Original Article ISSN (O):2395-2822; ISSN (P):2395-2814

Medical Research in India – "Comprehending Challenges and Quest for Renaissance"

Bishwajeet Saikia[1], Bhaskar Borgohain[2], Samarjit Dey[3], Raktim Pratim Tamuli[4], Priyanka Barua[5], Sairem Mangolnganbi Chanu[6]

[1]Assistant professor, Department of Anatomy, NEIGRIHMS, Shillong, INDIA
[2]Associate Professor, Department of Orthopaedics, NEIGRIHMS, Shillong, INDIA
[3]Assistant professor, Department of Anaesthesia, NEIGRIHMS, Shillong, INDIA
[4]Registrar, Department of Forensic Medicine, Gauhati Medical College, Guwahati, India
[5]Medical Social Worker, MIS Officer (ICDS), Department of Social Work, Govt. of Assam, Guwahati, India
[6]Assistant Professor, Department of Obstetrics and Gynaecology, NEIGRIHMS, Shillong, INDIA

Received: September 2017
Accepted: September 2017

ABSTRACT

Background: Medical research is the studies conducted to aid and support the knowledge in the field of health and medicine. Existing available data shows that in India involvement of doctor's in the field of research is on a decline. Explanation for which might be possible by evaluating the factors responsible for it. A few important factors like lack of manpower and increasing pressure to publish might be playing a key role in diluting the purpose of research work in the field of medicine. Therefore, we aim to study and explore the factors responsible for determining the attitude of health care professionals towards medical research and to evaluate their effect on the quality as well as the quantity of research work being carried out in various medical institutes in North East India. **Methods:** This was a medical institution based observational study which was conducted in two tertiary care teaching government medical institutes located in the the north eastern region of India. The tools used for primary data collection were questionnaire. Total 100 faculties (50 from each institute) were included in the study. **Results:** Out of total 100 participants, 59% doctor's in our study were of the opinion that the research work they did have some resourceful outcome, while 31% agreed of doing so for personal benefit. Most of the doctors in the institutes (73%) were of the opinion that they would like to be involved in the research work further; 7% of the participants were doubtful about it and 20% of were of the opinion that they don't like to get involved further in any kind of research activities. **Conclusion:** Based on the results obtained, restructuring medical education policies for more productivity of quality research in Indian scenario is the need of hour.

Keywords: Research, Medical Education, Medical research.

INTRODUCTION

The knowledge and advancement in any field can be attributed to its research activities. Research provides us with ever-changing new ideas and concepts. In medical science it generates knowledge that is acquired as articles, books or Journals. From clinical protocols to medical education it is the outcome of these researches which we follow. In this era of evidence based medicine, research experience is essential for physicians in order to provide the best possible care for their patients. Doctors should be well versed in latest medical advancement and should be able to understand and critically evaluate latest research in various medical fields. In our country, while most of the researchers are well rehearsed and are definitely working en route for novel development in the field of medical science, a fair number of them already over laden with patient care are succumbing under the changing demands and pressures of publishing. Existing data shows that doctors are not involved in research to the extent that they should be and their involvement in research is on a decline. According to a recent analysis done by Elsevier, World of Research 2015, the vast Indian subcontinent with 18% of the world's population, is publishing 5% of the World's highly cited output. It also receives fewer than 3% of the world's citations, and over 4% of the worlds download.[1] The UNESCO Institute of

Name & Address of Corresponding Author
Dr. Samarjit Dey,
Assistant professor,
Department of Anaesthesiology.
North Eastern Indira Gandhi Regional Institute of Health & Medical Sciences.

Statistics estimates that only 27% of total health researchers in the world are in developing countries.[2] South Asia comprised only 1.2% of all annual research on health topics.[3] With time constrains the difficulty becomes more for doctors to comply with the present scenario of publishing articles with an enormity which is ever increasing. This may somehow adulterate the attitude of authors towards research, making them confused of all the responsibility for why they publish? What they publish? How they approach for publishing their material? Therefore, in our study we aimed to explore the factors responsible for defining the ambit of medical research in present day situation and to evaluate the magnitude of its effect on authors engaged in scientific research in medical institutes. Medical council of India has also recommended publications as major criteria for promotions, and this has lead to a revolution of researches and transformation of a medical teacher to a medical researcher.

MATERIALS AND METHODS

After being approved by Institute Ethical Committee, NEIGRIHMS, Shillong this observational study was conducted in two tertiary care teaching medical institutes of the north eastern region of India: One in NEIGRIHMS, Shillong (Meghalaya) and another in Medical College, Tezpur (Assam). The tools used for primary data collection were questionnaires [Table 1]. This questionnaire was cross validated at NEIGRIHMS and followed by a total number of 100 Post-graduate doctors/students (50 from each institute) were included in the study, the questionnaires were given randomly (Computer randomisation) .Response to each question was given one point and designated under three categories: yes, no or doubtful. Data was analysed by Microsoft excel and expressed into percentage.

Table 1: Table showing the questionnaire used which was used as a primary tool for the study

Question	Response
Are you aware of the term "Research Methodology"?	Yes/ No /Doubtful
Are you involved in any research work (past/present)?	Yes/ No /Doubtful
Did you worked/working as a principle investigator any project?	Yes/ No /Doubtful
Were the PG thesis is the only research you had done/doing till now?	Yes/ No /Doubtful
Do you think the PG thesis was/is an extra-work load for you?	Yes/ No /Doubtful
Does the PG thesis helped/helping you in understanding about research methodology?	Yes/ No /Doubtful
Do you think research is important in medical practice/education?	Yes/ No /Doubtful
Would you like to get involved more in the field of research?	Yes/ No /Doubtful
If not for the above question, kindly mention the reason.	_____
Do you think carrying out a research work in your institution/department is difficult?	Yes/ No /Doubtful
If yes, for the above question, mention if there is any specific reasons.	_____
Do you have any of your previous research work published?	Yes/ No /Doubtful
Were you the first author for any of your published article?	Yes/ No /Doubtful
Were you the co-author for any of your published article?	Yes/ No /Doubtful
Being a co-author how were you involved with research work mostly?	
The post PG research work done by you was an effort for:	_____
Did any of your scientific research work helped in your day to day medical practice/education?	Yes/ No /Doubtful
Do you think doing research work in our country is wastage of manpower and money?	Yes/ No /Doubtful
Are you aware of "ethical aspects" of preparing and publishing scientific papers?	Yes/ No /Doubtful
If yes for the above question, did you follow the ethical standards?	Yes/ No /Doubtful
If no, for the above question, kindly mention the reason:	_____

The analysis was approached using these 21 key questions [Table 1]. The various challenges at the Government, Institutional and individual level were explored and the loop holes were identified for possible solutions.

RESULTS

In our study we found out that almost all the participants are well aware about the significance of research work 96% and its methodology, out of all (100) [Table 2 & Figure 1]. Most of them were involved in some kind of research work in their professional life either as a Principal Investigator (44%) or as co- investigators (56%). A total number of 34 participants informed that Post-graduate thesis work was the only research work they did in their professional life.

Table 2: Table showing awareness of doctor's towards significance of medical research

Are you aware of the significance of research?						
	Neigrimhs		Tmc		Total	
	No	%	No	%	No	%
Aware	49	98	47	94	96	96
Not	1	2	3	6	4	4

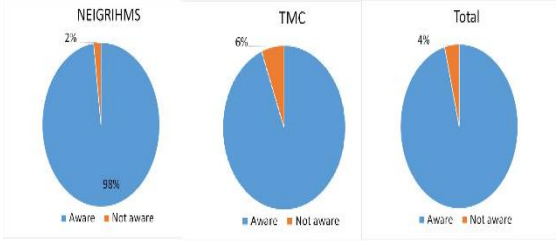

Figure 1: Table showing awareness of doctor's towards significance of medical research.

Most of the doctors in the institutes, 73% were of the opinion that they would further like to get involved in the research work. While 7% of the participants were doubtful about it, and 20% of them were of the opinion that they don't like to get involved further in any kind of research activities. [Table 3 and Figure 4]

Table 3: Attitude (negative/positive) of doctor's towards future research

Whether you would like to do further research?						
	Neigrimhs		TMC		Total	
	No	%	No	%	No	%
Yes	31	62	42	84	73	73
No	13	26	7	14	20	20
Doubtful	6	12	1	2	7	7

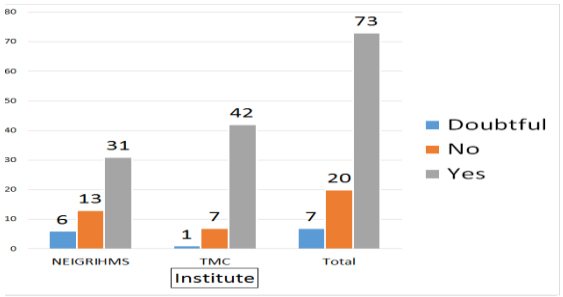

Figure 2: Attitude (negative/positive) of doctor's towards future research

To enclose an enhanced picture we analyzed this 20% of participants who showed a complete lack of enthusiasm for doing research work. Out of this 20% - 55% of the participants were generally not interested in the research work, 25% were of the opinion that for doing research work the infrastructure in their vicinity is not enough whereas, 20% thought that it's a work overload (table 4). Out of all the participants about 74% were of the opinion that in milieu of existing shortage of manpower and money in the health sector research is a burden for the health care professionals and the rest (26%) of people thought that since mostly irrelevant studies are being conducted in our country, it is purely wastage of manpower and money.

59% of the participants were of the opinion that the research work done by them helped in their clinical practice/education. However, 41% accepted that the research work they have done has no practical application and they did it just for building their personal profile. [Table 5 & Figure 4]

Table 4: Table showing factors responsible for negative attitude towards research work

Why no Further research?						
	Neigrimhs		TMC		Total	
	No	%	No	%	No	%
Not interested	7	54%	4	57%	11	55%
Time constraint	3	23%	1	14%	4	20%
Lack of Infrastructure	3	23%	2	29%	5	25%

Table 5: Table showing purpose of research work declared by the doctor's

Why did you do research?						
	NEIGRIMHS		TMC		Total	
	No	%	No	%	No	%
Benefit of society	31	62	28	56	59	59
Personal profile	19	38	22	44	41	41

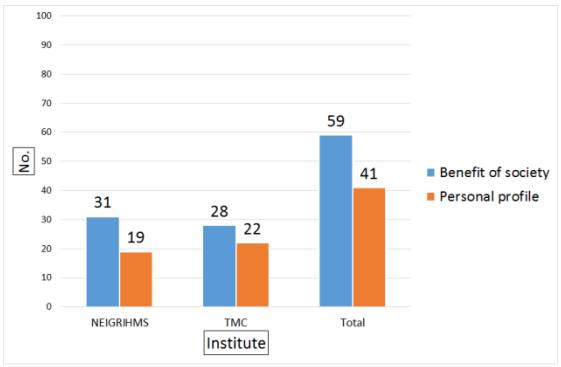

Figure 4: purpose of research work declared by the doctor's

Overall the key factors affecting the changing trends of medical research were identified as, general lack of interest (55%), inadequate infrastructure (25%), while time constrain (20%) was found to be the last but not the least factor involved [Table 4].

DISCUSSION

Medical institutions must be aware of the diseases common or endemic to that community or population its serving. Studies compromising of morphological variations, clinical conditions, patient compliance and many other significant statistical data's, must be carried out locally for building population specific treatment protocols. As described by Jain - the clinical conditions unique to this land need treatment guidelines which require innovation and a research analysis.[4] In this era of evidence based evaluation of individual patients, cultivation of research practices becomes a prerequisite for development of best possible health care system. Learning is a process of knowledge construction not of knowledge recording or absorption — and it requires environments in which learners can be active designers and contributors rather than passive consumers.[5,6] Therefore critical evaluation and analysis of the data collected by a physician himself becomes an integral element of a quality study.

As analyzed by Elsevier it was stated that in all subject's areas, the impact of India's research is inferior to the World average with natural sciences, its second impactful area after Engineering & Technology.[7] Even if there is substantial increase in the scientific publications from India in recent

years,[7] medical research often ends up in papers based on not so high quality study; published in low impact journals.[8] Medical research, which on paper is an integral part of medical education, is perhaps the most neglected field in a large majority of our medical Institutes. Analysis of the data provided by Index Medicus indicates that, in 1998, globally 416,561 were published of which India's share was only 0.714% (2974 articles).[9] Further, more than a quarter of India's citations come from India itself, making the research predominantly national and to an even greater extent, India's share of world patents are much smaller in comparison to its world population share, at 0.8% for patients filed and 0.4% for patents granted.[10] As seen in our present study most authors (41.6%) accepted of publishing for personal gains without any study impact. Patient's right for the technology is a far cry.

In our present study we found out that the major factor for the pessimistic attitude towards research was a general lack of interest (62%). Faculty, and in consequence the students, are hardly exposed to the latest tools in biomedical research and so feel shy of using modern technologies for research. In this atmosphere most teachers lack confidence in developing research project/s.[11] General lack of interest might be a secondary consequence of all these factors summed up. Problems like this cannot have a possible direct solution but measures like research orientation workshops starting early in undergraduate curriculum, might possibly be the answer to change this attitude in long run.

The other important factors which came out in our present study were lack of resources. This includes inadequate manpower, poor accessibility to international research tools/finance, professional medical writing and biostatistics documentation. With Institutes in our country running in bare minimum infrastructure due to lack of resources both money and manpower, research is practically a bridge too far. Recent studies suggests that although India now ranks 11th in number of papers and 16th in citations an improvement in 2009-2011 over its 1999-2008 positions of 12 and 18, there is a relatively poor numerical strength and below par visibility of Indian medical writers with best performance seen in pharmacology (3.37%) and poorest performance in neurosciences and behaviour, and psychology/psychiatry where we contribute 0.60% and 0.33% of global research. We are unable to achieve a better than 36% impact in any medical field.[1]

While these problems are attend through multiple programs throughout our country, till now we do not have any regular or sanctioned posts in research positions in any of the medical colleges like an assistant professor, research leading from the front in a formal manner; encouraging research to trainees. Since sanctioned posts cannot be created without the long drawn financial and bureaucratic implications, we can have honorary adjunct faculty and visiting research faculty position from diverse disciplines like biotechnology, engineering, statistics, philosophy, etc.[8,12] May be a small, but practically working and dedicated R and D Department attached to every medical Institute might can help trainees towards research and scientific inquiry. Developing human as well as financial resources and encouraging young physicians to actively engage in research will have our country seeing increase quantity and quality of research activities. However, with all the factors taken care of, honest individual efforts still remains the key for improving the quality and citability of the published work.

Limitations of the study

1) The study carried out in two tertiary care medical Institutes in North-east India might not exactly be representing the scenario of medical research in India; but it is definitely highlighting a few important factors which need to be addressed at this point of time.
2) A bigger sample size would reflect a better picture of the research issue.

CONCLUSION

The poor global visibility of Indian authors in medical field and research, with an increase in the quantity of published material without any significant impact, is an emerging challenge. Pressure of publication alone adds up to the quantity, not quality.

Implications to the policy makers in Medical Education would be

1) The Medical education system needs revision and re-structure with ideas like early introduction of research culture in medical undergraduate curriculum.
2) Possibility of a separate research units in Medical Institutes with appointment of Adjunct faculties for research activities only.

Implications for the Faculties are

1) Faculties should be aware enough to carry out population specific research for clinical protocols and effective health policies based on them.
2) It should be understood that mere publishing an article with impact without any purpose other than personal gains has to be checked and discouraged at all possible levels.

REFERENCES

1. Elsevier Analytical Services. World of Research 2015 [Internet]. Elsevier. 2015 [cited 2017 May 8]. Available

from: https://www.elsevier.com/research-intelligence/resource-library/world-of-research-2015
2. UNESCO Institute for Statistics. Global Education Digest 2004 [Internet]. 2004 [cited 2017 May 8]. Available from: http://www.unesco.org/education/docs/EN_GD2004_v2.pdf
3. Sadana R, D'Souza C, Hyder AA, Chowdhury AMR. Importance of health research in South Asia. BMJ. 2004 Apr 3;328(7443):826–30.
4. Jain AK, Kumar S. Indian Journal of Orthopaedics: Journey continues. Indian J Orthop. 2013 Jan;47(1):1–5.
5. Papert S, Harel I. Situating Constructionism [Internet]. Ablex Publishing Corporation; 1991 [cited 2017 May 8]. Available from: http://www.papert.org/articles/SituatingConstructionism.html
6. Fischer G. Beyond Couch Potatoes: From Consumers to Designers. Dblp. 2012;7(12).
7. Chakravarthy M. Scientific publications from India--on the right trajectory? Ann Card Anaesth. 2012;15(1):1–3.
8. Borgohain B, Saikia B, Sarma A. Cultivate…. research an attitude and learning a passion. Indian J Orthop. 2014 Nov;48(6):631.
9. Satyanarayana K. National Mapping of Science - India: Biomedical Sciences [Internet]. Information Today & Tomorrow (vol.19). 2000 [cited 2017 May 9]. p. 17–21. Available from: http://itt.nissat.tripod.com/itt20001/nmsbio.htm
10. Deo MG. Undergraduate medical students' research in India. J Postgrad Med. 54(3):176–9.
11. Kaushal K, Kalra S. Community health orientation of Indian Journal of Endocrinology and Metabolism: A bibliometric analysis of Indian Journal of Endocrinology and Metabolism. Indian J Endocrinol Metab. 2015;19(3):399–404.

How to cite this article: Saikia B, Borgohain B, Dey S, Tamuli RP, Barua P, Chanu SM. Medical Research in India – "Comprehending Challenges and Quest for Renaissance". Ann. Int. Med. Den. Res. 2017; 3(6):AT03-AT07.

Source of Support: Nil, **Conflict of Interest:** None declared