



## The Barriers of Conducting Medical Research in Saudi Arabia: A Review

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<p><b>Abstract:</b> Research is a crucial component of scientific and medical progress, generating new information and advancing healthcare knowledge. In the context of Saudi Arabia, it is essential for healthcare professionals and students to engage in research activities to stay current and improve patient care. This study explores the attitudes, knowledge, and barriers faced by healthcare professionals in Saudi Arabia regarding research analysis and writing. <b>Method:</b> A comprehensive literature search was conducted, focusing on English-language scientific literature published between August and September 2023, primarily through PubMed, Embase, Google Scholar, and the Saudi Digital Library. Reports written in English related to research in Saudi Arabia were considered for analysis. <b>Result:</b> The study identifies several barriers faced by Saudi healthcare workers in research, including issues like time constraints, lack of mentoring, and inadequate knowledge. The attitude and knowledge toward publishing research among medical residents were found to be suboptimal, with some individuals reporting low knowledge and unacceptable attitudes. Challenges such as the research approval process, heavy workloads, and gender disparities in research participation were also highlighted. <b>Conclusion:</b> Overcoming barriers to research and promoting a research culture is crucial for strengthening the scientific value of Saudi Arabia. By addressing the identified obstacles and implementing recommended measures, Saudi Arabia can contribute to the global research community and achieve its Vision 2030 goals, particularly in the healthcare sector.</p> <p><b>Keywords:</b> Research in Saudi Arabia, Conducting Researches, Barrier of Research, Barrier of Conducting, Research Obstacle, Research Barrier, Obstacle of Conducting Research, Barrier of Conducting Research.</p> <p><b>Copyright © 2024 The Author(s):</b> This is an open-access article distributed under the terms of the Creative Commons Attribution <b>4.0 International License (CC BY-NC 4.0)</b> which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use provided the original author and source are credited.</p>	<p><b>Research Paper</b></p>
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### INTRODUCTION

Research is diligence that may be in the interest of researchers in one way or another. It is the foundation of both scientific and medical progress [1]. New medical information might come from conducting research. It is important that the healthcare workers develop their knowledge through research work. Exposing medical students to research during the early stages of education can enhance and progress their future careers [2]. Healthcare professionals are required to stay current on new developments in their field to be aware of all management updates and recent guidelines. As a result, training and knowledge of healthcare providers should always stay up to date to provide the best care to their patients. Identifying the barriers that limit research conducting and productivity is the first step toward increasing research output in terms of both quantities. More importantly, quality.

There is no doubt that evidence-based medicine has contributed significantly to the notable advances in current medical practices. It is better that all healthcare providers take responsibility for publishing research. To keep the research cycle moving, in addition to motivating students in health sectors to do so as well. Evidences suggest that postgraduate medical trainees who participate in adequate research activities have better critical thinking skills, medical supervision, and lifelong learning [3, 4]. Since replacing the individualized, unsystematic decisions in clinical practice in 1992, evidence-based medicine has been the accepted approach to patient care.5 Clinical research is the foundation of evidence-based medicine and a key to providing the best possible care for patients [6-8]. Research activities have been improving recently in Saudi Arabia. The number of publications in health science has significantly increased between 2008 and 2017, with an annual growth rate of 14.1% [6-9].

A cross-sectional study conducted in a military hospital in Saudi Arabia found that most of the general practitioners who were included in the study had no research publications and were not working on any research projects, despite the fact that most of them had positive attitudes [3-10]. For example, the field of family medicine is still developing and is a relatively new one in Saudi Arabia. The aim of this paper is to compare the results of the studies that discussed the obstacles to publishing research, and thus, extract the benefits to be compared in an easier way. To avoid repeating the past, early research should therefore be prioritized. Research activities may be aided or hindered by a variety of factors. The potential for patient benefits, financial incentives, and interest in research were all shown to be among the key drivers encouraging participation in research [11, 12]. Also, the biggest obstacle in several countries was a lack of time set aside for research activities in the institutes [13]. This emphasizes the significance of carrying out investigations that may aid in assessing knowledge levels to allow for adequate planning to subsequently increase knowledge levels and practice essentials. In addition, we conducted a qualitative interview consisting of 6 questions among dental healthcare givers in Riyadh, Saudi Arabia. In which we asked about their opinions. The aim of the interviews was to be close to the reality of the Saudi health community from an expert view, and to sharpen our analysis of the results of the reviewed studies. As a result, we carried out the current study to investigate Saudi Arabian healthcare givers' attitudes, knowledge, and barriers regarding research analysis and writing.

## METHOD

A comprehensive literature search was conducted, mainly using PubMed and Embase, Google Scholar, Saudi Digital Library. Which was limited to publications written in English during AUG 2023 and Sep 2023 targeted the English-language scientific literature published through electronic search engines. The criteria for retention of reports for further processing were the following: reports written in English, reports concerning on research in Saudi Arabia, reports for which neither the abstract nor the full text could be obtained were eliminated, duplicated reports were excluded.

## RESULT

After going through several published reports in the same regard, it was found several barriers that most of Saudi health workers face. For example, conducted a cross-sectional survey that was distributed to four universities in Saudi Arabia: Alfaisal University, King Abdulaziz University, and King Saud bin Abdulaziz University for Health Sciences in Jeddah and Riyadh [14]. Found significant relations in a sample size of 435 participants, first, they found that the relationship between involvement in research and academic sector is significant. Second, a significant relationship between

higher (Grade Point Average) and output of research. Third, generally comparing second-year students to other years, they were statistically much more likely to participate in research. For the barriers, students who considered difficulties said that lack of time was the biggest one (51.5%), followed by lack of mentoring (41.8%) and lack of knowledge (34%). Conducted a cross-sectional study targeted the Saudi medical residents who were enrolled in the Saudi Commission for Health Specialties. Reported the attitude and knowledge toward publishing research, and it was found that of the 218 individuals, the majority (60.1%) had an unacceptable attitude ranges (between 26% and 50%), while 38.1% had low knowledge ( $\leq 25\%$ ). It showed also that (63.3%) had previously published a research paper [15].

One study conducted by (Saud AlEnazi) who investigated perceptions, barriers, and attitudes toward research among in-training physicians in Saudi Arabia. It showed that of 654 medical and surgical residents, female residents were substantially more likely than male residents to participate in research and to publish papers. Additionally, compared to married people, more single people participated in research. Senior residents wrote substantially more papers on average than did junior residents. 282 people, or 65%, were barred from taking part in research activities due to the difficulty of the research approval process. In addition, 335 residents (77.2%) voiced concerns about a heavy workload [16]. Also, one study by (AlSardi) who conducted an online survey targeting gastroenterologists in Saudi Arabia, reported that out of 214 physicians, insufficient research time was the most common reported barrier with (78.8%). Followed by a lack of funding and compensation with (77.6%) and lack of a statistician (68.2%). Additionally, Improvement of personal C.V and enhancement of research skills are the two most reported goals, 81.1% and 80%, respectively [17]. (Soubhanneyaz) Conducted a cross-sectional study among 132 family medicine residents in the Joint Program of Family Medicine Post-Graduate Studies, Medina, Saudi Arabia. The findings revealed that male resident exhibited a significantly higher positive attitude towards research than females, comparing with Saud AlEnazi, *et al.*, Female tend to participate and publish more. A second finding by Soubhanneyaz, *et al.*, Showed that about 47% agree on lack of interest as a barrier, also 56% agree on lack of time due to being over-burdened with education. Another finding, 56% agree on lack of reward and/or motivation as a barrier, also 44% agree on lack of research curriculum. Furthermore, 59% agree on inadequate financial support and 55% agree on poor accessibility to database (files) [18].

Another study by (Al-Abdullateef) targeted the attitude and practice of research among doctors in Riyadh Military Hospital primary care centers, Saudi Arabia. It showed that out of 97 participants, 64 (66%) said that they were interested in doing their own study.

The most common reason given for not taking part in research was lack of time (83.5%). Lack of support was the second most often cited cause (58.8%). Other obstacles mentioned by six general practitioners included a shortage of trained statisticians and labor [19].

## DISCUSSION

In this paper, we analyzed the results according to previous published articles and the we discussed the most common problems facing researchers, as time, financial and moral support are among the most obstacles. We hope that colleagues in all fields publish more of this matter, so that most problems and methods for solving them will be updated.

The aim of this study is to show significant findings that were reported as barriers in the medical fields, which are widespread generally in Saudi Arabia and many other countries. For example, the duty time being identified as a major barrier suggests that researchers in Saudi Arabia face challenges in balancing their time and life responsibilities with conducting research. This could indicate that limited time availability hampers the progress and productivity of researchers. Also, due to the demanding curriculum, it was thought that a major obstacle to conducting research in medical field students was a lack of time (Siemens). Furthermore, increasing awareness about achievement and the reputation gained from publishing research will make researchers rearrange their daily priorities and find the right time. Time is a universal issue; most healthcare givers are overwhelmed.

A shortage of research specialists remains the probable reason [20]. Another finding shows that publishing research is not a requirement causes a lack of institutional or organizational emphasis on disseminating research findings. This could potentially discourage researchers from investing time and effort into conducting studies, as the incentives for publication may be limited. Furthermore, the residency program's demand for research was linked to noticeably higher study and publication outputs both during and after residency training [21]. This as a requirement is beneficial for academic section with resident and teaching faculty, but not for practical medical provider.

Also, lack of data, and material sources indicates that researchers in Saudi Arabia may encounter difficulties in accessing necessary resources, such as equipment, laboratory supplies, or data sources. This scarcity can hinder the execution of research projects and limit the scope of investigations. Furthermore, technical difficulties could refer to challenges related to technology infrastructure, data analysis software, or availability of advanced research tools. These obstacles can impede the progress of studies and hinder the ability of researchers to effectively analyze and interpret their findings. In Saudi Arabia, and as an example, there were

several obstacles noted, including the inability to access records in the event of computer failure or power outages, the time required for data entry, the absence of IT technical support, the complexity of the technology, and the problematic patient-doctor interactions. Many physicians faced technical difficulties in electronic devices like in medical recording, and therefore this can apply in using electronic devices in general [22].

Additionally, the lack of motivation among researchers raises the possibility that there is a problem with intrinsic motivation or that there are other variables at effect that do not encourage participation in research activities. This could be attributed to various reasons, such as limited recognition, inadequate support, or absence of a research-oriented culture within the academic or professional environment. (Sozer) stated that being recognized and rewarded are crucial motivators that encourage people to act more voluntarily and joyfully, and the family affects the motivation level of the individual consciously or unconsciously [23].

One additional barrier which is lack of interest, this may indicate a mismatch between research topics and the individual preferences or career aspirations of researchers. It could imply that the current research domains or themes may not align with the researchers' passions, leading to reduced enthusiasm and productivity. Also, previous experience matters a lot, and this was a major barrier in their future research interest [24].

Researchers face lack of funds; the scarcity of funds highlights a financial constraint faced by researchers in Saudi Arabia. Insufficient funding can restrict their ability to conduct comprehensive studies, obtain necessary research materials, or attend conferences and workshops, thereby limiting the overall quality and impact of their research.

There is a struggling issue in finding participants, difficulties in finding participants can hinder the recruitment process for research studies. This challenge may arise due to various factors, such as limited sample sizes, specific eligibility criteria, cultural considerations, or logistical issues. Also, the lack of an adequate participant pool can limit the generalizability and validity of research findings. The mention of unacceptable attitude ratings suggests that researchers in Saudi Arabia may face negative perceptions or judgments from key stakeholders, such as supervisors, peers, or institutional authorities. These adverse attitudes can affect researchers' confidence, hinder collaboration opportunities, or impede the support system necessary for conducting successful research. For example, numerous studies have indicated that students are anxious and feel insecure about doing research and dealing with research-related concerns [25].

The shortage of trained statisticians highlights a specific skill gap within the research landscape in Saudi Arabia. Adequate expertise in statistical analysis is crucial for accurate data interpretation and robust research outcomes. The scarcity of statisticians can impede the quality and reliability of research findings. Also, (Miles) revealed that while most participants did not at first appreciate the significance of their college statistics and probability instruction, they later discovered the skills to be useful in their careers. The distinction between statistical applications in clinical and research settings shows a continuous divergence from the historical perspective that medical students should only learn about statistics in case they do research in their future careers as doctors [26].

Also, some of research centers in Saudi Arabia face bureaucratic procedures to obtain ethical permission, of which research approval process can delay time and funds, which can also hinder timely execution of studies and discourage researchers from pursuing their research goals.

The significant relationship between involvement in research and the university implies that universities in Saudi Arabia play a crucial role in promoting research engagement among academics. This finding suggests that institutional support and encouragement can positively influence researchers' involvement in research activities.

The significant relationship between higher GPAs and research output suggests a positive correlation between academic excellence and research productivity. This finding implies that individuals with higher academic achievements are more likely to engage in research activities and produce a greater volume of research output.

### Recommendations

- Introducing the research subject in the preliminary studies curriculum for preparatory year students.
- The inclusion of educational programs that include the idea of points and prizes for students, and therefore, for the frequent publication of research, students receive honorary awards from the deans of the colleges or medical facilities.
- Motivating all healthcare workers to publish research through the launch of government programs that help students and caregivers to publish the largest possible amount of research.
- Due to the difficulty of reaching the participants, we suggest creating electronic applications that give discounts and prizes to the people who participate most in scientific research.

- Research categories in hospitals on which promotions are based, and then on practical experience.
- Research centers implement easier protocols for all kinds of studies.

## CONCLUSION

Obstacles to publishing research have always been one of the reasons leading to the weakness of the scientific value of a particular country, and therefore we would like to help present the reasons leading to these obstacles in a concise manner. There are many programs that help create a pyramid composed of a research supervisor and researchers, regardless of who sponsors them. Many of the barriers to publishing research can be overcome with a little motivation and time. The Kingdom of Saudi Arabia is

Currently making tremendous developments in all fields in order to achieve Vision 2030, and among the sectors that are being developed intensively is the health sector. In this research, we present the problems and hope that the global community will provide solutions.

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