Research among medical students: The huge gap between training and expectations

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Type of article: Review

Abstract
In this article the importance of researching skills among medical students is highlighted. Moreover, it is explained why the issue is important and how far the educational system is from the ideal objectives. In addition, it is mentioned that there is a huge gap between how much students learn during their university courses and how much their professors and society expect them to accomplish. Finally, some suggestions are presented to improve the researching skills of the medical students.
Keywords: Research, medical students, training gap, unrealistic expectations

Introduction
Nowadays, the results of various studies in various branches of medicine are becoming ever more widely available. At first glance, many of the results of research published throughout the world are contradictory, and this limits the possibility of using them in
practice in medicine. These contradictions have not been resolved for many young doctors and medical students. Ideally, medical doctors and medical students should not only be able to gather information from the massive information in the field but also need to be able to evaluate them. In addition, they should be able to deliver the results of their research in a scientifically acceptable manner. Also, medical students need to be familiar with ethical issues for doing research (1).

In order to prepare medical students for assessing the articles and information available to them in various medical fields, they need to be familiarized with the research methodology, way of writing manuscripts, and scientific methods and the standards of criticizing the articles during the course of their studies. Therefore, it is necessary to set up training programs aimed at preparing students to achieve these goals. Medical students are also expected to learn ways of criticizing research articles as well as conducting research activities during their studies.

At present, it seems that general medical education and residency courses are not proportionate to the expectations for medical students as well as their future needs (2). This issue has caused problems that will be discussed later in this article.

The importance of research for medical students

One of the educational goals of physicians is to prepare them for the possibility of criticizing articles and information available through the Internet and journals. Without knowing the way of criticizing these articles, many of the information that is available is of no use to them because in order to obtain appropriate data, there should be a possibility to find appropriate information and critique them.
The rate of releasing information in medical science is very high and a large number of specialized articles are published daily. If doctors do not have the skills to evaluate and critique the articles, they cannot use the available information.

The academic environment of the university and the presence of experienced professors can be helpful in learning research and related skills. If research skills are well learned during the general medical and residential period, they can be very helpful in other future stages. Inadequate and defective training at this stage demonstrates its bad effects in later stages which in many cases are irreparable. Training courses improves the attitudes of medical students towards research (3). Several studies have reported changes in medical students’ attitude towards research over a period of time (4).

**Teaching research to medical students**

In Iran, there are few training courses in general medical education for teaching research methodology. Most of these units are not widely welcomed by students as they should. In most cases, the teaching is limited to theoretical presentations, and students are less involved in the practical work of research. Few students who are interested in practical research work, despite devoting high amounts of time and energy, do not receive rewards and are not encouraged.

This problem intensifies during the residency period. Almost no study units are devoted to research, and due to hard work and intensive study hours, students are less likely to participate in research activities. Like the general medical course, spending time on research activities involves low rewards, high costs, and burdens.

**Expectations from medical students**

In spite of inadequate training, students in the general medical course must complete the thesis as one of the lessons and pass a dissertation unit by conducting a research project,
presenting a report on its results, and defending it. Due to inadequate training in this field, general medical theses are associated with many defects and most of the results of these are not presented in high quality articles.

In addition, sometimes medical students have to publish their dissertations as papers and due to inadequate training in this field, it will cost them a lot of time, money, and hardship. Moreover, most of these mandatory papers lack enough quality. There is a similar situation during the residential period. In addition to the dissertation, students are often obliged to publish a paper.

**Disparity between training, expectations and needs**

It seems that the most important issue facing the medical students is disparity between their training, expectations from them, and their actual needs. For example, during a residency period, without a specific program for teaching research methodology, the student is expected to submit a dissertation and paper. However, what students ultimately need after graduation is the ability to critically evaluate articles.

These disparities have reduced the importance of research among students as well as their motivation. Students do not know anything about how to critically review articles or how to look for the best evidence. They ultimately prefer to meet their needs by addressing textbooks, web sites, and digital resources that are very limited.

This way of addressing the need for access to information resources makes the information of physicians not up to date. Moreover, in many cases it is not possible to access the information they need at all. In some cases, the inability to properly criticize the articles may lead them to citing articles that do not have enough scientific value.
**Suggestions**

According to the above, it seems that the need for a serious change in the field of research education is needed for medical students. The training should be changed in a way that suits the needs of these students. Added the training courses on how to search for information practically, as well as the ability to criticize scientific papers are among the important needs that should be considered.

Considering that the existence of the dissertation unit is a requirement of the general medical course and residential period, instead of relying on compulsory submission of the articles from the dissertation, students should be trained to master the skill of writing manuscripts. Moreover, as an act of encouragement for continuing research works, students who produce articles from their dissertations should be rewarded.

Research should be part of the medical students' curriculum and should not be considered as an extra-curricular activity. Devoting sufficient time during residency and general medical practice to research workshops is another requirement.

In addition, conducting research workshops as continuing education courses for general practitioners and specialists can be helpful.

**Conclusion**

Currently, there are disparities between medical students and residents' training, expectations from them, and their actual needs. It is suggested that educational system be modified in such a way to train students to have research skills that are tailored to their needs in the period of general medicine, specialization, and after the completion of these courses.
References


