

Barriers to the implementation of research priorities in medical education from the point of view of medical education experts at Shiraz University of Medical Sciences: A qualitative study

Parisa Nabeiei,¹ Mitra Amini,² Ali Asghar Hayat,³ Ali Mahbudi,⁴ Houry Mousavinezhad⁵

Abstract

Objectives: To determine the barriers to the implementation of research priorities in medical education from the viewpoint of educational experts.

Methods: The qualitative study was conducted at Shiraz University of Medical Sciences, Shiraz, Iran, from April to October 2016, and comprised medical education professors and experts working at the university's Education Development Centre. These professors had Master degree or PhD in medical education. Content analysis method was used after data was collected using semi-structured interviews followed by focus group discussions.

Results: There were 22 academicians in the study. Four themes, each with some sub-themes, were extracted out of the 86 codes derived from the interviews. The themes were: general priorities in educational research, lack of a comprehensive educational research database in medical sciences, discrimination among departments concerning budget, and the lack of the research spirit and teamwork were more prominent. Based on these themes, barriers identified fell in the two categories: manpower and financial resources.

Conclusion: The barriers can partly be eliminated through modifying the mentality and attitude toward research and teamwork in the university, proper planning in the budget of the educational field and managing the university research system.

Keywords: Research, Research priorities, Research barriers, Experts, Research management. (JPMA 69: 621; 2019)

Introduction

The word 'research' means exploration and search, and refers to a systematic attempt to achieve facts. In other words, research is an intelligent, smart, innovative and systematic way of retelling and revising phenomena, events and behaviours, and is used to achieve scientific and technological solutions.¹ Research is one of the main factors leading to cultural, social and economic sustainable development. Long-term development is impossible without an organised research system. As professors and students comprise the most important sources of scientific research at the university level, they can achieve the highest level of scientific and research productivity when proper conditions are provided to them and the barriers are removed.² Furthermore, universities with the highest intellectual capacity are considered the most important places of scientific development. Therefore, one of the most important factors leading to the comprehensive development of a society is directing the university research projects in line with the priorities of the society.³

Medical education has undergone many changes over the past decades, especially after the release of Flexner report, which revolutionised medical education in the United States. The report emphasised the need for re-designing many areas of medical education in response to the needs of the community. The report also highlighted the importance of research in this area.⁴ Research in education is one of the main, though relatively new, areas of medical education, and any research on education in professional medicine on undergraduate and graduate students or adult education is a lifelong learning experience.⁵ This field focuses on research in the domains of curriculum planning, teaching methods, faculty assessment, educational technology, etc., using educational models, interventions and assessment of the student-teacher interactions.⁶ The aim of this discipline is to promote the quantitative and qualitative research activities in the field of education through the extension of the research culture in education, targeting educational research, the provision of research advice and the establishment of educational decision-making using the results of the practical plans and the expansion of access to medical education resources.

A study in Saudi Arabia concluded that the most

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¹⁻⁴Clinical Education Research Center, ⁵Cardiovascular Research Center, Shiraz University of Medical Sciences, Shiraz, Iran.

Correspondence: Mitra Amini. Email: mitraamini51@yahoo.com

important obstacles in the development of research in the field of medical education were lack of suitable workplaces for the researchers' activities, limitation of research budget, and no understanding of the concept and importance of research in medical environments.⁷

Another study also explored the main obstacles to research in Asia, such as poor socioeconomic status, cultural problems, management problems, and information poverty. The incompatibility of research priorities in these countries with the main needs of the society is one of the most important problems in this field.²

In 2009, a study highlighted the research priorities in the following areas: effectiveness of physicians teaching, ethics and professionalism, reducing medical errors, using multidisciplinary education approach, evidence-based medical education, Internet education, basic and clinical sciences integration, the effect of communication skills in education and education management policies.^{4,5}

Research management is one of the most important necessities of educational centres and universities and should be planned and implemented based on the main needs of the country and in line with the main goals: comprehensive scientific health plan and health system development plan.⁸ The first step of organising research in the community is to get an understanding of the available capabilities and facilities and to identify the strengths and weaknesses of research programmes at the universities. In fact, recognising research barriers can improve the relationship between researchers and users of research results, facilitating the problem-solving process and practically easing the use of research findings. Additionally, the awareness of research barriers seems to be necessary to improve both quantitative and qualitative research in the universities.

The current study was planned to determine the level of implementation of research priorities in medical education and to determine the causes of failure and the barriers to the implementation of such priorities and research plans.

Subjects and Methods

The qualitative study was conducted at Shiraz University of Medical Sciences, Shiraz, Iran, from April to October 2016, and comprised medical education professors and experts working at the university's Education Development Centre. Goal-oriented or purposeful sampling was employed as it provides the most relevant information. In this study, the sampling continued till data saturation.

Data was gathered through semi-structured individual

interviews and a focus group discussion (FGD) with 4-6 university professors. These professors had Master degree or PhD in medical education. The interviews and FGD, written informed consent was obtained from the participants. The interviews were fully recorded and key points were noted. Each interview lasted 20-30 minutes. Interview questions were open-ended and based on interview guides. The interviews mostly explored the main focus of the study and encouraged the participants to share their experiences of implementing research priorities and obstacles. Probing questions were used to resolve ambiguities. Analysis began after the first interview, and coding and classification began after two interviews. This helped us design the other needed questions to streamline the study path. Experienced faculty members comprised the FGD. By exploring their points of view, taking notes during the session, and recording their statements, deeper data was extracted. Interviews continued until data saturation.

Data was analysed using qualitative content analysis method. In this method, deeper data is extracted directly from raw data through a systematic classification process, codes and classes. Key concepts are extracted from the data, and data collection and analysis are done simultaneously. Also, primary codes of the semantic units are extracted and then the codes are divided according to similarities and differences into subclasses, and the subclasses into abstract classes and key concepts.

The accuracy criteria in content analysis are defined by credibility, transferability, reliability and verification features. So, the main concept of meaningful sentences was extracted in the form of codes and the code classification was started. All codes with a common concept were placed in one class and named. With each new interview, previous classes could be revised and even merged or a new class may be created. Then, under the supervision of a university professor experienced in analysing qualitative data, the classification and naming of the classes were reviewed. By forming the classification, the main themes of the study were extracted and the relationship among classes was determined.

The accuracy of the data (rigor) was used to confirm the credibility, and about the validity and peer-check, the method of asking the colleagues was used. The results of member-check were analysed and the classifications were approved by two professors. In addition, a researcher experienced in qualitative research was also consulted, and he approved the process. The results of the analysis and encoding of the interview were shared with four interviewees and they confirmed them.

In the case of transferability, it was attempted to thoroughly describe all research details from sampling to the process of data collection and analysis so that there was no ambiguity in transferability. As to the reliability in the present study, an external observer experienced in qualitative research was consulted to verify and validate the process of data collection and analysis. The reliability of the study was thus obtained. The use of external observer who had access to the items, such as interview tapes, texts, notes, analysed data, study findings, extracted meanings, codes, themes and classifications, details of the study process, initial intention of the study and the initial questionnaire, the interview questions and, in general, all the details of the study, in addition to reliability, led to the conformability of the study.⁹⁻¹²

Results

There were 22 academicians in the study and 4 themes were extracted from the 86 extracted codes, each with several sub-themes. The themes were: lack of the practical research priorities in education, lack of a comprehensive education research database for medical sciences, inadequate and improper budgeting in the educational sector, and the weakness of the research morale and teamwork (Table-1).

The first theme touched on the impracticability of priorities in medical education, and included various subsets such as generality of educational priorities and their incompatibility with the educational needs of the

university. The participants believed that the status of research priorities in education was not based on a correct rationale and on the applicability of the outputs and achievement of the educational needs of the country. In this regard, one of the participants stated: "Educational priorities are not based on the needs of the university and they do not help the researcher in choosing titles and research topics" (participant No. 12). "When the students are told that you can choose the research topic of their theses as one of the priorities of research in education from the site of the department of education of the university, they are confused and usually cannot make a good choice" said a participant in FGD. "Finally, they return to the supervisor with a sense of frustration and confusion and ask him to help them in designing and selecting the topic"(participant No. 3).

This leads to neglecting the ability of students, as well as reworking of the faculty and the confusion of research enthusiasts in the field of education.

The second theme was about the lack of a comprehensive research database in medical education. It was referred to as 'research re-working'. "Every year, we are faced with research topics and published articles with similar topics in the field of education," one of the professors said. "On the other hand, many issues are neglected by the researchers and are not welcomed by them"(participant No. 5 in FGD).

One of the participants believed that "the educational

Table: The results of the content analysis of data.

Category	Subcategory	Code
Not Applicable Research Priorities in Education	The general priorities of research in education	The frustration of choosing topics of priority interest
	The lack of research priority in education	The confusion of students and researchers in the choice of educational subjects
Lack of Comprehensive Research Database on Education	Re-work on research topics in education	Disparity of priorities with the university educational needs
		Approving similar and parallel topics in the field of education and neglecting many other issues
		Continuous changes in research programmes and projects
Inadequate and disproportionate funding in the research sector in education	Intergenerational discrimination and lack of fair distribution of funding in different research departments of the university	Approval of low budget for research in education
	Lack of research budgets in university education plans	The importance of more clinical research than university research
The weakness of the spirit of research and teamwork	Inadequate motivation to conduct research in education	Insignificant effort by the researcher
		Organization's reluctance to use research results in education
		Failure to prepare and foster a researcher's morale before entering university in college students
	The division of inappropriate research work among the members of the group	Non-assignment of curriculum units for research activities in education
		Lack of working culture in the country
		The division of inappropriate research work among the members of the group

plans and needs of the country are changing rapidly. Usually because of the long process of approving research titles, and other educational priorities emerge before the subject approaches the implementation phase. So, the researcher will be confused about whether to continue the project or start a new project in line with the new needs"(participant No. 7). This is due to the weakness of the system for registering the topics and lack of a comprehensive education research database for medical sciences.

In the third theme, the participants highlighted the disproportion of the research budget in university education. Some of the professors believed that university budgeting in the educational sector was very inadequate and disproportionate and there was a real discrimination in this section. One of the professors in the interviews said: "The university education budget is quite inadequate and insignificant. Researchers often have to lower the budget for their projects in order to have them approved by the preliminary research committee. Often, this amount is further reduced before the final approval, and ultimately the final approved amount is much less than the amount suggested by the researcher."(participant No. 4).

According to another participant, "Frequently in the approval meetings for research projects at the university, insignificant projects in the clinical sectors are approved with a lot of budget allocation, but good projects with even less budget in the educational sectors are not approved. This discourages researchers. I think this is a kind of discrimination in allocating funds to different sectors" (participant No. 1).

One of the professors said: "The university research deputy will request the appropriate amount of funds in the covered areas in the annual budgeting, according to the needs of different departments in its operational and strategic planning every year. Unfortunately, due to the budget deficit of the country in the last few years, the received amount is much less than the requested amount and this amount will be available to the university research deputy much later and slower in the year." (participant No. 2 in FGD). It seems that this issue is effective in lowering the budget of different research departments of the university and extending the time of project implementation.

The final theme was about the weakness of the research spirit and team working. The participants believed that this issue needed to be seen in the larger social perspective where most individuals prefer individual work over teamwork even though there is evidence of

greater effectiveness of teamwork compared to individual activities.

One of the participants said: "Teamwork in educational fields is so little and most professors prefer to carry out the research individually" (participant No. 9). The reason, according to some, was lack of appropriate division of the task in a team during research, and, according to others, the division of research points among the researchers and so fewer points for faculty promotion. One of the participants rationalised thus: "When our professors leave us with very difficult issues in the research field and we do not actually have enough training and education about it, we are disappointed, and we refuse to do research projects or we go to other professors" (participant No. 10).

Another participant stated: "The issue of the weakness of group work spirit has a cultural background in our country's education and it should be taught to them in practice in the early school years so that it can get reflected in their various projects during the academic years afterwards" (participant No. 11).

Discussion

To the best of our knowledge, the current study is the first of its kind done in Iran.

The importance of identifying research priorities and barriers to their implementation has been examined in many studies.^{2,4} The present study showed that the non-applicability of research priorities in education is one of the important dimensions in the non-implementation of research priorities.

A total of 86 codes from the interviews were identified as barriers to the implementation of research priorities in education, among which 4 themes were extracted after a final and comprehensive analysis. A study divided the barriers to research in Asia into six categories: social, cultural-religious, communication, educational management, faculty members, and information barriers.²

Lack of proper monitoring and evaluation of research priorities in education and their implementation by university deputies and educators was one of the most important barriers pointed out by the participants in the current study.

Lack of the application of research results in improving and promoting educational problems of the country was one of the main barriers in the implementation of research priorities in university education. Some experts in the country believe that lack of the application of research results are caused by the incompatibility of

research goals with academic research priorities.¹³

It seems that lack of the application of research results in education is not considered to be only a barrier but rather a negative consequence of the complex problems of the research system. Finally, it has a negative effect on the motivation of researchers to carry out research activities in the field of education.¹⁴

This was also presented in a study which pointed out that lack of the applicability of research priorities and lack of clear goals and objectives hindered the improvement of the university's research status and faculty.¹⁵

Another barrier, based on the results of the current study, was the lack of a comprehensive research database in medical education. Since the university, as an open system, is a part of its environment, the policy and strategy of managers and supervisors are effective in university research management. Therefore, establishing the mechanisms and research information databases in education, which can strategically link the levels of investment, planning, coordination, monitoring and evaluation of research, seems to be effective in the structure of the university, especially the deputy for the educational affairs.

A study confirmed the lack of a centralised research system to coordinate activities and the lack of data banks of the research studies as barriers to the implementation of priorities in research.¹⁶

Another study believed that the lack of a comprehensive bank of research in education and the lack of communication between researchers and policymakers of the university is one of the main barriers to research.¹⁷

Other results of the current study showed that inappropriate and inadequate budgeting of research in the field of medical education is another barrier to research. Studies have agreed on the existence of problems and lack of financial resources as the main barrier of the research domain.^{2,18} Developing countries cannot appropriately invest in the research area due to limited resources and they are mostly unable to meet the needs of the research sector, and this reflects in underdevelopment and low productivity of these countries in comparison to the developed countries.¹⁹

In this research, the weakness in the research spirit and team working of the researchers was found to be an important barrier to the implementation of research priorities in education.

Also, educational researchers rarely have access to coherent statistical methods and consultants in this field

to design studies (interdisciplinary and double-blind studies, random assignments and samples), and this makes the research process and division of the team working more difficult and may result in the insufficient knowledge and skills in this area, and the poor quality of published articles.²⁰⁻²²

This is also the case for the designers of research in the field of education, as we usually find only a few education research professionals in different departments of a university. Usually, specialists in this sector work part-time at several centres, and their mental and occupational engagements weaken the quality of the approved issues and the published articles.²³⁻²⁵

In a study, individual characteristics such as sociability and willingness to do teamwork were found to be effective in increased productivity of the researchers.¹⁵ Another study considered the weakness of scholarly spirit and lack of sufficient motivation by faculty as one of the barriers to research.¹⁹ In one study, about half of the professors considered lack of willingness and motivation to perform research activities as the main barrier to research.²⁶

One of the issues affecting decreased motivation in researchers in the education sector is the long gap between learning and its outcomes. In fact, the effects of these changes in curriculum and learning of individuals are usually vague and have no quality.^{27,28} Contrary to the effects of medicines, the curriculum is not prescribed for a standard condition, and it usually involves many factors. For example, teaching different subjects to the faculty members in a curriculum has different outcomes and results. This is very influential in conducting research in this field.²⁹⁻³¹

Conclusion

In order to overcome research barriers in education in Iran, the most important options could be modifying the attitudes and thoughts, encouraging team working skills, planning and prioritising proper budget according to the needs of the community, and organising research management in the country.

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