

## Awareness & Knowledge Regarding Research Skills among Post Graduate Emergency Medicine Doctors in Teaching Hospitals of Kolkata

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### Abstract

*Introduction:* In today's world, all doctors are required to keep their medical knowledge and training up-to-date. Doctors should provide effective treatments based on the 'best available evidence'. It is widely accepted that evidence-based medicine has contributed significantly to the practice of medicine and advancement of medical science. Every doctor should strive to contribute to the generation of evidence by conducting research. *Objectives of the Study:* To assess the awareness and knowledge of research skills among post graduate emergency medicine doctors in teaching hospitals of Kolkata and identify any further scope inculcating research skills of emergency medicine residents leading to contribution in health research. *Methodology:* It is a multicentre, prospective questionnaire survey among post graduate emergency medicine residents of teaching hospitals in Kolkata. The sample size was 100 done during period of 1 year. *Discussion:* 60.6% were more than 29 years of age and 32% among 26-28. 60% had prior experience of writing research paper and even then 96% wanted to participate in research methodology workshop. 99% knew that research improves outcomes in patient management and that they require continue guidance and supervision during their thesis projects. Only few were able to complete their research work on time. The major reasons cited for poor research activity in our study were inadequate facilities for research and lack of time. In institutional reasons, we found 54% had found inadequate support from mentors or assistants and 20% cited lack of research curriculum. 51% believe that active participation can be done by MCI/DNB and universities by allocating time for research and making it mandatory. *Conclusion:* The study population was male predominant and young with majority having the background of research knowledge. Most of the participants however agreed that research methodology workshop was needed to improve their knowledge and in fact should be made compulsory in post graduation courses. 97% felt that specific time should be allotted separately during curriculum planning for research. In conclusion research is the realized need among our study population. Steps should be taken for promotion of research among emergency medicine post graduate residents.

**Keywords:** Research; Emergency; Medicine Residents.

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### Introduction

Doctors should provide effective treatments based on the 'best available evidence'. It is widely accepted

that evidence-based medicine has contributed significantly to the practice of medicine and advancement of medical science. Every doctor should strive to contribute to the generation of evidence by conducting research [1]. For carrying out a research

study, adequate knowledge, practical skills, and development of the right attitude are crucial [2]. When we consider the medical research scenario in India, we find that quality and number of published research articles are limited. As per the data available till 2008, India holds the twelfth rank among the productive countries in medicine research consisting of 65,745 articles with a global publication share of 1.59% [3]. The medical education system in India does not incorporate research methodology as a part of the curriculum. It is seen that research programs in medical colleges get the lowest priority. There are a numbers of reasons, including lack of funding and manpower resources, responsible for the poor quality in research-oriented medical education [4]. A previous study shows that out of 100,000 undergraduate medical students in India just 0.9% had interest in research through various research programs [5]. From this, it is clear that the inclination for research is poor among undergraduate medical students who are future resident doctors (postgraduate students). As per the Medical Council of India (MCI) requirements, post graduate trainee doctors have to carry out a dissertation project as a part of their MD/MS curriculum.

It is a common observation that a majority of resident doctors conduct research projects during the second or third years of residency [6]. In order to encourage research orientation in resident doctors, currently MCI has made it mandatory to not only attend one international/national conference, but also give an oral/poster presentation and send the article for publication [7]. An understanding of statistical methods and basic epidemiology are crucial for the practice of modern medicine [8]. A review of previous literature shows that the data regarding knowledge, attitudes, and practices toward medical research among doctors pursuing postgraduate studies in India is lacking. It So, we decided to undertake a cross-sectional study to assess research-related knowledge, attitude, and practices of postgraduate emergency medicine resident doctors of teaching hospitals of Kolkata, India.

#### *Objectives of the Study*

In our present study the author proposes to assess the awareness and knowledge of research skills among post graduate emergency medicine doctors in teaching hospitals of Kolkata and identify any further scope inculcating research skills of emergency medicine residents leading to contribution in health research.

#### *Research Questions*

1. What is the level of awareness and knowledge of research among post graduate emergency medicine doctors in teaching hospitals of Kolkata?
2. What are the factors that prevent post graduate emergency medicine doctors in contributing to health research?
3. What are the measures that can be taken in order to assist post graduate emergency medicine doctors in conducting research?

#### **Methodology**

Author proposed to carry out a multicentric, prospective, survey among post graduate emergency medicine residents of teaching hospitals in Kolkata.

#### *Study Population*

**Study Sample:** For the purpose of this proposal, data was collected, from all participants fulfilling the inclusion criteria. The expected sample size that was calculated with the help of "Raosoft" sample Size calculation. The sample size required for this survey was calculated as 102, rounded to 100 with the following formula

#### *Inclusion Criteria*

Post graduate emergency medicine resident doctors from teaching hospitals in Kolkata during the period of study.

#### *Exclusion Criteria*

Non training medical officers working in teaching hospitals of Kolkata.

Post graduate diploma emergency medicine resident doctors where research and thesis are not included in syllabus.

#### *The Survey*

The author carried out a questionnaire based survey among PG emergency medicine residents from teaching hospitals of Kolkata and an electronic survey using the web based software "survey monkey" (<http://www.surveymonkey.com>) which allowed secure, anonymous distribution of questionnaire via the internet. An Excel containing the aims and objective of the study with a link to the survey was

distributed among post graduated resident doctors. After initial e-mailing, 2 reminders sent out approx. every 3 weeks to physicians who had not responded to the survey. There was no incentive for participation and physicians who did not want to take part in the study, they did not have to and that non participation had no effect on their professional careers since questionnaires are anonymous.

Upon completion of data collection, data was coded, captured as Excel and then the statistical analysis was done. Descriptive statistics was used to summarize the data and provide answers to the research objectives.

#### *Ethical Approval*

The thesis (research) proposal was submitted to the Research Ethics Committee of Peerless Hospital & B.K. Roy Research Centre Kolkata for scrutiny and was approval was taken.

#### *Data Presentation*

In the present scenario of post graduation in India, it has become mandatory to do thesis and present research articles for publication as per MCI. A study done in Croatia [14], they found that 23% of the undergraduate students were involved in research project, but we in India start only during our post graduate programmes. We tried to find in our study the level of awareness and knowledge of research among post graduate doctors in Kolkata and whether the current methods of training and facilities are adequate to generate interests among students to do their post graduation research. In our study we had taken 100 post graduates, out of which we had to exclude one as the participant did not submit the questionnaire. Among 99 participants, 60.6% were more than 29 years of age and 32% among 26-28 years as that compared to a study by Giri, et al [15] where he had

29% above age of 29 years and 51% of 26-28 years. We had predominant male population for the study of about 67% to that of 59.5% in Giri, et al. In our population, we found that 60% had prior experience of writing research paper, 37% had presented paper in state, national level and 32% had publications in journals, 96% wanted to participate in research methodology workshop.

In a study done in Madison, USA [16], where they had 143 post graduates, 85% felt research experience was desirable, 48% were interested in pursuing research during residency and only 8% were active in research. As compared to our study where, post graduates felt that 99% wanted research methodology be made compulsory for them, two studies done in Canada and Pakistan showed that time during post graduation should be spent learning the clinical aspects and were unwilling to sacrifice personal time for research [17].

In our study, the residents also strongly believe, 97%, that time should be allotted separately during curriculum planning for research.

It was important to know that though, majority of the residents, 99%, knew that research improves outcomes in patient management and that they require continue guidance and supervision during their thesis projects, only few were able to complete their research work on time or earnestly. The major reasons cited for poor research activity in our study were inadequate facilities for research, 73% and lack of time 23%, whereas a study done in Gujrat, India by Patel, et al [18] found that 60% had lack of time and 26% with lack of research curriculum. While in Pakistan 19, 31% had lack of resources and poor research training at undergraduate and post graduate levels, 17%. These vary drastically to Western countries where lack of interest and lack of time were more important factors. In institutional reasons, we found 54% had found inadequate support from mentors or assistants and 20% cited lack of research curriculum.

**Table 1:** Age distribution

| Age (in years) | Frequency | Percent |
|----------------|-----------|---------|
| > 29yrs        | 60        | 60.6    |
| 23-25yrs       | 7         | 7.1     |
| 26-28yrs       | 32        | 32.3    |
| Total          | 99        | 100.0   |

**Table 2:** Gender distribution of the enrolled PEGM doctors

| Gender | Frequency | Percent |
|--------|-----------|---------|
| Female | 33        | 33.3    |
| Male   | 66        | 66.7    |
| Total  | 99        | 100.0   |

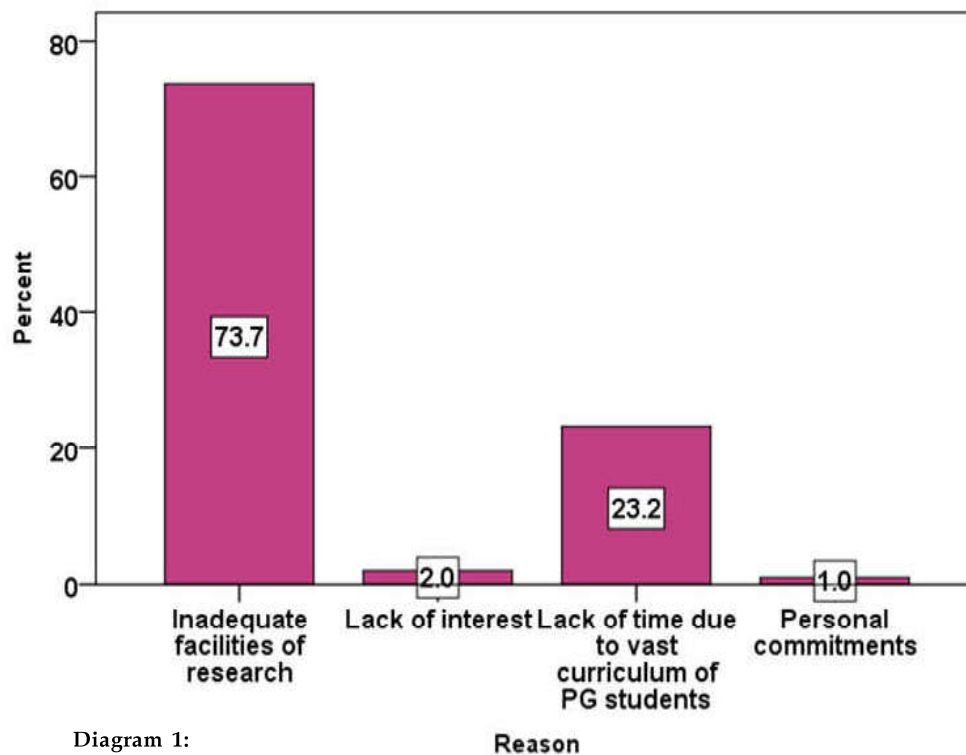
**Table 3:** Year of residency of the resident doctors

| Year of residency | Frequency | Percent |
|-------------------|-----------|---------|
| First year        | 31        | 31.3    |
| Second year       | 38        | 38.4    |
| Third year        | 30        | 30.3    |
| Total             | 99        | 100.0   |

**Table 4:** Marital status of PGEM doctors

|           | Frequency | Percent |
|-----------|-----------|---------|
| Married   | 47        | 47.5    |
| Unmarried | 52        | 52.5    |
| Total     | 99        | 100.0   |

### Obstacles in conducting medical research for personal reason



**Table 1:**

| Reason  | Resident's response* N (%) |
|---|----------------------------|
| <b>Personal reasons</b>                                   |                            |
| I. Lack of interest                                       | 2 (2.0)                    |
| II. Lack of time due to vast curriculum of PG subjects    | 23 (23.2)                  |
| III. Inadequate facilities for research                   | 73 (73.7)                  |
| IV. Other personal commitments like marriage/ family etc. | 1 (1.0)                    |
| <b>Institutional reasons</b>                              |                            |
| i. Lack of interest by the faculty/ guide                 | 12 (12.1)                  |
| ii. Inadequate support by mentors/assistants              | 54 (54.5)                  |
| iii. Lack of research curriculum                          | 20 (20.2)                  |
| iv. Inadequate financial support                          | 5 (5.1)                    |
| v. Lack of time   | 8 (8.1)                    |

We asked our participants what can be done for research promotion in institutions, we found 64.6% wanted 2-3 months allocated for supervised research and provide attractive research stipend.

They also said, around 51% that active participation can be done by MCI, DNB and universities by allocating months for research and making it mandatory.

We do have a few limitations during our study period. We found that we have taken only emergency medicine specialty which shows the data of only one specialty and does not involve other clinical or para clinical. We could not include the questions that reflected a broad range of topics in research for post graduate doctors. Our study sample size included only 99 which do not truly represent the total population size of post graduate residents of all specialties.

**Response by PGEM doctors for promoting research by MCI / DNB / Universities**

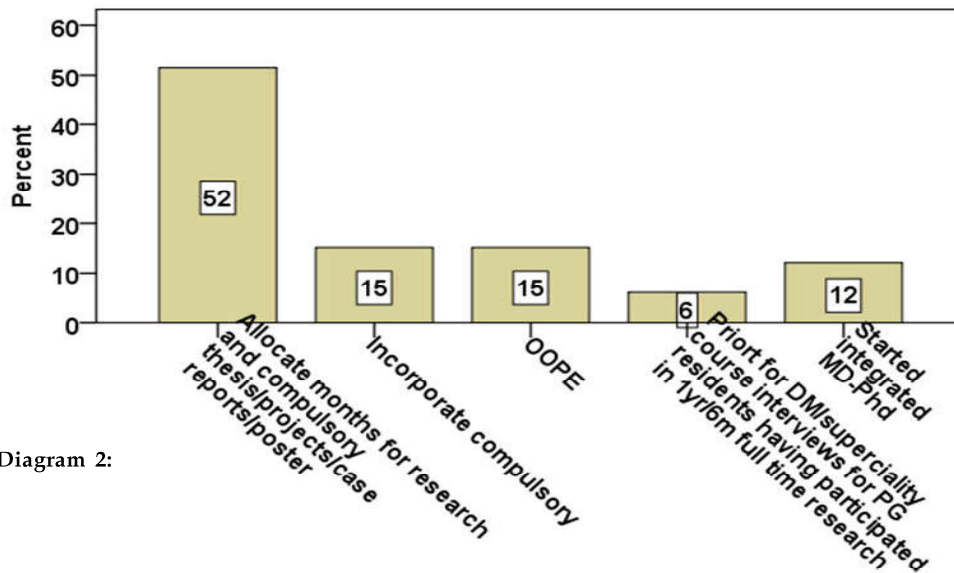


Diagram 2:

**Response by PGEM doctors for promoting research in Medical College**

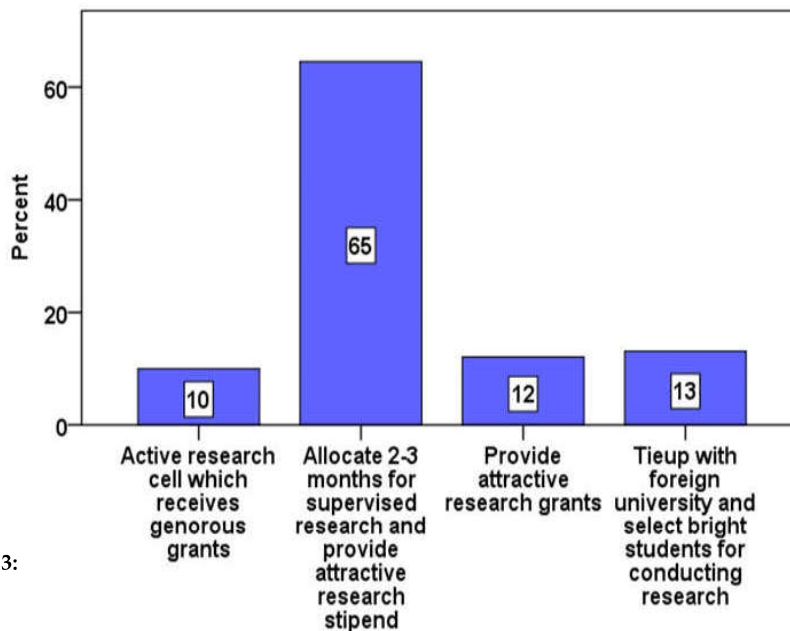


Diagram 3:

## Conclusion and Discussion

The study population was a male predominant one and young with majority having the background of research knowledge. Most of the participants however agreed that research methodology workshop was needed to improve their knowledge and in fact should be made compulsory in post graduation courses. 97% felt that specific time should be allotted separately during curriculum planning for research. In conclusion research is the realized need among our study population. Steps should be taken for promotion of research among emergency medicine post graduate residents of the study population.

So this study emphasises on conducting research methodology workshop for post graduate residents. This study further recommends that medical colleges should allocate specific time during post graduate Residency for research and provide attractive stipend to promote research.

Furthermore Medical council of India, National board of Examinations (DNB) and Universities should take decisions to promote research.

By implementing all the steps for promotion of research and providing adequate support to post graduate Residents by mentors, quality of research will improve which in turn will lead to better patient outcome.

## References

1. Sackett DL, Roseberg WM, Gray JA, Haynes RB, Richardson WS. Evidence based medicine: What it is and what it is isn't. *BMJ*. 1996;312:71-2. [PMCID: PMC2349778] [PubMed: 8555924].
2. Bhatt A. Mumbai: Pharma BioWorld; The Challenge of growth in clinical research: Training gap analysis; 2005.p.56-8.
3. Gupta BM, Bala A. A scientometric analysis of Indian research output in medicine during 1999-2008. *J Nat Sci Biol Med*. 2011;2:87-100. [PMCID: PMC3312706] [PubMed: 22470241].
4. Requirement for Research Oriented Medical Education in India in Entrance Exams 2012 Education and Career in India. 2011. [Last accessed on 2011 Nov 15]. Available from: <http://entrance-exam.net/requirement-for-research-oriented-medical-education-in-india/>.
5. Deo MG. Undergraduate medical students' research in India. *J Postgrad Med*. 2008;54:176-9. [PubMed: 18626161].
6. Post Graduate Medical Education Regulations 2000. [Last accessed on 2011 Nov 14]. Available from: <http://www.mciindia.org/RulesandRegulations/PGMedicalEducationRegulations2000.aspx>.
7. Medical Council of India Postgraduate Medical Education regulations, 2000. [Last accessed on 2011 Nov 14]. Available from: <http://www.mciindia.org/rulesand-regulation/Postgraduate-Medical-Education-Regulations-2000.pdf>.
8. Potti A, Mariani P, Saeed M, Smego RA., Jr Residents as researchers: Expectations, requirements and productivity. *Am J Med*. 2003;115:510-4. [PubMed].
9. Pawar DB, Gawde SR, Marathe PA. Awareness about medical research among resident doctors in a tertiary care hospital: A cross-sectional survey. *Perspect Clin Res*. 2012;3:57-61. [PMC free article] [PubMed].
10. Temte JL, hunter PH, Beasley JW. Factors associated with research interest and activity during family practice residency. *Fam Med*. 1994;26:93-7. [PubMed].
11. Silcox LC, Ashbury TL, Vandekerckhof EG, Milne B. Residents' and program directors' attitudes toward research during anesthesiology training: A Canadian perspective. *Anesth Analg*. 2006;102:859-64. [PubMed].
12. Sumi E, Murayama T, Yokode M. A survey of attitudes toward clinical research among physicians at Kyoto University Hospital. *BMC Med Educ*. 2009;9:75. [PMC free article] [PubMed].
13. Khan H, Khan S, Iqbal A. Knowledge, attitudes and practices around health research: The perspective of physicians-in-training in Pakistan. *BMC Med Educ*. 2009;9:46. [PMC free article] [PubMed].
14. Kolcic I, Polasek o, Mihalj H, Gombac E, Kraljevic V, Kraljevic I, et al. Research involvement, specialty choice, and emigration preferences of first year medical students in Croatia. *Croat Med J* 2005;46:88-95.
15. Giri PA, Bangal VB, Phalke DB. Knowledge, attitude and practices towards medical research amongst the postgraduate students of pravara institute of medical sciences university of central India. *J Fam Med Primary Care* 2014;3:22-4.
16. Temte JL, hunter PH, Beasley JW. Factors associated with research interest and activity during family practice residency. *Fam Med* 1994;26:93-7.
17. Silcox LC, Ashbury TL, Vandekerckhof EG, Milne B. Residents' and program directors' attitudes toward research during anesthesiology training: A Canadian perspective. *Anesth Analg* 2006;102:859 64.
18. McCrindle BW, Grimes RB. Will pediatric residents do research? A survey of residents' attitudes. *Ann R Coll Physicians Surg Can* 1993;26:283 7.
19. Patel Brijalkumar S, Kubavat Amita R, Sondara Divyesh B, Chaudhari Jignesh S. Knowledge, Attitude, and Practice of Resident Doctors about Medical Research in a Tertiary care Hospital, Rajkot, Gujrat. *Int J Res Med*. 2014;3(2);94-97.
20. Khan H, Khan S, Iqbal A. Knowledge, attitudes and practices around health research: The perspective of physicians in training in Pakistan. *BMC Med Educ* 2009;9:46.