

ORIGINAL RESEARCH ARTICLE

ATTITUDE AND PERCEIVED BARRIERS TOWARDS CONDUCTING RESEARCH AMONG MEDICAL PROFESSIONALS

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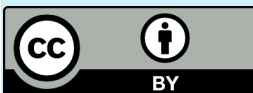
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ABSTRACT

Background: Medical research is the foundation for gaining scientific information and learning. However, in developing countries like Nepal, it is given low priority, mostly due to inadequate research funding. This study was aimed to assess the attitude and the barriers associated with medical research.

Methods: This descriptive cross-sectional study was conducted among the medical professionals of Nepal from 10th October to 10th November 2021. A self-administered questionnaire was used to collect the data. Collected data included demographics, a questionnaire related to attitude and barriers to research among medical professionals of Nepal. The data was collected, compiled, and analyzed by using Statistical Package of Social Science (SPSS) version 26. The data were analyzed using descriptive statistics.

Results: In total 83 participants with a mean age of 32.8±4.7 years participated in the study. More than 90% of the participants were having a positive attitude regarding the role of research enriching medical education and that it promotes critical thinking. The majority of them believed that research is also helpful for securing a better academic position. More than 90% agreed that research should be included in the MBBS/BDS curriculum. The major obstacles reported were lack of adequate funding (72.3%), lack of well-equipped laboratory (65.1%), non-inclusion of research as a subject in the medical curriculum (62.7%).

Conclusions: The majority of participants were positive towards research. The major obstacles faced by medical professionals were lack of adequate funding, non-inclusion of research as a subject in the medical curriculum, lack of a well-equipped laboratory, lack of mentorship and incentives.

INTRODUCTION

Medical research is required to comprehend medical literature as well as to improve and strengthen critical evaluation skills. In the present day, there has been a rise in new diseases and new treatments have been available. In addition, evidence-based medicine is very necessary to diagnose, prevent and treat any patients.¹ Research and publications help in updating the changes and addition of new knowledge, increase the habit of communication amongst colleagues, clinicians, and other researchers.¹⁻³ Promoting scientific research in the medical field helps to nurture the information of determinants of disease and its treatment.⁴

The difference between the developed and developing countries is based on the utilization of research facilities to recognize and address any medical ailment that is prevalent in their community. They need to use their resources as there can be variation in the disease pattern, etiopathogenesis.⁵ While many institutes abroad are having research methodology as a separate compulsory course, such courses are only available in specific areas such as nursing, public health, medical/dental postgraduate program of Nepalese medical education

curriculum.⁶ Study pertaining to attitude and barrier towards research has been performed among medical students,⁶ however, such studies has not been done among medical professionals which is also utmost important in the present scenario.

With the emergence of new diseases, Nepal also has to increase the research arena so that the future graduates make their career in research and also for healthy living. Hence, this study was aimed to assess the attitude and the barriers associated with medical research.

METHODS

A descriptive cross-sectional study was conducted among the medical and dental doctors of the Armed Police Force (APF) of Nepal from 10th October to 10th November 2021. Convenient sampling was used to collect the data from the participants.

Based on the study of Patil et al,⁶ taking p= as 61.7% (0.617), q=(1-p) =0.383, d=10% margin of error, the sample size was calculated using formula $n=Z^2pq/d^2=90.74$. The questionnaire was sent to all the medical professionals. However, in the final

study 83 participants participated in the study.

The questionnaires were adapted from previous studies⁷⁻⁹ and modified after consultation with the experts related to the field. A pretesting of the questionnaire was done among 30 medical professionals not attached to APF. Based upon the response of pretesting modifications were made and the final questionnaire was prepared which was used in the study. Cronbach's alpha was assessed to measure the reliability of tools. The reliability of tool was 0.83. The self-administered questionnaire consisted of two parts. The first part will deal with your demographic details, the second part was related to attitude (13 questions) & barriers (16 questions) towards conducting research.

The questionnaire was linked to a google form. The questionnaire was disseminated to the medical professionals via Facebook messenger, what's app, Viber, and another social platform and also was emailed to the persons who are not linked to social platforms. The first page of the google form contained an information sheet and informed consent. Participants were not allowed to enter inside the questionnaires without the response to the consent form. The automated Google form received only one response from one email address to avoid duplicate or multiple responses from a single participant. Full confidentiality of the data collected was ensured to all the study participants.

Before data collection, ethical approval was also taken. Data was collected, compiled, and analyzed by using Statistical Package of Social Science (SPSS) version 26. The data were analyzed using descriptive statistics.

RESULTS

In total 83 participants with a mean age of 32.8±4.7 years consented to participate in the study. Among them 22 (26.5%) were females and 61 (73.5%) were males. In total 44 (53%) were bachelor's degree holders, 35 (42.2%) were master's degree holders. Only 34 (49.4%) were involved in the research. About half of the participants received previous research

training (Table1).

Table 1: Demographic data and research information of participants

Variables	Frequency (percent)
Age (Mean years±SD)	32.8±4.7
Gender	
Female	22 (26.5)
Male	61 (73.5)
Marital status	
Married	55 (66.3)
Unmarried	28 (33.7)
Highest Educational Degree Attained	
Bachelor	44 (53)
Fellowship	3 (3.6)
Masters	35 (42.2)
PhD	1 (1.2)
Presently involved in any research	
No	49 (59)
Yes	34 (41)
Conducted a research on your own	
No	49 (59)
Yes	34 (41)
Previous research training	
No	42 (50.6)
Yes	41 (49.4)
Previously published a research	
No	57 (68.7)
Yes	26 (31.3)
Previously presented a paper or poster	
No	43 (51.8)
Yes	40 (48.2)

More than 90% of the participants were in agreement regarding the role of research enriching medical education and that it promotes critical thinking. The majority of them believed that research is also helpful for securing a better academic position. More than 90% agreed that research should be included in the MBBS/BDS curriculum (Table 2).

Table 2: Attitude towards conducting research

Variables	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Research enriches medical education	2 (2.4)	1 (1.2)	-	23 (27.7)	57 (68.7)
Research promotes critical thinking	1 (1.2)	-	1 (1.2)	37 (44.6)	44 (53)
Research conduction secures better academic position	2 (2.4)	-	5 (6)	42 (50.6)	34 (41)
Research helps in improving one's curriculum vitae	2 (2.4)	-	3 (3.6)	34 (41)	44 (53)
The research contributes to innovations in the medical field	2 (2.4)	-	1 (1.2)	30 (36.1)	50 (60.2)
Scientific research should be a part of the MBBS/BDS curriculum	2 (2.4)	-	4 (4.8)	35 (42.2)	42 (50.6)
The research will help in better understanding of a subject	2 (2.4)	1 (1.2)	1 (1.2)	45 (54.2)	34 (41)
The research will help one's clinical practice later	2 (2.4)	1 (1.2)	9 (10.8)	45 (54.2)	26 (31.3)
It is an extra burden to do research	9 (10.8)	32 (38.6)	27 (32.5)	14 (16.9)	1 (1.2)
Research is time-consuming and disturbs studies	7 (8.4)	39 (47)	24 (28.9)	13 (15.7)	29 (34.9)
Research helps in health policy direction	-	1 (1.2)	5 (6)	48 (57.8)	-
Financial prospects are good for a research career	2 (2.4)	9 (10.8)	45 (54.2)	25 (30.1)	2 (2.4)
Can consider medical research as an exclusive future job career	3 (3.6)	4 (4.8)	32 (38.6)	34 (41)	10 (12)

Table 3: Barriers towards conducting research

Barriers	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Lack of adequate funding for medical research	1 (1.2)	1 (1.2)	2 (2.4)	60 (72.3)	19 (22.9)
Lack of time	1 (1.2)	9 (10.8)	17 (20.5)	45 (54.2)	11 (13.3)
Lack of research training	2 (2.4)	3 (3.6)	5 (6)	49 (59)	24 (28.9)
Lack of interest	6 (7.2)	25 (30.1)	23 (27.7)	25 (30.1)	4 (4.8)
Non-inclusion of research as a subject in MBBS/BDS curriculum	3 (3.6)	9 (10.8)	11 (13.3)	52 (62.7)	8 (9.6)
Lack of statistical support	-		8 (9.6)	59 (71.1)	16 (19.3)
Lack of well-equipped laboratory facilities	-	5 (6)	7 (8.4)	54 (65.1)	17 (20.5)
Inadequate mentorship	-	4 (4.8)	3 (3.6)	51 (61.4)	25 (30.1)
Lack of well-equipped computer facilities	-	19 (22.9)	19 (22.9)	37 (44.6)	8 (9.6)
Lack of study subjects or samples for research	4 (4.8)	31 (37.3)	13 (15.7)	28 (33.7)	7 (8.4)
Difficulty in following up with patients or research subjects	2 (2.4)	14 (16.9)	15 (18.1)	42 (50.6)	10 (12)
Difficulty in obtaining administrative approval	2 (2.4)	12 (14.5)	16 (19.3)	39 (47)	14 (16.9)
Difficulty in obtaining ethical approval	2 (2.4)	12 (14.5)	16 (19.3)	41 (49.4)	12 (14.5)
Lack of publication related knowledge	-	9 (10.8)	14 (16.9)	47 (56.6)	13 (15.7)
Delay in the journal review process	2 (2.4)	5 (6)	20 (24.1)	45 (54.2)	11 (13.3)
Lack of incentives for research	1 (1.2)	1 (1.2)	6 (7.2)	53 (63.9)	22 (26.5)

As shown in Table 3, the major barriers for conducting research were lack of adequate funding (72.3%), non-inclusion of research as a subject in the medical curriculum (62.7%), lack of well-equipped laboratory (65.1%), lack of mentorship (61.4%) and incentives (63.9%).

DISCUSSION

There have been a lot of recent advances in medical practices, which were only possible through meticulous research. Research is vital for the development of research skills, learning ability, writing research papers and critically evaluating other research work done.¹⁰ In a developing country like Nepal, research has not been given huge priority. It is only due to the advent of the COVID-19 outbreak, the necessity of research labs was felt and the inception of medical research lab have been conceptualized and in certain parts of Nepal, it has already started too. In Nepal, medical and dental residency programs have research methodology as a part of an academic curriculum, yet only a few medical doctors are onto research activities. Again, nursing and public health have research as a major course too. Experience of research during the early phase of the medical profession helps in future residency programs and also to choose a correct path.¹¹ This study was performed in a small center of Nepal in an attempt to assess the current understanding of research and the barriers that medical professionals face in implementing research knowledge to research in Nepal. In the present study 34 (41%) were involved in any research and 26 (31.3%) had published a research paper. Nearly 50% had also obtained research training. This was lower than the other studies.^{1,10,12}

This is the era of evidence-based practice. The new diseases, new medicines, the efficacy of old medicines compared to new, these all have been possible through critical thinking, research, and coming in a common consensus through publication.^{1,12,13} In medical education, health research training is an important part. It enriches research skills right from literature search to

critically evaluating the published papers and then writing own papers.¹⁴⁻¹⁶ Majority of the participants in this study also agreed that knowledge of medical research enriches medical education and that it also promotes critical thinking. However, such habits or cultures are developed from basic undergraduate training. In a developing country like Nepal, in the medical curriculum, the importance of research has not been stressed clearly. In this study, more than 90% of medical professionals reported that research should be a part of the MBBS/BDS curriculum.

While developed countries have advanced research labs, developing countries are still facing a lot of barriers. In a study done in Nepal, Paudel et al revealed that students have a positive attitude and perception and attitude towards research. The majority of the participants revealed they were not interested in a research career due to lack of funding and fear of stress in jobs.⁶ In a study conducted in Bahrain, Khalaf et al reported that the majority of primary care physicians had a positive attitude towards research. However, there were some obstacles felt such as insufficient time given to lab, lack of incentives, and inadequate statistical support.¹⁷ Pallamparthy et al in their study showed that although most of the participants had research knowledge, the participants did show lack of time, funds, and difficulty of patient follow up as the main constraints of research.⁸ In another study in Tamil Nadu, India, Omprakash et al showed 72% of the participants had an acceptable level of knowledge. In the same study, the perceived barriers were lack of time, research skills training.⁴ In regards to barriers the participants of the present study stressed lack of adequate funding (72.3%), non-inclusion of research as a subject in the medical curriculum (62.7%), lack of well-equipped laboratory (65.1%), lack of mentorship (61.4%) and incentives (63.9%) as the major barriers for conducting research. In Nepal too, few grants have been provided by the Ministry of social welfare and Nepal Health Research Council, Nepal Academy of Science and Technology.

There are a few limitations of the study. The study was limited to the medical professionals of APF and the sample size was small so the findings cannot be generalized to the other population. We also cannot deny the information bias in this study.

CONCLUSION

The majority of participants were agreed towards the need of research. The major obstacles faced by medical professionals

were lack of adequate funding, non-inclusion of research as a subject in the medical curriculum, lack of a well-equipped laboratory, lack of mentorship and incentives. The study also observed a gap in research knowledge which has to be started at the undergraduate level thus emphasizing the addition of research as a component in the medical curriculum.

CONFLICT OF INTEREST: None

FINANCIAL DISCLOSURE: None

REFERENCES:

1. Saud AlEnazi A, Alamri AS, AlGhamdi AS, et al. Perceptions, barriers, and attitudes toward research among in-training physicians in Saudi Arabia: A multicenter survey. *Sci Prog.* 2021;104(2):368504211010604. [\[DOI\]](#)
2. Koko A, Ahmed ASM, Mustafa ASM, Elsheikh MNMA. Undergraduate medical research perspective among medical students in university of Khartoum: a cross-sectional study from Sudan. *Sudan Journal of Medical Sciences.* 2020. [\[DOI\]](#)
3. Sahib NH, Baiee HA. Knowledge attitudes and barriers of undergraduate medical studentstowards research in University of Babylon. *Medico Legal Update.* 2020;20(1):1103-9. [\[LINK\]](#)
4. Omprakash A, Kumar AP, Ramaswamy P, Sathiyasekaran BWC, Ravinder T. Assessment of Knowledge, Attitude, Perceived Barriers towards Research among First Year Undergraduate Medical Students: A Study from Chennai, Tamil Nadu, India. *Journal of Clinical and Diagnostic Research.* 2019. [\[DOI\]](#)
5. Dadipoor S, Ramezankhani A, Aghamolaei T, Safari-Moradabadi A. Barriers to research activities as perceived by medical university students: A cross-sectional study. *Avicenna J Med.* 2019;9(1):8-14. [\[DOI\]](#)
6. Paudel S, B K, Acharya BM. Medical Student's Knowledge, Attitudes and Perceived Barriers Towards Research: A Study among Nepalese Students. *International Journal of Research -GRANTHAALAYAH.* 2019;7(2):162-170. [\[DOI\]](#)
7. Osman T. Medical students' perceptions towards research at a Sudanese University. *BMC Med Educ.* 2016;16(1):253. [\[DOI\]](#)
8. Pallamparthi S, Basavareddy A. Knowledge, attitude, practice, and barriers toward research among medical students: A cross-sectional questionnaire-based survey. *Perspect Clin Res.* 2019;10(2):73-78. [\[DOI\]](#)
9. Bilal M, Haseeb A, Mari A, Ahmed S, Sher Khan MA, Saad M. Knowledge, attitudes, and barriers toward research among medical students of Karachi. *Cureus.* 2019;11(9):e5599. [\[DOI\]](#)
10. Kyaw Soe HH, Than NN, Lwin H, Nu Htay MNN, Phyu KL, Abas AL. Knowledge, attitudes, and barriers toward research: The perspectives of undergraduate medical and dental students. *J Educ Health Promot.* 2018;7:23. [\[DOI\]](#)
11. Nour MO, Natto HA, Bara'ah SF, Nizar A, Alkhiri AT. Participation of Health Colleges' Students in Research at Umm Al-Qura University, Saudi Arabia: A Cross-Sectional Study. *Imperial Journal of Interdisciplinary Research.* 2017;4(11):17-22. [\[LINK\]](#)
12. Ganesh A, Chari JK, Rajkumar M, Archana B, Balaji S. Awareness, attitude and obstacles in research among dental professionals in Chennai: an institutional based survey. *Indian Journal of Public Health.* 2020;11(03):669. [\[LINK\]](#)
13. AlSayegh AS, Enayah SK, Khoja WN, Enayah RK, Sendi NS. Assessment of the current knowledge and willingness to conduct medical research work of future healthcare providers: A cross-sectional study in Jeddah, Saudi Arabia. *J Family Med Prim Care.* 2020;9(3):1522-7. [\[DOI\]](#)
14. Narasimhaiah MG, Mallikarjuna SR, Kalaburgi RA. Study on Attitudes and Barriers of Medical Students towards Conducting Research in a Medical College. In: *Technological Innovation in Pharmaceutical Research Vol. 8.* 2021:83-90. [\[DOI\]](#)
15. AlKetbi H, Hegazy F, Alnaqbi A, Shousha T. Evidence-based practice by physiotherapists in UAE: Investigating behavior, attitudes, awareness, knowledge and barriers. *PLoS One.* 2021;16(6):e0253215. [\[DOI\]](#)
16. Pascal Iloh GU, Amadi AN, Iro OK, Agboola SM, Aguocha GU, Chukwuonye ME. Attitude, practice orientation, benefits and barriers towards health research and publications among medical practitioners in Abia State, Nigeria: A cross-sectional study. *Niger J Clin Pract.* 2020;23(2):129-37. [\[DOI\]](#)
17. Khalaf AJ, Aljowder AI, Buhamaid MJ, Alansari MF, Jassim GA. Attitudes and barriers towards conducting research amongst primary care physicians in Bahrain: a cross-sectional study. *BMC Family Practice.* 2019;20(1):20. [\[DOI\]](#)