# **Original Research Article**

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# A study incorporating action research to enhance community based medical education

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#### **ABSTRACT**

**Background:** Action research is a natural way of acting and researching at the same time and intends finding the solution to local problems encountered by the researcher team. Action research adds to the enthusiasm of community based interventions and learning when implemented by students as a part of community based learning.

**Methods:** A medical education research was carried out involving 40 medical students visiting adopted village under CCHCP of JNMC Sawangi (Meghe) during the period of January to June 2015. Students were assessed on various skills associated with conducting action research, responses towards its utility and its felt need in community based learning was assessed on a five-point likert scale and consensus score was calculated based on the responses.

**Results:** The study reported significant increase in the excellent test score and good test score and decrease in average test score and poor test score. So the performance of students improved from pre-test to post-test. Normalized gain (g) was 0.59, considered moderately effective.

**Conclusions:** Students agreed to having achieved various skills in conducting research with good consensus scores and also agreed to a strong need to incorporate action research in community based medical education.

Keywords: Action research, Community based medical education, Medical students

# INTRODUCTION

Action research is a natural way of acting and researching at the same time. It intends finding the solution to local problems encountered by the researcher team. It is executed as a natural cycle, which achieves twin outcome action (e.g. change) and research understanding). 1,2 Action research adds to the enthusiasm of community based interventions and learning as the deciders and doers of the interventions are same. It is best suited to be executed in place where we wish to achieve change like motivating the community and teaching students at the same time like community based medical education.3-5

Community based learning can be effective if students' participation is enthusiastic. Besides community is much benefited by active involvement of students in solving the health problems of rural community. Incorporation of action research planned and implemented by students themselves may add to the enthusiasm in implementing community-based interventions. This may also add in making community based medical education more effective.

Hence, the present study was carried out with an aim to enhance community based learning in medical undergraduates by promoting action research in village visits adopted under rural adoption scheme.

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## **Objectives**

Objectives of the study were sensitizing undergraduate medical students in various aspects of conducting action research and to promote action research in the community to benefit adopted villagers through the agency of medical students.

The overall expected outcome was to improve community based learning among students by improving their understanding for health problems and requirements of rural people.

## **METHODS**

It is a medical education research wherein faculty of community medicine department attending the village visits mentored the students in conducting action research.

Medical undergraduate students of 2013 batch visiting Hingani village once in a month under existing the Comprehensive Community Health Care Programme (CCHCP) of Jawaharlal Nehru Medical College (JNMC) Sawangi (Meghe), Wardha, Maharashtra were involved to carry out the study. A total of 40 medical students (2013 Batch) and Community/Villagers were involved as a part of the study. The duration of study was 6 months starting from January 2015 to June 2015, wherein duration was given to medical students for conducting action research was of 4 months followed by data collection, analysis and report writing by principle investigator in duration of 2 months.

The proposal was submitted to IEC committee of the Jawaharlal Nehru Medical College (JNMC), Sawangi (Meghe), Wardha, Maharashtra and approval were obtained for the same.

Faculty taught and guided the students about various aspects of conducting and executing action research like framing the study based on identified problems in the community, designing questionnaire for research, data collection, data analysis and also to execute action measures towards solving the problem. Innovative ideas among students in creating IEC material required to execute action to be taken were thus promoted. Students were divided in small groups of 10 medical students and each group conducted one action research project of short duration. Each group submitted the project report to department of community medicine within allotted time.

# Data collection tool

Under the Comprehensive Community Health Care Programme, the medical students have field visits to the identified adopted villages for 3.5 years. Each medical student is allotted 4 to 5 families from the adopted village. For the students of 2013 batch, families from village Hingani were allotted and the students were

having their follow up (once a month) field visits to the allotted families when the present study was conducted. In the given research, at first all the 40 medical students were briefed about the rationale and objectives of the research study. They were sensitized and were explained the 'Steps in conducting Action Research' both in the classroom and in fields. Faculty, postgraduate students and medical social workers were involved for the purpose.

In the second step, students were asked to choose one topic to conduct action research based on the identified medico-social problems in the families. The students prepared and implemented tools for data collection and plan for action to be taken based on the findings of data collection. The students planned action measures towards helping community in solving the problem. A faculty from the department of Community Medicine facilitated the group of 10 students. Innovative ideas among students in creating IEC material required to implement action research were promoted. Improving their understanding for health problems and requirements of rural people thus enhanced community based learning among students.

# Data analysis

Students participating in action research were assessed on various skills associated with conducting action research and a retro-pre comparison was done based on students' feedback. Students' responses towards utility of action research and its felt need in community based learning was assessed on a five-point likert scale and consensus score was calculated based on the responses.

# **RESULTS**

Students participating in action research were assessed on various skills associated with conducting action research based on a pre-test and post-test format. The assessment of pre-test and post-test showed: In pre-test majority 15 (37.5%) participants were having poor level of test-score, 14 (35%) had average, 9 (22.5%) had good and 2 (5%) had excellent level of test score. After implementation of action research and its sensitization sessions, the post-test showed that majority of the participants i.e. 25 (62%) participants were having good level of test score and 15 (37.5%) had excellent level of test score (As shown in Table 1).

Table 1: Pre and post- test score of the study participants.

Grades of score	Pre-test score	Post-test score		
Excellent test score	02 (5.0)	15 (37.7)		
Good test score	14 (35.0)	25 (62.5)		
Average test score	09 (22.5)	00 (0.0)		
Poor test score	15 (37.5)	00 (0.0)		

(Figures in the parenthesis indicate percentages)

The effectiveness of intervention was calculated using formulae:

- Absolute Learning Gain = [(% post-test) (% pre-test)]
- Relative Learning Gain = [(% post-test) (% pre-test)] / (% pre-test) \*100
- Normalize Gain (g) = [(% post-test) (% pre-test)] / [100-(% pre-test)]

Effectiveness of intervention was determined if the range of 'Normalized gain (g)' is as follows-

Low: 0 – 0.29
Medium: 0.30 – 0.69
High: 0.70 – 1.00

Normalized gain (g) in the intervention 'Incorporating Action Research to enhance Community Based Medical Education' was found to be 0.59 and thus was considered moderately effective.

The skills imparted by the intervention 'Incorporating Action Research to enhance Community Based Medical

Education' were enlisted and subjected to response by the students participating in the study on a 5 point Likert Scale.<sup>8</sup>

The students involved as study participants were rated on understanding the steps in conducting a research (weighted mean: 1.55; consensus: 69.40%), Identifying a problem in the community (weighted mean: 1.44; consensus: 72.86%) and prioritizing the health problem in the community (weighted mean: 1.50; consensus: 69.81%). Noteworthy, most of them also strongly agreed to being facilitated in Planning Community Based Action Research (weighted mean: 1.83: consensus: 57.87%) and Executing Community based interventions (weighted mean: 1.48; consensus: 66.61%). The students involved as study participants were also rated on the skills of doing data entry using a statistical software (weighted mean: 2.35; consensus: 40.66%) and doing data analysis using a statistical software (weighted mean: 1.95; consensus: 63.24%). Students who participated in study were also asked about the need to incorporate action research in community based medical education and most of them agreed or agreed strongly to the need (weighted mean: 1.60; consensus: 73.45%) As shown in Table 2.

Table 2: Skills imparted by the interventions.

Skills Imparted by	Strongly	Agree	Neither agree nor	Disagree	Strongly	Weighted	Consensus
the interventions	agree		disagree		Disagree	Mean	score
Understanding the steps in conducting research	24	13	1	1	1	1.55	69.40%
Identifying a problem in the community	28	7	2	2	0	1.44	72.86%
Prioritizing the problem in the community	29	2	9	0	0	1.5	69.81%
Planning Community based action research	23	4	11	1	1	1.83	57.87%
Executing community based interventions	29	7	1	2	1	1.48	66.61%
Data entry using a statistical software	15	12	3	4	6	2.35	40.66%
Data analysis using a statistical software	16	17	2	3	2	1.95	63.24%
Need to incorporate action research in community based medical education	21	16	1	2	0	1.60	73.45%

## **DISCUSSION**

The study intended to sensitize undergraduate students in various aspects of conducting action research and to

promote action research in the community to benefit adopted villagers through the agency of medical students. The study reported significant increase in the excellent test score and good test score of the students and decrease

in average test score and poor test score of students. Hence the performance of students improved from pretest to post-test. Normalized gain (g) in the intervention 'Incorporating Action Research to enhance Community Based Medical Education' was found to be 0.59 and thus was considered moderately effective. The students involved as study agreed to having achieved various skills in conducting research with good consensus scores. Various medical schools studied the role of a medical teacher as an action researcher using climate instrumentation and research strategies, to understand the nature, and improve the quality, of the educational experience that students gain in medical schools, and their constituent departments, classrooms and other settings.<sup>9</sup>

However, actual involvement of students by themselves planning and implementing action research at community level under community based learning and its utility has not been studied before. Students who participated in present study agreed to a strong need to incorporate action research in community based medical education. Hence the activity can be included for all the students as a part of community Based learning in medical schools. The overall expected outcome of improving community based learning among students by improving their understanding for health problems and requirements of rural people can thus be achieved. Studies supports that conducting such researches by medical students may reduce health disparities by increasing access to health care and increasing health research and dissemination in communities. 10

However, overall fruitfulness of the intervention will depend on active and wholehearted participation of students in planning and implementing the studies. Active and vigilant supervision of the faculty is needed for the same. Participatory and action oriented researches need to have an evaluation criteria which can evaluate such type of work and its utility in medical education being imparted at community level. 11

Hence planning of evaluation criteria and evaluating the action oriented researches conducted by medical students in local communities being evaluated as per this criteria is needed to involve this activity as a part of community based learning. Formative assessment of students may also be planned based on skills demonstrated by students while conducting such researches.

# Limitations

The whole 2013 batch of medical students could not be included in the study taking into accounts the feasibility, manpower and time constraints. All villagers of the adopted village could not be benefitted as sample size of each action research of students will vary based on feasibility.

However the rest of the students were involved in the classroom and field teachings and carrying out interventions in the subsequent field visits.

#### **CONCLUSION**

Incorporating Action researches in undergraduate medical education as a part of community exposure or community postings for students is the need of the day to enhance community based medical education in medical schools in India.

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Ethical approval: The study was approved by the

Institutional Ethics Committee

#### REFERENCES

- 1. Dick B. Action research: action and research [On line]. [Available at http://www.aral.com.au/resources/aandr.html], 2002.
- 2. Kemmis S, McTaggart R, & Retallick J. (Eds.) The action research planner (2nd edn. rev.) Karachi: Aga Khan University, Institute for Educational Development; 2004: 2-6.
- 3. Gaventa J, Cornwall A. Power and knowledge. In P. Reason & H. Bradbury (Eds.), Handbook of action research: Participative inquiry and practice. London: Sage Publications. 2001: 70-80.
- Community-based learning: engaging students for success and citizenship, by Aatelia Melaville Amy C. Berg Martin J. Blank. Coalition for community schools. 1998.
- 5. Park K. Textbook of Preventive and social Medicine, 21st edition, M/s Banarsidas Bhanot Publihers, Jabalpur, India. 2011: 819-20.
- 6. Lewin K. Action research and minority problems. J Social Issues. 1946;2(4):34-46.
- 7. Reason P, Bradbury H, editors. Handbook of action research: Participative inquiry and practice. Sage. 2008: 86-122.
- 8. 5-Point vs. 6-Point Likert Scales. [Cited online] [Available on: http://www.infosurv.com/ images/ Likert\_Scale\_Debate.pdf.]
- Genn JM, Harden RM. What is medical education here really like? Suggestions for action research studies of climates of medical education environments. Medical Teacher. 1986;8(2):111-24.
- 10. Wallerstein NB, Duran B. Using community-based participatory research to address health disparities. Health Promotion Practice. 2006;7(3):312-23.
- 11. Kidd SA, Kral MJ. Practicing participatory action research. J Counseling Psychology. 2005;52(2):187-9.

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