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حواجز ومواقف طلاب الطب وأعضاء هيئة التدريس والاطباء تجاه البحث العلمي في جامعة بنغازي ليبيا

BARRIERS AND ATTITUDES, OF MEDICAL TEACHING STAFF ,DOCTORS AND STUDENTS TOWARD SCIENTIFIC RESEARCH AT BENGHAZI UNIVERSITY LIBYA

Author .: Fatma Yousuf Ziuo¹, Arij Altarhone², Amira Alsharif², Raja Elsanfaz²

Salma Kafala², Hagar Elatrsh², and Maryam Ben Attia²

3. Asma Osman Mohammed: Asst-Prof. U of Bahri. Sudan

1Associate Professor Family and Community Medicine Faculty of Medicine Benghazi
University

2 postgraduate students at family and community medicine department , Faculty of Medicine
Benghazi University.

dr.fatmayz@yahoo.com

Received 09|09|2020 - Accepted 11|10|2020 - Available online 15|01|2021

Abstract

scientific research is crucial for health-care delivery. However, medical students may not participate in research during their training, which might negatively affect their understanding of the importance of research and their future ability to conduct research projects. **Aims of study:** to assess the perception ,attitudes and practices of the medical students toward research and the challenges which may be a barrier in conducting research. **Subjects & Methods:** A cross-sectional study was conducted using a self-administered, pre-tested questionnaire. The (BMC). The (FM) & Benghazi Medical Center study was conducted at faculty of Medicine students, interns, postgraduate, graduated doctors and teaching staff at faculty (in both basic and clinical fields) in 2020 were the study population. **Results:** The total sample was 227 respondents, the mean age was 29 ± 6.3 Year, and 63.4 were females and 36.6% were males. The current study reported that 203(89.4%) of the respondents agree and strongly agree that doing scientific research is important, 85.6% agreed and strongly that research in undergraduate is necessary. The scientific research barriers at Benghazi university were more than half of respondents agree and strongly agree there was no adequate training for research methodology , 47.4% agreed that Lack of professional supervision, and 50.4% agreed that poor accessibility to data, Conclusion: although all respondents agreed that research is important but still there

barriers in the study of research at undergraduate level and there are many obstacles facing are g research at medical faculty Benghazi university. The investigators suggested that the faculty of medicine should have more training programs for teaching under and postgraduate doctors about research methods, providing supervisors and financial support for faculty members.

الملخص

البحث العلمي بالغ الأهمية لتقديم الرعاية الصحية. ومع ذلك ، قد لا يشارك طلاب الطب في البحث أثناء تدريبهم ، مما قد يؤثر سلبيًا على فهمهم لأهمية البحث وقدرتهم المستقبلية على إجراء المشاريع البحثية. أهداف الدراسة: لتقييم الممارسات الإدراكية لطلاب الطب تجاه البحث والتحديات التي قد تكون عائقًا في إجراء البحث. الموضوعات والطرق: تم إجراء دراسة مقطعية باستخدام استبيان تم اختباره ذاتيًا. أجريت الدراسة بكلية الطب (FM) ومركز بنغازي الطبي (BMC). كان الطلاب والمتدربون وخريجو الدراسات العليا والأطباء المتخرجون وأعضاء هيئة التدريس في الكلية (في المجالات الأساسية والسريرية) في عام 2020 هم مجتمع الدراسة. النتائج: بلغ مجموع العينة 227 مستجيباً ، وكان متوسط العمر 29 ± 6.3 سنة ، و 63.4 من الإناث و 36.6٪ من الذكور. أفادت الدراسة الحالية أن 203 (89.4٪) من المستجيبين يوافقون ويوافقون بشدة على أهمية إجراء البحث العلمي ، واتفق 85.6٪ بقوة على أن البحث في المرحلة الجامعية أمر ضروري. عوائق البحث العلمي في جامعة بنغازي كانت أكثر من نصف المستجوبين يوافقون ويوافقون بشدة على عدم وجود تدريب كاف لمنهجية البحث ، واتفق 47.4٪ على غياب الإشراف المهني ، واتفق 50.4٪ على ضعف الوصول إلى البيانات. الخلاصة: على الرغم من اتفاق جميع المستجيبين على أهمية البحث ، إلا أنه لا تزال هناك حواجز في دراسة البحث على المستوى الجامعي وهناك العديد من المعوقات التي تواجه البحث العلمي في كلية الطب جامعة بنغازي. اقترح الباحثون أن يكون لدى كلية الطب المزيد من البرامج التدريبية لتعليم الأطباء الجامعيين والخريجين حول طرق البحث و توفير المشرفين والدعم المالي لأعضاء هيئة التدريس

Keywords : perception, attitudes , research. self-administered, questionnaire

Introduction:

Research is very important for improvement of health-care delivery. However, medical students may not participate in research during their training, which might negatively affect their understanding of the importance of research and their future ability to conduct research projects(1). Research is the only known tool for the advancement of human knowledge of

biology and medical sciences. Biomedical research activity and production are directly associated with countries' and societies' prosperity in medical practice and health-care delivery (1). Earlier exposure to the basics of research can result in more research-intensive careers by medical doctors(2). Moreover, many studies have reported that medical students who are exposed to research during their college years show higher research productivity during their future careers(3). Many obstacles have been reported to hinder a student's ability to conduct research. Some of these obstacles include lack of mentorship (4), lack of time to devote to extracurricular activities, and lack of adequate research training which more prominent in developing countries(5,6). limited resources remain the main obstacles to conduct research (7,8). As a result, important health care-related data are not properly investigated in these low-resource countries, and therefore, medical clinics and hospital suffer from a lack of evidence-based care that can improve the lives of the patients (7,8).

Libya as other developing countries has very minim share into the global wealth of biomedical research production and knowledge. A study at Sabratha University in Libya, investigated the factors that are currently impeding scientific research among postgraduate students. The most important factors are the lack of a strategic plan for scientific research, the limited funding for research, poor infrastructure, and the weak research skills of faculty members. Although the lack of private investment in research and the political instability in Libya has served to increase the challenges confronting scientific research (9).

Aims of the Study: the study aimed to assess the barriers and attitudes of teaching staff , Libyan medical students and doctors toward scientific research.

Subjects and Methods:

Research design: A cross-sectional descriptive study was conducted using a self-administered, pretested questionnaire.

Research setting (place - time): The study was conducted at faculty of Medicine (FM) , Benghazi University (BU)& Benghazi Medical Center(BMC).

Study population: students, interns, postgraduate, graduated doctors and teaching staff at faculty (in both basic and clinical fields) in 2020 constituted the study population.

Data collection: The questionnaires were distributed among faculty members in medical school. The research tool was a researcher-made questionnaire with close-ended questions organized in two sections of basic characteristics of the respondents and the attitude of the study population. The barriers were grouped into six categories based on the nature of them.

The questionnaire:

Research tool composed of five major elements:

1. The socio-demographic section includes questions asking about gender, region, work area, specialty, and age.
2. Questions about barriers that every participant face at his/her institution/country that affects his/her role in the research field.
3. Questions about the strengths and opportunities healthcare providers have at their institution/country that affect their role in the research field.

Ethical issues: written consents were taken from all respondents before starting the survey.

The investigators carefully read the information to the participant to understand that the following will be done:

- 1) An opinion on the importance of medical scientific research.
- 2) Knowing the most important problems facing scientific research in the Faculty of Medicine, University of Benghazi. Confirm that the participants had the opportunity to ask questions about the study and that all questions have been answered.

The investigators emphasized that no one was forced to give consent and the approval was given freely and voluntarily.

Statistical analysis:

The respondents' attitudes were collected in five-point Likert scale (from absolutely disagree to absolutely agree). The highest and lowest score was 5 and 1, respectively. The self-administered questionnaire was distributed and collected by researchers. The value of the factors related to effective research activity barriers derived from the participants' answers and to assess the relationship between the mean rank attitude score and some personal factors.

Results:

1. Respondents' socio - demographic characteristics:

The present study revealed that of the total sample of 227 respondents, 179 (78.9%) were from medical faculty at Benghazi university, 34(15%) from BMC and 14(6.2%) from Al-jala hospital. The respondents mean age was 29 ± 6.3 Year, the Minimum age was 23 years and Maximum age was 58 years, and 169 (74.4%) their age 23-29 years. The current study reported that females represented nearly two-thirds 144(63.4) and males slightly more than one-third 83 (36.6%), 120 (52.8%) were students, 43(18.9) were graduated doctors and specialist and consultants 17(7.5%) were teaching staff (Table 1).

2. Respondents' opinion about the importance of scientific research:

The current study reported that the respondents opinion about the importance of scientific research, 203(89.4%) of them agree and strongly agree that doing scientific research is important, and 191 (85.6%) agreed and strongly agreed that research in undergraduate is necessary. The investigators 189(82.6%) agreed and strongly agreed that participating in research or publishing scientific paper is important. nearly three quarters 170(74.9%) agreed and strongly agreed that research methodology should be a part of curriculum, 118(52%) and 60(26.4%) agreed and strongly agreed respectively that research will be a part of their career goals and 82 (36%) agreed that conducting research always needs a lot of money (table 2). The present study reported a highly significant relation between the respondents education level and occupation and the mean research importance attitude score at Benghazi , Libya where $p=.001$ and .0001 for anova test figure 1&2 .

3. Respondents' opinion about scientific research barriers at Benghazi:

According to respondents' opinion in the present study the scientific research barriers at faculty of medicine Benghazi university were 138(60.6%) agree and strongly agree there was no adequate training for research methodology, more than one-third 82(34.4%) agree and strongly agree that no adequate time to evaluate scientific literature in medical school and less one third 76(32.7%) agree and strongly agree that there are many opportunities to participate in medical research at medical faculty. The present study reported that 62(27.2%) agree and

strongly agree that no adequate facilities for research in the medical faculty, 108(47.4) agreed that Lack of professional supervision, half of respondents 115(50.4%) agreed that poor accessibility to data, more than half 124(54.4%) agreed that difficulty of following up with patients, 102(44.7%) agreed that difficulty obtaining approval for the study. 108(47.4%) of respondents agreed that lack of financial support of medical research in the faculty of medicine. 99(43.4%) of respondents agreed that the spirit of individualism and lack of interest in-group is the main individual barrier to research activities, and more than half of respondents 124(54.4%) agreed that attention of researchers is not address to community problems. More than three thirds 164(68%) agreed and strongly agreed that doing research is interesting, and 159(69.8%) of respondents agreed and strongly agreed that they are not motivated to do research (table 3).

4. Respondents' opinion towards clinical research methodology and clinical practice (table4):

More than three quarters of respondents 181(79.3%) agreed and strongly agreed that managing clinical problems can be easier if the scientific approach is properly followed, 185(81.2%) agreed and strongly agreed clinical research skills can significantly improve the physician's clinical practices. More than half of respondents 125(54.8) agreed that all medical advances are based on the proper application of the scientific methodology, 115(50.4) of respondents agreed that clinical research methodology should be a mandatory knowledge requirement for all physicians. More than half of respondents 118(51.8%) agreed that being oriented with the clinical research methodology is necessary to obtain accurate clinical data.

Half of respondents agreed that Limiting medical practice to scientific findings only makes the practicing physicians narrow-minded 115 (50.4%), 89 (39.0%) of respondents agreed that following the scientific research methodology adds difficulty to clinical research practice, more than half of respondents 121(53.1%) agreed that undergraduate students should participate in clinical research projects.

Table 1: Respondents socio - demographic characteristics:

Characteristics	Number (%)
1. Place of work:	
a) Medical collage Benghazi	179(78.9)
b) Benghazi medical center (BMC)	34(15)
c) Al-jala hospital	14(6.2)
2. Age interval/years:	
a) 20-29	169(74.4)
b) 30-39	44(19.4)
c) 40-49	5(2.2)

d) ≥ 50	9(4)
Mean age \pm SD	29 \pm 6.3 Year
3. Sex:	
a) Male	83(36.6)
b) female	144(63.4)
4. Marital status:	
a) married	34(15.1)
b) single	191(84.1)
c) divorce	2(0.8)
5. Occupation:	
d) Teaching staff	17(7.5)
e) Physician	43(18.9)
f) Interns students	47(20.7)
g) Students	120(52.8)
6. Education:	
a) Undergraduate	113(49.8)
b) Graduate	54(23.8)
c) Postgraduate	41(18.1)
d) Higher	19(8.4)
7. Specialty:	
a) Students	170(74.9)
b) Basic	14(6.5)
c) Surgery	12(5.2)
d) Medicine	13(5.7)
e) Gynecology & obstetric	8(3.5)
f) Community	5(2.2)
g) Pediatric	2(0.9)
h) forensic	1(0.4)
8. Years of experience:	
a) Students (no experience)	172(75.8)
b) <10y	41(18.1)
c) 10-<20y	9(3.9)
d) >20y	5(2.2)
Total	227(100)

Table 2: Respondent opinion about the importance of scientific research:

Items	Strongly disagree No.(%)	Disagree No. (%)	Neutral No. ()	Agree No. ()	Strongly agree No. ()
1. Do you think that the scientific research is important?	10(4.4)	5(2.2)	9(4.0)	85(37.4)	118(52)
2. Research in undergraduate is necessary.	2(.9)	9(4.0)	25(11.0)	129(56.8)	62(27.3)
3. Participating in research or publishing scientific paper is important	3(1.3)	7(3.1)	27(11.9)	108(47.6)	81(35.7)
4. Research methodology should be a part of curriculum-	1(.4)	15(6.6)	40(17.6)	121(53.3)	49(21.6)
5. Research will be a part of my career goals.	2(.9)	17(7.5)	30(13.2)	118(52)	60(26.4)
6. Conducting research always needs a lot of money	9(3.9)	44(19.3)	67(29.4)	82(36)	26(11.4)

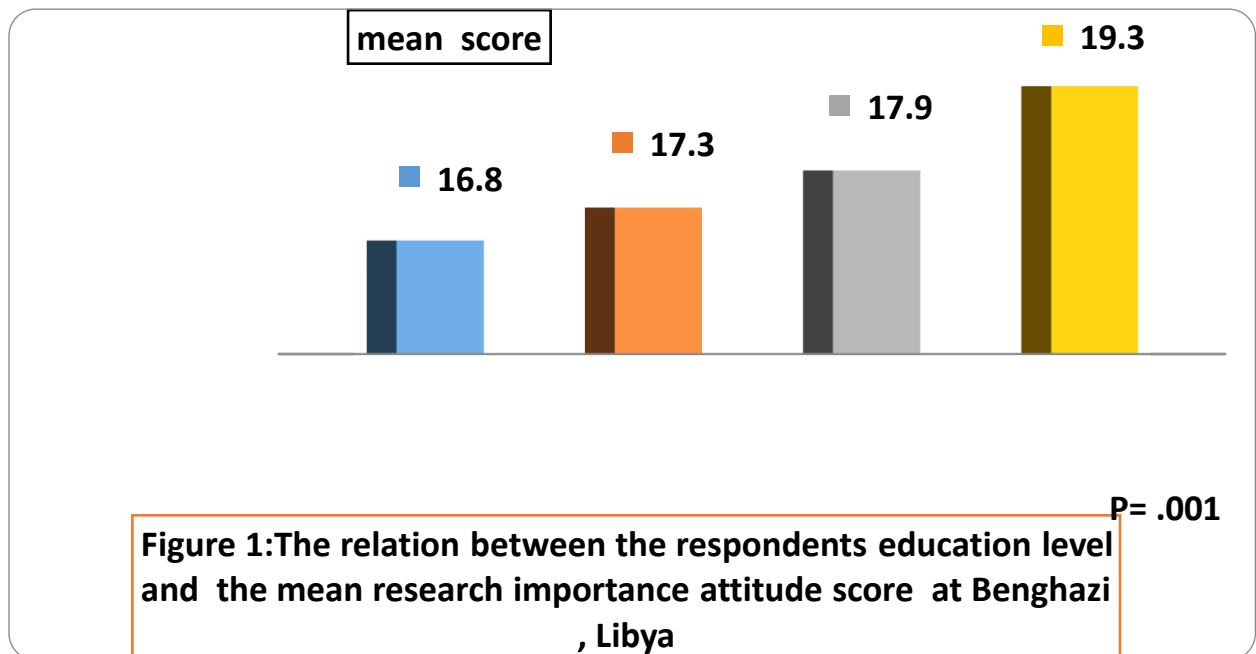
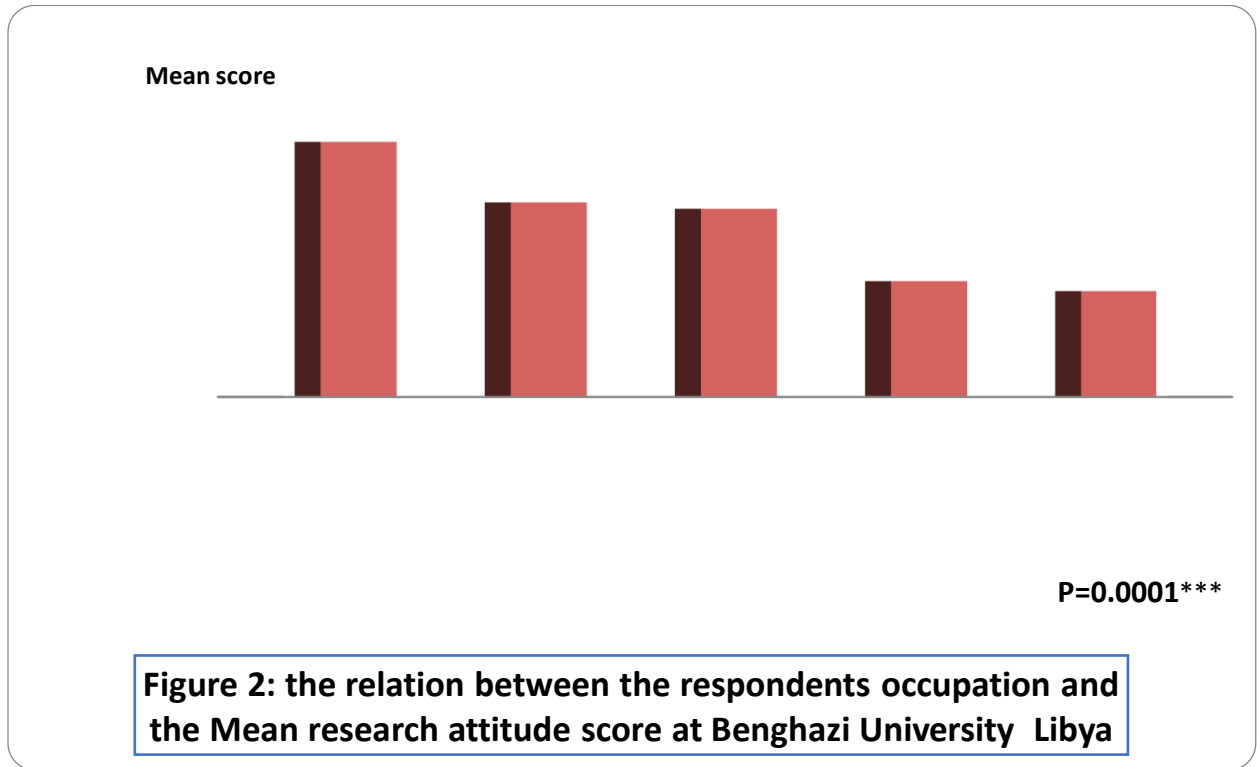


Table 3: Respondents opinion about scientific research barriers at faculty of medicine at Benghazi University

Questions	strongly disagree no. (%)	Disagree No. (%)	Neutral No. (%)	Agree No. (%)	Strongly agree No. (%)
1. No adequate training for Research methodology	8(3.5)	46(20.2)	30(13.2)	87(38.2)	51(22.4)
2. There is no adequate time to evaluate Scientific literature in medical school	27(11.8)	84(36.8)	37(16.2)	69(30.3)	13(4.4)
3. There are many opportunities To participate in medical research in medical school	24(10.5)	89(39.0)	40(17.5)	62(27.2)	12(5.5)
4. No adequate facilities for research in the medical faculty.	31(13.6)	94(41.2)	38(16.7)	42(18.4)	20(8.8)
5. Lack of training research courses	9(3.9)	24(10.5)	25(11.0)	113(49.6)	55(24.1)
6. Lack of professional supervision	5(2.2)	37(16.2)	35(15.4)	108(47.4)	40(17.5)
7. Poor accessibility to data	4(1.8)	25(11.0)	34(14.9)	115(50.4)	50(21.9)
8. Difficulty of following up with patients	4(1.8)	22(9.6)	37(16.2)	124(54.4)	41(18)
9. Difficulty obtaining approval for the study	5(2.2)	25(11.0)	63(27.6)	102(44.7)	27(11.8)
10. Lack of financial support of medical research in the faculty of medicine	7(3.0)	13(5.7)	28(12.3)	108(47.4)	72(30.6)
11. The spirit of individualism and lack of interest in-group .	9(3.9)	30(13.2)	53(23.2)	99(43.4)	37(16.2)
12. Attention of researchers is not address to community problems	6(2.6)	18(7.9)	45(9.7)	124(54.4)	35(15.4)
13. Do you think that doing research is interesting?	9(3.9)	24(10.5)	24(10.5)	10(44.3)	54(23.7)
14. I am not motivated to do research	9(3.9)	24(10.5)	36(15.8)	101(44.3)	58(25.5)

Table4: Respondents opinion towards clinical research methodology and practice:

Questions	strongly disagree no. (%)	DISA GREE No. (%)	Neu tral No. (%)	Agre e No. (%)	Stro ngly agre e No. (%)
1. Managing clinical problems can be easier if the scientific approach is properly followed.	6(2.7)	14(6.1)	27(11.8)	112(49.1)	69(30.2)
2. Clinical research skills can significantly improve the physician's clinical practice.	9(3.9)	9(3.9)	25(11.0)	111(48.7)	74(32.5)
3. All medical advances are based on the proper application of the scientific methodology	5(2.2)	21(9.2)	26(11.4)	125(54.8)	51(22.4)
4. Clinical research methodology should be a mandatory knowledge requirement for all physicians.	6(2.6)	13(5.7)	41(18.0)	115(50.4)	53(23.2)
5. Being oriented with the clinical research methodology is necessary to obtain accurate clinical data.	3(1.3)	20(8.8)	25(11.0)	118(51.8)	62(27.2)
6. Limiting medical practice to scientific findings only makes the practicing physicians narrow-minded	4(1.7)	16(7.0)	59(25.9)	115(50.4)	27(11.8)
7. Following the scientific research methodology adds difficulty to clinical research practice.	10(4.3)	56(24.6)	47(20.6)	89(39.0)	26(11.4)
8. Undergraduate students should participate in clinical research projects.	8(3.5)	17(7.5)	31(13.6)	121(53.1)	48(21.1)



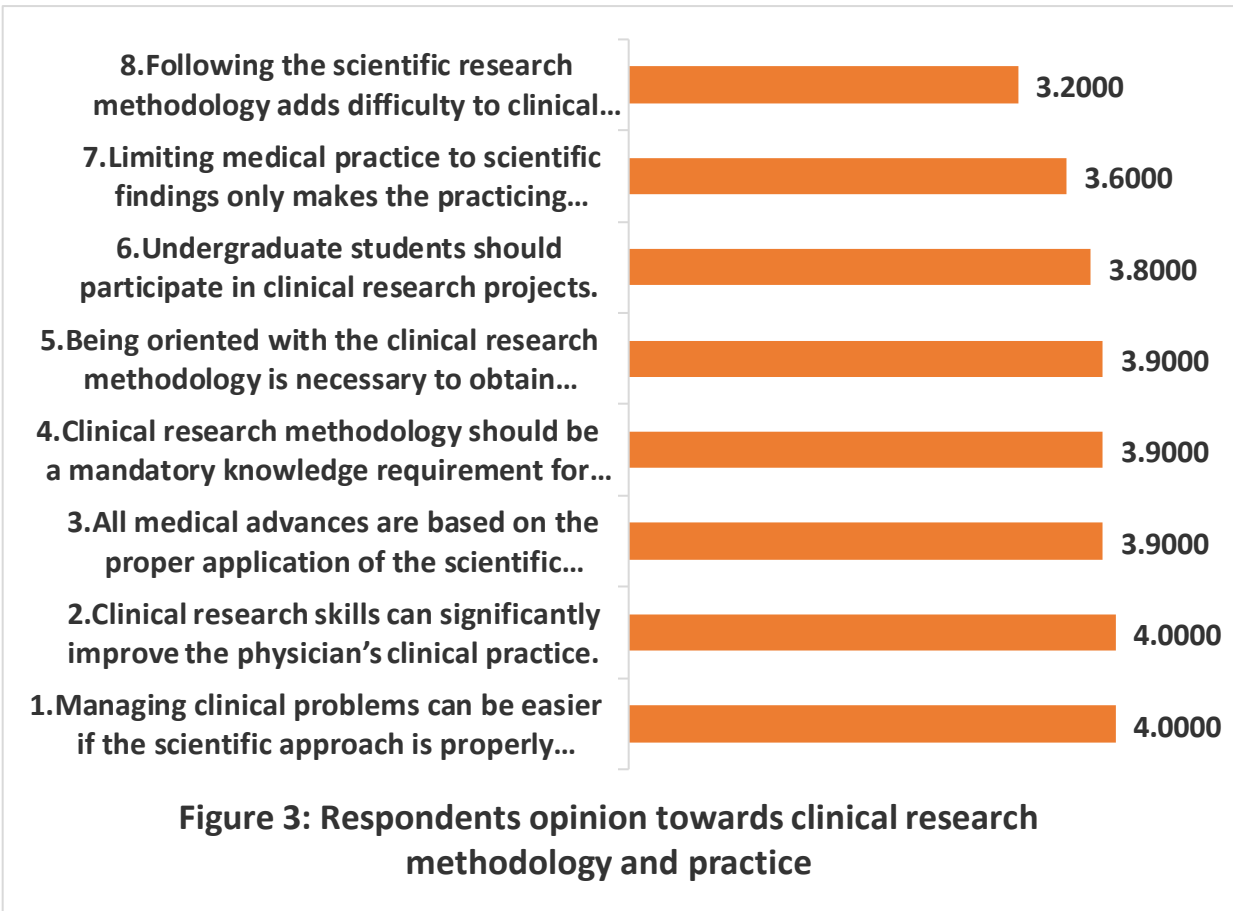


Table4: Respondents opinion towards clinical research methodology and practice:

Questions	Strongly disagree no. (%)	Disagree No. (%)	Neutral No. (%)	Agree No. (%)	Strongly agree No. (%)
1. Managing clinical problems can be easier if the scientific approach is properly followed.	6(2.7)	14(6.1)	27(11.8)	112(49.1)	69(30.2)
2. Clinical research skills can significantly improve the physician's clinical practice.	9(3.9)	9(3.9)	25(11.0)	111(48.7)	74(32.5)

3. All medical advances are based on the proper application of the scientific methodology	5(2.2)	21(9.2)	26(11.4)	125(54.8)	51(22.4)
4. Clinical research methodology should be a mandatory knowledge requirement for all physicians.	6(2.6)	13(5.7)	41(18.0)	115(50.4)	53(23.2)
5. Being oriented with the clinical research methodology is necessary to obtain accurate clinical data.	3(1.3)	20(8.8)	25(11.0)	118(51.8)	62(27.2)
6. Limiting medical practice to scientific findings only makes the practicing physicians narrow-minded	4(1.7)	16(7.0)	59(25.9)	115(50.4)	27(11.8)
7. Following the scientific research methodology adds difficulty to clinical research practice.	10(4.3)	56(24.6)	47(20.6)	89(39.0)	26(11.4)
8. Undergraduate students should participate in clinical research projects.	8(3.5)	17(7.5)	31(13.6)	121(53.1)	48(21.1)

Discussion: the present study focused on the perceptions, attitudes and practices of medical students and teaching staff toward research and the barriers and obstacles facing them.

The current study reported that 89.4% respondents of opinion agree and strongly agree that doing scientific research is important, 84.1% agreed and strongly agreed that research in undergraduate is necessary and nearly three quadrants (74.9%) agreed that research methodology should be a part of curriculum. A slightly higher results were reported by AlGhamdi K M. et al (2014)(6) that 97.1% agreed that research is important in the medical field by senior medical students at the King Saud University, Riyadh, Saudi Arabia, 91.9% of students believed that research methodology should be a part of the medical school curriculum (6).

The investigators in the present study found that 82.6% agreed and strongly agreed participating in research or publishing scientific paper is important, and 8.4% agreed and strongly agreed that research will be a part of their career goals. A nearly a similar results were reported by AlGhamdi K M. et al (2014)(6) that conducting research during medical school is important at Saudi Arab medical school 87.7%, More than two thirds of students 67.4% believed that conducting research should be mandatory for all medical students (6). [Waaajer](#) et al (2019)(7) they matched 2005-2008 MD graduates (n = 4145 in total) from all eight Dutch university medical centers to their publications indexed in the Web of Science and published

between 6 years before and 6 years after graduation. They reported that students who had published before graduation 1.9 times as likely to publish, published more papers, and had a slightly higher citation impact after graduation.

Research is not considered a part of the medical curriculum in many developing countries. A study from India, for example, Chaturvedi and Aggarwal, (2001)(8) reported that 91% of interns had no research experience in medical school. Thus, students in India are rarely exposed to research at the stage of their academic development when such exposure could encourage further research (Aslam et al., 2005) (9). Siemens et al. (2010)(10) in the Canadian study reported that , 43% of respondents agreed that the main reason to participate in research during medical school was to facilitate acceptance into a residency of choice, lack of time was a significant barrier to pursuing research during medical school as only 31% of all respondents felt there was adequate allotted time for research endeavors (10), only 15% of respondents felt that there was sufficient training in research methodology in medical school, difficulty in attaining a research supervisor; only 44% of respondents agreed that it was relatively easy to find a research mentor (10).

Siemens et al. (2010) (10) stated that the negative attitudes of medical students toward research have been found to serve as an obstacle to learning associated with poor performance in research (10). Most of the medical students are not aware of why research is crucial to health care. Lack of student conferences and research workshops on how to write and organize research papers is among the reasons for such negative attitudes. The encouragement of those young researchers is not sufficient. Lack of time was seen as a significant barrier to pursuing research during medical school due to the busy curriculum. This factor results in a decreased number of medical students interested in participating in research (10). The Canadian study found that although the majority of medical students felt that participation in research activities were likely beneficial to their education, only 44% felt that research will play a significant role in their future career, and only 38% agreed that more time should be set aside in medical school to facilitate more research experience. Siemens et al. (2010) reported that, the majority of them believed that research was important in the medical field 167 (97.1%) and a boosting factor for their careers, but only 88 (55.3%) participated in research during medical school.

Frishman,(2001)(11)& Houlden et al.,(2004)(12) stated that even if research experience as a student does not lead to a career in academic medicine, the experience can help improve a student's skills in searching and critically appraising the medical literature and independent learning (11,12). Such exposure to research as a student can also help identify future careers, establish important contacts, and secure better residency positions (11,12). Frishman (2001) (11) reported that only 116(7.4%) agreed that research should be mandatory for all medical students. In the Canadian study, 43% stated that they had no significant involvement in research projects during medical school, and 24% had no interest in any research endeavors (10). While, in Germany, medical students authored 28% of the publications of one institution, including first authorship in 7.8% of papers (Cursiefen and Altunbas,1998)(13).

The perceptions, practices, obstacles and attitudes toward research among medical students in the Middle East. Not only addressed a previously neglected issue in our region but also attempted to comprehensively assess this issue to find ways to overcome the obstacles faced by students. These efforts could lead to an increased involvement of medical students in research(6).

The current study revealed that the respondents mean attitude score for important of research and use of research in clinical practice were v.good (3.9&3.8)respectively . while the total score of the attitude toward research barriers was good (3.4). According to respondents' opinion in the present study the scientific research barriers at faculty of medicine Benghazi university were (60.6%) agree and strongly agree there was no adequate training for research methodology, 34.4% agree and strongly agree that no adequate time , 27.2%) agree and strongly agree that no adequate facilities for research in the medical faculty, 47.4% agreed that Lack of professional supervision, 50.4% agreed that poor accessibility to data, 54.4% agreed that difficulty of following up with patients, 44.7% agreed that difficulty obtaining approval for the study, 47.4% of respondents agreed that lack of financial support of medical research in the faculty of medicine. The other personal factors 43.4% of respondents agreed that the spirit of individualism and lack of interest in-group is the main individual barrier to research activities, and more than half of respondents 54.4% agreed that attention of researchers is not address to community problems. While, 68% agreed and strongly agreed that doing research is interesting,

and 69.8% of respondents agreed and strongly agreed that they are not motivated to do research

Regarding the clinical research the present study reported that 79.3% agreed and strongly agreed that managing clinical problems can be easier if the scientific approach is properly followed, 81.2% agreed and strongly agreed clinical research skills can significantly improve the physician's clinical practices. More than half of respondents (54.8%) agreed that all medical advances are based on the proper application of the scientific methodology, 50.4% of respondents agreed that clinical research methodology should be a mandatory knowledge requirement for all physicians. More than half of respondents (51.8%) agreed that being oriented with the clinical research methodology is necessary to obtain accurate clinical data.

Abushouk AI et al (2016) studied the attitude of students at Faculty of Medicine, Ain Shams University Egypt, toward the barriers of scientific research and they reported that the majority of students (74.2%) agree that undergraduates should participate in clinical research. However, only 23.8% reported engagement in related activities. Students showed low knowledge scores. They highlighted several barriers against research participation including lack of time, proper mentoring, and funding. Sheikh et al 2013(15) reported that the lack of internet facilities was found to be significantly associated with lack of interest of medical students at King Edward Medical University, Pakistan (15).

conclusion :Although all participants in the study agree on the importance of scientific research, there are still barriers in doing research at the university level and there are many obstacles facing scientific research in the Faculty of Medicine, University of Benghazi. The researchers suggested that the Faculty of Medicine should have more training programs to educate undergraduate and graduate doctors about research methods and to provide supervisors, facilities, and financial support for faculty members to carry out research projects. Establishing research centers and encouraging teamwork.

Acknowledgments: The authors would like to acknowledge the medical students, staff members at Faculty of Medicine, Benghazi University and graduated , postgraduate doctors and senior physicians and surgeons at Benghazi medical center and al-jala hospital Benghazi for their great help and support in conducting this study.

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