this group was interviewed in this study.

For selecting participants, a purposive sampling and for collecting data, semi-structured interviews were used, so that the interviews were conducted individually. The interview guide including an interview introduction and an open question was offered to each person. Questions include: a comprehensive question (how are your experiences about way of learning and acquiring the clinical procedures skill in gastroenterology ward as a fourth-year resident who passed almost all wards necessary for internal training period?) The interview continued till the data repeated, and data were saturated. Accordingly six fourth-year internal residents (3 males and 3 females) of Tehran University of Medical Sciences working at Rasul-Akram University affiliated hospital participated at this interview. Informed consent form was completed by the participants. The content of the interview conducted with permission of participants were recorded and transcribed as soon as possible. Next, the text was separated in the form of short meaningful units and each line was numbered. After obtaining the written approval of the content of the interviews conducted by each of the participants (member checking), the initial codes (keywords or main concepts) were extracted and finally classified and the themes were extracted. In order to gain assurance of the accuracy and consistency of the data (credibility and dependability) that is somewhat the same validity and reliability in quantitative studies, the experts were provided with the written text of the interview to identify the similarities and differences of their extracted concepts with the ones by the researcher.

Results

The analysis of the data obtained from the interviews with the internal residents about their experiences of the procedures learning in gastroenterology department disclosed totally three categories: learning and experience with the following four themes (learning time and experiencing, leaning and experiencing times, learning and experiencing opportunities), training, and lack of the training of some procedures which were as follows:

Learning and experience

Learning time and experience

According to the interviewed participants, nasal gastric intubation and endotracheal tube were experienced during their internship and other procedures in residency period. The quotes of the participants in the study include:

1.1. I felt no need to learn nasal gastric intubation and endotracheal tube during residency period because I learned them during my internship. In my residency I was a trainer myself.

1.2. I did nasal gastric intubation and endotracheal tube during my internship.

17.4. Ascites tapping was repeated during residency and I experienced liver biopsy and ERCP during residency.

8.5. I experienced ascites tapping and liver biopsy and ERCP during residency.

16.6. I learned ascites tapping in the first year of residency and experienced liver biopsy and ERCP during residency as well.

Learning method and experience

The data of the study is indicating that nasal gastric intubation was learnt during internship in the form of bedside teaching and its theoretical knowledge has mostly been self-centered or simultaneously with practical learning. During residency, the residents only

helped and taught the interns. Some of the quotes of the participants were as follows:

2.1. We did not have NGT during residency but helping to the interns.

7.3. We did not have NGT during residency but helping to the interns two or three times in the first year of residency.

Endotracheal intubation: the practical learning in the course of this was through supervision or model during internship and it is experienced as a trainer in some independent cases and in residency period. Ascites tapping: the theory of this course was completely self-centered and practical practice of it was either independent or with the help and supervision of senior residents and it has been experienced through the supervision of junior residents in some cases. Liver biopsy: it is only experienced through observation and its theory in self-centered. ERCP: it is only experienced through observation.

Learning times and experience

Another achieved sub-class of learning was learning times and experience of the procedures. Each resident has done nasal gastric intubation once or twice during their residency. All participants have experienced tracheal tube in the residency period. The followings are the quotes uttered by participants:

18.1. There were 5 or 10 cases or may be more than that during internship, in residency there were only one or two cases.

5.2. I have done tracheal tube maybe more than ten times during my internship whereas I have only done once or twice in my residency.

15.3. I have only done once or twice in my residency.

10.4. I have done tracheal tube maybe more than ten times during my internship but I have only experienced once or twice in my residency.

And other procedures mentioned by participants are as follows:

33.1. Ascites tapping is repeated a lot in residency period.

8.2. I have tapped ascites 5 or 6 times by myself.

20.3. I have tapped ascites several times.

39.3 I just observed liver biopsy once or twice.

22.5. I just observed liver biopsy done by one of the attending physicians.

36.6. I just observed some liver biopsies.

Learning opportunity and experience

Another achieved sub-class is learning opportunity and experience. Here are some quotes of the participants:

1.1. Nasal gastric intubation in emergency and surgery ward.

3.4. Nasal gastric intubation in surgery ward.

6.8. Nasal gastric intubation in emergency ward of this center.

Tracheal tube: It has been experienced in the emergency and ICU wards and the participants in the interview mentioned some cases providing them with the opportunity to experience this procedure:

10.1. There was no anesthesiologist at all.

6.2. Anesthesia resident came late, I put endotracheal tube myself.

Ascites: it has been experienced in various wards such as hospitalization and emergency wards, night shift, gastroenterology ward of Firoozgar hospital and first year night shift. The participants claimed that the experience was achieved through training of the first year residents who felt a need for learning it and existing of many cases in the wards of the hospitals. The quotes below were mentioned by participants:

45.1. I have just observed biopsy in Firoozgar hospital.

21.2. I have just observed liver biopsy in Firoozgar hospital done by attending physician.

26.6. I have just observed liver biopsy in Firoozgar hospital several times.

ERCP has been experienced in ERCP room and Endoscopy ward of Rasul-Akram University affiliated hospital.

Trainer

Another main category achieved from the data of the study is trainer. In all the procedures, the trainer in the internship period was either their peer (intern to intern) or resident (resident to intern) and in rare cases it was the emergency physician and in residency period, it was resident to resident or self-centered. Here are some related quotes of the participants:

16.2. We got no training on the procedures because we did them when we were on call at which there was no attending physician. You had to get help from your senior resident or experience it by yourself.

17.4. I learned the procedures from my senior residents in emergency and gastroenterology wards.

11.5. I got no training. I did and experience it by myself.

Lack of the training of some procedures

The other achieved main category is related to the lack of the training of peritoneal lavage, Blackmore tube, balloon insertion, proctosigmoidoscopy, drainage of abdominal abscesses guided by sonography, peritoneal core biopsy and upper and lower endoscopy procedures which were pointed out by the internal residents. Although these procedures are necessary for learning and experiencing and they are in their log book, they claimed that they had no experience about. In some cases that they were interested in learning some procedures

such as endoscopy, but their attending physicians were not interested in teaching. The followings are some their quotes:

37.2. Unfortunately, they neither had any training program for us nor do they let us learn if we were very keen to.

25.4. I was told that Peritoneal lavage is something that no-one other than a surgeon could do.

28.5. Nobody has trained us.

81.1. As an endoscopy internist, particularly upper gastrointestinal endoscopy, I would prefer to get complete training.

Discussion

The results of this study showed that learning of two procedures (nasal gastric intubation and tracheal intubation) have been experienced before residency period. According to the participants, they have mastered these procedures before residency and in residency period they did not have problem in doing them and they themselves trained or supervised the interns.

One of the main reasons which can be cited is the abundance and simplicity of the procedures as well as the university of the undergraduate medical students which have provided the students with opportunities for learning and experiencing such procedures. According to research and education samples, training was a kind of peer education (intern to intern) during internship. Residents believe that learning in residency period has been peer education (resident to resident) or clinical. The attending physicians in the emergency or surgery wards have rarely had role in their learning. Direct training, particularly in the internal wards was rare and the indirect one was with the insistence of the residents in some cases. The attending physicians were not so active in training. According to the participants, the attending physicians were not interested in teaching some procedures or they believed that they were not necessary for the residents which were due to their ignorance from the curriculum and in some cases; it refers to lack of sense of responsibility. The result of this study is similar to the one done by Amini et al titled "The Status of Practical Clinical Skills of Interns in Tabriz Medical University". The aim of Amini et al study was to review the interns' ideas with their ability to practice twenty basic clinical procedures and determine the effect of available educational opportunities on the level of their competency. The results of this study showed that the interns have experienced most of the procedures through observation and in most cases without the direct supervision of the attending physicians or residents. Educational models were rarely used for their training, therefore, interns' skill for doing most of the procedures was insufficient and most of them did the procedures without needed training.[16] Some of these procedures that the attending physicians believe they are not necessary for the residents are the practical selective skills in curriculum of internal residency, such as peritoneal biopsy and upper endoscopy. But nowadays, the electives are a part of students' curriculum which is called students' elective components.

The purpose of this choice is that the curriculum meets the individual needs of the students and electives are strongly established in the medical school and have a specific value and credibility.[17]

Therefore, it is crucial that the executive of the residency curriculum pay a special attention to this case. No formal training was done on the theoretical knowledge of the procedures and the acquired knowledge by the residents was completely experimental and self-centered. It is true that residents' self-centered learning matches with instructional strategies and basic methods of teaching and learning, however, self-centered learning does not mean that the learner does this without a guide. Quoting from Fitzco and Maccoler Seif[18] stated that with indirect or learner-based education, the trainer prefers to pull out the data of the students; these trainers provide some information and experiences for the students and help them to reach to conclusion themselves. Various learning materials are used more and more. Whenever the learner needs help the trainer plays the role of the facilitator or the guide. In addition, Quoting from Agn and Chavk, Seif stated that in the link between learner-centered method and constructed-based theory have told that directing the learners requires a high level of interaction. Deep understanding achieved by a new process needs the active learners and skillful trainers.[18] Each beginning needs a director or guide to prevent the precession even it carries the previous knowledge and experience. Director could be an effective motivation in the difficult situations. Everyone needs motivation for doing everything and without motivation every activity sounds meaningless. The director can be main factor of motivation as pointed out by the participated residents. They believe that especially in the beginning of residency, a director/guide is needed to create motivation for right way of training and learning as well as showing how to pass an effective residency period. Direct association of the trainer leads to the encouragement of the students and reminds the student the importance of his/her role as someone who should take some responsibilities after training. If a feeling of being important in the destiny of a society which the learner must manage is created, he/she will never feel that the received training is useless and it is a kind of wasting time. There are some sample statements in this study that the residents claim that they have withdrawn from the training during residency (the feeling of unimportance of internal medicine has arisen during his residency in the resident

who thinks internal medicine is in fact general practicing with only more clinical experiences). What is inferred from the statements of the residents is that they can do many of the procedures outlined in this study independently only with experiencing and learning once during the training. However, as mentioned by some participants, there were some procedures which were not experienced or even observed by the residents, such as tracheal tube or peritoneal lavage and Blackmore tube due to rare cases or the denial of the residents to learn some procedures such as proctosigmoidoscopy, lower endoscopy, maybe, because of having more side effects. All these show that no particular attention is paid by the authorities of education for doing the procedures and acquiring the necessary skills by residents. In accordance with article 2-1, paragraph 6-20 internal medicine curriculum approved by the Educational planning Commission of Secretariat of Medical Education, Ministry of Health and Medical Education in 2001, the certification is offered if the participant will acquire enough skills related to the mentioned procedures which are the minimum numbers of proposed cases in the program and the department determines the proficiency level.[3] According to participants' statements and discussed terms in the residency curriculum, it is clear that no attention is paid to the competency of residents in doing the necessary procedures during graduation and there is no standard program for training these skills. This study is similar to the one titled "The Assessment of the Practical Skills of Pediatric Residents" done in Boston in 2007. In this study, 29 basic skills in pediatric medicine were selected and the qualification of the residents in doing and training of these skills was examined through a questionnaire. The results showed that the pediatric medicine residents had some shortcomings in some necessary skills such as neonatal intubation, injection management and venipuncture, and it is said that most of the residents could not learn some important procedures in the final stages of their residency simultaneously. Residency program must be planned on the basis of standard methods for training the needed skills.[19] A paper published in Informed World journal in July 2003,has cited that having qualification in procedures is the most important part of internal medicine residency period for receiving national board certification[20] Which verifies the argument of the present study.

Conclusion

The results of this study suggest that the executive management of internal medicine residency program is weak which is not compatible with the holding approvals of this period and acquiring the minimum competency of the graduate. The implementation and application of the instructions in the developed program of the medical and specialized education of internal medicine residency period must be seriously considered. The content of the educational program must be conveyed both to the attending physicians and the residents at the beginning of the residency period. It is crucial for the residents to be aware of their duties and responsibilities consciously. They have to know what competencies they should ultimately achieve form the beginning of the period. Preparing instructions and guides which make attending physicians and the residents familiar with philosophy, objective, mission and vision of the education in internal medicine residency period and using a student portfolio which is in line with what mentioned above, could play an important role in the capability of the internal medicine residents. In addition, it makes the strategies facilitating the competencies available for the attending physicians.

In other words, it aligns the activities of the trainer and trainee that leads to desirable reinforcement of expected competencies and the trainers try to supervise the education of the residents. The theoretical knowledge of the procedures through self-centered methods or direct training must be considered important. The Medical and Specialized

Education Council is required to follow the right implementation of developed programs in the related universities. Finally, it is suggested that the medical universities, schools and departments must try to enhance the current situation and overcome the shortcomings through self-review studies and studies such as reviewing the effect of direct education and supervision by the trainers of the residency period and its effect on the quality of learning and the qualification of the residents.

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Conflict of interests

Authors declared no conflict of interests.

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