



A problem-based approach to teaching research methodology to medical graduates in Iran

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Brief Report

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Abstract

Physicians are reticent to participate in research projects for a variety of reasons. Facilitating the active involvement of doctors in research projects is a high priority for the Iranian Blood Transfusion Organization (IBTO). A one-month training course on research methodology was conducted for a group of physicians in Mashhad, in northeast Iran. The participants were divided in ten groups. They prepared a research proposal under the guidance of a workshop leader. The quality of the research proposals, which were prepared by all participants, went beyond our expectations. All of the research proposals were relevant to blood safety. In this brief report we describe our approach.

The Problem

One of the most topical debates in undergraduate and postgraduate medical education focuses on training potential general practitioners to participate in formal research projects. Physicians do not participate in research projects for many reasons, including a lack of interest, a low level of confidence, negative attitude toward research, a lack of time, a lack of awareness of research opportunities and a lack of institutional support (1, 2, 3, and 4).

Numerous studies have attempted to identify the factors associated with the medical professional's commitment to participate in research. The literature on research utilization has demonstrated an interest and positive attitude toward research activities among medical practitioners, nurses, and paramedic professionals (2, 3, and 5). However, medical practitioners are often ambivalent about research projects, and prefer to attend educational courses to improve their clinical skills (4). Results from a survey of Australian pharmacists have indicated that most have never been a member of a research team or attended a research methodology course. However, a significant percentage of those who had been involved in research projects described it as a positive experience, while most of those who had not participated in research activities mentioned that they had never been asked to do so (1).

A Solution

One way in which to encourage physicians to participate in research activities is to demonstrate that research has a positive impact on their practical day-to-day work (6). Thus, providing the facilities and opportunity for research to encourage physicians to participate in research projects is among the highest priorities of health service providers such as the Iranian Blood Transfusion Organization (IBTO). The current policy of the IBTO's Research Center is to train potential researchers from staff practitioners who are interested in research and have the required skills to design standard research projects in areas of transfusion medicine, from blood donation to blood collection and blood transfusion.

To achieve the goals of the National blood policy of the Iranian Blood Transfusion Organization (IBTO), particularly in the area of enhancing the level of blood safety and



decreasing occurrences of transfusion-associated infections, a one-month training course on research methodology was conducted for a group of physicians in Mashhad, in northeast Iran. All the participants were among the staff physicians of Khorasan-e Razavi Blood Center, including 36 general practitioners who work as donor health interviewers in donation centres, the head of educational and administrative departments, one general surgeon, one pathologist, and one immunologist. Previous programs consisted of traditional lectures to teach research methodology. These were not considered suitable to meeting the objectives of the course, hence, for this training course we employed a Problem-Based approach to enable the workshop participants to engage in academic and research processes. Thus the workshop participants were persuaded that the results of the research projects could enhance their day-to-day practical work. The participants were encouraged to solve health problems they encountered and arrive at the best solution for implementation by means of systematic research methods. The participants were divided in ten groups. Then they were asked to prepare a research proposal step by step, considering the guidelines from the workshop leader. To facilitate the possibility of group discussions, we divided the workshop participants into two separate classes so all participants would have the chance to discuss and present their ideas or group work in presentation sessions. To form acceptable research proposals we set criteria encompassing the rationale for the study, the structure of the review of literature, the study design, material and methods as well as the educational program target which should be achieved.

At the conclusion of the conducted educational program, we reported not only a significant improvement in delivering the course but also in the participants' interest and level of engagement with the subject. The quality of the research proposals, which were prepared by all participants, went beyond our expectations. All of the research proposals by participants were relevant to blood safety (Box 1).

The workshop organizers asked the workshop participants for feedback. We asked participants to state their feelings towards the course by questionnaire. The consensus was that the educational program was successful in encouraging them to participate in research activities. The possibility of participating in mutual discussion and debate among students and teachers, providing good examples for teaching concepts of research methods, and providing new and helpful subjects to study were the most valued and positive aspects of the workshop. At the workshop conclusion, a hypothesis concerning the difference between the effectiveness of diverse methods of teaching research methodology to medical graduates was generated by the workshop leader and is going to be examined using an experimental design in the near future.

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Group	Title of Research Project
1	Factors influencing platelet count in platelet units
2	Risk factors associated with vertical transmission of Human T-Cell Lymphotropic Virus in blood donors in Neyshabour and Sabzevar
3	Causes of "Practice to Recommendation" by Blood donors in Mashhad
4	Seroepidemiology of HBV infection in blood donors in Mashhad
5	Seroepidemiology of Transfusion-Transmissible Infections in Patients with Major Beta-Thalassemia in Mashhad
6	Prevalence of Hepatitis B infection in blood donation volunteers with a history of jaundice
7	Comparing the blood safety between mobile and fixed blood drives
8	Investigation of sociodemographic characteristics of blood donors in Mashhad
9	Causes of "Confidential Unit Exclusion" in blood donors in Neyshabour
10	Investigation of the causes of not giving blood among women in Mashhad

Box 1. List of Research proposals prepared by workshop Participants.