

## Attitudes and barriers for conducting research – Medical college faculty perspective

Manjunath GN,\* Swamy RM,<sup>1</sup> Naveen Kumar<sup>1</sup>

<sup>1</sup>Professor of pharmacology, SSMC, Tumkur

\*Corresponding author

Professor and Head of Pharmacology, SSMC, Tumkur, India -572107

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### Abstract

**Background:** Faculties in medical college have more responsibility in teaching and patient care. But they are one of the significant contributors for evidence based medicine (EBM).

**Aim:** To assess the attitude and identify the barriers for conducting research by medical college teachers

**Materials and methods:** It is a cross sectional observational study using a semi structured questionnaire prepared after reviewing the literature and studied on 80faculties of various departments of Pre, Para and clinical subjects

**Results:** The response rate was 80%.The mean score of attitude between the three departments with average score of  $3.50\pm 0.40$  ( $F= 0.179$ ) and  $3.27\pm 0.51$  ( $F=0.936$ ) respectively. The most common individual barrier was “No funding for research” (89.1%). The organizational barriers were “Lack of incentives” (16.8%), “Lack of funds” (16.1%), “lack of infrastructure” (15.4%) and “lack of research training” (15.0%).

**Conclusion:** The attitude of faculties remains reasonably good and there is a need for financial support and infrastructure which can improve the quality of research.

**Key words:** Attitudes, individual barriers, organizational barriers, medical faculty

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### I. Introduction:

Scientific research is a systematic study aiming to solve a problem and is the main stimulus in a society to guarantee its development and is considered a key growth indicator.<sup>1</sup> A systematic perspective is required to understand how research and knowledge from various sources is produced and synthesized. How the demand for relevant knowledge is cultivated, and whether that knowledge is used to strengthen the effectiveness of health systems, improve health, and reduce inequities.<sup>2</sup>

The difference between the developed and developing countries lies in the research facilities, conditions, and domains.<sup>1</sup> The concern toward scientific research has increased in both developing and developed countries because biomedical research can improve medical care.<sup>3</sup> In fact, developing countries do not use research instruments to recognize and solve problems and that is why they are incapable of meeting their needs scientifically. Therefore, developing countries are mainly consumers of the scientific findings of the developed countries, mostly published in the academic journals of the same countries.<sup>1</sup>

Universities have been trying to set up research units in all departments and, in this way, a considerable amount of university budgets is spent on scientific research.<sup>2,4</sup> The available literature also shows that efforts are needed to identify facilitating factors and barriers in the faculties to produce more meaningful output from health research in India. Faculty members in academic institutions face a number of difficulties in conducting research, including lack of use of research findings, difficulties related to statistical analysis, lack of support for research activities from the institution, shortage of time, lack of interest in research activity, high work load, budget difficulties, social responsibilities, lack of resources, and lack of institutional support.<sup>2,5</sup>

The perceptions and attitudes of staff have significant impact on the success of an organization. More so, staff satisfaction toward research and publishing practices will enhance the developmental goal and strategic management of the institution and vice versa.<sup>6</sup>

Identification of obstacles can lead to improvement of relationships between researchers and the beneficiaries of the research, and facilitation of problem-solving leads to benefits from research.<sup>2</sup>

Very limited numbers of studies are conducted regarding this in India. Hence this study was initiated to assess the attitude and barriers of research among the medical college faculty

## II. Methodology:

It is a cross sectional observational study which was conducted on medical faculties of Sri Siddhartha medical college, Tumkur involving different departments of Pre-clinical, Para-clinical and clinical subjects. The study was conducted from March 2020 to April 2020 after taking prior approval from the Institutional ethics committee. Inclusion criteria include all faculties of either sex who are willing to participate in this study. Tutors and residents were excluded. The questionnaire was modified by adding additional questions pertaining to organizational barriers after literature search and relevance was verified by the colleagues. The ability to understand was checked by administering the questionnaire to few faculties as pilot study. The questions were modified according to the suggestions.

This semi-structured questionnaire consists of 4 parts. Part one includes demographic data like age, gender, Department and years of experience. Part 2 and 3 contains attitude questions and individual barriers in the 5 point scale of Strongly Agree (SA) with score 5, Agree (A) with score 4, Neutral (N) with score 3, Disagree (DA) with score 2 and Strongly Disagree (SD) with score 1 format. Part 4 contains questions regarding the institutional barriers for conducting research. The questionnaire was distributed to 80 faculties across different departments. Only completed questionnaire was used for analysis.

**Statistical analysis:** The data was entered in excel spread sheet. Data cleaning and data validation was done and analysed using Statistical Package for Social Sciences (SPSS-Version 20). Variables were tested for normality with the help of Kolmogorov-Smirnov test. Data was presented as Median and Interquartile range for non-normally distributed variables. Attitude scores and Barriers scores were compared using independent sample t-test between genders and ANOVA was applied to compare between departments. P-value < 0.05 was considered statistically significant.

## III. Results and observations:

The total response rate in this study was 80% (64/80) with males contributing to 54.68% and females' 45.42%. The median age and teaching experience of the participants are depicted in Table -1. Majority of the participants were from clinical subjects (45.3%).

**Table 1: Socio-demographic Characteristics of study participants**

Characteristics	Male(N=35)	Female (N=29)	Total(N=64)
Pre-clinical	5 (14.3%)	8 (27.6%)	13 (20.3%)
Para-clinical	11 (31.4%)	11 (37.9%)	22 (34.4%)
Clinical	19 (54.3%)	10 (34.5%)	29 (45.3%)
Age	43 (38-49)*	36 (34-44)*	41 (36-46)*
Teaching Experience	10 (8-17)*	8 (4-10)*	10 (7-15)*

\*Data expressed as Median (Interquartile Range)

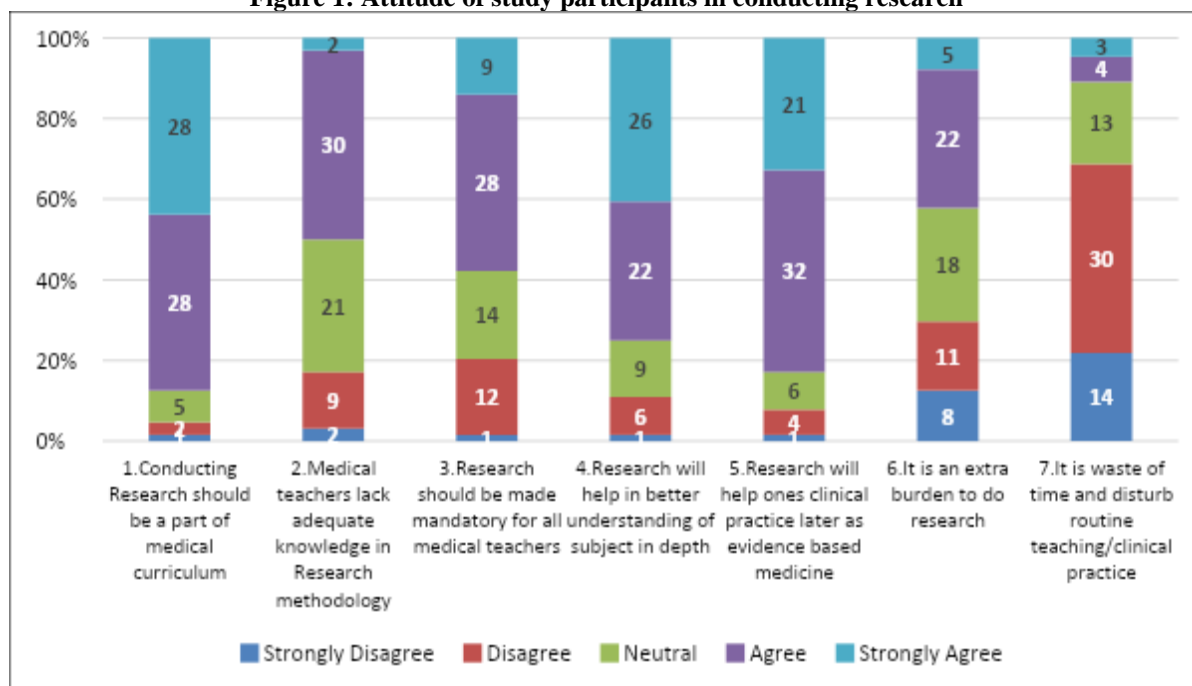
The average attitude score and barrier score between the genders were  $3.50 \pm 0.40$  ( $p=0.456$ ) and  $3.27 \pm 0.51$  ( $p= 0.380$ ) respectively which is not significant. And, also there was no difference between the three departments with average score of  $3.50 \pm 0.40$  ( $F= 0.179$ ) and  $3.27 \pm 0.51$  ( $F=0.936$ ) respectively. (Table 2)

**Table 2: Comparison of attitude and barrier scores between Genders and Departments**

Scores	Sex	N	Mean	Std. Deviation	t-value	P-value
Average Attitude Score	Male	35	3.47	0.36	-0.751	0.456
	Female	29	3.54	0.46		
Average Barrier Score	Male	35	3.22	0.49	-0.884	0.380
	Female	29	3.33	0.54		
Scores	Department	N	Mean	Std. Deviation	F-value	P-value
Average Attitude Score	Pre	13	3.44	0.34	0.179	0.837
	Para	22	3.52	0.37		
	Clinical	29	3.51	0.46		
Average Barrier Score	Pre	13	3.10	0.53	0.936	0.398
	Para	22	3.29	0.56		
	Clinical	29	3.33	0.46		

Analysis of attitude of participants' shows that majority of the participants have a positive attitude either by agreeing or strongly agreeing as shown in Figure 1.

Figure 1: Attitude of study participants in conducting research



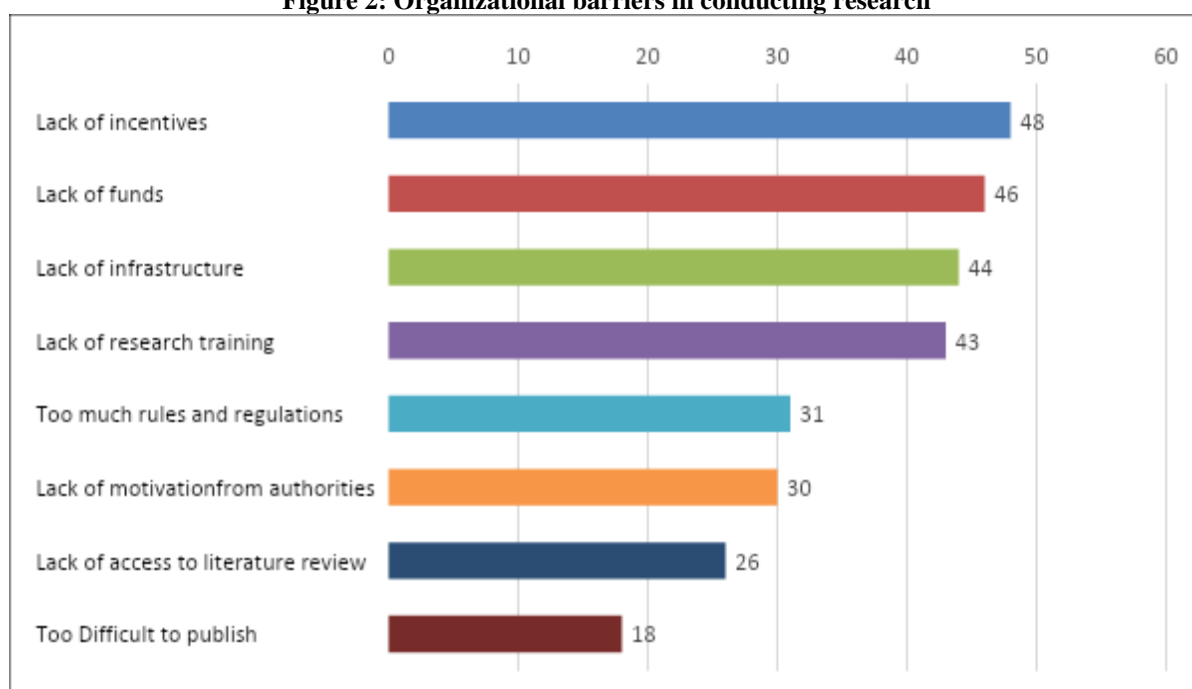
Similarly analysis was done for the various individual barriers for conducting research as shown in Table 3. The biggest barrier identified was “No funding for research” (89.1%) and the least identified barrier was “No previous research experience” (25%).

Table 3: Individual Barriers for conducting research

Barriers	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
1.Lack of skill and knowledge in research methodology	2 (3.1%)	15 (23.4%)	11 (17.2%)	28 (43.8%)	8 (12.5%)	64 (100%)
2.Lack of self interest	3 (4.7%)	18 (28.1%)	19 (29.7%)	18 (28.1%)	6 (9.4%)	64 (100%)
3.No funding for research	2 (3.1%)	2 (3.1%)	3 (4.7%)	24 (37.5%)	33 (51.6%)	64 (100%)
4. Lack of guidance from senior faculty	3 (4.7%)	12 (18.8%)	26 (40.6%)	15 (23.4%)	8 (12.5%)	64 (100%)
5. There is Lack of time	4 (6.3%)	24 (37.5%)	15 (23.4%)	15 (23.4%)	6 (9.4%)	64 (100%)
6. Difficult to follow patients/participants	2 (3.1%)	16 (25.0%)	12 (18.8%)	28 (43.8%)	6 (9.4%)	64 (100%)
7. No previous research experience	7 (10.9%)	28 (43.8%)	13 (20.3%)	13 (20.3%)	3 (4.7%)	64 (100%)

“Lack of incentives” (16.8%), “Lack of funds” (16.1%), “lack of infrastructure” (15.4%) and “lack of research training” (15.0%) were the most common organizational barriers identified and least barrier was “Too difficult to publish”. (Figure-2)

Figure 2: Organizational barriers in conducting research



\*Multiple response variable- Total count exceeds total number of cases

Apart from these barriers poor data retrieval, difficulty to obtain patients data, lack of research material, lack of implications to society, overburdened with institution work and over pressure leading to poor quality were the other factors specified.

#### IV. Discussion

Medical faculties are involved in research only because as per new amendment rules of Medical Council of India (MCI), research publications in indexed/national journals are now mandatory for promotion to posts of professors and associate professors.<sup>7</sup> Also we have entered into an era of evidence-based medicine (EBM) which aims to apply evidence gained by a scientific method to change current medical practice.<sup>8</sup> The gap between performance in research and practice is the result of several interacting factors, including limited time and resources on the part of practitioners, insufficient training, lack of feedback and incentives for use of evidence-based practices, and inadequate infrastructure and systems organization to support translation.<sup>2,9</sup>

In this study it was seen that 80% of faculties showed interest to participate indicating their attitude towards research is adequate. The attitude score of the faculties were similar with advancement of their academic career, gender and different departments with no statistical significance. Research should be a passion for the output to be productive and not mandatory regulations. The present generation of faculties is not able to produce quality research except for promotional purpose due to several factors.

To identify those factors literature review was done and identified certain barriers for conducting research at individual and organization level for conducting research. In our study “No funding for research” (89.1%) was common individual barrier opted which is much higher than other study conducted (47.7%).<sup>10</sup> In another study conducted “lack of time” was the most common barrier unlike the present study.<sup>11, 12</sup> The least opted barrier was “lack of previous research experience”. Medical faculties have more responsibilities in giving clinical care and priority for teaching. If provided with monetary assistance the motivation for research may be escalated.

An individual faculty needs the support of the organization. Our faculties have identified several barriers which can be rectified. The four major determinants of organizational barriers were “Lack of incentives”, “Lack of funds”, “lack of infrastructure” and “lack of research training”. This is almost similar to other studies conducted elsewhere.<sup>2, 11-13</sup> However the least barrier identified was “Too difficult to publish”.

Positive role models and adequate professional mentorship are crucial to researchers and, if unsupported, early career staff can discontinue their work.<sup>14</sup>

This study was conducted with limited number of faculties under single institution. If conducted with larger number of sample can bring about a quality data which can be utilized by the administrators for implementation.

## V. Conclusion

By providing good infrastructure and financial assistance to the faculties can improve the research activity in the medical college. Sufficient work holiday to conduct research along with a good mentor support without mandatory pressure can bring out a quality work for publication.

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