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## ORIGINAL RESEARCH PAPER

# An Evaluation of ROME Camp: Forgotten Innovation in Medical Education

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## A B S T R A C T

**Background and Objectives:** Mahatma Gandhi Institute of Medical Sciences (MGIMS), Sewagram, India's first rural medical institute, has been implementing its community-based public health teaching with the aim of building a physician workforce for the rural poor. For the past four decades, the MGIMS has organized and run the Re-orientation of Medical Education (ROME) camp for final year medical undergraduates at one of the rural centres of the department of Community Medicine. The objectives of the present study were to learn students' perceptions of the value and effectiveness of various components of the ROME camp and learn the factors they perceive facilitate and inhibit learning.

**Methods:** A mixed-method research design of quantitative (survey) and qualitative (force field analysis) methods was used. The study participants were all 61 of the final year medical undergraduates participating in the ROME camp in 2008. The quantitative data was analyzed using SPSS software package and summative content analysis of the qualitative data was undertaken.

**Results:** Students were generally very positive about all aspects of the camp and its component parts. The greatest consensus (88.9%, on a 0 to 100% scale) was for the contribution to student learning of the visit to the Primary health centre and Sub-centre, as offering direct exposure and interaction with the village-level service providers. There was poorer consensus for students' involvement with the field-based clinics, as this was felt by some not to contribute significantly to their understanding of socio-economic and environmental factors related to cases (78.8%) and their ability to diagnose health problems in resource poor settings (76.5%). The major strength of the camp was felt to be its exposure visits and hands-on experiences in surveys and interaction with village-level health care providers. Students reported poor interactions with teachers in some educational sessions, including the field-based clinics and classes on theories of national health programs.



**Conclusions:** The curriculum of the ROME camp was generally well regarded by students, but based on their views it should emphasize interactive theory sessions. The ROME scheme can be revitalized in all medical colleges as it is an effective practical approach for teaching public health principles and practice to medical students.

**Keywords:** Re-orientation of Medical Education, camp, curriculum, community-based teaching, integrated teaching

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## Introduction

Medical education in India has been inherited as a British legacy. In this system, rural orientation and practical exposure of medical undergraduates to the health care delivery system and field realities is lacking. One promising way to address this lack would be to revitalize public health teaching and make it responsive to the existing deficiencies in India's health care system<sup>1</sup>. The Re-orientation of Medical Education (ROME) program of the World Health Organization for Asian countries was aimed at developing medical education system responsiveness and relevance to the needs of a country by making necessary curriculum changes. The Government of India took initiative in 1977 by launching the 'Re-Orientation of Medical Education' (ROME) scheme to impart community-oriented training to medical undergraduates in primary health care. Over the period from 1977 to now, almost all medical colleges ceased its implementation. One reason for its failure was that colleges did not update their programs<sup>2</sup>. One exception has been the Mahatma Gandhi Institute of Medical Sciences (MGIMS), Sewagram, which has continued to implement the ROME camp for medical undergraduates with contextual modifications (figure 1) implemented in line with the recommendations of the Medical Council of India<sup>3</sup>.

The MGIMS, Sewagram is India's first rural medical institute, supported by both the Central and State Government and based on Gandhian ideology. The MGIMS admits 65 medical students each year from all over India on the basis of a pre-medical entrance test. It has been implementing its community-based public health teaching with the aim of training doctors for work with the rural poor. It orients students to the prevalent public health problems of rural areas and empowers students with the necessary social, medical and public health skills through curricular innovations such as orientation camp for early students, social service camp in villages, a village adoption scheme, ROME camp, rural orientation during internship, and two years required rural service before graduates are allowed to pursue post-graduate training at MGIMS<sup>4</sup>.

Garg et al.<sup>5</sup> have described the community-based teachings at the MGIMS, including the ROME camp. The camp is an integrated approach to public health and clinical disciplines where the field clinics for students are arranged within the patient's house. The camp curriculum focuses on primary health care and attempts to create conditions for the students to gain a hands-on understanding of the nature of rural health problems. Such community-based teaching for medical undergraduates is seldom practiced in India. The MGIMS has organized the ROME camp for the last four decades. During that time, no systematic effort has been made to evaluate its curriculum from the students' perspective. The World Federation of Medical Education (WFME) Global Standards recommends that students should participate in the design, management and the evaluation of their curriculum. The information on students' perspectives is useful for developing and refining a quality and effective educational program<sup>6</sup>. Hence, the objectives of the present study were to learn students' perceptions of the value and effectiveness of various components of the ROME camp curriculum and to explore the factors they perceive work for and against their learning at the ROME camp.

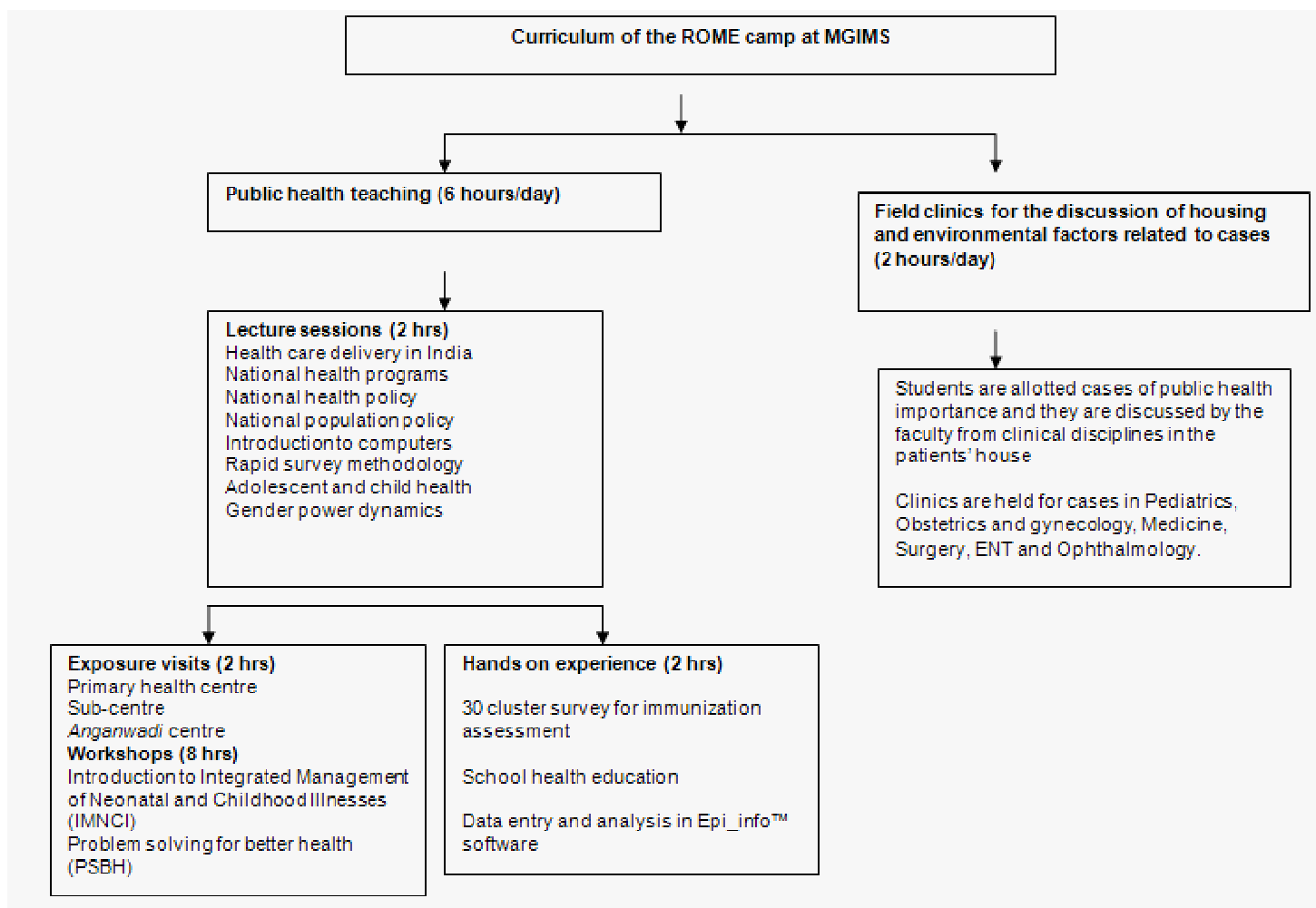


Figure 1: Community based teaching in the ROME camp for final year medical students

## Methods

**Study setting:** The present study was undertaken at the Rural Health Training Centre, Bhidi, which is a peripheral centre of MGIMS, Sewagram. It is located in the Wardha District, Maharashtra State, India, about 760 km east of the state capital, Mumbai. The study was undertaken at the end of the 12-day ROME camp in November, 2008.

**Study participants and design:** The study participants were the group of 61 final year medical undergraduates participating in the ROME camp. A mixed-method research design of quantitative (survey) and qualitative (force field analysis)<sup>7</sup> methods was used.

**Data collection methods:** The quantitative data was collected with a questionnaire with banks of questions using a five-point Likert scale<sup>8</sup>. Two teaching faculty members of the Department of Community Medicine designed 14 questions for the questionnaire. It was 'face validated' by obtaining expert opinion from the Head of the Community Medicine Department. It was pre-tested by cognitive interviewing of ten senior medical undergraduates to identify ambiguous wording and 'double barreled'



questions. After obtaining informed consent at the end of camp, all medical undergraduates were asked to take the self-administered questionnaires to report their views of the educational value of various parts of the ROME camp curriculum. To minimize 'social desirability bias' where the respondents try to please the interviewer, appear helpful and avoid socially unacceptable responses, the questionnaire did not collect personal information from subjects, such as names, ages, sex and roll number.

In a second data gathering approach, a trained teaching faculty member facilitated a force field analysis exercise<sup>6</sup> with 19 purposively selected students who were willing to participate and who had attended all sessions during the camp period. This exercise was used as a technique to uncover the factors that students perceived worked for and against learning at the camp. After obtaining informed consent, all 19 participating students were asked to individually list statements of the factors they perceived fostered and hindered learning during the camp period. Next, all 19 students were given an opportunity to freely talk and share their experiences in a flexible group discussion lasting one hour. Finally, all responses were compiled and presented.

Ethical clearance was obtained from the Institutional Ethics Committee of the MGIMS.

**Data analysis:** The quantitative data was analyzed using SPSS (Chicago, IL, USA) software package version 12.0. A consensus measure, expressed in percentage, was obtained for each of the items. Values at the upper end of the range indicated more "agreement" than values at the lower range. A value closer to 1.0 or 100% has less dispersion around the weighted mean value and indicates greater agreement. Low consensus values were identified through high dispersion around the mean value<sup>9</sup>. Values above 80% were considered to reflect good consensus and below 80% were considered to reflect poor consensus.

A summative approach to qualitative content analysis was undertaken to identify and quantify certain themes from the text data and infer meaning in the given context<sup>10</sup>. The unit of analysis was students' individual statements. Statements with similar meaning were grouped together until a point was reached where further collapsing would cause a loss of qualitatively important information. The data was classified and quantified as simple non-hierarchical typology of various for and against perceptions. To increase the integrity of the process, two Community Medicine faculty members who were well versed in qualitative research methods carried out the analysis. The first author performed the initial content analysis and the second author reviewed it. Any disagreements between the two were resolved through discussion.

## Results

All 61 students participated in the survey questionnaire. Out of 61 students, 38 (62.3%) and 23 (37.7%) were male and female, respectively. The majority, 39 (63.9%) were from rural family backgrounds and the remaining 22 (36.1%) had urban family backgrounds. About 31 students (50.8%) were from the state of Maharashtra and the remaining 30 (49.2%) were from the other states of India. The mean age of the responding students was 21.39 ( $\pm 1.26$  standard error) years.

Students were generally very positive about all aspects of the camp and its component parts. The consensus measures ranged from minimum 76.5% to maximum 88.9% for the 14 items in the questionnaire. The maximum consensus (88.9%) was for the exposure visit to the Primary health centre and Sub-centre, as they provided direct interactions with the village level service providers. This was followed by the consensus on the value of exposure to field surveys, hands-on experience in school health education (86.6%) and skills-based Integrated Management of Neonatal and Childhood Illnesses (IMNCI) training (85.6%) during the camp period. Notably, there was an 85.6% consensus for the overall teaching approach of the camp period. The consensus values for exercises



relating to the software Epi\_info<sup>TM</sup>, specifically for its hands-on experience and data entry, were 82% and 80.1%, respectively. There was 82.2% consensus for the community-based camp approach for teaching the subject of Community Medicine. (Table I).

There was poorer consensus for the field-based clinics (78.8%), as some students did not perceive these contributing much to their understanding of socio-economic and environmental factors related to cases nor contributing much to their ability to diagnose health problems in resource poor settings (76.5%). The consensus for utility of the theory class on national health programs was 78.7%. (Table I).

**Table I: Medical students' (n=61) opinion about various aspects of the ROME camp curriculum, n (%)**

n	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Consensus %
Session on rapid survey methodology was useful	24 (39.3)	34 (55.7)	2 (3.3)	1(1.6)	-	84.8
Exposure visit to Primary Health Centre, Sub-Centre was useful to understand health care delivery in India	39 (63.9)	22 (36.1)	-	-	-	88.9
Participation in field surveys improved our understanding for survey technique	35 (57.4)	24 (39.3)	1(1.6)	-	1 (1.6)	86.8
Hands-on experience on Epi_info <sup>TM</sup> was useful	17 (27.9)	36 (59.0)	6 (9.8)	2 (3.3)	-	82.0
Field clinics helped us to learn socio-economic and environmental factors related to case	12 (19.7)	31 (50.8)	11(18.0)	5 (8.2)	2 (3.3)	78.8
Visit to Anganwadi centre was useful to understand Integrated Child Development Scheme	33 (55.0)	20 (33.2)	5 (8.3)	2 (3.3)	-	82.8
Theory class on National Health Programs contributed to our understanding	10 (16.4)	37 (60.7)	13 (21.3)	1 (1.6)	-	78.7
School health education was practice of Behavior Change Communication	35 (57.6)	23 (39.0)	1 (1.6)	-	1 (1.6)	86.8
Integrated Management of Neonatal and Childhood Illnesses workshop was skilled based training to manage neonatal and childhood illness (n=34)	25 (73.5)	6 (17.6)	3 (8.8)	-	-	86.6
Teaching methods in camps supported our learning	20 (32.8)	40 (65.6)	1 (1.6)	-	-	85.9
Data entry and analysis was useful exercise	15 (24.6)	31 (50.8)	8 (13.1)	6 (9.8)	1(1.6)	80.1
Camp-based approach was useful for learning the subject of Community Medicine	31 (50.8)	23 (37.7)	6 (9.8)	1 (1.6)	-	82.2
Camp empowered us to become a rural doctor	26 (42.6)	23 (37.7)	8 (13.1)	2 (3.3)	2 (3.3)	78.8
It has empowered us to diagnose health problems with minimal recourses	17 (27.9)	28 (45.9)	13 (21.3)	2 (3.3)	1 (1.6)	76.5

The discussions with the students during force field analysis established an understanding about the factors students perceived fostered and hindered learning. The main perceived factors helping students to learn was their exposure visit to the Primary health centre, Sub-centre and Anganwadi centre (94.7%) (see Note 1), which was an opportunity for them to directly interact and learn from Auxiliary Nurse Midwife and Anganwadi worker (68.4%) (see Note 2). The other positive factors were facilitation of a workshop on Problem-Solving for Better Health (PSBH) (63.2%), interactive sessions of short duration (57.9%) and their participation in a field-based cluster survey on immunization coverage and an exercise on focus group discussion (52.6%). The main factors perceived to work against learning were the fewer interactive sessions within the knowledge-based theory teaching and the statistics used in these sessions (57.8%), the use of lengthy PowerPoint presentations in the lecture sessions (42.1%), and the overly-busy schedule (36.8%). The other problem students noted was that there was too little time given to Epi\_info<sup>TM</sup> software



learning and Integrated Management of Neonatal and Childhood Illness (IMNCI) workshop, interaction with the health care providers and lecture sessions after dinner (31.6%). The lack of interest of facilitators and patients in the field clinics was also perceived to negatively affect students' learning (26.3%). (Table II).

**Table II: Force field analysis with 19 students to explore perceived forces for and against learning**

<b>Forces for learning</b>	<b>n (%)</b>	<b>Forces against learning</b>	<b>n (%)</b>
Exposure visit to Primary health centre, Sub-centre and <i>Anganwadi</i> centre was useful for our learning	18 (94.7)	Less interactive sessions with lot of theory and statistics in it	11 (57.9)
Interaction with health workers such as <i>Anganwadi</i> worker, Accredited Social Health Activist (female village level health worker) and Medical officer was useful	13 (68.4)	Use of lengthy PowerPoint presentations in the lecture session	8 (42.1)
Problem Solving for Better Health workshop during the camp period	12 (63.2)	Very busy time table (schedule)	7 (36.8)
Interactive lectures of short durations	11 (57.9)	Lecture sessions after dinner	6 (31.6)
Field-based survey or demonstration of Focus group discussion	10 (52.6)	Less time for Epi_info <sup>TM</sup> or Integrated Management of Neonatal and Childhood Illnesses workshop or interaction with health care providers	6 (31.6)
Opportunity to deliver health education in a school	8 (42.1)	Poor facilitation in field clinics	5 (26.3)
Field-based clinics	6 (31.6)	Poor co-operation of patients in field clinics	2 (10.5)
Teaching National Health Programs with interaction of experts, field visits and innovative teaching methods	4 (21)	Less duration of camp	3 (15.8)
Stay in field settings	3 (15.8)	Sitting on ground for too long time during sessions in the field	3 (15.8)
Integrated teaching approach	2 (10.5)	Personal illness during the camp period	1 (5.3)

## Discussion

ROME camp is a student-centered program for skill building in public and clinical disciplines for final-year medical undergraduates. It was noteworthy that students were generally very positive about the camp and its component parts. The ROME camp is similar to Community-oriented Medical Education (COME), in that both are educational processes that focus on population groups and individuals in the community and take into consideration the community's health needs<sup>11</sup>. Adoption of community orientation in medical education has potential benefits for students, medical schools, and also for the community<sup>12</sup>.

The Re-orientation of Medical Education (ROME) program of the World Health Organization was aimed at developing medical doctors for the rural poor through changes in students' curriculum<sup>13</sup>. A study of 44 Indian medical colleges undertaken by the Indian National Institute of Health and Family Welfare (NIHFW) during 1988-89 revealed that, regrettably, the goals of the Health For All initiative were forgotten in curriculum planning<sup>14</sup>. The goals of 'Health for All by the year 2000' were related to maternal and child health, safe drinking water and sanitation and indicated a need for skilled medical officers at Primary Health Centre level<sup>15</sup>. The curriculum of the MGIMS ROME camp has been responsive to these goals and the corresponding learning needs of medical students. However, perceived needs in medical education change with time, and there is now a growing need to emphasize public health principles within medical education due to the globalization of economies, the emergence of new infectious diseases, the ageing of the population and growing numbers with chronic conditions, and the increasing violence and terrorism. These topics should be taught to medical students to ensure they understand the complex social and economic determinants of health<sup>16</sup>. While



the Department of Community Medicine, MGIMS, Sewagram has made significant progress in developing a relevant and updated curriculum for the ROME camp, it now also needs to focus on emerging public health issues using new learner-based teaching approaches like problem-based learning and the use of learning portfolios.

The overall teaching approach in the MGIMS ROME camps is an integration of task-oriented assignments, social sciences within the medical domain and active community involvement. In a formative exploration of the teaching of Community Medicine in MGIMS, Sewagram, students' perceived the camp-based teaching to be an effective teaching approach for the subject of Community Medicine<sup>17</sup>. In South East Asia and specially in India, there has been an increase in the number of medical schools implementing a community-based education (CBE) program<sup>18</sup>. Most medical schools experience difficulties providing the right quality and quantity of educational experiences due to lack of curricula to respond to the needs of the community and the country. The present study explored the curriculum of the ROME camp, and its findings might help those who are involved in development of CBE programs elsewhere.

Overall, there was good consensus that the various aspects of the ROME camp curriculum were valuable to learning. However, there was poor consensus for some less interactive theory sessions and the utility of the field-based clinics due to poor facilitation and lack of cooperation from the patients. Major perceived constraints affecting student learning were the relative lack of interaction between students and teachers in some sessions, which instead were heavy on information and statistics, and the use of lengthy PowerPoint presentations in some theory classes. The findings of a force field analysis of students' perceived strengths and weaknesses of the camp were used to create a set of recommendations. We concluded that the MGIMS should adopt active learning methods (tutorial, self-directed and independent) in the ROME camp. The operational link between the camp curriculum and the subsequent stage of practice, i.e., primary health care and village level health care providers, should be retained and strengthened. There should be a policy addressing the evaluation and effective use of communication technology in the educational program. These recommendations are in line with those of the "Edinburgh Declaration" of World Federation for Medical Education (WFME)<sup>6</sup> Hence, the teaching faculty of the ROME camp should be well-informed about trends and innovations in public health teaching and should emphasize and encourage student-teacher interaction.

To conclude, the major strength of the camp, as perceived by its current students, has been its exposure visits and hands-on experiences in surveys and interaction with health providers within villages. One perceived major weakness was poor student-teacher interaction in some sessions, including field-based clinics and theory classes on national health programs. Hence, the ROME camp curriculum should be amended to emphasize interactive theory sessions to better bridge the theory and practical sessions. We believe the ROME scheme can be revitalized in all medical colleges in India with some contextual modifications for local circumstances as an effective and practical approach to public health teaching for medical students.

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Note 1: Anganwadi (the word means "courtyard shelter" in Hindi) are government sponsored child-care and mother-care centres which were started by the Indian government in 1975 as part of the Integrated Child Development Services Scheme to combat child hunger and malnutrition through supplementary nutrition, and early childhood development through informal education.



Note 2: Anganwadi worker is a female worker chosen from the community. She has to ensure key maternal and child services like supplementary nutrition, micro-nutrient supplementation, immunization, periodic health check-ups and referral, and nutrition education of mothers.

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