

## ORIGINAL ARTICLE

## BUILDING A CULTURE OF RESEARCH: FOCUS GROUP DISCUSSION

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**Background:** Medical curriculum should be enabled to train students in research but focus in this regard is much lacking. This study was designed to explore the perception of final year medical students regarding pre-requisites of a research culture at the level of institute, faculty and leadership.

**Methods:** A focus group discussion with two mini groups (male and female group), each consisting of 6 members and supervised by an experienced moderator was conducted. The study comprised of discussion lasting for 90 minutes. Firstly, opinions of students were gathered and coded, then it was followed by conversion of their statements into themes and interpretation of results. **Results:** Discussion on institutional factors, role of faculty and importance of leadership was carried out and numerous themes were identified. Among institutional factors, themes of curriculum & funding were revealed. Regarding the role of faculty, themes of motivation, skill learning & mentor-mentee ratio were highlighted and while discussing the fundamental role of leadership, need of a role model, who must be a flexible leader was emphasized. **Conclusion:** Institutes should support a curriculum with early exposure to research, along with hiring of supportive, research oriented faculty who can prove to be the role model & flexible research leader.

**Keywords:** Medical curriculum, Research culture, Research skill

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## INTRODUCTION

Research stands as the basis of evidence based medicine. History reveals that be it the discovery of Heparin by Jay McLean or the discovery of sinoatrial node by Martin Flack at undergraduate level, scientific research stands alone as the foundation of all these achievements.<sup>1</sup> Even after much advancement in medical sciences, there are many regions in the world which await development of an efficient health care system. South Asia, containing one quarter of world's population also falls in that category. The answer to the development of new initiatives so as to improve health system lies only in research and exploration.<sup>2</sup> This highlights the significance of early involvement of medical students in research. Undergraduate training programs that encompass development of research skills enable the students not only to think critically and explore new dimensions of knowledge but also in the pursuit of a bright career in later stages of life.<sup>3,4</sup> Early indulgence in research leads to postgraduate research involvement, and such long term strategy can result in enhancement of research efficiency to address the burden of health issues by updating the medical information.<sup>4,5</sup> Considering all the above facts, considerable emphasis is laid on undergraduate research in developed countries by making research study, a part of their core curriculum. Such academic models must be adopted by developing countries as well, to stand at a uniform level.<sup>6</sup>

Students can only be effectively engaged in critical thinking and exploration if institutions play their supportive, rather initiative role in this regard. This can effectively be done by incorporating a mandatory

training course on research at undergraduate level.<sup>5,6</sup>

According to the recommendations of World Federation for Medical Education, basic medical education should be such that it enables the students to think and analyze critically, thereby highlighting the potential of medical student as a researcher.<sup>7</sup> The idea of research at undergraduate level requires a lot of assistance and encouragement from faculty. Adequate guidance by mentors in research can help in actual realization of this idea, bringing out a competent health care professional, carrying a young scientist along.<sup>8,9</sup> Scholarships and financial rewards can also prove to be an incentive for young trainees.<sup>9</sup> Considering innumerable benefits of involvement in research at undergraduate level, this can be incorporated as a part of study course, by making it mandatory, elective or extra-curricular. This idea can definitely prove to be of value in countries where medicine is facing crisis among post-graduate researchers.<sup>10</sup>

It is important to know the students' perspective in this regard and understand the limitations that they face in conducting research in their early professional education. Lack of protective time for formal research courses in curriculum, undergraduate research mentors and on-campus basic science laboratories have been identified as a few factors posing barriers to early involvement in research.<sup>11-13</sup>

Students' perception in this regard varies considerably and there is paucity of collected evidence to identify the problem areas for students. Focus group discussion is considered to be of much value in exploring the view-points of participants, and also for strengthening of preliminary data.<sup>14</sup> Such exploration of

students' view is grossly lacking in our set-up. So, objective of our study was to explore the perception of final year medical students (males & females) regarding the pre-requisites of a research culture at the level of institute, faculty and leadership, as put forward by a study in Australia.<sup>15</sup>

## MATERIAL AND METHODS

This qualitative study with grounded theory paradigm, was conducted on a purposive sample of 12 final year medical undergraduates (6 males and 6 females), after taking their written informed consent. Institutional approval was also obtained before commencement of the study. A focus group discussion was conducted after segregating them in two mini groups, one group consisting of males and other consisting of females. Discussion was carried out for a period of 90 minutes. It was supervised by an experienced moderator and whole process was video-taped with consent. Firstly, their opinions regarding building a culture of research were gathered and coded. Then, the statements of students were converted into themes and finally, their themes were counted to interpret the results.

## RESULTS

Focus group discussion was conducted on three potential factors that have been shown by Australian researchers, to play a role in building a research culture. Discussing the role of *institutional factors*, certain themes were identified including *curriculum & funding*. Regarding curriculum, male students stated, "*There should be longitudinal research module from day 1 with weekly lecture in curriculum.*" and "*It is very important that students should be exposed to different research questions in research module.*" Similarly, regarding curriculum, female students expressed their views as, "*There should be Hands on research instead of just lectures in research module*" and also that, "*Since 1st year if there is no exposure to research in curriculum, we can't expect our graduates to learn research skill*". Funding issues were also highlighted, by the male students saying, "*Problem lies in mind-set of institute; funding should be there to motivate students, as private institutes don't spend on research nor do the government*" while female students said, "*Our institute should provide funds for quality research that can compete at national & international level*".

*Role of faculty* was addressed as the second most influential factor in building a culture of research. In this regard, three themes were identified, which included *motivation, skill learning* and *mentor-mentee ratio*. Regarding motivation, male group members expressed their view as, "*Inspiring examples should be there among the faculty, so that students can understand the importance of research.*" while the female group said, "*Faculty should emphasize side by side on the*

*importance of research, instead of giving late exposure in 4th or final year*" and "*Students who wish to participate in research should be encouraged & their confidence boosted to raise questions.*" As far as skill learning is concerned, male participants expressed, "*Since 1st year, writing skill should be inculcated by creative writing classes held by faculty to learn research writing later as English is our 2nd language.*" and female participants seconded them by saying, "*Faculty should involve students from day-1. Research interest is lacking in faculty, so they should be trained first & seek guidance through seminars.*" Regarding mentor-mentee ratio, male members said, "*Small group research activities should be planned by research oriented faculty to improve quality of life of whole community.*" while the female members agreed by saying, "*Sufficient number of research faculty is required to own small groups & facilitate in publication.*"

*Impact of leadership* was the third most powerful factor that was discussed. Students were convinced that leadership attributes like being a *role model* and *training* of students by a *flexible* research leader can surely be of drastic help in this regard. While expressing the attributes of a role model, male participants said, "*Leadership has pivotal role so there should be no communication gap to provide a friendly environment with freedom of mind.*" To this, female participants added, "*Leader should be available in person & on social media for hand-on as well as distant learning.*" and that "*Leader should participate himself as well in active research.*" Regarding expertise and training of research leader, male participants were of the view that, "*Only active researchers should impart the knowledge, skill & attitude of research, whereas, M.Phil /Ph.D teachers should conduct subject-related lectures.*" Similarly, female participants added, "*Only Experts should conduct research, whether they are of medical or non-medical background*" and, "*There should be a variety of research supervisors to address different diseases & issues in community*" While highlighting the attributes of leadership, emphasis was laid on *flexibility*. About this, males were of the opinion, "*There should be no language barrier in research opportunity & presentation on national & international platforms*" and females supported by saying, "*Selection of research topic should be flexible, depending upon interest of student or need of society.*"

## DISCUSSION

This is one of the pioneer studies in the institution to explore the students' perception regarding building a research culture and to identify the areas of concern in this regard. A study conducted at Al-Faisal University College of Medicine, Riyadh also highlighted the lack of sufficient research and limitations perceived by medical students when trying to conduct research. That

research concluded on lack of sufficient time and other supportive and facilitatory measures on part of institution as an important factor.<sup>12</sup>

Similarly, another study was conducted in a Brazilian medical school to identify the percentage of students involved in undergraduate research, to know about the benefits of such involvement and to find the obstacles preventing them from such activities. It was found out that less than 50% were involved in active research but irrespective of that, 91% of participants favoured its inclusion in curriculum.<sup>13</sup> A three-year mandatory research program was incorporated, beginning from first year of medical education at Marmara University, Turkey. This was characterized by tremendous increase in research activity during the following years and revealed that up to 63% graduates found undergraduate research extremely beneficial.<sup>7</sup> A similar Mentored Student Project was introduced at a medical school in India, during second year of MBBS and it was found to be very successful in fostering positive attitudes towards research culture.<sup>8</sup> Many other studies carried out in various parts of the world have shown the limited involvement of students in research due to non-availability of opportunities and difficulties faced in self-directed research activities, thus emphasizing the need of a research infrastructure at institution level with adequate funding.<sup>9,12</sup>

Student's perceptions regarding building a culture of research were very positive, but it needs a lot of support and facilitation from institution, faculty and research leader. This study established an evidence based data from the students. This study helped in establishing an overview of student's perceptions and difficulties faced by them in areas of research so that a research culture can be promoted.

Despite revealing valuable results, our study had a few limitations. We could not involve other stake holders like Heads, Faculty and leaders. Participants in each group could be increased to 8–10. We could not compare with the new batch that was exposed to research in 1<sup>st</sup> year, through integrated curriculum. More number of local / regional groups (10–15) could have been involved.

## CONCLUSION

Institutes should support a curriculum with early exposure to research and should manage funding. They

should hire sufficient number of motivated, research oriented faculty for hands-on research.

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