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## Full Length Research Article

### EFFECT OF INCLUSION OF RESEARCH PROJECTS ON ACADEMIC OUTCOME OF MEDICAL UNDERGRADUATE STUDENTS

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#### ABSTRACT

The number of undergraduates involved in research activities is very less in Indian medical Colleges. Usually they are focused towards their academic performance and find research activities as time consuming and totally extracurricular. In this study we tried to observe any positive or negative effect of doing short term research on academic performance and at the same time we tried to obtain students' personal views on doing research

**AIM:** We focused on analyzing the effect of research on academic performance of undergraduate Medical students.

##### OBJECTIVES:

- Their academic scores before and after doing short term research projects
  - Their perception about research
  - Idea of further upgradation of undergraduate research programme according to them
- CONCLUSION:** In India, undergraduate medical research is far from satisfactory. Amongst various approaches to improve it, Indian Council of Medical Research Short-term Studentship (ICMR STS) is a very popular programme among medical students. Undergraduate students are mainly focused for academics and research projects didnot have very significant improvement in academic outcome ,although interest in particular topic was definitely increased. Students find problems like lack of time, neglect of routine studies and deterioration of clinical skills due to more time being spent on research activities, by giving more credit and benefit in examination and better guidance can motivate them further towards critical thinking and analysis

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#### INTRODUCTION

The number of undergraduates involved in research activities is very less in Indian medical Colleges. Usually they are focused towards their academic performance and find research activities as time consuming and totally extracurricular. In this study we tried to observe any positive or negative effect of doing short term research on academic performance and at the same time we tried to obtain students' personal views on doing research

**AIM:** We focused on analyzing the effect of research on academic performance of undergraduate Medical students.

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#### OBJECTIVES

- Their academic scores before and after doing short term research projects
- Their perception about research
- Idea of further upgradation of undergraduate research programme according to them

#### MATERIALS AND METHODS

This is a questionnaire-based qualitative study. This study was conducted in Jawaharlal Nehru Medical College, Sawangi [M], Wardha. Permission was obtained from Institutional Ethical Committee of the College and student participation was voluntary. A pre-tested Questionnaire examining their

awareness, perceptions and practices towards research in Medical field was used and their academic performances after doing ICMR Short term research Projects were analyzed.

## RESULTS

A total of 22 students who did ICMR Short term research projects during their under Graduation participated in the study. Table 4 showing there was no significant effect on academic scores after doing research projects.

**Table 1. Academic background of Participants who were incorporated in research projects**

information	no	Percentage
1 Year of admission		
2006	4	18
2007	4	18
2008	10	46
2009	4	18
2 Year of doing project		
2008	1	5
2009	7	31
2010	4	18
2012	8	36
2013	2	10
3 Subject		
Clinical	14	64
paraclinical	8	36
4 Designation of guide		
Professor	12	54
Associate professor	9	41
Assistant professor	1	5
5 Source of information about research		
Teachers	2	9
Internet	8	36
Seniors/friends	10	46
parents	2	9

Maximum no of students did research projects in MBBS FINAL PART I in clinical subjects under the guidance of professor and source of information for them was seniors and friends.

Although most of the students find its beneficial but wish to get more credit or rewards in terms of bonus marks in exams and pre PG entrance tests.

## DISCUSSION

However; the medical educators are trying to improve the research potential of students of undergraduate level to their best, some motivating initiatives can be begun at the Institutional level to promote undergraduate research as in this study students opined to grant some bonus points to their academic performance as a reward. Even if the experience of doing research as a student does not lead to a later career in academic medicine, research experience can help improve students' skills in searching and critically appraising the medical literature, independent learning, and writing research papers (Altunbas *et al.*, 1998). In one Indian study, 91% of interns reported no research experience in medical school ([Http://Www3.Sund.Ku.Dk/](http://Www3.Sund.Ku.Dk/)). Thus, students in India rarely get exposed to research at this crucial stage in their academic development when such exposure could encourage further research after qualification. The apex accrediting and regulatory agency of medical education in India, namely the Medical Council of India, lays down research aptitude as an

**Table 2. Students Perception About and Their achievement related to research**

Questions exploring student's perception and achievement related to research.	no	Percentage
1 Is doing research project gives /gave you motivation toward s studies?		
Very frequently	7	31
Frequently	9	41
Occasionally	6	28
Rarely	0	0
never	0	0
2 Does incorporation of research project Helped you in generation of some interest towards studies Or in the subject where The project was done		
Very frequently	5	23
Frequently	15	68
Occasionally	2	9
Rarely	0	0
never	0	0
3 Does incorporation of research project Helped you in better understanding of subject matter/content		
Very frequently	7	31
Frequently	15	69
Occasionally	0	0
Rarely	0	0
never	0	0
4 Does incorporation of research project changed your learning attitude towards learning of subject		
Very frequently	9	41
Frequently	9	41
Occasionally	2	9
Rarely	2	9
never	0	0
5 Does incorporation of research project helped you in improvement of performing skills related to subject?		
Very frequently	11	50
Frequently	10	45
Occasionally	1	5
Rarely	0	0
never	0	0
6 Have you made any presentation in any conference out of your research paper		
Yes	16	73
no	6	27
7 Have you made any publication out of your research project?		
Yes	5	23
no	17	77
8 Does incorporation of research project should be made mandatory to all the students?		
Yes	13	59
no	9	41
9 Whether it has improved your academic performance		
Yes	16	73
no	6	27

Undergraduate students usually find increased interest in the related topic and think that research is helpful in improving the confidence in particular topic and may improve their academic performances but it is time consuming

Institutional goal for an undergraduate student. In addition, MCI recommends completion of a research project as one of the criteria for award of internal assessment marks (HouldenRl *et al.*, 2004). The global minimum requirements for medical education include research as one of the essential requirements for medical students to promote critical thinking and problem solving, thereby improving patient care (Frishman, 2001).

**Table 3. Different Ways to Improve and Encourage the Participation**

SN	Personal idea	No	%
1	Bonus marks should be given in University examinations	6	27
2	Credit points to be added in pre PG entrance examinations	4	18
3	Subject of that semester, should only be chosen	5	22
4	Some text should be taught as project	3	14
5	Meta-analysis only to be given	1	5
6	Total wasteful	3	14

According to participants, motivation of students in participation of research project can be increased by giving project of their existing semester and by giving bonus point in their academic results of that semester.

**Table 4. Academic score**

sn	before	after	difference
1	74	70	-4
2	65	64	-1
3	69.15	69.75	+0.60
4	67	67	Same
5	68	73	+5
6	70	71.75	+1.75
7	68	67	-1
8	69	68.6	-0.2
9	72	71.2	-0.8
10	65	67	+2
11	76.82	71.62	-5.20
12	68	66.6	-1.2
13	65.7	67.74	+2
14	68.5	67.5	-1
15	65	70.25	+4.75
16	70.5	71.8	+1.3
17	66.62	70.1	+3.48
18	65.5	68.62	+3.12
19	63.2	71	+4.8
20	71	6	-2
21	63	61	-2
22	73	78	+5

ICMR is running good short term research project programme to enhance this capability amongst undergraduates. In our study 41% students were frequently motivated by doing the research work and 59% felt that the research work should be mandatory for all where as in study done by burgoyeneet *al*<sup>6</sup> 56.5% students were motivated and 55% students felt it mandatory in a study done by Sayed *et al* (2013) 45% students thought that their skills after doing the project has improved where as in a study by ball and Mohamed Ball and Mohamed (2010) 70% students thought that their skills have improved.

6% considered that the research-modules approach was not of any great value to them while in our study 14% thought it was total waste of time. 18% suggested that credit points of the research done should be added in pre post-graduation entrance examinations in a study by Nikkar-esfahani *et al.* (2012).164 (69%) agreed that they had been interested in participating in extracurricular research while at medical school. This group was also more likely to believe research experience should influence selection into postgraduate training programmes. In this study 36% students used internet as a source of information about the research while only 23%

students made an attempt to publish their research which was similar to study done by Harsha *et al.* (2009) i.e 16%. Though the student's awareness increased because of participation in research and teaching as a part of curriculum. The main hurdles to research were found to be less awareness, no proper motivation, lack of facilities, time constraints, no proper guidance whereas in study done Harsha *et al.* (2009)

## Conclusion

In India, undergraduate medical research is far from satisfactory. Amongst various approaches to improve it, Indian Council of Medical Research Short-term Studentship (ICMR STS) is a very popular programme among medical students. Undergraduate students are mainly focused for academics and research projects didnot have very significant improvement in academic outcome, although interest in particular topic was definitely increased. Students find problems like lack of time, neglect of routine studies and deterioration of clinical skills due to more time being spent on research activities, by giving more credit and benefit in examination and better guidance can motivate them further towards critical thinking and analysis.

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