

**Original Article**

**Formative exploration of students' perception about Community Medicine teaching at Mahatma Gandhi Institute of Medical Sciences, Sewagram, India**

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**Abstract:**

**Objective:** The objectives of the present formative research were to explore the medical undergraduates' study problems and their perceptions about various teaching approaches in currently practiced teaching curriculum of Community Medicine. **Material and Methods:** The present formative research was undertaken at Dr. Sushila Nayar School of Public Health incorporating Department of Community Medicine, Mahatma Gandhi Institute of Medical Sciences, Sewagram. The respondents were 17 (26.5%) conveniently selected final year exam appearing medical undergraduates from 2004 regular batch of 64 students. A triangulation of qualitative research methods like free listing, pile sort exercise and a Focus Group Discussion (FGD) were used. A two dimensional scaling and hierarchical cluster analysis was completed with the pile sort data. The data was analyzed by using software Anthropac 4.98.1/X software. **Results:** The medical undergraduates could understand the topics like Integrated Management of Neonatal and Childhood (IMNCI), Primary Health Care (PHC), cold chain system for vaccines, immunization and health education, dietary survey and cluster survey method taught in the community based camp approaches. Students found it difficult to comprehend the core of subject from the scattered lecture series over a long teaching period, especially using lengthy over head projector/liquid crystal display presentations. The major problems encountered in studying the subject of Community Medicine were difficulty in understanding the concepts of biostatistics, confusions due to apparently similar text in National Health Programs and difficulty to recall disease statistics due to vast syllabus. **Conclusions:** Students perceived the community based camp approach of teaching as a best method to understand the subject, which is an integration of task oriented assignments, integration of social sciences within medical domain and active community involvement. Hence, the community based camp approach can be scaled up as a best Community Medicine teaching approach. The active learning methods could be used to improve the lectures and the clinics which should be more concentrated in final year of teaching. **Key Words:** Community Medicine, Perceptions, Community-based-teaching, medical undergraduates, India

### Introduction:

Good quality public health research output from India has been found to be grossly inadequate.<sup>1</sup> The lack of originality and substance in public health teaching system leads to underutilization of substantial brilliant talents and finally to poor local public health research.<sup>2</sup> The key to address this problem would be to revitalize Community Medicine teaching and bring rigor and respect to the discipline.<sup>1</sup>

Dr. Sushila Nayar School of Public Health incorporating Department of Community Medicine, Mahatma Gandhi Institute of Medical Sciences (MGIMS), Sewagram has been implementing innovative and socio-culturally specific Community Medicine teaching approach for its medical undergraduates. MGIMS is a rural oriented medical school founded in 1969 in central India by Mahatma Gandhi's closest associate. The teaching model of MGIMS is based on Gandhian ideology and also covers the teaching curriculum of Maharashtra University of Health Sciences, Nashik.<sup>3</sup> It envisions building doctors for rural poor by orienting them to prevalent public health problems in rural area and empowering them with the required epidemiological and public health skills.

Garg et al<sup>4</sup> and Narayanan<sup>5</sup> have already provided the detailed description of community based teachings of MGIMS. In brief, this teaching model incorporates village based Social Service camp for first year students in adopted village, Re-orientation of Medical Education (ROME) camp for final year students, monthly visits to adopted village, the lectures and the clinics. Each batch of the medical undergraduates has to undergo two above mentioned field based camps of fifteen days duration each, subsequently followed by monthly village visits and institutionally based lectures/clinics. The various community based teaching approaches have been successfully tested but little is known about students' study problems in routine Community Medicine teaching and their perceptions regarding community based teaching approaches. Hence, the objectives of the present formative research were to explore the medical undergraduates' study problems and their perceptions about various teaching approaches in currently practiced teaching curriculum of Community Medicine at MGIMS.

### Material and Methods:

**Study setting:** The present formative research was undertaken at Dr. Sushila Nayar School of Public Health, MGIMS, Sewagram. It is located in Wardha district, Maharashtra state, India about 758 km east from state capital Mumbai. Every year, 64 students from all over India take admission to MGIMS for MBBS course (a degree course) through all India competitive entrance examination.

**Study subjects:** The respondents were 17 (26.5%) conveniently selected final year from 2004 regular batch of 64 students. All the respondents were exposed to the entire present teaching curriculum in Community Medicine.

**Data collection methods:** The data was collected by two investigators (trained Community Medicine teachers). A triangulation of free list, pile sort and focus group discussion was undertaken to increase the validity of the results. An informed consent was obtained from the respondents. The study was conducted in two sittings one week apart with the group during the month of August 2007.

**Free listing and Pile sorting:**<sup>6</sup> In order to find out various 'problems faced in studying subject of Community Medicine', 'various lessons actively learned' and 'useful teaching approaches in the present teaching curriculum' each of the participating student was asked to make individual free list on given research questions'. The relatively higher rank items of domain 'various lessons actively learned' were subsequently subjected to pile sorting exercise. In this exercise five participants were asked to sort these items freely into group that s/he felt went together or according to whatever criteria made sense to them. The data was analyzed by using software Anthropac 4.98.1/X.<sup>7</sup> A two dimensional scaling and hierarchical cluster analysis was completed with the pile sort data to find out underlying relationships among the set of observations. The investigators reviewed the free list and pile sort data to decide the domains for semi-structured Focus Group Discussion (FGD).<sup>8</sup> A FGD was conducted with the group of 12 students who were willing to talk freely. The trained investigators obtained the informed consent from respondents and undertook FGD using guidelines.

### Results:

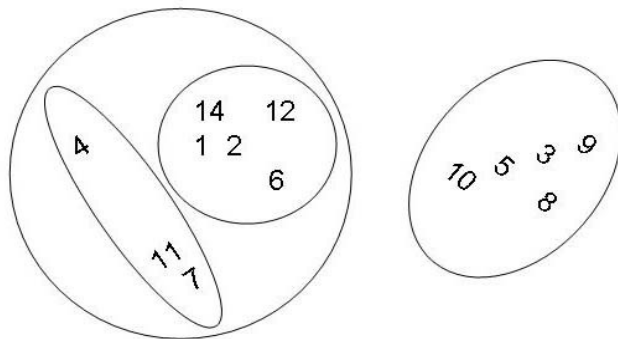
The top free list items (with high Smith's S value) of domain 'problems faced in studying Community Medicine' included problems like difficulty in understanding the concepts of biostatistics, confusions due to apparently similar text in various National Health Programs, difficulty to recall disease statistics due to vast syllabus stuffed with knowledge based information. The top free list items (with high Smith's S value) of domain 'various lessons actively learned' incorporated topics like 30 cluster sampling technique for assessment of immunization coverage, dietary survey, Integrated Management of Neonatal and Childhood (IMNCI) in camp, epidemiology, communication skills and Primary Health Care (PHC).

The result of the two-dimensional scaling and hierarchical clustering of the pile sorts are displayed in Figure 1 showing how the grouping of the subjects 'various lessons actively learned was perceived by the students along with the different criteria these students chose to group the subjects. The respondents primarily formed subject groups on the basis of practical approaches and mutual relationships of subjects as perceived by them (Table I).

**Table I: Topics grouped by respondents in pile sort exercise and their reasons for grouping**

Respondent	Groups of subjects as formed by respondents	Reasons for grouping
1	Epidemiology, Non-communicable diseases, Anthropometry, Demography	Academic relevance
	Immunization, IMNCI, Primary Health Care, Cold chain	Subject of practical relevance
	Dietary survey, Health education, Disaster management, Survey methods, Documentation, Communication skills.	
2	Survey methods, Dietary survey, Communication skills, Documentation, Disaster management	Subject of practical relevance
	Primary Health Care, Epidemiology, Non-communicable diseases, Health education	Related to Community health
	Cold chain, Demography, Anthropometry, Immunization, IMNCI	Related to Maternal and Child Health
3	Primary Health Care, Health education, Cold chain and Immunization	Functional and organizational relationship
	Non-communicable diseases	
	Disaster management	
	IMNCI, Communication skills	
4	Anthropometry, Epidemiology, Demography, Documentation, Survey methods, Dietary survey	Practical approaches
	IMNCI, Cold chain, Immunization	
	Non-communicable diseases, Disaster management	
5	Primary Health Care, Health education, Survey methods, Dietary survey, Epidemiology, Demography, Documentation, Communication skills	Descriptive subjects
	Non-communicable diseases, Disaster management	
	Health education, IMNCI, Cold chain, Primary Health Care, Communication skills, Documentation	
5	Anthropometry, Survey methods, Dietary survey, Epidemiology and Demography	Mathematical subjects

**Figure 1: Cognitive map showing grouping of subjects learned in Community Medicine**



8- Cold chain, 3- IMNCI, 9- Immunization, 5- PHC, 10- Health education  
 14 - Anthropometry, 1-Survey methods, 2- Dietary survey, 12-Documentation, 6- Communication skills  
 4-Epidemiology, 11- Disaster management, 7-NCD

As shown in the Figure 1, respondents classified actively learned subjects into two broad groups. The first group comprised of subjects like IMNCI, PHC, cold chain system, immunization and health education. The major source of learning for these subjects was ROME camp. The second group included subjects like dietary survey, cluster survey method, anthropometry, documentation and communication skills which students primarily learned during Social Service camp. The subgroup of subjects like epidemiology, non-communicable diseases and disaster management was learnt from the lecture series and the clinics.

The free list of teaching approaches which students found useful in learning the subject included the ROME camp, Social Service camp, lectures and clinics in descending order of Smith's S value. A focus group discussion with the students further explored the rationale behind their various perceptions. The responding students appreciated camp approach of teaching as here they could understand the core of subject and its practical application which they found difficult to comprehend in class room teaching. The other reasons in the favor of camp approach was its focused, intensive, skill based and properly sequenced interactive teaching curriculum which helped them to understand the subject in a single attempt. The ROME camp was found to be more useful as it was conducted in final year and it included exam oriented topics. The lecture series scattered over a long teaching period from first year to final year was less useful as it was difficult for students to understand, interlink and timely retrieve the subject matter when they had to concentrate more on subjects due for first year university examination. Surprisingly, most of the students disliked the approach using lecture cum presentations using over head projector/liquid crystal display because they were usually too long and fast. Hence, these lectures were soon forgotten as students could not take any notes of it. However, students had no doubt regarding technical contents of lectures. They wanted simple organized and interactive sessions. Students also found it difficult to select the study materials as they found variations within information provided from different sources like lecture notes, books and handouts of presentations.

#### Discussion:

In the present study, the medical undergraduates could understand the subject matter and learn skill based topics like IMNCI, PHC, cold chain system, immunization and health education, dietary survey and survey methods through field based camp approaches. The students found it difficult to comprehend the core of subject from scattered lecture series over long teaching period especially using lengthy over head projector/liquid crystal display presentations. The major problems encountered in studying the subject of Community Medicine were difficulty in understanding the concepts of biostatistics, confusions due to apparently similar text in different National Health Programs, difficulty to recall disease statistics due to vast syllabus stuffed with knowledge based information.

The teaching of Community Medicine in resource poor developing countries aims at producing graduates with skills to critically appraise evidence, prevent and manage diseases and promote health in the community.<sup>8</sup> There has been an increase in the number of medical schools implementing community based educational (CBE) program. Kristina et al found students with community involvement in community based teaching could appreciate their learning.<sup>10</sup> Al-Dabbagh et al found task based community oriented teaching model useful for teaching Family Medicine in Iraqi Medical schools.<sup>11</sup> Connor et al has recommended integration of social sciences within medical domain.<sup>12</sup> In the present formative research, the community based camp approach appeared to be an effective method of teaching Community Medicine in rural India. It could be because of its problem based curriculum and more interaction of students with the teachers and community members during task based assignments in camps. Thus, the teaching approach in camps of MGIMS is an integration of task oriented assignments, integration of social sciences within medical domain and active community involvement. Notably, the student centered educational innovation is not quite evident in Asia as seen in other parts of the world.<sup>13</sup> According to Murrey et al,<sup>14</sup> adoption of community orientation in medical education has potential benefits for the students, the medical schools and also for the community.

The Maharashtra University of Health Sciences, Nashik recommends Community Medicine teaching throughout period of teaching duration.<sup>3</sup> In the present study, students reported that the lecture series scattered over a long teaching period from first year to final year was less useful. As during initial teaching period they had to concentrate more on other subjects due for first year university examination. However, the "Social Service Camp" in this period was perceived as useful approach. The ROME camp was found more useful as it was conducted in final year and it included exam oriented topics. Abeykoon et al<sup>15</sup> noticed that most of the medical schools in Asia have traditional, teacher centered and hospital based education. One of the recommendations of the "Edinburgh Declaration" of World Federation for Medical Education (WFME) was to use active learning methods (tutorial, self-directed and independent).<sup>16</sup> Strategies that have been developed as self-directed learning include: problem-based learning; discovery learning; task-based learning; experiential and reflective learning; portfolio-based learning; small-group, self instructional and project-based learning; peer-evaluation and learning contracts. Recently, the Government of India has launched Public Health Foundation of India (PHFI) aiming to train more public health professionals. According to few experts, instead of this new parallel initiative, the existing Community Medicine departments in medical

colleges could be improved and strengthened for better utilization of resources.<sup>17</sup> One way to achieve this would be to improve the curriculum and teaching of Community Medicine in medical colleges.

To conclude, the community based camp approach can be scaled up as a best Community Medicine teaching approach. The active learning methods could be used to improve the lectures and the clinics which should be more concentrated in final year of teaching. Finally, the limitations of the present study should be kept in mind. The scope of present relatively small formative research was limited to exploration of students' problems and generation of hypothesis for future intervention research on community based teaching methods.

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