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Medical Research Productivity and Barriers from the Perspective of Faculty Members at the University of Tripoli

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Abstract

Background University-based research is critical for primary care, particularly in low- and middle-income countries like Libya. The current study was aimed at exploring the research productivity and potential barriers among academic medical staff at the University of Tripoli, Libya.

Methods A cross-sectional questionnaire-based study was done at the University of Tripoli for the period from November 2022 to March 2023 to determine health research barriers among staff members in different medical faculties. Data collected included participant's demographics, years of experience as a faculty member, workplace, academic status, highest educational qualification, education type, and number of research studies published. Data also contained questions around personal, access, administrative, and resource barriers to and facilitators of research activity.

Results A total of 132 questionnaires were distributed by the authors, of which only 102 were successfully answered, giving a response rate of 76%. The majority of participants 49 (48.04%) conducted a cross-sectional study, followed by 34 (33.3%) who carried out a review study. The most important reason of doing research was to improve knowledge of the field (62.75%), while 77.47% stated that they made use of and were comfortable using advanced technology in their research activities. The top barriers to research were a lack of financial support (76 [74.51%]), followed by the complex publication process (43 [42.16%]). Lack of writing skills (4 [3.92%]) was the bottom perceived barrier.

Conclusion Faculty members at the University of Tripoli face various barriers that can impede their productivity in medical research, such as a lack of resources, and limited research opportunities. These factors, combined with a lack of support from administrators, can lead to low morale and a lack of motivation among faculty members, which can further inhibit their research productivity.

Keywords
- barriers
- publications
- primary care
- research productivity
- researchers

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ملخص المقال باللغة العربية

إنتاجية البحث الطبي والعوائق من منظور أعضاء هيئة التدريس بجامعة طرابلس

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الخلفية. تعد البحوث الجامعية أمراً بالغ الأهمية للرعاية الصحية الأولية، لا سيما في البلدان المنخفضة والمتوسطة الدخل مثل ليبيا.

الهدف: هدفت هذه الدراسة الحالية إلى استكشاف إنتاجية البحث الطبي والعوائق المحتملة بين الكادر الطبي الأكاديمي في جامعة طرابلس، ليبيا.

الطُرق: تم إجراء دراسة مقطعية مستعرضة في جامعة طرابلس في الفترة من نوفمبر 2022م إلى مارس 2023م، لتحديد معوقات البحث الطبي بين أعضاء هيئة التدريس في الكليات الطبية المختلفة. تضمنت البيانات التي تم جمعها التركيبة السكانية للمشارك، سنوات الخبرة كعضو هيئة تدريس، مكان العمل، الحالة الأكاديمية، أعلى مؤهل تعليمي، نوع التعليم، وعدد الأبحاث المنشورة. كما يحتوي أيضًا على أسئلة حول العوائق الشخصية والإدارية، والموارد التي تعوق النشاط البحثي ومسيرته.

النتائج. تم توزيع ما مجموعه 132 استبيانا وتم الرد على 102 فقط بنجاح، بمعدل استجابة 76 ٪. أجرى غالبية المشاركين (48.04٪) دراسات مقطعية، تليها دراسات مرجعية (33.3٪). كان أهم سبب لإجراء البحث هو تحسين المعرفة الميدانية بنسبة 62.75٪، بينما ذكر 77.47٪ أنهم استخدموا التطورات التكنولوجية وكانوا مرتاحين لاستخدامها في العمل الأنشطة البحثية. كانت أهم العوائق أمام البحث هي نقص الدعم المالي (74.51٪)، تليها عملية النشر المعقدة (42.16٪)، في حين أن الافتقار إلى مهارات الكتابة (3.92٪) كان العائق الأقل نسبة.

الاستنتاج: هناك رغبة بين أعضاء هيئة التدريس لإجراء البحث العلمي، وكان صعوبة الحصول على الموارد هو العائق الرئيسي أمام زيادة إنتاجية البحث العلمي. قد يلزم أخذ هذه العوامل في الاعتبار عند تطوير البرامج لتعزيز الأنشطة البحثية.

الكلمات المفتاحية: معوقات، منشورات، رعاية أولية، إنتاجية بحثية، باحثون.

Introduction

Research capacity has long been the core mission of academic medicine.[1] Higher research productivity is linked to better clinical care, expanded research prospects, promotions, and increased researcher prestige in the field.[2] Early career research experience and training have been linked to continued professional academic work, which may help residents make career decisions.[3] Furthermore, it has the potential to influence teaching and student quality while also contributing to genuine indigenous and long-term development.[2]

The main goals of primary care research are to evaluate the effectiveness and efficiency of health care practices and health policies and to gain a better understanding of disease management in relation to people, families, and the community. Continuous advances in disease prevention and management through relevant research lay the groundwork for a dynamic health care system that can effectively address a community's needs. The increasing burden of chronic, noncommunicable disease, and high rates of infectious disease place enormous strain on health care systems in many low- and middle-income countries (LMICs).[4]

The importance of research in institutional rankings cannot be overstated. As a result, universities around the world place a high value on promoting research productivity among faculty.[5] However, unlike high-income countries, many LMICs do not have sufficient human or financial resources to support high-level research.[6] Additionally, research conducted in North America and Europe frequently fails to adequately address the distinct clinical contexts and research needs of LMICs. LMICs make up 85% of the world's population and 92% of the disease burden, but only 10% of the world's funding for medical research is allocated to them.[7] As a result, there are more global partnerships, stronger foreign investments, and support for LMICs' research capacity.[8]

In Libya, there is no curriculum requirement for research methodology in the medical education system. Research programs in medical colleges typically receive the least attention. Lack of funding and human resources are just two of the factors contributing to the poor caliber of research-oriented medical education.[9] Nevertheless, the use of evidence-based practice is becoming more and more sought globally.[10] Libya and other African nations have recently seen an increase in interest in and support for evidence-based medical research, as well as an increase in their involvement in clinical epidemiology and research.[9] However, there are still issues with research practice and implementation at Libyan universities. For example, an earlier survey reported low research productivities by staff members at the University of Tripoli with an annual production rate of 1.4 articles/100 academic staff.[11]

In 2020, European Erasmus + program funded "a LIBYA UP: Labs of Innovation and Business for Young Actors of start UP" project, designed to build research capacity and promote research productivity among academic staff of 3 European organizations and 10 Libyan universities including the University of Tripoli.[12] This study set out to assess the levels of medical research productivity among academic staff at the University of Tripoli, and determine the barriers and motivators influencing their research activities.

Methods

Study Design and Data Collection

A descriptive cross-sectional questionnaire-based study was done at the University of Tripoli for the period from November 2022 to March 2023 to determine medical research barriers and facilitators among staff members in different faculties of medical specialties, that is, Medicine, Pharmacy, Medical Technology, Nursing, Veterinary, etc. The contributors were selected randomly and were interviewed face to face after obtaining informed consent, with their identity undisclosed.

Questionnaire Development and Distribution

A questionnaire was used to collect the data and was validated on a sample of three expertise with their comments being considered. Moreover, the questionnaire reliability coefficient was calculated by Cronbach's alpha using SPSS based on power of 0.80 and 0.90 (Power = 1–β), and the average internal consistency reliability was 0.85, with the 95% confidence interval (CI) of 0.83–0.87 for total scores and 0.80 to 0.88 for subscales.

A total of 132 questionnaires were distributed by the authors and only 102 were successfully answered, giving a response rate of 76%. The questionnaire contained participants' demographics, years of experience as a faculty member, workplace, academic status, highest educational qualification, education type, and number of research studies published. It also contained questions around personal, access, administrative, and resource barriers to and facilitators of research activity.

Statistical Analysis

Data were collected and analyzed using Microsoft Excel 16, and presented as number and percentage.

Results

Sociodemographics

The sociodemographic characteristics of faculty members at the University of Tripoli are listed in ►**Table 1**. The majority of faculty members (35.29%) were aged 45 to less than 55 years, and only 3.92% were aged 25 to less than 35 years. The majority of participants (60.78%) were males. Of the 102 responses, 38.2% were from medicine, 25.49% were from medical technology, 21.57% were from veterinary, 13.73% were from pharmacy, and only 0.98% were from nursing.

About 25.49% had 1 to less than 10 years of experience as a faculty member, 28.43% ranked as full professor, the teaching activities were deemed the primary activity in 82.35%, and 87.25% had published at least one paper in scientific journals.

Table 1 Sociodemographic of the included participants

Item	Number	Percentage
Age (y)		
25 to <35	4	3.9
35 to <45	25	24.5
45 to <55	36	35.3
55 to <65	30	29.4
65 to <75	7	6.9
Gender		
Female	40	39.2
Male	62	60.8
Faculty		
Medicine	39	38.2
Pharmacy	14	13.7
Medical technology	26	25.5
Nursing	1	1.0
Veterinary	22	21.6
Year of experience as faculty member		
1 to <10	26	25.5
10 to <19	29	28.4
19 to <28	30	29.4
28 to <32	9	8.8
32 to <45	8	7.8
Academic rank		
Professor	29	28.43
Associated professor	13	12.75
Assistant professor	13	12.75
Lecture	27	26.47
Lecture assistant	20	19.60
Primary activity		
Research	15	14.71
Teaching	84	82.35
Providing of health care services	3	2.94
Number of papers published in journals		
1 to <25	89	87.25
25 to <50	12	11.76
50 and above	1	0.98

Individual Motivators and Barriers of Doing Research

►**Table 2** depicts that the majority of participants, 49 (48.04%), had conducted a cross-sectional study, while 34 (33.3%) did a review study, 33 (32.35%) carried out a case report, and 27 (26.47%) conducted a case-control study. Reasons, barriers, and facilitators are also illustrated in ►**Table 2**. It is worth mentioning that of seven possible reasons of conducting research, improving knowledge of the field was the main reason for 64 (62.75%) participants, for 58 (56.86%) participants it was mandatory job requirement, and for 50 (49.01%) participants it was due to personal interest. Few of the participants (32 [31.375%]) did research to present it in a conference, 29 (28.43%) to become a prominent academician in the field of study, and only 7 (6.86%) were doing research for recognition purposes.

According to ►**Table 2**, the majority of staff members, 79 (77.47%), stated that they used and were comfortable with using advanced technology in their research activities. While the top barriers to research were lack of financial support (76, 74.51%), the complex publication process (43, 42.16%), lack of facilities in data collection (29, 28.43%), and lack of research work team (20, 19.61%) were other barriers. Lack of inner motivation (17, 16.67%), lack of a mentor (12, 11.76%), lack of conception of idea (7, 6.85%), and lack of writing skills (4, 3.92%) were the bottom three perceived barriers (►**Table 2**).

Discussion

Career development has traditionally been based on a faculty member's research productivity, which can be measured by the number of peer-reviewed publications they self-report. This study provides an important overview of the level of research productivity and important factors contributing to it among medical university staff at the University of Tripoli. The findings reported low level of research output of academic faculty as measured by the number of publications.

Table 2 Individual motivators and barriers of doing research

Quires	Number	Percentage
What are the types of research that you have done?		
Case report	33	32.35
Cross-sectional study	49	48.04
Case series	11	10.78
Case control	27	26.47
Cohort	11	10.78
Randomized control trial	17	16.67
Meta-analysis	16	15.69
Review study	34	33.33
Experimental	3	2.94
What are reasons for doing research?		
Personal interest	50	49.01
Mandatory job requirement/ requirement for promotion	58	56.86
To improve knowledge of field	64	62.75
To present conferences	32	31.37
For recognition/acclaim	7	6.86
To become a prominent academician in field of study	29	28.43
To pursue career abroad/ education abroad	12	11.76
How much do you use advances in technology (video calling, online shared documents) for working with your research team		
Not at all	5	4.90
Do not know how to use it	3	2.94
Use it but not comfortable	16	15.69
Use it and comfortable using it	79	77.45
Challenges faced by participants that have written one or more papers		
Publication process	43	42.16
Data collection	29	28.43
Statistical analysis	14	13.73
Writing up the paper	4	3.92
Conception of idea	7	6.86
Financial support	76	74.51
Lack of proper guidance	12	11.76
Lack of team	20	19.61
Loss of interest/motivation	17	16.67

Similar studies in Libya and other parts of Arab and African countries have reported similar levels of research outputs[13–16]; however, it is at variance with the research output of academic faculty in United States.[17]

This study offers a critical overview of the motivations for conducting research by primary care faculty members at a university in Tripoli, as well as the constraints and enablers/facilitators that affect the research capacity and output. It is likely that similar difficulties exist in other universities and organizations in Libya and throughout the Arab world. The desire to expand personal research knowledge and skills among the surveyed academicians in the current study was the main contributing factor of doing research. This is consistent with findings from Nigerian researchers, who were also intrinsically motivated by personal interest, scholarly advancement, and societal contribution.[5] Additionally, the primary driver of research productivity among Kenyan researchers was personal career development.[18] The participated academic staff in this study appear to have a strong desire to carry out their research in this setting. Nevertheless, to maximize faculty production and satisfaction, it is necessary to have a deeper understanding of the specific facilitators and inhibitors of research productivity in the various schools.

As noted in this study, funding disparities, lack of data resources, and lack of faculty support for research are some of the biggest obstacles to conducting research. Tools like a comprehensive and efficient research policy are needed in order to promote and support successful research initiatives. Similar to our findings, a study that measured the research productivity in Arab countries between 1996 and 2012 through a systematic review of 76,417 reports exhibited paucity of publication due to lack of funding and difficulty of publishing in high-impact journals.[15] More government funding for high-quality research and encouraging Libyan medical school, hospital, and research center staff to write high-quality papers should have a positive impact. Additionally, promoting collaboration with prestigious international universities ought to aid in raising standards in Libya's medical schools. Attending conferences and scientific meetings, conducting low-budget research projects, and publishing one's own findings can all create excellent opportunities to conduct more complex research projects.

The current study had some limitations. It reveals low response rates among the surveyed university, which may reflect a general lack of interest in research among the study population or lack of interest in completing such surveys. The external validity of our findings may be impacted by this. It also suggests that we might not have identified the constraints on research productivity faced by a sizable portion of the University of Tripoli researchers who may be undermotivated and/or time-constrained. The study was only carried out in one institution, so it might not be applicable to other institutions in Libya.

Conclusion

Faculty members at the University of Tripoli face various barriers that can impede their productivity in medical research, such as a lack of resources, and limited research opportunities. These factors, combined with a lack of support from administrators, can lead to low morale and a lack of motivation among faculty members, which can further inhibit their research productivity.

Conflict of Interest

The official ethical permission to conduct the study was obtained from Ethics Committee of the Faculty of Medical Technology, University of Tripoli (IRB: MedTech-23301).

Conflict of Interest

None declared.

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