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QUALITATIVE AND QUANTITATIVE STUDY FOR IMPACT EVALUATION OF A RESEARCH PROGRAMME FOR UNDERGRADUATE MEDICAL STUDENTS - EVIDENCE GENERATING COMMUNITY HEALTH INTERVENTION PROJECT (EVIGENCHIP)

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Abstract:

Background:A less numberof undergraduate (UG) MBBS students carry the concept of biomedical research. In order to achieve the endeavour of creating globally at par Indian medical graduates, it appears obligatory to introduce research aptitude among UG medical students. More than a decade back, Medical Education Unit of SBKS Medical Institute& Research Centre, SumandeepVidyapeeth, formulated and running a research orientation programme to involve and enrich the UG medical students in biomedical research during their 3rd first professionals . The programme is named as Evidence Generating Community Health Intervention Project(EviGenCHIP).

Aims and Objectives:1. To evaluate the impact of EviGenCHIP Programme. 2. To assess research aptitude and research profile of the trained students.3.To appraise feedback from the faculty about the programme.

Methodology: This was an observational study conducted at department of Forensic Medicine & Toxicology, SBKSMI&RC in duration of 4 months after approval from Institutional Ethics Committee. A Quantitative & Qualitative study conducted on UG students and teaching faculties trained under EviGenCHIP. Total number of students participated in this study was 100 for quantitative study. 4 batches of focused group, each group comprising of 6 students, i.e. 24 students and one group of 6 faculties were recruited for qualitative study. Non-randomised sampling method was adopted to recruit the participants in Focused Group Discussion.

Observations: This programme does have an impact on most of the students who participated in this programme which is reflected in content analysis of Focus group discussion and Quantitative data analysis.

Conclusion: This unique programme is a necessity in formal medical undergraduate education and those students who were interested and are properly mentored reflected positive impact on their research aptitude.

KEY WORDS: Community research, UG Medical teaching, Focused Group Discussion, Impact evaluation

I. INTRODUCTION:

Very few of the new entrants joining modern medicine carry the concept of biomedical research in the specialty. Even fewer of them opt for dedicating themselves into research field for various reasons. A recent study has shown that only 0.9 percent of the undergraduate students have shown research aptitude.[1] interestingly another study conducted in Mumbai have reported negative attitude of the undergraduate medical students towards biomedical research.[2] However, there are encouraging reports as well from different studies conducted in various parts of India.[3] Isolated initiatives are in place to stimulate scientific thinking of medical students, the impact however is yet to be assessed. The Government of India has launched various schemes to promote research among Medical students through ICMR and other organizations. However, by and large, the present scenario is not cheering and sea changes are required to be done in order to accomplish the task of inculcating the research aptitude among the medical students at very early stage of their professional carrier.

The Medical Education Unit(MEU) of SBKS MI&RC, few years back aspired by the concept of PSBH, formulated a plan to involve and enrich undergraduate medical students about scientific research while they reach in third phase part I of MBBS programme. The innovative programme is known as Evidence Generating Community Health Intervention

Project(EviGenCHIP). In a two day workshop which comprises various components of a Research Proposal is delivered by the faculties of MEU and other trained faculties to participant students. Hands on exercise are conducted at the end of every session. All participant students are divided in multiple groups with 4-6 students in each group. Each group prepares a proposal for short term research on a topic by the end of 2nd day under guidance of their designated mentor/guide faculties. The research topics are usually health problems prevailing in the local community which in turn is research area for the project. The proposals are refined in next few days with guidance of mentors/guide. The whole research project is completed in duration of four months.

II. AIM:

To evaluate the impact of EviGenCHIP programme

III. OBJECTIVES:

1)To assess research aptitude and research profile of the trained students
2)To appraise feedback from the faculty about the programme

IV. METHODOLOGY:

Study Site: Department of Forensic Medicine & Toxicology, SBKS MI&RC, SumandeepVidyapeeth an Institution Deemed to be university, Vadodara, Gujarat
Duration of Study: 4 months
Study Design: Quantitative and Qualitative study
Study Population: Undergraduate medical students of third phase part I of MBBS programmeand Teaching Faculties of SBKS MI&RC, trained under EviGenCHIP programme.

Inclusion criteria:
1. Those students who have attended, successfully conducted and submitted the project and participated in the presentation of their project for award of prizes
2. Those faculties (mentors) who had been played a role either as previous co coordinators or mentor in EviGenCHIP programme
3. Those who consented to participate in the study

Exclusion Criteria:
1. Those who have not participated in the dedicated workshop
2. Those who have participated but had dropped out at any stage of this programme before completion
3. Those who fulfil inclusion criteria but not consented to participate in the study

Sample Size: Hundred (n=100) students participated for quantitative study. 4 batches of Focus Group Discussion, each group comprising of 6 students, i.e., 24 students and one group of 7 faculties participated for qualitative study.
Sampling method: Non-randomised sampling method was adopted to recruit the participants in Focused group discussion.
Method of enrolment for Participants:
Amongst those batches that have undergone EviGenCHIP programme, the students of pre final year batch were recruited for this study. Hundred students were part of quantitative study and 24 students in 4 constituted groups for focused group discussion (FGD). Reason for selecting this batch was that sufficient time (nearly 1 year) has elapsed to advance their student research profile since they have undergone EviGenCHIP. Students were invited to participate voluntarily in FGD. The FGD was held as per their convenient slot in the time table.Those randomly selected 6 faculties who had played roles as mentors/Guide in EviGenCHIP projects earlier for students were also recruited for FGD.
Study Method: Focused Group Discussion was conducted for qualitative study and structured questionnaire based responses collected for quantitative study.
Guidelines for conducting FGD: Welcoming, briefing of the topic, Intimation about being recorded and video graphed. Explaining ground rules like one person at a time will speak; no right or wrong answer etc. was detailed.
Study Place: Calm, comfortable environment with circle seating arrangement for FGD at Department of Forensic Medicine & Toxicology, SBKS MI&RC
Moderator: To moderate the activity skilfully with pre-determined structured questions in permissive environment
Assistant: To handle logistics (videography, response recordings)
Materials: Equipments - voice recorder, Pen and Paper

Data Analysis:
Qualitative data of Focus Group Discussions- The data was collected by recording the discussion in audio-video format. Conversation between participant and between participants to coordinator was noted in graph to find out flow of discussion. Collected information was systematically analyze and presented.
Quantitative data of questionnaire - The collected data was compiled in Microsoft office excel 2007. It was analyzed by using Epi info software. Simple Descriptive analysis was done. Dichotomous and numerical data was collected from the quantitative study.
Ethical Issues: Study was done after getting approval from institutional ethics committee. Written informed consentswere obtained from all participants before participation. No ethical issue has arisen during the study.

V. OBSERVATIONS AND RESULTS:

Qualitative data of Focused Group Discussions

Content Analysis: Faculty (Mentors)

A group of six faculty members who had been trained 'mentors' for EviGenCHIP projects of students in any batches during last five years were invited for a Focus group discussion who expressed their opinions as under:

1. **Necessity of EviGenCHIP Programme**

   Most of faculty were of the view of that EviGenCHIP is very good programme that leads to exposure of research process in early career stage that would ultimately boost up the skill and knowledge of research process. EviGenCHIPprogramme is not a part of formal evaluation system so it should be optional to interested candidate only because many of student's shows lack of interest which leads to burden on guide.However all of them unanimously have the viewpoint that this programme is a necessity in formal education. The current procedure of conducting two day workshop for EviGenCHIP programme is fine and needs no modification.

2. **Concept of EviGenCHIP**

   It's a novel idea that helps in learning of research process. It allows students to come out with research topic or their idea. Some time topic may be not interesting for some in group; grouping should be done by common interest. More time is required for selection of topic. However, they carry different opinions in regard to willingness of the 'mentors' and their competency. They advocate for a formal training to the faculties and setting of minimum eligibility criteria before they play actual role of mentors. The eligibility criteria suggested was in terms of minimum number of scientific work, publication and their exposure in Research field.

3. **Process of EviGenCHIP**

   Lack of interest of students and mentors will lead to poor understanding of concept and process, quality will compromise. At the end of workshop evaluation must be done. Mark of project in internal marks will improve quality. Formal training to mentors is necessary to make them competent. Active involvement of students with less burden can improve programme. Anonymous feedback from student regarding learning is important to improve programme. Regularity in involvement is lacking.There was a common feeling among mentors that since the programme is mandatory for all students, only few take it seriously, rest take it as burden imposed upon them. Even in a group of five students all do not contribute equally. Hence brainstorming needs to be done to make this programme more interesting. In few groups the 'mentors' have to do all work for the student. So the very objective of EviGenCHIP programme is not met with. Many faculties express their views that this programme should be done in internship.

4. **Usefulness of EviGenCHIP**

   Every project should be published in one or other form. Student must be educated regarding usefulness of involvement in research and should be encouraged.

Content Analysis (Students)

Three batches of students comprising of six students each was held. Salient points which were commonly narrated in each three groups are as under:

1. **Necessity of EviGenCHIP Programme**

   Majority of the students expressed opinions that this is a unique programme and is of great help in understanding the complexities of research methodology. They feel that this programme should be carried out twice, once in 2nd MBBS and then in 1st year of final year MBBS.

2. **Concept of EviGenCHIP**

   The faculties who are guide/mentor play an important role in conduction of research project in desired way. However it wasn't a common feature in all groups, few groups of students faced the problem of 'Mentor' not being proactive. They were less interested, unenthusiastic and incompetent to be a mentor. They carry the viewpoint that the mentor as well must undergo training in Research Methodology. Some minimum criteria need to be set for a faculty to become eligible for mentoring a group of student. If feasible, the student opts to choose mentors amongst the list of eligible mentors.

3. **Process of EviGenCHIP**

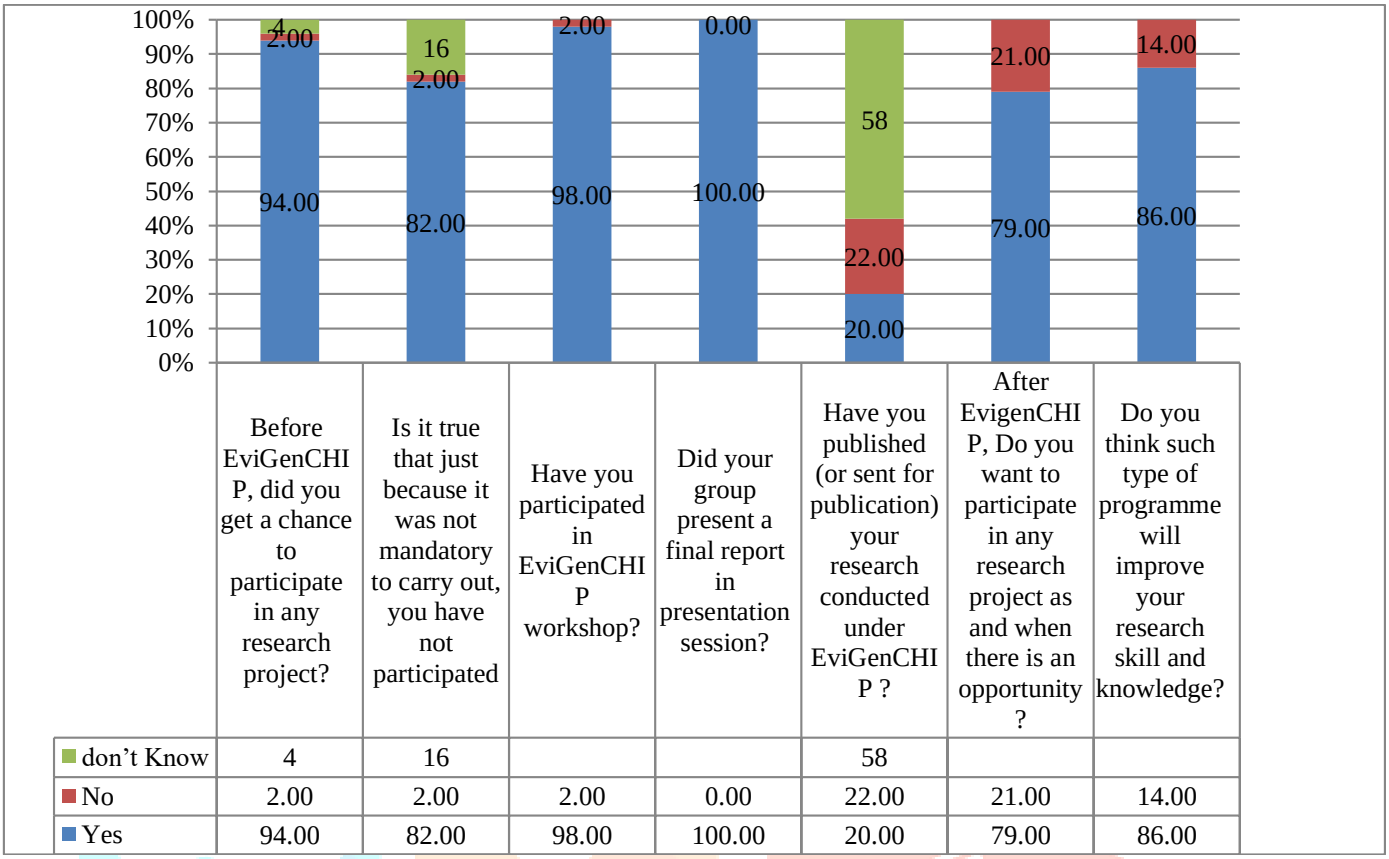
   Suggestion was put forth that the current practice of two days' workshop with hands on exercise demand a change. A sensitization programme to appraise the students about the EviGenCHIP, its aim, objectives, Procedures and allocation of mentors be conducted once at least 15 days prior to the actual workshop. It will allow student to have a better understanding. This being 1st exposure to the field of Research, two days time is not sufficient. Many even do not have a clue what is happening and which way to go. The most tedious task is selection of topic to work upon and generate evidence out of it.

4. **Usefulness of the Programme**

   The good and enthusiastic students are learning and the programme has certainly an impact on them but those who are not willing are okay with zero marks and hence the there is no impact of this programme on them.

Quantitative data of Questionnaire -

Questionnaire based survey in 100 students who have completed EviGenCHIP projects.



	Before EviGenCHIP, did you get a chance to participate in any research project?	Is it true that just because it was not mandatory to carry out, you have not participated	Have you participated in EviGenCHIP workshop?	Did your group present a final report in presentation session?	Have you published (or sent for publication) your research conducted under EviGenCHIP ?	After EvigenCHIP, Do you want to participate in any research project as and when there is an opportunity ?	Do you think such type of programme will improve your research skill and knowledge?
don't Know	4	16			58		
No	2.00	2.00	2.00	0.00	22.00	21.00	14.00
Yes	94.00	82.00	98.00	100.00	20.00	79.00	86.00

Graph 1:Responses of Questionnaire received from participant students

Graph 1 shows that majority of the student (86%) consider this programme good in enriching their research skill and look forward for attending such programme (79%) in future as and when an opportunity arises. Significant percentages (20%) of undergraduate students have either sent articles for publication or have already got it published may be considered as an outstanding performance.

VI. DISCUSSION

In an editorial, VinodScaria stated that the PSBH program in India devotes its energy entirely toward sensitizing medical students to the problem solving philosophy. Each student develops a protocol related to his/her research question. Nearly a third of the projects are selected for implementation. Rather than individual implementation, group activity is encouraged, thus promoting teamwork. Over 2000 medical students from around India have been extensively trained through this initiative. This program have been widely appreciated and acclaimed by many institutions.[4] We at our institute, inspired by PSBH commenced this programme in 2013. Around two hundred students are benefitted and in the process have generated evidences through their projects paving path for further bigger researches and evidence generation at community level.

According to Dongre AR, the initial implementation of a program exposing medical students to the community survey research process was well received. Early exposure of medical undergraduates to the survey research process appears to help them be better clinicians, who are able to understand and use field level data.[5] Likewise, through this programme, an inclination towards involvement in research process is visualized considering the outcome of the present study.

According to Deo MG, Medical research, which is the mother of new knowledge, has remained out of focus even six decades after independence. The emphasis must be given to indigenous generation of new knowledge then to 'importing' knowledge. This can be done with only by developing research oriented educational programmes both at the undergraduate and postgraduate level.[6] The observation of present study indicates that EviGenCHIP programme has made a considerable percentage of students get oriented towards conducting medical research.

In a study conducted by Lopatto D, Most frequent student responses to select important benefits of an undergraduate research experience from 45 possible benefits are mainly comprised of enhancement of professional or academic credentials, Clarification of a career path, Understanding the research process in your field, Learning a topic in depth, Developing a continuing relationship with a faculty member and Learning to work independently.[7] Findings of present study is in accordance with this study. Qualitative data analysis has reflected the magical role of 'mentors' by way of encouraging the students throughout the process of research and enabling them to conduct medical research independently.

According to Linn MC, Most undergraduates give high ratings to research experiences. Studies report that these experiences improve participation and persistence, often by strengthening students' views of themselves as scientists. Rigorous research is needed to identify ways to design research experiences so that they promote integrated understanding. These studies need powerful and generalizable assessments that can document student progress help distinguish effective and ineffective aspects of the experiences, and illustrate how students interpret the research experiences they encounter. To create research experiences that

meet the needs of interested students and make effective use of scarce resources, we encourage systematic, iterative studies with multiple indicators of success.[8]

VII. CONCLUSION:

Hybrid pattern of teaching and training comprising traditional and innovative methods are need of the hour. Health issues oriented community outreach activities by the medical students shall provide them first hand understanding of variety and magnitude of prevalent diseases in their surrounding areas. It shall as a by-product will ignite the good traits of sensitivity, empathy and communication skill without much effort. Newer curriculum has stressed on it. Medical teachers have to play the most relevant role. These continued innovative measures and many alike will support the envisaged mission of producing Indian medical graduates globally at par.

VIII ACKNOWLEDGMENT:

We are thankful to and acknowledge the contribution of participants for being part of this study and expressed their un-inhibited views about this programme.

IX. CONFLICT OF INTEREST:

None declared.

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PHOTOGRAPH 1: An ongoing session of Focused Group Discussion among participant undergraduate medical students with moderator and documenter.