

Challenges and Barriers Experienced by Medical colleges faculty members in Conducting Research, University of Benghazi

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Abstract

Scientific research is a methodical investigation designed to address a problem and serves as a primary catalyst for societal advancement, regarded as a crucial indicator of growth. In addition, the university's scientific research plays a significant role in improving the community. Accordingly, the present study attempts to investigate challenges faced in conducting research from the perspective of Medical Faculty members at Benghazi University. A descriptive cross-sectional study was conducted to accomplishment of research question. The questionnaire selected as a tool, the online questionnaire, has been distributed in a Google Form for ease and efficient data collection. The questionnaire was adopted from previous literature and validated by experts. The quantitative data that gathered from teaching staff from the medical faculty's Public Health, Pharmacy, Biomedical Science, Medicine, and Dentistry, and analyzed by SPSS version 26. The statistical tests used were percentages, frequencies, and means. One of the more significant findings to emerge from this study is that the most reported barrier was personal challenges. The findings indicate that 84/ (56.0%) participate in terms of personal challenge. The statement of (The pressures resulting from the faculty member's obligations) was higher than the other statements. Just about 23 (15.3%) of medical faculty members indicated that the lack of foreign languages in which scientific journals are issued is a personal challenge. In addition, based on the results, the second barrier from the point of view of participants was the institutional and administrative. Financial constraints and Social and cultural barriers ranked third and fourth as barriers to the results of this study, respectively. The last barrier was the technical and infrastructural limitations. The findings indicate that research activity is hindered by personal limitations, including time constraints and skill deficiencies, as well as by broader institutional, financial, technical, and societal factors. Future research should investigate these barriers in depth by using a qualitative study approach.

Keywords. Research, Teaching staff, Medical University, Barriers.

Introduction

In recent decades, research has been so successful in advancing affairs, it is now regarded as a crucial component of development (1). Specifically, society can benefit greatly from health research since it can offer valuable insights into disease trends and risk factors, treatment or public health intervention outcomes, functional abilities, care patterns, and health care utilization and costs (2). Without a doubt, the degree to which research is responsive to societal demands and expectations determines its efficacy and productivity. The nation's research capabilities should meet the fundamental demands and expectations of society since, in the absence of such capabilities, research will lose its dynamic and decisive position and turn into a luxury and unnecessary category (3).

The primary institutions for research and development within countries are regarded as universities and research institutes (4). University research is particularly interesting because it has a large variety of clinical and/or laboratory facilities as well as a research staff. The goal of university research is not only to gather new information but also to teach students about it (5).

The origins of Libya's Higher Education (HE) system can be traced back to December 1955, marking the issuance of a Royal Decree that founded the University of Libya (Al-Jama'a Al-Libya) under the initiative of King Idris I. The initial location for the establishment of the first two faculties, namely the Faculty of Arts and the Faculty of Education, was in Benghazi, both of which were established through the same Royal Decree (5). Currently, Libya has seven general universities and three specialized universities, with around 340,000 students enrolled for the academic year 2008/09. About 57% of these students are female, and over 90% attend public universities (6).

The research in Libya in general, the scholarly output of the academic personnel affiliated with Libyan universities remains significantly limited. For instance, in 2007, examination of the published medical literature indicated that the mean annual publication rate at Al-Fateh Medical University stood at 1.4 articles per 100 academic staff members (7). Four primary factors may account for the challenges encountered by scientific research in Arab nations broadly, and specifically in Libya: 1) Emigration of skilled professionals, 2) Insufficient financial resources, 3) Inadequate scientific infrastructure coupled with unqualified support personnel, and 4) Excessive teaching responsibilities (8).

It has been argued that either in Libya despite having the highest research and development (R&D) intensity and the largest Gross Domestic Expenditure on Research and Development (GERD) as a percentage of GDP in 2014, Libya shows a significantly low level of contribution and output in this field compared to other Arab nations. This discrepancy may be attributed to a lack of awareness or reporting. Furthermore, the country's deficiency in vision and strategic planning is highlighted by the disproportionately low number of researchers and the excessively high ratio of technical personnel per million inhabitants when compared to its Arab counterparts (9). One of the most significant current discussions is the challenges that faculty members who conduct research. Although the massive role of the university research in the community improves general and health-specific outcomes, there are numerous challenges faced by the teaching staff in conducting the research. For instance, the high barrier that has faced the faculty members in developing countries was the lack of access to information sources, facilities, low funding, low motivation, and high workload (10-12). The challenges in some developed countries, for instance, Australia, academic staff members' unreasonable demands for research productivity. In the USA workload was (13,14). In Libya, a number of studies have found that faculty members suffer greatly from both material and cognitive barriers, as well as those pertaining to working conditions that result from studying in Sabha University. Furthermore, in Sabratha University, the three main challenges are the absence of a research strategy which the second that the lack of resources, and the Lack of incentive for scientific research (15) (16).

Methods

Study design and setting

This study was a cross-sectional study conducted using a web-based and hard copy questionnaire that was developed and distributed. The questionnaire was adopted from a previous study (17). The questionnaire consists of three parts: first, about background variables: age, experience, etc. The second part is about First: Personal Challenges, Second: Administrative Challenges, Third: Financial Challenges, Fourth: Social Challenges, and Fifth: Technical Challenges. In addition, it was a closed-ended question approach.

Target population

A convenient sample of faculty staff and teaching assistants in several medical faculties at the University of Benghazi, including the faculty of public health, medical, dental, biomedical, and pharmacy.

Statistical Analysis

All statistical analyses were performed using SPSS 26. The statistical tests used in this study were percentages and frequencies.

Ethical consideration

First, the university's approval was obtained. Then, the participants' consent was obtained, the purpose of the study was explained to them, and they were informed that it would be processed only for scientific research purposes.

Results

From the data in Figure 1, it is apparent that 40.70% were public health participants, which was the highest. After that, in the second order comes the medicine faculty with 40%, followed by biomedical sciences and pharmacy at 9.30% and 6.70%, respectively. The lowest percentage was for faculty members at the College of Dentistry.

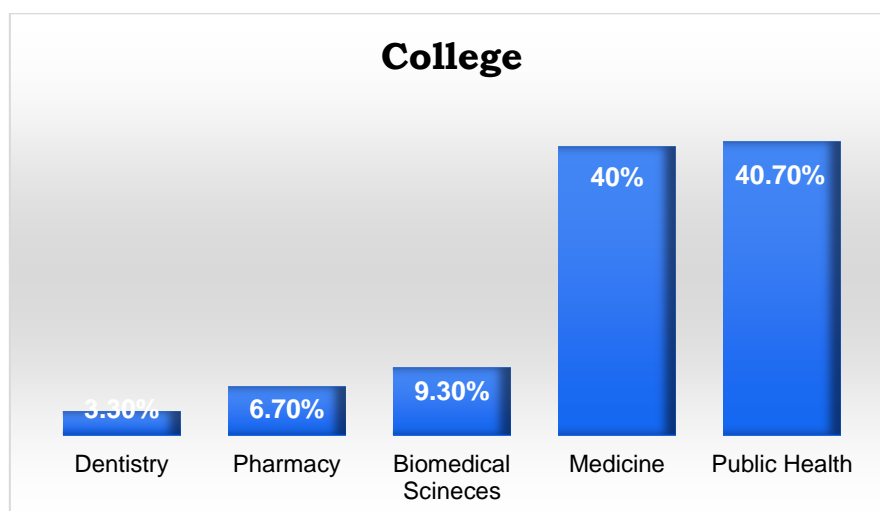


Figure 1. The colleges Distribution of the Study Participants

From data in Figure 2, we can see that the highest age group of participants belonged to the 41-50 age group (43.30%) of faculty members, which is slightly under half, followed by the age group from 30-40 years. The lowest age group of participants was less than 51 years old.

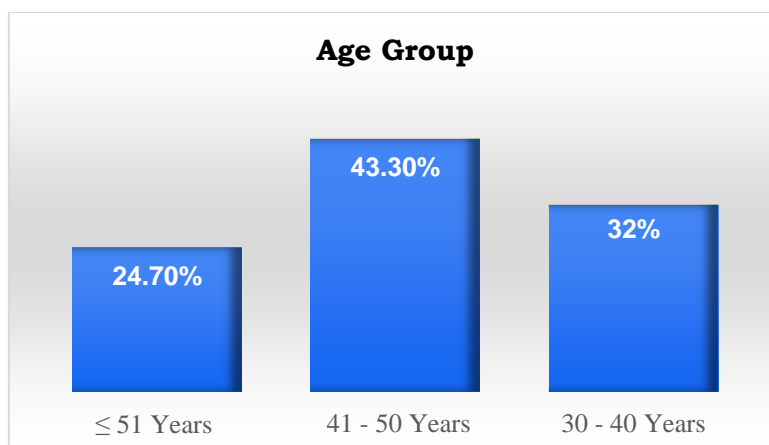


Figure 2. The age Distribution of the Study Participants

Figure 3 illustrates that the highest percentage of the participants were female of faculty member. In addition, a quarter of the participants were male with percentage 25%.

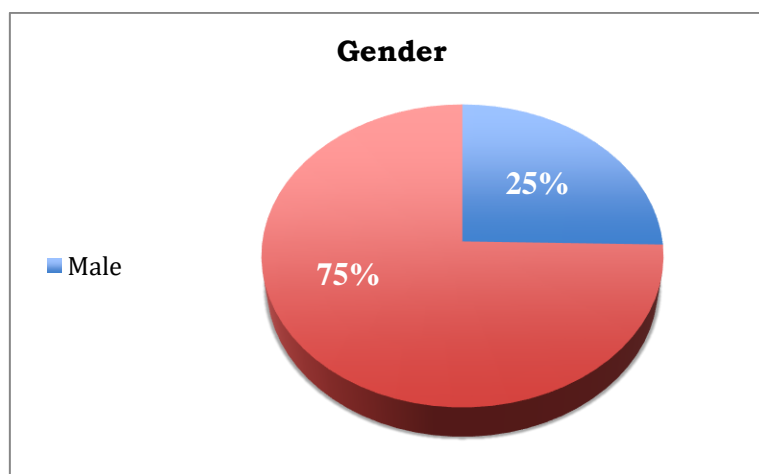


Figure 3. The Gender Distribution of the Study Participants

It appears from Figure 4 that most of the participants hold a master's degree qualification, which was approximately 67.30%. A little over a quarter of participants hold a Ph.D. degree. A very small percentage of participants had bachelor's degrees, which was 1.30%.

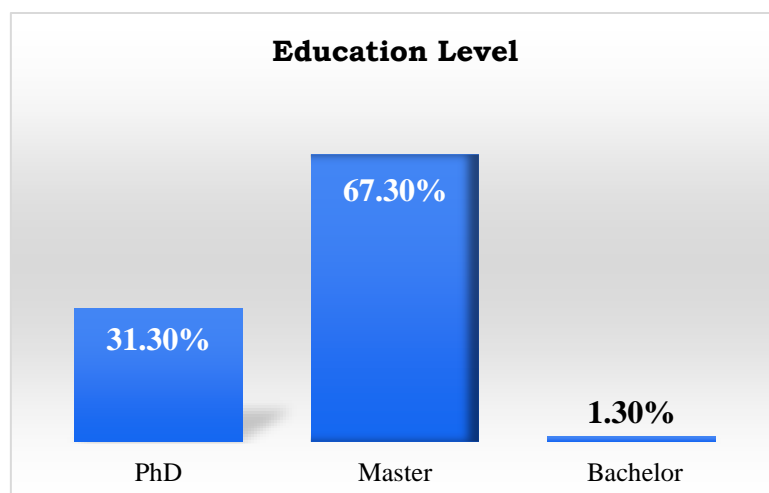


Figure 4. Education Levels Distribution of the Study Participants

Figure 5 presents the career level of the participants in this study. The career level of most of participants was (Lecture) with 32.70%. Assistant Professor was the second in the order with percentage around 28.7%. Moreover, the assistant Lecture was the third in order with percentage 23.3%. The other career level were very small percentage which associate Professor, pro and Teaching Assistant as 8%,6% and 1.3.

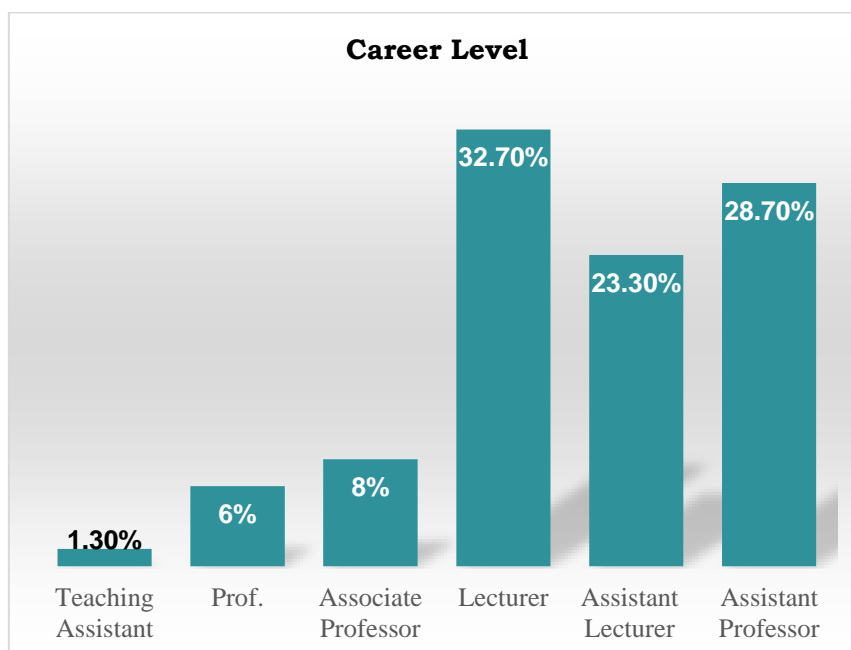


Figure 5. The career levels of the Study Participants

Table 1 shows that 42% of participants agreed that there wasn't enough time due to administrative load, 30% found weak scientific research skills; however, 38% disagreed about the lack of foreign language. 44% of the faculty members strongly agreed that a low salary is not enough to pay publication fees, 56% agreed about the faculty's obligations, 54% research is just a way for promotion, and 46% frustrated due to the lack of interest and benefit from the faculty member's research.

Table 1. Personal Challenges of a faculty member in conducting research

First: Personal Challenges	Agree	Strongly Agree	Neutral	Disagree	Strongly Disagree
The faculty member does not have enough time due to the administrative burden.	63 (%42.0)	31 (%20.7)	33 (%22.0)	21 (%14.0)	2 (%1.3)
The faculty member's weak scientific research skills.	45 (%30.0)	11 (%7.3)	35 (%23.3)	40 (%26.7)	19 (%12.7)
The faculty member's lack of foreign languages in which scientific journals are published.	23 (%15.3)	8 (%5.3)	31 (%20.7)	57 (%38.0)	31 (%20.7)
The faculty member's low salary enables him to pay publication fees in scientific journals abroad.	43 (%28.7)	67 (%44.7)	27 (%18.0)	12 (%8.0)	1 (%0.7)
The pressures resulting from the faculty member's obligations.	84 (%56.0)	29 (%19.3)	26 (%17.3)	9 (%6.0)	2 (%1.3)
The faculty member conducts scientific research for promotion.	81 (%54.0)	35 (%23.3)	21 (%14.0)	12 (%8.0)	1 (%0.7)
Frustration due to the lack of interest and benefit from the faculty member's research.	69 (%46.0)	55 (%36.7)	17 (%11.3)	9 (%6.0)	--

It appears from Table 2 that 57% of the participants agreed about requiring the university to develop a research plan for issues related to society, 44% mentioned the absence of university scientific references, 47% stated the lack of research databases. 49% strongly agreed about the difficulty of publishing abroad, 48% agreed about the university's lack for scientific or related conferences, workshops; however, 47% of the faculty members strongly agreed that the university does not encourage participating in scientific activities. 49% revealed the weak communication within the research parties., and 42% agreed that the university does not provide research courses training.

Table 2. Administrative Challenges of a faculty member in conducting research

Second: Administrative Challenges	Agree	Strongly Agree	Neutral	Disagree	Strongly Disagree
The university lacks a research plan that addresses the problems related to society.	85 (%56.7)	48 (%32.0)	14 (%9.3)	3 (%2.0)	--
Lack of scientific references in university libraries.	66 (%44.0)	51 (%34.0)	20 (%13.3)	11 (%7.3)	1 (%0.7)
Lack of research databases at the university.	70 (%46.7)	60 (%40.0)	17 (%11.3)	3 (%2.0)	--
Publishing procedures are difficult in peer-reviewed scientific journals abroad.	63 (%42.0)	73 (%48.7)	11 (%7.3)	3 (%2.0)	--
Lack of conferences, seminars, and scientific workshops held by the university.	72 (%48.0)	55 (%36.7)	20 (%13.3)	3 (%2.0)	--
Weak communication between the university and research bodies inside and outside Libya.	74 (%49.3)	66 (%44.0)	9 (%6.0)	1 (%0.7)	--
The university does not encourage faculty members to participate in conferences, seminars, and scientific workshops inside and outside Libya.	60 (%40.0)	71 (%47.3)	15 (%10.0)	4 (%2.7)	--
The university does not hold training courses for faculty members to provide them with skills in scientific research.	63 (%42.0)	55 (%36.7)	27 (%18.0)	5 (%3.3)	--

Table 3 indicates that 59% of the participants strongly agreed that the university does not prepare a financial budget for research, 51% stated that the university does not pay rewards to faculty members for encouragement, 59% mentioned imposing fees on scientific research submitted by faculty members. 62% strongly agreed about the high costs of publishing research, 47% added that it did not provide financial support to the faculty member to participate in scientific conferences, 49% do not receive financial support from their scientific research. Moreover, 41% of the participants agreed on low spending on scientific research by the beneficiaries.

Table 3. Financial Challenges of a faculty member in conducting research

Third: Financial Challenges	Agree	Strongly Agree	Neutral	Disagree	Strongly Disagree
The university does not prepare a financial budget for scientific research.	54 (%36.0)	89 (%59.3)	7 (%4.7)	--	--
The university does not pay rewards to encourage distinguished research conducted by a faculty member.	43 (%28.7)	77 (%51.3)	22 (%14.7)	7 (%4.7)	1 (%0.7)
Imposing fees on scientific research submitted by faculty members for publication in university journals.	57 (%38.0)	88 (%58.7)	5 (%3.3)	--	--
High costs of publishing research in scientific journals.	50 (%33.3)	93 (%62.0)	7 (%4.7)	--	--
The university does not provide financial support to the faculty member to participate in scientific conferences.	62 (%41.3)	71 (%47.3)	14 (%9.3)	3 (%2.0)	--
Faculty members do not benefit financially from their scientific research.	66 (%44.0)	74 (%49.3)	10 (%6.7)	--	--
Low spending on scientific research by the beneficiaries.	61 (%40.7)	31 (%20.7)	39 (%26.0)	19 (%12.7)	--

Table 4 presents, 53% of faculty members agreed about the miscarriage to link scientific research to the needs of society; however, 42% have a neutral opinion about society's weak sense of its need for scientific research to solve its problems. 58% agreed on the reliability of research explanation to solve community issues, 63% community's lack of confidence in the research, also 63% absence of academic communication between the faculty member and the community. 41% strongly agreed lacking mechanisms to implement faculty members' research in various sectors, and 56% mentioned the weakness state's laws to protect scientific production.

Table 4: Social Challenges of faculty members in conducting research

Fourth: Social Challenges	Agree	Strongly Agree	Neutral	Disagree	Strongly Disagree
Failure to link scientific research to the needs of society.	80 (%53.3)	45 (%30.0)	18 (%12.0)	7 (%4.7)	--
Society's weak sense of its need for scientific research to solve its problems.	35 (%23.3)	11 (%7.3)	63 (%42.0)	34 (%22.7)	7 (%4.7)
The community relies on applied research conducted in research centers to solve its problems.	87 (%58.0)	23 (%15.3)	31 (%20.7)	9 (%6.0)	--
The community's lack of confidence in the research of the faculty member is because it believes that it is basic research that does not solve its problems.	94 (%62.7)	33 (%22.0)	23 (%15.3)	--	--
Lack of academic communication between the faculty member and the community through conferences, seminars, and workshops.	95 (%63.3)	48 (%32.0)	7 (%4.7)	--	--
Lack of a mechanism to implement faculty member research in various sectors of the state.	59 (%39.3)	61 (%40.7)	27 (%18.0)	3 (%2.0)	--
The weakness of the state's laws in protecting scientific production.	58 (%38.7)	84 (%56.0)	6 (%4.0)	2 (%1.3)	--

As Table 5 indicates, 39% of participants strongly agreed on the university of highly efficient research laboratories, 46% stated the absence of cooperation from hospitals and medical educational institutions, also 51% lacked information in health and medical centers. 45% of faculty members agreed about the need for required devices and equipment, 43% added the absence of computer services that contribute to scientific research. and 51% strongly stated the importance of assistants, specialists, and technicians.

Table 5: Technical Challenges of faculty members in conducting research

Fifth: Technical Challenges	Agree	Strongly Agree	Neutral	Disagree	Strongly Disagree
Lack of highly efficient laboratories.	57 (%38.0)	58 (%38.7)	26 (%17.3)	8 (%5.3)	1 (%0.7)
Lack of cooperation from hospitals and medical educational institutions.	67 (%44.7)	69 (%46.0)	13 (%8.7)	1 (%0.7)	--
Lack of health and medical information centers.	62 (%41.3)	77 (%51.3)	10 (%6.7)	1 (%0.7)	--
Lack of devices and equipment.	68 (%45.3)	66 (%44.0)	14 (%9.3)	2 (%1.3)	--
Lack of computer services that contribute to scientific research.	65 (%43.3)	62 (%41.3)	17 (%11.3)	6 (%4.0)	--
Lack of assistants, specialists, and technicians.	62 (%41.3)	77 (%51.3)	10 (%6.7)	1 (%0.7)	--

Discussion

This study aimed to identify the primary challenges and barriers faced by faculty members in the medical colleges at the University of Benghazi in conducting scientific research. The findings revealed that these obstacles are multifaceted, encompassing personal, institutional, financial, technical, and social dimensions. This diversity reflects the complexity of the research environment and highlights the urgent need for a comprehensive and systemic approach to improving the state of research in Libyan academic institutions.

Personal challenges were among the most reported difficulties. The results indicated that many faculty members face limited time for research due to heavy academic and administrative workloads, insufficient research skills, and inadequate proficiency in foreign languages, particularly English, which is dominant in scientific publishing. These factors contribute significantly to low research productivity. These findings are consistent with previous studies in developing countries, which highlight the lack of opportunities for academic training and skills development as a major barrier to faculty engagement in research (18-20). The imbalance between teaching and research responsibilities further limits the ability of faculty members to contribute meaningfully to scientific knowledge (21-22).

The next barriers were institutional and administrative. The study revealed that universities lack comprehensive research strategies, offer few opportunities for conference participation, and provide limited access to academic resources such as journals and databases. These outcomes support previous findings that underscore the absence of strategic planning and weak research governance in Libyan universities (23-25). A robust research culture depends on structured institutional frameworks, including active research committees, internal funding bodies, and supportive academic leadership (22,26). Without these elements, research becomes isolated, under-prioritized, and under-resourced.

Financial constraints were among the most critical challenges reported. Many faculty members pointed to a near-total lack of dedicated research funding, high publication fees, and the absence of financial incentives or rewards for research efforts. These findings mirror broader regional challenges, where research is often underfunded despite national commitments to development goals (27-29). Without adequate funding mechanisms, researchers are unable to conduct high-quality studies, pursue innovation, or publish in reputable international journals, thereby limiting Libya's contribution to global scientific discourse (30-31). Moreover, Social and cultural barriers were also noted. A significant number of participants highlighted a lack of societal awareness regarding the importance of academic research, alongside a weak connection between universities and the communities they serve. There appears to be limited effort to translate research outcomes into real-world applications, reducing the perceived value and impact of faculty-led research. This disconnect poses a major obstacle to research that is intended to be responsive to local needs (24,25). Enhancing public understanding and appreciation of research, while encouraging community-based initiatives, could help close this gap (32).

Technical and infrastructural limitations emerged as the final major category of challenges. Faculty members emphasized severe deficits in research infrastructure, including outdated or insufficient laboratories, a lack of advanced equipment, poor internet access, and minimal collaboration with hospitals and research institutions. These limitations are especially detrimental in medical fields where clinical trials, laboratory investigations, and interdisciplinary collaboration are essential (24,26,30). Investing in modern facilities and forging institutional partnerships with health organizations are necessary steps toward enabling applied research that can improve healthcare outcomes (33). When compared to research environments in developed countries, the challenges faced by Libyan faculty members are more fundamental and systemic. While academics in high-income nations often contend with pressures to publish or achieve high research metrics (20,22), researchers in Libya continue to grapple with the absence of basic conditions such as funding, infrastructure, and institutional support (24,27,30). This stark contrast underscores the need for a phased and sustainable research development strategy that starts by addressing foundational issues, establishing policies, securing funding, enhancing infrastructure, and building research capacity among faculty members (26,29,32).

Conclusion

This study provides critical insights into the multifaceted challenges that hinder the advancement of scientific research among faculty members in the medical colleges at the University of Benghazi. The findings reveal that research activity is impeded not only by personal limitations, such as time constraints and skill gaps, but also by broader institutional, financial, technical, and societal factors. The absence of institutional strategies for research, insufficient funding mechanisms, poor infrastructure, and weak community engagement represent significant structural barriers. These issues collectively result in a research environment that lacks motivation, resources, and direction. Compared to global research institutions, the obstacles in Libya are more foundational, indicating the urgent need for systemic reform and sustainable investment in research capacity.

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Conflicts of Interest

Declare conflicts of interest or state "The authors declare no conflicts of interest." Authors must identify and declare any personal circumstances or interests that may be perceived as inappropriately influencing the representation or interpretation of reported research results.

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