International Journal of Innovation Sciences and Research
Vol.4, No, 12, pp.551-555, December- 2015
Available online at
http://www.ijisr.com

RESEARCH ARTICLE

EVIDENCE BASED COMMUNITY HEALTH PROJECT: FACULTY PERCEPTION ON ITS EFFECTIVENESS, OUTCOMES AND IMPLEMENTATION

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Accepted 27th November, 2015; Published Online 30th December, 2015

ABSTRACT

Introduction: Evidence based public health is "The development, implementation and evaluation of effective programs and policies in public health through application of principles of scientific reasoning, including systematic uses of data and information systems and appropriate use of program planning models". Sumandeep Vidyapeeth is the pioneer of evidence based education system (EBES) in India, running evidence based community health projects (EBChP) for undergraduates.
Methods: One hundred and twenty III MBBS part-I students were completed 24 EBChP in groups, after 2 days of training workshop, under the guidance of trained mentors. Students were sensitized from the first day and prior workshop was also conducted to train them for evidence searching skills, data collection, data analysis and many other aspects of research methodology. This study was aimed to evaluate the faculty perception and attitude towards this new system for its effectiveness, outcome and future implementation.
Results: Response rate of the study was 83.3%. Almost 80% faculties were agreed that research in medical field is important and EBChP will help medical students to understand the research. Workshop covered all the aspects of research protocol include group discussion, ethical aspects, literature searching, report writing, analysis and presentation and 70% faculty agreed that students acquire the research concept after workshop and EBChP. Feedback regarding student learning showed, 73% faculty were agreed that data collection in community was satisfactory and students learned team work and data analysis but report writing and presentation skills require more workout. Only 64% faculties agreed that the data collected was publishable. Faculty views for research as a good carrier option were 50-50% and consider it as a financially bad option.
Conclusion: Faculty overall appreciates this education system and strongly recommends it to continue for medical students in future so they can learn research skills. At the same time funding, lack of concept and extra work load on faculties and students were reported as limitations.

KEY WORDS: EBChP, Research, Evidence.

INTRODUCTION

Health is perhaps the most important human resource. One's capacity to provide for one's family and contribute to the making of a healthier community is limited. The way Medicine is taught and learnt has undergone tremendous changes over the past few decades. Pedagogy or teacher-centered learning is gradually being replaced by student-centered learning. Community based research is an approach to health and environmental research meant to increase the value of studies for both researchers and the community being studied. Few guidelines are existing to determine what resources are required to promote successful community based research efforts. Still less is known about the degree to which community based projects has been effective in sustaining long term university community partnerships and generating high quality data to guide further research. (Viswanathan *et al*., 2004) Community based research in India is not a part of medical curriculum of MCI, only few medical institutions have reported on their formal exposure to field survey and on projects for medical undergraduates as a part of posting in community medicine.

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(Teaching of public health in medical schools, 2009; Dongre *et al.,* 2010; Premarajan *et al.,* 2005; Soudarssanane and Sahai, 2007) Evidence based public health is "The development, implementation and evaluation of effective programs and policies in public health through application of principles of scientific reasoning, including systematic uses of data and information systems and appropriate use of program planning models". (Brownson *et al.,* 1999) The active learning methods used can be helpful in understanding the subject better and be more interesting for the student. Studies have shown the positive results with community based teaching in medical education. (Garg and Nayar, 1996)

SBKS Medical Institute & Research Center adapted the Evidence Based Education System (EBES) as part of Sumandeep Vidyapeeth initiative. (Purohit *et al*., 2012) One of the components of EBES is the Evidence Based Community Health Project (EBChP). It is a learning method based on the principle of using problems as a starting point for the acquisition and integration of new knowledge. (Barrows, 1983) The primary objective of EBChP is to provide the platform for medical students in understanding community health problem, generate evidences for the problem and try to find out the solution with available resources at local level. These projects are given during their third year studies with subject community medicine.

They were exposed for two days workshop on searching problem, formulate research question, searching literature on the various aspects of problem, formulate action plan for generating evidence and to prepare the proposal for research project. The workshop was interactive and small group discussions were conducted with guide. After the workshop all the projects were sent for institutional ethics committee for ethical clearance. Students had conducted projects in group of 5-6 students under guidance of teachers in next six months. They finished 24 such projects and report submitted and presentation done in front of a panel of senior faculties of institution. All the faculties were from institute itself and worked as a mentor for the students throughout the project.

Evaluation of the new system makes it more effective and generates scope for future improvement. Various studies conducted in student's perception, but reported research for faculty perception are lacking. Very little is known, what faculties think about this teaching method and how it will be effective in future. Hence, we developed a formal, hands-on experience for faculties on EBChP in the public health research process and evaluated the achievement, experience and response of faculty after the EBChP workshop cum discussion. Faculty perception on its effectiveness, outcomes and implementation were evaluated.

MATERIALS AND METHODS

This was a descriptive, self structured questionnaire based cross sectional study carried out in 24 faculties, who had been guided the III MBBS Part-I students for EBChP in SBKS MI & RC, Sumandeep Vidhyapeeth, Piparia, Vadodara, Gujarat, India. III MBBS Students passed through the whole process during year 2013. This 2 days work shop in May included the hands on training on formulating the answerable question, searching evidence skills, evaluation of evidences and its appraisal. Every project was under the guidance and supervision of a mentor, one of the faculties of SBKS MI & RC. They finished the 24 such community projects after ethical clearance and presented in the month of Oct 2013 after completion.

The present study will take a feedback from all these faculties under three heading, personal detail, views regarding their experience with students and their perception for effectiveness of EBChP in medical education. Pre-tested semi structure questionnaire was used for the feedback. After Ethical approval (EC No. SVIEC/ON/MEDI/RP/14142), data collection was started and faculties were approached in collage during duty hours. This study was conducted to get genuine answer of all questions in context to the programme for further improvement.

The questions were focused on their perception of local EBChP-workshop about research methods, development of protocol, guidance of teacher for developing protocol, field data collection experience, report writing and presentation of report. All the aspects were covered to understand the learning objective of evidence generation, searching evidence, process of research and writing the report. The items in questionnaire were in the five point Likerd scale (Strongly agree-1, agree-2, neutral-3, disagree-4 and strongly disagree-5), scale 1 and 2 as well as 4 and 5 were merges for the analysis purpose. All results were expressed in mean± SD for quantitative data. Qualitative data will be expressed as percentage.

OBSERVATION AND RESULTS

All 24 faculties were approached during duty hours and given the information regarding the purpose of the study. Informed consent was taken from each faculty. Name was kept as optional for genuine feedback. The response rate of study was 83.3%, as we collected 20 completely filled feedbacks. About 80% faculty members were agreed that research in medical field is important and the reason given is updating the knowledge. Only 40% faculties knew that medical curriculum of MCI has any component of research in curriculum. Feedback on likert scale has following results. Table-2 shows the feedback about students improvement and Table-3 includes the feedback regarding the EBCHP training workshop. 50% faculties consider research as a good career for a doctor, while 20% consider it financially bad option. 50% faculty was agreed to take research as their own carrier.

Table 1. The faculty profile

Age	Age range 28-68yrs	Mean age 37.9±11.9	Sex M= 13, F=07	
Designation(N=20)	Professor=04	Associate professor=03	Assistant professor=13	Tutors=0
Teaching experience (Yrs)	Range		Mean	
	1-18 years		5.65±4.04	
Trained in medical education	Yes=20		No=0	
Trained for EBES	Yes=18		No=02	

Table 2. The feedback on likert scale regarding the improvement in students

QUESTION Do you think……	Strongly agree	agree	neutral	disagree	Strongly disagree
EBChP will help medical student to understand the research?	5(25%)	12(60%)	2(10%)	1(5%)	-
Medical student should know about research methodology?	5(25%)	12(60%)	1(5%)	2(10%)	-
After EBChP, students acquired the research concept?	3 (15%)	13 (65%)	2(10%)	2 (10%)	-
Students should know about Ethical aspect of research during studentship	5(25%)	12(60%)	2(10%)	1(5%)	-
Student learnt team work during this project work	3(15%)	13(65%)	3 (15%)	1(5%)	-
Student learnt the data analysis skill during project	6(30%)	11 (55%)	3(15%)	-	-
Student learnt the report writing skill during project	4(20%)	11(55%)	2 (10%)	3(15%)	-
Student learnt the presentation skill during project	1(5%)	14 (70%)	3(15%)	2(10%)	-
Student learnt the report writing from data during project work	2(10%)	12(60%)	4(20%)	2(10%)	2(10%)
The quality of research evidence generated by the students out of this project is publishable	7(35%)	10(50%)	1(5%)	1(5%)	1(5%)

Table 3. The feedback of EBCHP training work shop

QUESTION	Strongly agree	Agree	neutral	disagree	Strongly disagree
Workshop covered all the aspect of research protocol write up	2(5%)	10(50%)	4(20%)	4(20%)	-
Group discussion for proposal writing with facilitator was good for learning	3(15%)	9(45%)	3(15%)	5(25%)	-
Searching literature session was adequate to learn hands on in session	4(20%)	10(50%)	2(10%)	4(20%)	-
Students made action plan for work with Gnatt charting, was that satisfactory	9(45%)	2(10%)	3(15%)	4(20%)	2(10%)
Data collection was satisfactory	2(10%)	11(55%)	5(25%)	2(10%)	-

Faculty feedback showed that such training programs are welcomed in medical education. The positive remarks were research sensitization, community exposure, evidenced based learning, exposure of elite class students to ground reality of humanity. These training programs will improve student's ethical concepts, problem solving skills, field work skills, data reasoning and improvement in quality medicine care. On the other side negative feedback included many aspects as it was extra burden, lack of trained volunteers, time consuming, lack of student's concepts regarding research and preliminary knowledge. Some of the faculties agreed that lack of infrastructure, recourses and time constraint on the part of college was the main limitation. Limited scope of studies, quality of publishable data, spurious data collection, and unsatisfactory follow-up were the non collage limitations. More detailed training, voluntary participation, financial support; publishable data will defiantly require to improve the quality

DISCUSSION

The educational goals have changed from teaching facts to facilitating and helping students to learn how to find relevant information through active process of self directed learning. The roll of the teacher is shifted from presenter of knowledge to the promoter of learning. (Chapagain *et al*., 1998) The national knowledge commission, established in 2005, recommends in the report of its working group on Medical education regarding the need for all institutions to have training programme for trainers at up-gradation of their teaching skills and awareness of new medical education technology. (Report of the Working group on Medical Education. Background, 2007)

In the literature, there are few published papers describing or evaluating the use of community health projects within a clinical environment. (Foley *et al*., 1997; Schwartz *et al*., 1991 Chamberland *et al*., 1992; Henry *et al*., 1997). One of these has described the use of problem based learning based on an initial encounter with a real patient. Evidence based community-medicine training enable students to understand the needs of communities and relate theoretical knowledge to practical training in a primary care context. (Sharma *et al*., 2007) This method of teaching and training the medical students has been recognized at various levels. Community based camp approach is an effective method of active learning as it involves integration of social sciences with medical domain, task oriented assignments and active community involvement. (Dongre *et al*., 2010) The differential analysis indicates that there are four factors; resource, quality assurance, student's factor and teaching conception of faculty members affecting the implementation of EBChP in institutions, basically their Viewpoints centered on quality assurance mechanism, the student factor and their teaching belief. (Albanese and Mitchell, 1993) There are many causes for non acceptance as educational means in India like faculty shortage, lack of proper training etc. (Ghosh, 2007) Our study shows that proper orientation and faculty development workshops are essential for the change of attitude and belief of faculty, since EBChP is a newer technique in Indian higher institution.

Therefore its implementation definitely requires proper planning and strategies to adopt and incorporate it, to break hundred years old monotonous traditional pedagogical system of medical education in India. Collaboration between institution having EBM in curriculum, sharing faculty and resources may be the key to promote curricular reforms. Organizing hands on workshop can helpful to create awareness amongst faculty on EBM. (Zaidi *et al*., 2010; Des Marchais *et al*., 1991) Faculty feedback showed that such training programs are welcomed in medical education. The positive remarks were research sensitization, community exposure, evidenced based learning, exposure of elite class students to ground reality of humanity. This study showed that faculty had perception of some hindrances about implementations of EBChP in medical colleges. The main reservations reported are cost related as non availability of logistics rooms, furniture, access to internet and computers and the remunerations and under trained faculty, while minor hindrances were student's early exposure, less interest and extra load without extra time. The studies conducted in other countries showed the similar limitations in implementation. (Vahidi *et al*., 2007; Kiguli-Malwadde *et al*., 2006; Shankar, 2010; Carrera *et al*., 2003; Lai and Tang, 2000)

We have introduced a formative EBChP group assessment in III MBBS Part-II. This is modeled on the Evidence searching skills in first and second year. Project assessment of first and second had not been carried forward with this evaluation because we assumed that the culture of working in a group would be very strong after 2 years. (O'Neill *et al*., 2000)

However, feedback of faculties for Integrated EBM in medical curriculum have suggested that groups need more prior training to improve the quality of research and their performance in EBChP. The low ratings for information technology, computer skills and funding were disappointing. Judging from the faculties comments in this evaluation and subsequent questionnaires, it would appear that the problem was access to a consistently functioning network. This is now being addressed. Overall, the curriculum has been successfully introduced. The shortage of trained tutors may be controlled by training of residents and demonstrators.

The faculty's initial negative perceptions regarding may be changed through staff capacity building training workshops (Zaidi *et al*., 2010). There are concerns about the reduction of interest of faculty members for research as the year progresses, and also about the different responses from some of the students. We are continuing with our evaluation, including that of outcomes as the students approach and eventually graduate from a radically different undergraduate medical course

The aim of medical education should be to address the healthcare milieu of the society in which it operates. With inadequate research on various aspects of public health problems, the true nature of the problems and means to address them will continue to remain in the realm of speculation. In India, efforts to orient medical students to public health research are lacking. It has been suggested that medical colleges should provide a brief skill-based training program on community based research as a part of the undergraduate curriculum. (Isaacs, 2007; Deo, 2009)

The medical college in general has the social accountability to produce a doctor who will take care of the health needs of the masses and not of the privileged few means doctor of first contact. It is up to the medical colleges to address this problem seriously and suggest measures. (Wantamutte, 2004) Due to limited supportive evidences, it remains a challenge to design, introduce and catalyze such a training approach in the traditional medical undergraduate teaching curriculum.

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