Original Article

Family medicine research in Kazakhstan: challenges, needs and support

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ABSTRACT

Family medicine (FM), a relatively new speciality, has actively addressed the issue of research, despite the fact that, until recently, the majority of family doctors defined themselves in terms antithetical to research. Initial attempts in developing countries have typically concentrated on clinical care and teaching, with engagement in research being less common. The aim of the study is to investigate family the FM specialists' perspectives on research engagement in Kazakhstan employing a mixed-methods research design with the collection of both quantitative and qualitative data. We surveyed 83 FM specialists to better understand the needs and barriers faced by this community in conducting research. Semi-structured interviews were conducted to obtain an in-depth picture of the issues. Understanding these issues is central to developing informed policies for promoting FM specialists' research engagement, as well as taking steps to build their research capacity. The study resulted in important findings in understanding the specialists' challenges in conducting research, and the needs and support provided to researchers in FM in Kazakhstan. The research barriers are a lack of time to conduct research, difficulty in publishing research, and a lack of cooperation between peers and research mentoring from experienced professionals. Specialists' needs include specialized training programs and internships, a team of like-minded people and research partnerships, and access to patient databases and archived data. The specifically targeted policies should be undertaken to facilitate the specialists' research careers by promoting research engagement, fostering research capacity, and recognizing FM as a specialty.

Keywords

family medicine, higher education and science, Kazakhstan, research engagement, barriers to research, needs in conducting research, support for research activities.

INTRODUCTION

The economic development of any nation is centered on research[1]. Various barriers to building a research career in higher education institutions cause difficulties in attracting academic staff, especially young specialists[2].

Research in family medicine (FM), a relatively young specialty, has become an important focus in recent years. For a long time, many family physicians saw their role as being separate from research[4]. However, even though FM has been practiced in various countries for over fifty years, some nations are still in the process of developing it. In these developing countries, the early efforts often concentrate on providing clinical care and education, with less emphasis on research. For FM to succeed as an academic discipline, its leaders must recognize the importance of producing original research. This not only enhances clinical practice but also helps FM gain wider acceptance in the academic community.

The discipline of FM lacks a consistent and steady flow of novel research on a global scale. Top FM researchers led an entire plenary with

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DOI: https://doi.org/10.3329/bjms.v23i4.76537

an interactive focus at the 2018 Society of Teachers of FM Conference to encourage more family physicians to solve problems and engage in research[3]. For more than a decade, the WONCA network has stated its concern about the importance of research in FM, and it used the recommendations from the 2003 Kingston Conference on Improving Health Globally: The Necessity of Family Medicine Research as the basis for advocacy, highlighting the significance of the specific needs and implications for developing countries that should be addressed while implementing these recommendations[5].

This raises the question of what kind of objectives and support FM specialists require in their research activities. This study identifies research attitudes, barriers to conducting research, needs, and national and institutional support provided to FM research in Kazakhstan[6]. The relevance of the research lies in its in-depth understanding of specialists' research engagement, their needs, and barriers to the conduct of their research. The study findings can contribute to promoting FM research, enhancing teaching and learning processes, and institutional improvement.

Literature review

For tenure-track academics to remain at a higher-education institution, research engagement has always been necessary. However, university researchers encounter a number of difficulties, including low priority and inadequate funding for research, the inability to balance teaching and research due to a faculty shortage and overload, a lack of academic writing abilities the lengthy and depressing submissions of research articles, a work–life imbalance, insufficient research funds, or job instability[7,8].

Barriers faced by researchers in Kazakhstan include a lack of funding from the Ministry of Science and Higher Education primarily the Samruk Kazyna national welfare fund), a lack of national funding, low wages for young scientists, a dearth of grants for doctoral studies, the inability to apply for doctoral studies, and a lack of proficiency in foreign languages, preventing researchers from using various methodological foreign sources. Challenges affecting researchers' working conditions and career prospects are a heavy workload related to official duties, few opportunities for career advancement, a lack of knowledge about other employment options, and a lack of potential funding sources for research projects. Moreover, the barriers include uncompetitive research staff (there is little or no information about Kazakhstani scientists and their research in open sources), low commercialization of research, inadequate equipment of research organizations and laboratories that demands new material and technical equipment, inadequate coverage of Kazakhstani journals in international databases, and weak investment at universities[9].

FM most clearly identifies itself as a generalist field; it does this by utilizing interpersonal dynamics and the viewpoint of the patient. Family doctors are educated to address both passive and active demand, and the clinical scope of FM spans the lifecycle, from self-empowerment through end-of-life care. Therefore, the FM research field covers a broad range of topics and is frequently influenced by the social, epidemiological, and biological sciences[10]. FM academics can defend involvement in any topic that might have an impact on the health of their patients or their communities. The unique settings that primary care providers work in and their scope of practice are evident from the literature; demonstrating that the types of research, and by extension educational issues, that arise in primary care and ambulatory care settings systematically differ from secondary and tertiary care settings[11].

Because FM is a relatively new specialty, many primary care specialists lack graduate training. An academic presence is needed in universities to provide clinical, educational, and research leadership for the development of a new specialty, which took more than 25 years in the UK. To gain respect from other specialties and to improve the general status and quality of practice, FM researchers' profiles were essential. The discipline of FM was initially established in academic settings in several areas (such as Palestine and Ethiopia), and the discipline is still challenged by the need to build capacity to support high-impact research[12].

Moreover, although many healthcare systems around the world are still in the early stages of developing research units with family doctor academics and primary care–specific research programs, many also lack the infrastructure to conduct research in primary care settings—in part because this sector is still underdeveloped when compared to specialties based in the hospital sector. The majority of primary care clinicians work in community programs or settings with little infrastructure for teaching and conducting

FM research. These constrained research infrastructure settings can be defined as any training or practice environment with a small number of personnel with original research experience. Such settings are distinguished by a lack of infrastructure, such as access to human resources for data collecting, help with data analysis, and mentors with academic experience. Hence, a crucial concern is how to provide support to FM staff for conducting research[13].

METHODS AND MATERIALS

Research design

To identify Kazakhstani FM specialists' barriers to conducting research, their needs, and national and institutional support provided for them, this study addresses the following research questions:

RQ 1. What are the research attitudes (research frequency and reasons for doing research)?

RQ 2. What are the challenges and barriers impeding research?

RQ 3. What research needs are faced, and what support is provided?

RQ 4. To what extent are research attitudes and barriers to research interrelated?

To answer these research questions, this study employed a mixed-methods research design. This is the best method for clearly identifiable cases because it offers a thorough understanding and special methodological benefits for researchers wishing to address the complexity of such research problems and issues.

Data collection, measurement, and analysis were manipulated in the study. It employed both qualitative and quantitative methods. A descriptive survey and interviews with FM professionals working at Kazakhstani medical universities were conducted to better understand the respondents' research participation, their requirements, and the obstacles to research in their field[14].

Sample and data collection

A Google Forms online questionnaire was distributed to FM specialists. It included items about the participants' demographics (age, sex, place of employment, level of education, and teaching experience), language proficiency, publication rate, frequency of research engagement, motivations for conducting research, and obstacles. Items regarding motivations for conducting research and obstacles were adapted from the questionnaire by Jamoom and Al-Omrani[15,16].

Eighty-three people ranging in age from 25 to 75 made up the survey sample, with an average age of 48.95 (*SD* = 11.3). Convenience sampling was carried out using WhatsApp's mobile instant messaging service. The survey participants were contacted with authorization from the university administration in accordance with ethical principles. Before the interview, the interviewees were informed of the details of the study, and their rights and privacy, and they signed a statement of consent.

The main challenges faced when doing research were identified based on interview data, and the participants' needs and support provided were categorized.

The study participants' demographic data are shown in Table 1.

Table 1. Participants' demographic characteristics

Demographic information	Survey		Interview	
	n	%	n	%
Sex				
Male	5	6.0	—	—
Female	78	94.0	8	100.0
Education level				
Bachelor's	23	27.7	—	—
Master's	28	33.7	1	12.5
PhD	32	38.6	7	87.5
Academic experience				
0–4 years	8	9.6	—	—
5–9 years	14	16.9	—	—
10+ years	61	73.5	8	100.0
Total	83	100.0	8	100.0

Data analysis

Data analysis involved mixed methods, such as quantitative frequency analysis and qualitative thematic analysis, to gain an in-depth understanding of how research attitudes, barriers, and needs are conceptualized and defined by the specialists, as recommended by Daudt .

The quantitative research data were coded in MS Excel. The descriptive statistical analysis, reliability analysis,

Spearman's rank correlation analysis, and Pearson chi-square test of significance were used to examine the quantitative data using SPSS Statistics software.

Content and thematic analysis were used to interpret the qualitative study findings. The goals of the content analysis were to determine trends and patterns in the words used, their frequency, their relationships, and the structures and discourses of communication. These are used to describe the characteristics of the collected data by systematic coding and categorization. The thematic analysis was "a method for identifying, analysing and reporting themes within data". This means that the data were carefully examined numerous times to uncover patterns, themes, and sub-themes as well as to divide the data into various categories. Based on this, the findings of the study were outlined, and their implications and limitations were discussed.

The survey and interview findings were compared to determine the study's concurrent validity. The testing scales are of high quality and reliability because Cronbach's alpha was 0.86 for the Research Engagement Scale and 0.84 for the Research Barriers Scale.

RESULTS

Research frequency and reasons for doing research

The survey showed that Kazakhstani FM specialists are often engaged in research (51.8%), and only 1.2% of them stated that they never conduct research.

Table 2 presents descriptive statistics for the specialists' reasons for conducting research, categorized by the total sample of respondents and their sex.

Table 2. Reasons for conducting research

I conduct research . . .	Mean	*SD*	Min	Max
because it is good for my professional development.	4.10	0.78	2	5
because it enhances my teaching skills.	3.96	0.86	1	5
because it will help me get a promotion.	3.64	1.06	1	5
to promote my self-confidence as a teacher.	3.76	0.98	1	5
to become more critical and analytical about my teaching practices.	3.86	0.86	1	5
to develop my research skills.	4.07	0.71	2	5
to raise my awareness of my students' needs.	3.28	0.98	2	5

Table 3. Challenges in doing research

Themes	Sample interview quote	%
Stringent requirements for research	Since the late 1990s, when evidence-based medicine began to develop, the requirements for research have changed; they've become more stringent in terms of research methodology. (S1)	12.5
Difficulty in sampling and formulating topic and questions	Sampling is harder to conduct in FM research. Unlike FM abroad, we'll definitely talk about interdisciplinarity or the involvement of the subject of research in FM will be disputed, referring it to public health; that is, they begin to separate the fields. (S1) Family doctors have patients with medically unexplained symptoms, whereas other clinical studies, unlike FM, have clear inclusion and exclusion criteria and clearly described symptoms. (S5) The choice of research topic can be difficult. (S6)	37.5
Lack of experts in FM research	If someone wants to conduct a study in FM, it's difficult to formulate clinical research questions, and there's a risk that experts won't understand. Few experts understand what FM is. (S1) There's a lack of academic support, mentoring, and competent research supervisors familiar with statistical data processing, selection of research methods, etc. (S7)	25.0
Difficulty in dealing with patients	It's easy to measure the parameters of the body—for example, the reaction of heart rate to some drugs or changes in blood lipids or blood sugar in response to some medications—but it's more difficult to study human behavior, human attitudes, human psychology. (S1) The population is unwilling and unmotivated to participate in a study. (S2) It's difficult to collect data and organize studies in FM because patients appearing for an outpatient appointment may not come next time; they don't stay for a certain time, like they do in the hospital. (S6)	37.5
Misunderstanding the scope of research	Research in Kazakhstan is officially divided into areas such as public health and medicine, which shouldn't be mixed. There's a general misunderstanding of what FM is and a lack of research schools in FM. (S1) There's a misunderstanding that FM and public health are opposite directions, although primary healthcare is related to public health. (S5) FM in Kazakhstan isn't considered a field of serious research, like narrow specialties such as cardiology, surgery, or psychiatry. People don't understand what one can research in medical centers. (S7)	37.5

Themes	Sample interview quote	%
Lack of patient databases and access to data	There's no central patient register due to weak information platforms, poor statistics, and poor registration. Private clinics, hospitals, and primary healthcare facilities have separate databases with no connection between them. Thus, there's no opportunity to conduct large-scale epidemiological long-term studies. (S1) There's no access to data from the Electronic Healthcare Center such as medical center reports on schoolchildren's medical examinations or morbidity and mortality rates, even upon request. (S2)	50.0
Lack of funding	There's a lack of grants for research specifically in FM. (S5) The low salary level of the department's assistants in comparison with practical healthcare leads to a shortage of personnel. (S8) The state doesn't give preference to research in FM. They just need practical doctors: the workhorses of the GP, not researchers. (S8)	62.5
Excessive workload and lack of time	Research is impossible due to the excessive workload of medical workers, documentation, and a database that they have to process. (S2) There's a huge load due to a large number of students undergoing basic training at FM departments due to the state's high need for specialists in general practice. (S8)	50.0
Doctors' non-involvement in research	Family doctors have no motivation to conduct research. (S2) Family doctors aren't involved in conducting research. (S3)	37.5
Lack of knowledge and training	FM isn't included in the list of priority directions of research (approved by the Ministry of Science and Higher Education) for internships, unlike other clinical specialties. (S1) There's a lack of training and knowledge of management and statistics needed to work for yourself and with a team, to engage in a project. (S4) Family doctors, like all doctors, are very disconnected from statistics; they're afraid of some fantastic research methods. (S5) Residency programs lack general research training. Undergraduate students study evidence-based medicine and research management, but they don't apply this knowledge and these skills in practice. There's no training on research even in master's programs. (S5)	87.5
Lack of motivation and staff shortage	Family doctors and general practitioners aren't engaged in research and aren't very (or at all) interested in doing it. (S7) Often one or two people at the department (the head and a professor) are responsible for research, and the rest are all engaged in teaching and medical work. (S8) There's a staff shortage at the department. (S8)	37.5

Figure 1 presents publication activity in the last 5 years.

Figure 2 shows that 61.4% of the specialists had published in journals from the list of the Committee for Quality Assurance in the Sphere of Science and Higher Education (CQASSHE) defined by Kazakhstan's Ministry of Science and Higher Education, and 55.4% in Scopus-indexed journals. However, most FM specialists in Kazakhstan do not have any publications in Web of Science–indexed journals (71.1%), 44.6% have not published in Scopus-indexed journals, and 38.6% have not published in the journals from the CQASSHE list.

Research challenges, that the specialists face, were also identified through the interviews conducted. Table 3 presents themes and quotes from respondents.

DISCUSSION

To address the research questions about attitudes toward research (RQ1), challenges and barriers in conducting it (RQ2), support available at national and institutional levels (RQ3), and the relationship between attitudes and barriers (RQ4), this study used both qualitative and quantitative methods. This approach allowed for a detailed comparison of the results. The quantitative data revealed key differences in motivations for doing research, trends in publication, and obstacles faced by researchers. Meanwhile, the qualitative data provided deeper insight into the challenges of conducting research, particularly the difficulty in generating new ideas[17].

The study revealed that only half of the specialists often engage in research (51.8%), stating reasons for conducting research such as contributing to professional development, developing research skills, enhancing teaching skills, making themselves more critical and analytical regarding their teaching practices[18]. However, most do not have any publications in journals indexed in Web of Science (71.1%), and in the last 5 years 44.6% and 38.6% of them have not published in Scopus-indexed journals or journals on the CQASSHE list, respectively. This finding relates to the other result obtained from the interviews. The interviews showed that no targeted university support exists for them in fostering their research publications and building their overall research capacity. This is in contrast to a study by Kuzembayeva et al. (2022) on research support in other fields and universities in Kazakhstan, indicating the availability of research schools, financial motivation

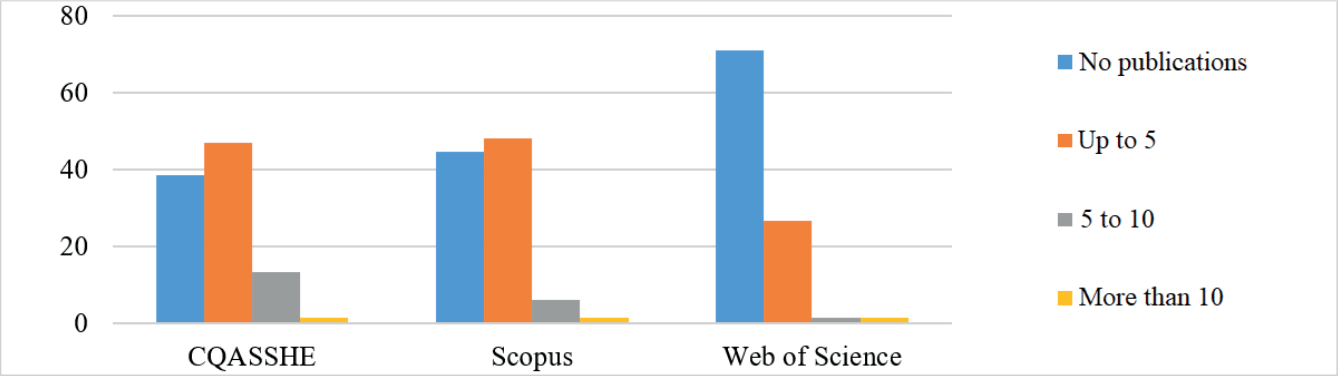

Figure 1. Publishing activity in the last five years (n = 83)

for publishing in high-ranked journals, and partial sponsorship of graduate studies. Support measures provided to FM specialists include institutional funding of research projects, grant funding from the Ministry of Science and Higher Education, and university support in holding conferences and making business trips[19].

The research barriers, as identified in the descriptive survey, include a lack of time to conduct research, difficulty in publishing research, lack of cooperation between peers, and the need for research mentoring from experienced professionals[20,21]. This result aligns well with the results of the interviews with the specialists and previous studies by O'Connor., stating that academic faculty cannot balance teaching and research because of an overload situation, and Mrowinski, indicating long review (or desk rejection) times and poor reviews in research publishing. The major challenges emerging from the interviews are a lack of knowledge and training (87.5%), a lack of funding (62.5%), a lack of patient databases and access to data (50%), and an excessive workload and lack of time (50%). Other challenges include misunderstanding the scope of research in FM (37.5%) and a lack of experts (25%), which is in line with previous studies. Saidiya highlight the view of FM as the center of the healthcare system, with prevention being its core business, a holistic approach, continuity of care, a community-based character, and making a positive contribution to the healthcare system, but most medical professionals are unclear about what exactly the role of a FM specialist is, or should be[22]. Family physicians themselves feel that their function is not well understood among other medical specialties. In addition, they are not respected by other medical disciplines. A qualitative systematic review exploring students' perceptions and attitudes about FM in Australia, Canada, Japan, Malaysia, Spain, and the UK found that students perceived FM as a career of low interest and low prestige. Essuman reported the same findings in Ghana[23,24].

These issues have led to research policies in Kazakhstan such as rejecting grant proposals and funding applications, and difficulties in planning research and preparing doctoral theses. According to Howe and Kidd, in high-income countries there is currently a bias in research funding: what research is done depends heavily on the priorities of the sponsors, especially the private sector. We agree with Stigler that, although there are different paths to creating a modern healthcare system that achieves effective universal health coverage through strengthening primary healthcare, much of the evidence and leadership for such initiatives will come through research findings and their application to policy and practice[25].

Another challenge in conducting is doctors' non-involvement in studies (37.5%). This is also identified by Cole, indicating three main barriers such as the busy nature of daily practice, perceived irrelevance of research to practice, and inadequate training to engage in research. Another important finding, related to difficulty in dealing with patients (37.5%), was also reported in prior studies. As stated by Bird, researchers attempting to include patients and family caregivers often face challenges. As indicated by Harrison and Frampton, patient engagement in research can be messy because it often requires added time, resources, and expertise to help facilitate the engagement, which may not always be available[27]. Manafo highlight that it can be challenging to manage the expectations of all those involved and define clear roles for the patients. Over

the past decade, patient engagement has emerged as an important way to help improve the relevance, quality, and impact of health research; however, we agree with Easley that there is limited consensus on how best to meaningfully engage patients in the research process[26].

This study found that the needs of FM specialists include specialized training programs and internships (87.5%), a team of like-minded people and research partnerships (75%), and access to patient databases and archived data (50%). The need for training programs in FM is consistent with other reports, confirming that many countries offer family doctors fewer opportunities to develop their academic competencies than other specialists (Medical Schools Council, 2017). According to Koshmagambetova, it is necessary to focus on the integration of special research skills in educational programs at all levels of education because the specific research skills obtained are not static and require constant improvement[27]. The need for access to patient databases and archived data is in line with the observations of Howe and Kidd, who state that access to data from populations and communities is the only way to understand the full picture of a country's health: this is the rationale for building primary care-based research networks. In the United States, the Patient-Centered Outcomes Research Institute has invested tens of millions of dollars to build clinical data research networks with a national distribution, making it easier to conduct multisite studies by allowing access to well-curated EHR data at all member institutions. Such resources should facilitate research in the "real world" environment; that is, primary care practice[28].

These findings support the ideas of Hutt, who states that an academic presence is needed at universities to provide clinical, educational, and research leadership for the development of a new specialty. This took more than 25 years in the UK, and Howie and Whitfield highlight that FM researchers' profiles are essential to gain respect from other specialties and to improve the general status and quality of practice[29].

The most obvious finding to emerge from the analysis of the interview data is that there is no targeted support for research in the field. Half of the specialists interviewed indicated that there is national and institutional support for research in FM such as grant funding from the Ministry of Science and Higher Education and universities; however, 12.5% of specialists state that no support is provided in the field[30,31].

Another promising finding identified by employing Spearman's rank correlation analysis is that a positive correlation exists between research attitudes and publishing practices, and a negative correlation between research barriers and publishing rates[32]. It indicates that FM specialists are motivated to conduct and publish research, although the publishing rate is lower in those facing research barriers such as insufficient knowledge and skills (as well as language skills) required to conduct quality research and a lack of interest in research. Accordingly, one might conclude that universities should provide faculty members with support mechanisms for successful and deliberate upward progress rather than being caught in an uneven drift, which is consistent with the concepts of O'Connor[33].

CONCLUSION

This study resulted in important findings in understanding Kazakhstani FM specialists' challenges in conducting research, their needs, and the support provided to researchers. Only half of the specialists are often engaged in research to develop professionally and foster their research skills, and to become more critical and analytical regarding their teaching practices.

The research barriers identified in the survey include a lack of time to conduct research, difficulty in publishing research, lack of cooperation between peers, and a need for research mentoring from experienced professionals. The analysis of the interview data yielded 11 categories related to research challenges with 38 codes under these categories, nine categories with 32 codes related to their needs, and three categories with eight codes related to the national and institutional support provided to them. The major challenges emerging from the interviews include a lack of knowledge and training, lack of funding, lack of patient databases and access to data, and excessive workload and lack of time.

The needs of the participants include specialized training programs and internships, a team of like-minded people and research partnerships, and access to patient databases and archived data. Half of those interviewed indicated that there is national and institutional support for research in FM such as grant funding from the Ministry of Science and Higher Education and universities; however, it covers only a small number of academics.

The publishing rate is lower among those that face the research barriers of lacking the knowledge and skills

necessary to conduct quality research and a lack of interest in research, but research attitudes and publishing practices positively correlated with each other, indicating that individuals are motivated to conduct and publish research. Thus, the findings confirm that Kazakhstani FM specialists need specifically targeted policies to facilitate their research careers.

Limitations and future implications

Due to the anonymous nature of this research, the likelihood of bias is reduced. However, this does not negate the limitation that this study relies on self-report measures by respondents. This study's findings could serve as a foundation for future research on Kazakhstani FM specialists' needs and barriers, which may contribute to developing informed policies for promoting research engagement, fostering research capacity, and recognizing FM as a specialty.

Funding

This research was funded by the Science Committee of the Ministry of Science and Higher Education of Kazakhstan (grant no. AR09260428).

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Conflicts of interest

The authors have no conflicts of interest to declare.

Institutional review board statement

This study was conducted according to the guidelines of the Declaration of Helsinki, and it was approved by the Ethics Committee of West Kazakhstan Marat Ospanov Medical University, Kazakhstan.

Data availability statement

The data supporting this study are included within the article and/or supporting materials.

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