

Difficulty Faced by Trainee Doctors in Conducting Research and Measures to Assist Trainee Doctors

Pankaj Kumar Singh¹, Quency Dcosta²

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Author's Affiliation: ¹Registrar, Chesterfield Royal Hospital, Chesterfield S44 5BL, United Kingdom, ²Registrar, Department of Emergency Medicine, Lewisham Hospital, London United Kingdom.

Corresponding Author: Pankaj Kumar Singh, Registrar, Chesterfield Royal Hospital, Chesterfield S44 5BL, United Kingdom.

E-mail: pankajmbbsru@gmail.com

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Abstract

Aims and objectives: In this Research, we study the difficulties faced by postgraduate trainee doctors while conducting research and the measures that can be taken to assist post-graduate trainee doctors in conducting research.

Material and Methods: A questionnaire based survey was carried out among Post-graduate trainee doctors (DNB & MD PG residents) from teaching hospitals in Kolkata duration of the study was approximately 1 year between July 2018 - June 2019. 170 postgraduate trainee doctors from the clinical and pre/para clinical specialty were evaluated, difficulties faced by them in conducting research, and suggestions on how research can be promoted among PG residents was taken.

Results: In the present study, residents reported significant reasons for not conducting adequate research during residencies, such as lack of time, inadequate guidance from teaching staff, and lack of financial support, inadequate support by mentors/assistants, and lack of research curriculum. Among personal reasons, 51.8% of the respondents reported that inadequate research facilities were the main reason for not conducting research/lack of research interest. The respondents of both the groups stated that lack of time due to the vast curriculum of PG subjects was also one of the reasons for not conducting research/ lack of research interest.

Among institutional reasons, 44.1% of the respondents reported that a lack of research curriculum was the main reason for preventing PG residents from conducting research

Conclusion: In the present study, the participants were asked about what can be done for research promotion in institutions, majority of the respondents wanted 2-3 months of allocated time for supervised research and provision of a research stipend. Others suggested the provision of research grants and the creation of an active research cell. About MCI body measures, incorporation of compulsory research methodology workshops in PG curriculum, providing a paid fellowship in research, giving priority for students who have participated in part-time research, enter super speciality courses were also suggested.

Keywords: Clinical research; Medical education; Post graduate trainee doctors; Medical Council of India.



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INTRODUCTION

Research comprises of work undertaken on a systemic basis to increase the stock of knowledge, including the knowledge of an individual, culture, and society and the use of this stock of knowledge to devise new applications. It is used to establish and confirm facts, reaffirm the results of previous work, solve new or existing problems, support theorems, or develop new theories.¹

A common explanation for the rather limited novel research output from medical institutions is that the medical college faculty members have a patient load amidst meager infrastructure which leaves them with little time and energy to think about any serious research. A healthy academic and productive environment demands equal participation, incentives, and research opportunities.²

It is a well known fact that formal training in research methods is not part of the undergraduate medical curriculum in India in contrast to other professions. Research methodology training has remained a neglected area in the Indian curriculum of medical education.³ There are several reasons, including lack of funding and manpower resources, responsible for the poor quality of research oriented medical education.⁴ A very small percentage of undergraduate medical students in India had an 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 postgraduate students. Even though multiple platforms are available to encourage research like the Indian Council of Medical Research (ICMR) study grants at the undergraduate level, lack of exposure during the undergraduate program forms a major obstacle towards postgraduate research.⁶

Materials and Methods

Site of study: Postgraduate teaching hospitals in Kolkata (both Government & Private, DNB & MD).

Study Population: Clinical and paraclinical Post-graduate trainee doctors.

Study Design: A cross-sectional multicentre, prospective survey was conducted using a structured and pre-validated questionnaire.

Duration of study: The duration of the study was approximately 1 year between July 2018 - June 2019

Inclusion Criteria

Postgraduate trainee doctors (DNB & MD PG residents) from teaching hospitals in Kolkata during the period of study.

Exclusion Criteria

Non-training medical officers working in teaching hospitals of Kolkata. Postgraduate diploma resident doctors where research and thesis are not included in the syllabus.

Data Collection

The questionnaire was designed based on guidelines of knowledge of research methodology, attitudes, and practices towards research and measures to improve research practices and drafted in the English language.

Statistical Methods

A questionnaire based survey was carried out among PG resident doctors from teaching hospitals from Kolkata through an electronic survey using the web based software "survey monkey" (<http://www.surveymonkey.com>) which allowed secure, anonymous distribution of questionnaire via the internet.

Statistical analysis

A total of 170 postgraduate trainee doctors were enrolled in this study and data was analyzed. Descriptive statistical analysis was performed to calculate the means with corresponding standard deviations (S.D.). Using this software, basic cross-tabulation and associations were performed. Chi-square test was used to test the association of different study variables. Z-test (Standard Normal Deviate) was used to test the significant difference between the two proportions. $p < 0.05$ was considered statistically significant.

Results

Demography

Table 1: Distribution of age of the participants

Age Group (in years)	Number	%
23 - 25	32	18.00
26 - 28	76	76.40
>28	62	5.60
Total	170	100.00
Mean \pm s.d.	27.81 \pm 2.69	
Median	27	
Range	23 - 33	

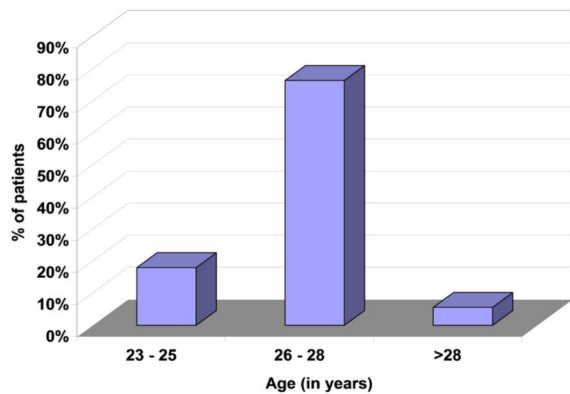


Fig. 1: Distribution of age of the participants

The mean age (Mean \pm S.D.) of the participants was 27.81 ± 2.69 years with range 23 – 33years and the median age was 27 years.

Table 2: Gender Distribution of the Enrolled PGT Doctors

Age Group (in years)	Number	%
23 - 25	32	18.00
26 - 28	76	76.40
>28	62	5.60
Total	170	100.00
Mean \pm s.d.	27.81 \pm 2.69	
Median	27	
Range	23 - 33	

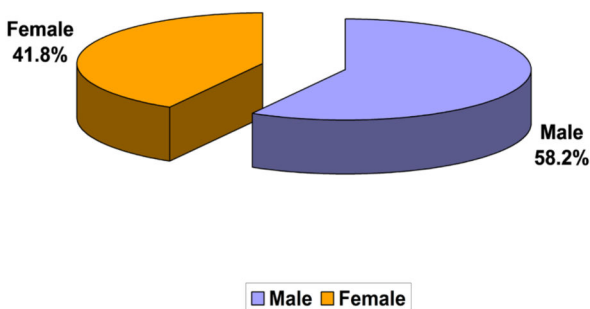


Fig. 2: Gender Distribution of the Enrolled PGT Doctors

Majority of the participants (58.2%) were males.

Table 3: Distribution of field of specialization of the participants

Field of specialization	Number	%
Clinical	103	60.60
Pre and Para-Clinical	67	39.40
Total	170	100.00

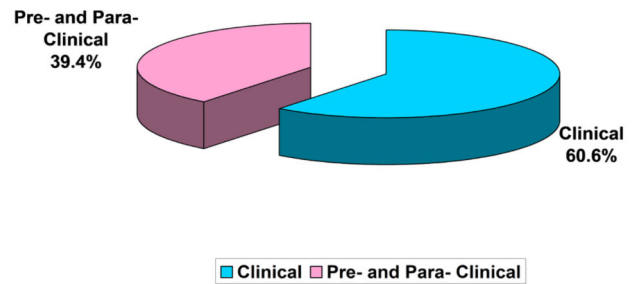


Fig. 3: Distribution of field of specialization of the participants

60.6% of the respondents were from clinical field and 39.4% were from pre/ para- clinical field.

Reasons among PG students for not conducting research

Personal reasons:

Table 4: Answer by the respondents regarding reasons for not conducting research/ lack interest in research

Reason of not conducting research/ lack interest in research	Number	%
Lack of interest	9	5.30
Lack of time due to vast curriculum of PG subjects	63	37.10
Inadequate facilities for research	88	51.80
Other personal commitments like marriage/family etc.	10	5.90
Total	170	100.00

Personal Reasons

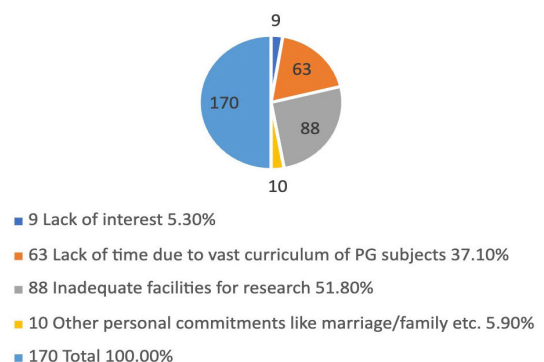


Fig. 4: Answer by the respondents regarding reasons for not conducting research/ lack interest in research

51.8% of the respondents reported that Inadequate facilities for research was the main reason for not conducting research/ lack interest in research which was significantly higher ($Z = 2.13$; $p = 0.033$).

Table 5: Distribution of answer by the respondents regarding reason for not conducting research/lack interest in research and the respondents of the two groups

Reason of not conducting research/ lack interest in research	Clinical (n=103)	Pre and Para-clinical (n=67)	Total
Lack of interest	6	3	9
Row %	66.7	33.3	100
Col %	5.8	4.5	5.3
Lack of time due to vast curriculum of PG subjects	36	27	63
Row %	57.1	42.9	100
Col %	35	40.3	37.1
Inadequate facilities for research	53	35	88
Row %	60.2	39.8	100
Col %	51.5	52.2	51.8
Other personal commitments like marriage/family etc.	8	2	10
Row %	80	20	100
Col %	7.8	3	5.9
Total	103	67	170
Row %	60.6	39.4	100
Col %	100	100	100

$\chi^2=2.03$; $p=0.56$ NS - Not Significant

Chi-square (χ^2) test showed that there was no significant association with the respondents regarding reason of not conducting research/lack interest in research and the respondents of the two groups ($p=0.66$).

Most of the respondents of both the groups found lack of time due to vast curriculum of PG subjects as the reason of not conducting research/lack interest in research.

Institutional reasons:

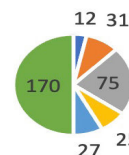
Table 6: Answer by the respondents regarding reasons preventing PG residents from conducting research

Reason of preventing PG residents from conducting research	Number	%
Lack of interest by the faculty/ guide	12	7.10
Inadequate support by mentors / assistants	31	18.20
Lack of research curriculum	75	44.10
Inadequate financial support	25	14.70

Lack of time	27	15.90
Total	170	100.00

44.1% of the respondents reported that lack of research curriculum was the main reason for preventing PG residents from conducting research which was significantly higher ($Z= 3.97$; $p<0.0001$).

Institutional Reasons



- 12 Lack of interest by the faculty/guide 7.10%
- 31 Inadequate support by mentors /assistants 18.20%
- 75 Lack of research curriculum 44.10%
- 25 Inadequate financial support 14.70%
- 27 Lack of time 15.90%
- 170 Total 100.00%

Fig. 5: Answer by the respondents regarding reasons preventing PG residents from conducting research

Table 7: Distribution of answer by the respondents regarding reasons for preventing PG residents from conducting research and the respondents of the two groups

Reason of preventing PG residents from conducting research	Clinical (n=103)	Pre and Para-Clinical (n=67)	Total
Lack of interest by the faculty/guide	10	2	12
Row %	83.3	16.7	100
Col %	9.7	3	7.1
Inadequate support by mentors /assistants	19	12	31
Row %	61.3	38.7	100
Col %	18.4	17.9	18.2
Lack of research curriculum	42	33	75
Row %	56	44	100
Col %	40.8	49.3	44.1
Inadequate financial support	15	10	25
Row %	60	40	100
Col %	14.6	14.9	14.7
Lack of time	17	10	27
Row %	63	37	100
Col %	16.5	14.9	15.9
Total	103	67	170
Row %	60.6	39.4	100
Col %	100	100	100

$\chi^2=3.33$; $p=0.50$ NS- Not Significant

Chi-square (χ^2) test showed that there was no significant association the respondents regarding reason of preventing PG residents from conducting research and the respondents of the two groups ($p=0.50$). Most of the respondents of both the groups found Lack of research curriculum as the reason for preventing PG residents from conducting research.

How research can be made attractive for PG students/how to promote research among PG residents?

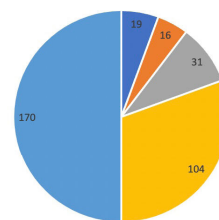
Medical college /Teaching hospitals measures:

Table 8: Answer by the respondents regarding the way to promote research among PG residents

The way to promote research among PG residents	Number	%
By providing attractive research grants	19	11.20
By tying up with foreign university and select bright students for conducting research	16	9.40
Through active research cell with generous grants	31	18.20

By allocating 2 -3 months for supervised research and providing attractive research stipend	104	61.20
Total	170	100.00

Medical College/ Teaching Hospital Measures



- 19 By providing attractive research grants 11.20%
- 16 By tying up with foreign university and select bright students for conducting research 9.40%
- 31 Through active research cell with generous grants 18.20%
- 104 By allocating 2 -3 months for supervised research and providing attractive research stipend 61.20%
- 170 Total 100.00%

Fig. 6: Answer by the respondents regarding the way to promote research among PG residents

61.2% of the respondents reported that by allocating 2-3 months for supervised research and providing attractive research stipend research could be promoted among PG students which was significantly higher ($Z= 6.21$; $p<0.0001$).

MCI/regulative body measures:

Table 9: Answer by the respondents regarding the way of promoting research by MCI/DNB/universities among PG residents

The way of promoting research by MCI/NBE/Universities among PG residents	Number	%
By initiating integrated MD, Ph.D.	9	5.30
By giving priority to get admission to DM/Super-specialty courses for PG residents having experience of at least 1 year/6 months full time research	15	8.80
By allocating some time period (out of 3 years) for compulsory research in term of thesis, projects, case reports and poster presentation	79	46.50
OOPE (out of professional experience) one year paid fellowship in compulsory research	8	4.70
By incorporating compulsory research methodology workshops in PG curriculum	59	34.70
Total	170	100.00

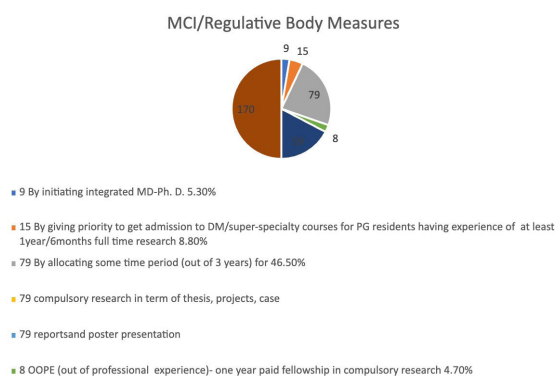


Fig. 7: Answer by the respondents regarding the way of promoting research by MCI/DNB/Universities among PG residents

46.5% of the respondents reported that by allocating some period (out of 3 years) for compulsory research in term of the thesis, projects, case reports, and poster presentation, by different medical institutions research can be promoted among PG students which were significantly higher ($Z= 1.72$; $p=0.08$).

Discussion

In the present study, residents reported significant reasons for not conducting adequate research during residencies, such as lack of time, inadequate

guidance from teaching staff, and lack of financial support, inadequate support by mentors/ assistants, and lack of research curriculum. Among personal reasons, 51.8% of the respondents reported that inadequate research facilities were the main reason for not conducting research/lack of research interest. The respondents of both the groups stated that lack of time due to the vast curriculum of PG subjects was also one of the reasons for not conducting research/ lack of research interest.

Among institutional reasons, 44.1% of the respondents reported that a lack of research curriculum was the main reason for preventing PG residents from conducting research. In a study done by Moges T. et al., inadequate financial support, lack of access to equipment or research material, inadequate mentor support, inadequate motivation, lack of time, lack of acknowledgment for research work was cited as the major reasons.¹¹

In a study carried out in India, residents' workload was cited as an obstacle to their participation in meaningful research work.^{7,8} Lack of time due to the vast curriculum of postgraduate subjects, lack of research curriculum, and inadequate facilities was stated as major obstacles for pursuing research in another study.⁹ Poor research infrastructure and inadequate research funding opportunities and limited time were stated in another study.¹⁰

S. No.	Studies	Reasons for not conducting adequate research during residency
1	Moges T. et al. ¹¹	Inadequate financial support 94%, Lack of access to equipment or Research material 93%, Inadequate mentor support 81%, Inadequate motivation 75% Lack of time 10%, Lack of acknowledgement for research work 63%
2	Pallamparthi S et al. ¹²	lack of awareness (53%), lack of interest (54%), lack of funds (62%), lack of time (59%)
3	Purushottam A. Giri et al. ⁹	Lack of time due to vast curriculum of postgraduate subjects (59.5%), lack of research curriculum (25%), and inadequate facilities (25.8%)
4	Memarpour. M et al. ¹³	Limited time (74.7%), lack of funding support (82.4%), lack of mentorship support (68.7%), lack of incentive (67.9%)

5	Dattaray P. et al. ³	Lack of research allotted time 74%, Lack for research curriculum 42%, inadequate facilities 38%, Inadequate financial support 38%
6	Present Study	Lack of research curriculum (44.1%), Inadequate support by mentors (18.2%), Lack of time (15.9%), Inadequate financial support (14.7%)

In the present study, the participants were asked about what can be done for research promotion in institutions, majority of the respondents wanted 2-3 months of allocated time for supervised research and provision of a research stipend. Others suggested the provision of research grants and the creation of an active research cell. About MCI body measures, incorporation of compulsory research methodology workshops in PG curriculum, providing a paid fellowship in research, giving priority for students who have participated in part time research, enter super-specialty courses were also suggested.

Conclusion

Lack of research curriculum was also cited as a hurdle in the present study by most of the resident doctors. Before starting the research study, the protocol should be discussed by the faculty members and the research study should be planned. The faculty members should not only assess research work periodically but also provide the necessary information and guidance to resident doctors.

For training in research methodology, Compulsory research methodology workshops in the PG curriculum regularly must be incorporated. Training and workshops are the simplest ways to introduce the concept of research as they are well received and enhance the knowledge and performances of the medical personnel. There is a need to improve the format of the workshop for addressing the needs of the postgraduates in dissertation work.

The regulatory bodies should undertake measures such as creating an active research cell and providing stipend and research grants to promote research. Out of professional experience, paid fellowship in research, integrated MD Ph.D. courses can be started. When offering jobs in government and private medical sectors and admission to super-specialty courses, preference could be given to resident doctors who have carried out and published research studies.

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