What do medical graduates think of their earlier research projects?

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ABSTRACT

Background: *Research project is an educational means to increase the students' creativity and motivates them to take on solving medical and health problems.*
Purpose: *To assess the attitudes of Qazvin's medical practitioners toward their earlier research projects.*
Methods: *The views of 202 physicians (residents, general practitioners, specialists and sub-specialists) who were practicing in Qazvin province and had been graduated between 1986 and 2001 were collected with a self-administered structured questionnaire.*
Results: *Most research projects did not received any facilities from their universities. Only 2.5% had received financial support. Of 202 physicians, 60.9% received no supervision in choosing their research projects topics. Most research projects had little or no impact on the scientific and practical skills, future careers and their postgraduate residency program. However, most physicians stated that research project is necessary for medical students and pointed out the need for more education on research methodologic fundamentals. Of all respondents, 73% believed that they had little or no knowledge about research methodologies.*
Conclusion: *Overall, our findings indicate that the research projects do not meet the standards of sound research work.*
Keywords: *THESIS, RESEARCH PROJECTS, VIEWS*

Journal of Medical Education Summer *2003 3(2); 77-80*

Introduction

Conducting a research project is widely regarded as a valuable component of medical education (1) and research project has always attracted medical students (2,3). Moreover, dissertations and research projects are formally used as a part of final assessment of students.

Research project can be seen as a means to motivate medical students to take the challenge of solving medical and health care problems and also enhance students' creativities. If any improvement is to take place, identification of defects of current practices in conduction of research projects is of critical importance.

Maxwell's study in England (3) revealed that most of medical students and their professors believed that researches on basic science and clinical topics were valuable in preparing students for their future professional life.

Another important factor is the supervision over these projects.

In a study in Saarland University, Germany in 1995 (7), 12 medical students chose their own mentors among the faculty members of their universities at the beginning of their university entrance. The mentors were responsible for the students scheduling, consultation about doctoral thesis and helping with problem solving, and consultation for personal affairs. After two years participants were interviewed about the program for the first time and their satisfaction turned out to be high (4).

To have basic knowledge of the research procedures is an important element in conducting a research project. In a survey in Mississippi Medical Center in the US (5), the residents stated that they had learnt research methodology in the process of conducting their projects, in which basics of research (observation, grounding hypothesis, deduction, and testing) were provided for medical students as an educational package. Finally, the cases admitted the effectiveness of training in conducting their research project (92%) and clinical practice (88%)

In Iran, research project (doctoral dissertations) is the final part of undergraduate medical education in which the students conduct a research according to their interests under the supervision of a faculty member. But these research projects of medical students do not seem to be considered important by the medical education system. Studies in Gilan and Quazvin medical universities reveal that most research projects had basic defects in their designs (6). To tackle the problem, a general set of instructions for conducting research projects was provided by the Ministry of Health and Medical Education since 1997, to improve competencies required to perform research projects in medical graduates. This survey was carried out to collect the physicians' views of their earlier research project.

Materials and Methods

The factors contribute to effective conduction of a research project were identified through a literature review. Based on these factors, a questionnaire were designed and given to 20 physicians practicing in Tehran to assess its validity and reliability. Necessary changes were made. The questionnaire consisted of two parts; the first included general information such as age, sex, the name of the university the physician graduated from and the year of graduation. The second part consisted of 25 questions concerning different aspects of research projects.

To all 383 physicians who were graduated between 1986 and 2001 and were practicing in Qazvin province, a questionnaire was sent.

Results

From a total of 383 practitioners, 202 physicians (119 general practitioners, 44 specialists, 4 sub-specialists and 35 residents) responded including 141 male (69.8%) and 61 female (30.2%) physicians with a mean age of 34 ± 3.5 years. They were mostly graduated from Universities of Medicine located in Tehran (41.1%) and Qazvin Medical University (32.2%). Basic science and clinical subjects comprised 4% and 96% of the research topics respectively.

The majority (58.9%) of research projects were conducted by only one student, 32.2% by two students and only 8.9% were conducted by a team of students (3 students and more) (Fig.1).

Of all projects, 67.3% had received high scores – more than 19 out of 20.

Of all cases only 2.5% received some financial support and 78.7% were not provided with any support, physical or financial. Some respondents (81.2%) had selected their topics under the supervision of an adviser. The supervision was regarded very good in 19.3% of the cases, moderate in 44%, average in 18.8%, and poor in 12.9%.

Concerning the basic competencies required for conducting research projects, 3%, 24.3%, 62.4% and 10.4% of the respondents had good, average, poor and very poor competencies when they began their projects. Of all projects, 91.6% have not been presented in any scientific venues or journals.

Figure 2 shows the effect of research projects on choosing the specialties by 83 residents or specialists responding the questionnaire.

Figure 3 shows the effectiveness of the projects on scientific and practical skills of the graduates as stated by respondents.

Conducting a research project was the only scientific investigation carried out during the study period of 65.4% of all respondents.

Some physicians (59.9%) persisted on the essentiality of research projects, 20.8% considered it to be necessary to some degree and 19.3% did not see any necessity in conducting a research project.

Of all respondent, 4% found the beginning of physiopathology phase, 37.6% stated the beginning of clerkship, 43.6% suggested the beginning of internship, and 14.9% proposed any time during internship to be the appropriate time for choosing the research subject.

Conducting major research projects (scientific or applied), and engaging students in the process of these projects to develop their research skills was evaluated to be very high by 47%, high by 37.6%, moderate by 6.9%, and poor by 8.4% of the respondents.

Many respondents (76.7%) suggested that acquaintance with data sources and research methodology are necessary. Their priorities in order of frequency are as follows: internet; scientific magazines and Medline; familiarity with research methodology; and biostatistics.

Discussion

Although research is a team work in nature, the finding of the survey reveals that team work is neglected and only 8.9% of projects had been conducted by a team.

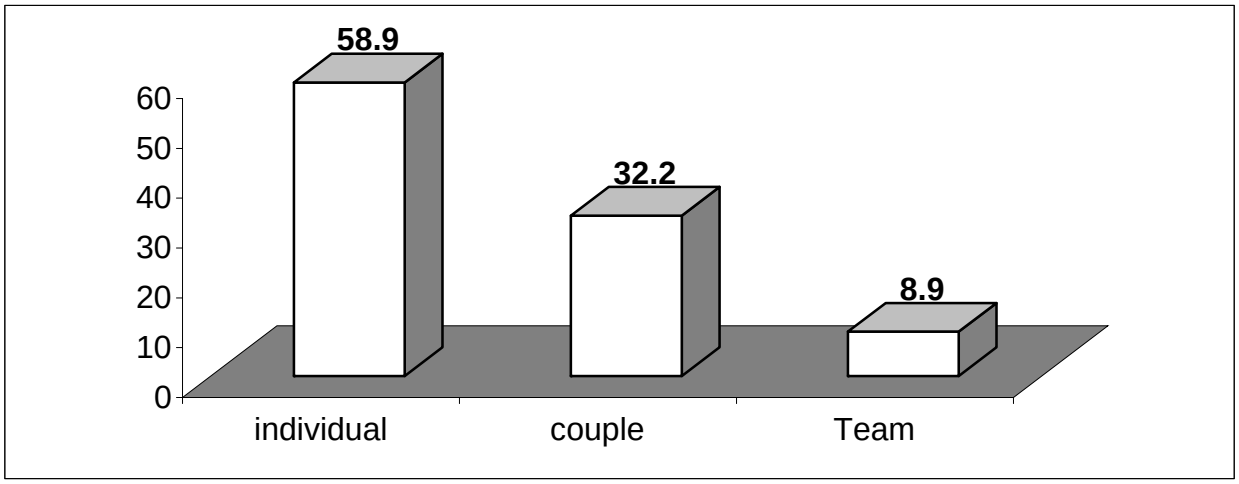

FIGURE 1. Frequency distribution of research projects' personal resources

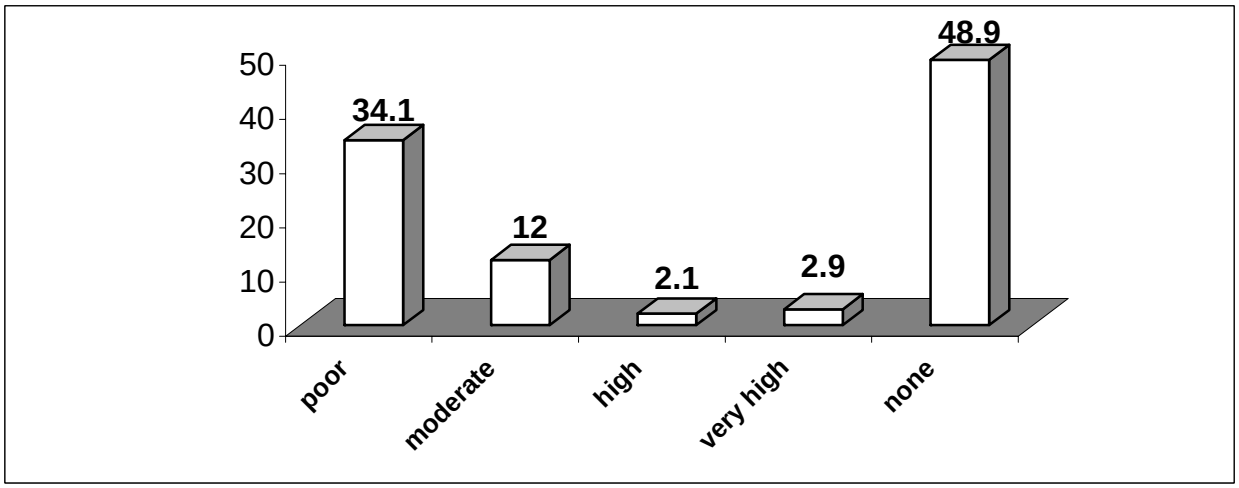

FIGURE 2. Frequency distribution of the degree of research projects' effectiveness on choosing specialty by the physicians

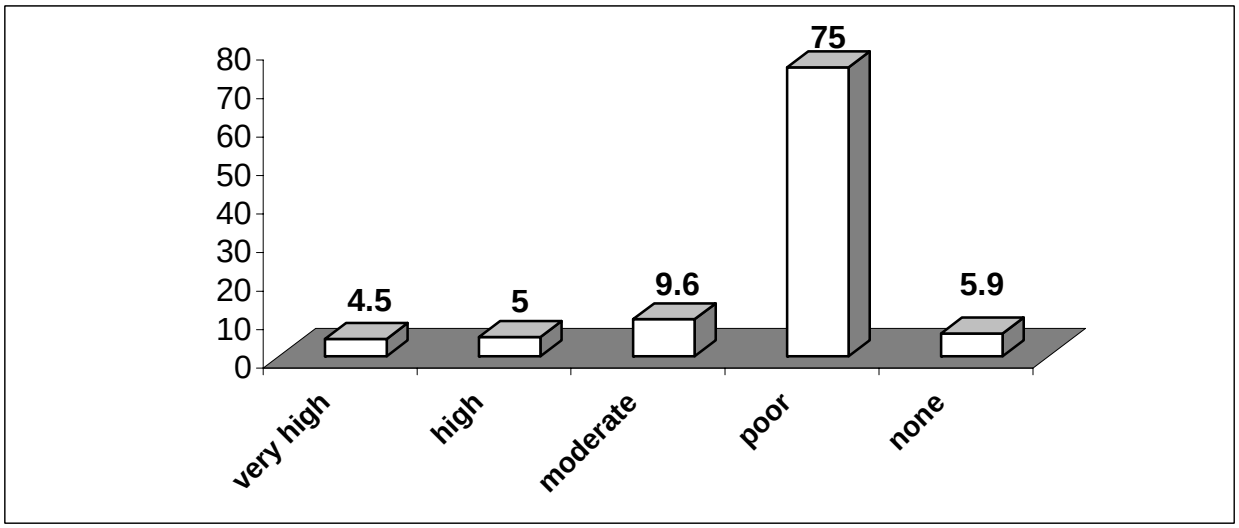

FIGURE 3. Frequency distribution of research projects' effectiveness on scientific and practical skills

According to physicians, the research projects had little impact on the training and health system of the country. Most of the research projects (91.6%) were not discussed in any seminar and congress nor published in medical or any other scientific journal; while in a study in England (9), more than half of the research projects were found to be published in international periodicals. In Germany (7, 8), 66% of the students were cited in Medline as authors of their research projects. In a survey conducted in England (3) most of medical students and their professors insisted on the effectiveness of research projects (clinical or basic science) in preparation of young doctors for future practice.

Most research projects (82.2%) had little or no impact on the specialists in choosing their specialized majors.

One good policy of the scientific research council in our country was its decision to lead the projects toward the countries' research priorities (10). The findings of our study indicated the failure in its implementation, since 60.9% of the students received no supervision in choosing the topics of the research they undertook.

Most of the students had little or no knowledge regarding research methodology (73%) and 61% stated the essentiality of learning research steps, and conducting a research project (60%). In Finland more than one-third of medical students participate in extracurricular research work (5).

Overall, our findings indicate that the research projects do not meet the standards of sound research work. If the competencies of medical graduates in conducting research is to improve to meet basic standards of research works, and to further develop to be relied on as a main source of knowledge generation based on national priorities, far more attention must be paid both by policy makers and executive bodies at national level.

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