

Community-Based Medical Education from Gezira Medical Students' Perspective

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Abstract

Community-based education (CBE) is the means of achieving educational relevance to community needs. The Integrated Field Training, Research and Rural Development Program (IFTRRD) is a course designed to achieve CBE in Faculty of Medicine, University of Gezira since its establishment in 1978. We aimed to study CBE from Gezira medical students' perspective regarding the IFTRRD course. In this cross-sectional study, 244 medical students at University of Gezira were enrolled during 2016-2017. Most of the participants agreed that their team work and leadership skills had improved (82% and 78.3% respectively). Moreover, 96% of the students agreed that rural stay helped them be engaged with the community. About 91% identified health and health-related problems in the village and 50% of them performed interventions. About 45.9% achieved 75% of the social accountability philosophy. The students gained communication, teamwork and leadership skills. Moreover, they achieved the philosophy of the university in social accountability. They also identified community problems and performed appropriate interventions.

Keywords: COMMUNITY; COMMUNITY ORIENTATION; STUDENTS' PERSPECTIVE; SUDAN

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Introduction

Community based education (CBE) is defined as the means of achieving educational relevance to community needs and, consequently, as a way of implementing a community-oriented educational program. It consists of learning activities that involve the community extensively as a learning environment in which not only students, but also teachers, members of the community, and representatives of other sectors are actively involved during the educational experience (1).

Despite the great revolution in medical

education following the application of Flexner module, Problems of inequity in the distribution of health services still existed even in developed countries (2, 3) because graduates know little about the prevailing community problems and are not well prepared to work in rural or remote areas (4). This raised worldwide awareness of the importance of primary health care, education for health, and equity in service delivery. Many institutions for health profession education adopted the community-based education (CBE) approach which is followed by establishment of Network of Community-Oriented Educational Institutions for Health Sciences (Network towards unity for health) (5-7).

CBE offers opportunities for students to be trained in the community and rural areas (3, 8, 9). Moreover, it helps students to acquire

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skills such as leadership, communication, teamwork, critical thinking and others. These skills are assessed through peer evaluation and the supervisor of the group (4, 10).

Community-based education is now recognized as an important method in medical education and a critical constituent for accreditation of medical schools (11, 12). Moreover it contributed to solving the problem of inequity in service delivery and improving health systems besides solving important health problems (13).

Faculty of Medicine, University of Gezira (FMUG) is one of the leading schools in social accountability in the Eastern Mediterranean Region (EMR). Since its establishment in 1975, it has used different modules that serve the community i.e. 25% of its curriculum is community-based, such as the integrated field training research and rural development (IFTRRD) module. The general objectives of this module are to enable students to: (1) achieve the philosophy of the university in orientation towards the community and its problems, (2) Acquire critical thinking and problem solving skills, (3) Acquire the concept and skills of teamwork, (4) Acquire the concept of integration, (5) Conduct peer education for students, (6) Gain the Ability to conduct research related to the problems of the community by following the scientific methods, (7) Contribute to community development as a change or facilitating agents. This module comprises two parts: a theoretical part and a practical one. The theoretical part consists of several lectures regarding problem identification and project management which are conducted at the faculty campus. In the first phase of the practical part, groups of 15-20 students are sent to stay in a village in Gezira state, aiming to make community diagnosis of major health and health-related problems, through direct observation, interviews with the village leaders and filling a questionnaire designed by the staff members. In phase two they select priority problems and propose a project to solve them. In the third phase they

evaluate the achievement of their projects (14). All three phases are being accompanied by auxiliary activities such as health education and environmental sanitation campaigns as well as outreach health services. This module is conducted and supervised by staff of the Family and Community Medicine department. The community leaders are involved in every step of this module, from the placement of the student and throughout the planning and implementation of the project, to evaluation and data presentation. Lectures are used as the main method of teaching, while other methods like seminars, report writing, and exhibitions are used for assessment.

Although the CBE courses constitute a large percentage in the curriculum, there is lack of studies and literature on the students' opinion and regarding the impact of these courses on the students.

This study was conducted to assess the achievements of the objectives of the IFTRRD module from the Gezira medical students' perspective. The study aimed to evaluate the competencies their interventions towards the community and evaluating the module from the students view.

Methods

Study Design, Period and Setting

This is a cross-sectional descriptive analytic study conducted during October 2016 to April 2017 in the Faculty of Medicine, University of Gezira, Sudan. It is the largest governmental university outside the capital Khartoum and it is a leading medical school in community-oriented, community-based and innovative medical education in Sudan and in the Middle East. With average of 250 graduated doctors annually.

Population, Sample Size and Technique

All students who attended and completed the IFTRRD courses and those who agreed to be involved in this study were included. While

students who did not attend or did not complete the IFTRRD course were excluded (n=820). The sample size was based on prevalence of 50% with 95% confidence level and 5% level of significance from the population of the study, the required sample was 250 subjects.

A cluster sampling technique was used, in which each batch was considered as a cluster. The sample size for each batch was proportional to its students count. All students who met the inclusion criteria were selected by a simple random method.

Data Collection and Analysis

The data was collected using a self-administered questionnaire developed by a research team (Class of 2017 and 2018), and reviewed by the director of the Education Development and Research Center. A pilot study was conducted among 5% of the study sample size. The purpose of this pilot was to assess the clarity of the questionnaire and the ease of going through all the items and to generate further variables for the study. The specific objectives and the questionnaire were explained to the participants prior to data collection. The questionnaire comprised two parts. The first part included questions regarding socio-demographic data such as age, sex, residency, semester, and type of certificate. The second part assessed the perception of students and their achievements regarding IDFTRRD program using Likert's scale. Questions were based on the intended learning outcomes and the specific objectives of this program. It consisted of 17 questions in 3 domains: learning outcomes (7 questions), problem identification and intervention (6 questions) and students' evaluation of the course (4 questions). Data analysis including correlation test was done using SPSS software, version 20.

Ethical Considerations

The research was approved by the Research Ethical Committee of the Faculty of Medicine, University of Gezira; and a verbal consent was obtained from the participants.

Results

In this study, 250 students were included. The response rate was very high 97.6% (n=244), 32.8% were male and 67.2% were females with a male: female ratio of 1: 2.1, aged from 18-29 year with a mean of 20.46 ± 4.4 SD. Twenty percent of students were from rural areas while 80% were from urban areas. Most students had entered with a Sudan school certificate (Table 1). Most of the participants got acquainted with leadership, team work and communication skills (78.3%, 82%, and 58.6% respectively). About four-fifths of them (86%) were able to be engaged with their village community (engagement means to get to know the community concepts and culture and act as a member of it). About 62% of students had constructed an additional questionnaire to study a specific problem in the community. Concerning the final report writing about the village, 70% of the students showed a full participation. Almost the same percentage (69.3%) of the students, considered themselves - by the end of this course to be capable of carrying out a research in the future (Table 2) Most of the students (97.5%) participated in the activities e.g. Health campaign, environmental sanitation, health education exhibits and sessions and social programs which were held during the placement in the village. Of the participants, 91.4% were able to identify the main health or health related problems of the village. Most students (83.6%) were able to evaluate those problems according to a specific priority criteria which

Table 1: Demographic data of the participating students in the study 2016-2017. N=244

Variables	Gender		Semester			Type of certificate			Residency	
	Males	Females	6th	7th	9 th	Sudan.	Arabian	Others	Urban	Rural
Percentage	29.5%	63.9%	35.7%	34.4%	29.9%	80.7%	18.4%	0.4%	70.9%	28.3%

Table 2: Students opinion of attainment \ achievement of intended learning outcomes 2016-2017. N=244

Variables	Percentage				
	Totally agree	Agree	Neutral	Disagree	Totally disagree
Learning outcomes					
Acquaintance of Leadership skills	28.7%	49.6%	12.7%	6.6%	2.5%
Gaining Team work skills	38.9%	43%	10.7%	5.7%	1.6%
Engagement with village community	47.1%	38.9%	7%	5.7%	1.2%
The Communication with the community was easy	23%	35%	31.1%	7%	2.9%
Capability of carrying out a research	23.8%	45.5%	20.1%	8.2%	2%
Participation in the activities during village stay		Yes 96.7%		No 2.5%	
Ability to formulate additional questionnaire		61.9%		36.1%	
Problem identification and intervention					
Ability of problems identification	35.2%	56.1%	4.9%	2.9%	0.8%
Problems evaluation	28.7%	54.9%	11.9%	3.7%	0.8%
Participation in the project implementation	29.1%	47.1%	14.3%	7.8%	1.6%
The community was reactive towards the implemented project	20.9%	36.5%	30.7%	8.2%	3.7%
Problems encountered during implementation of the project		Yes 53.3%		No 46.3%	
Participation in final report writing		70.5%		29.1%	
Students' assessment to the course					
Their willingness to serve the community in the future	26.2%	50%	14.3%	4.9%	3.3%
Achievement of the school philosophy	(0%) 2.5%	(25%) 6.6%	(50%) 28.3%	(75%) 45.9%	(100%) 15.6%
The objectives of this module	Very clear	Clear	Neutral	Not clear	Very not clear
	22.1%	50.8%	20.9%	2.9%	2.5%
Usefulness of this course	Very useful	Useful	Neutral	Not useful	Very not useful
	34.8%	36.5%	20.9%	2.5%	4.1%

includes: the magnitude of the problem, seriousness, community concern, feasibility, the cost, implementation time and compliance with policies. 76% percent of the students participated in their project implementation in collaboration with the stakeholders in the village. About three-fifths (57.4%) of the students stated that the community was reactive in implementing the solution for the priority problem and just over half of them (53.3%) had encountered problems during the implementation phase, which were mainly due to financial issues (Table 2).

Of the students, 61.5% stated that they had achieved the philosophy of the university by 75% to 100%. And 76.2% of them acquired

the sense of responsibility to serve their community in the future. Regarding the objectives of this course 73% of the students considered them to be clear, about 71.3% of the students considered this course as a useful way to take their part in community orientation, responsiveness to community and social accountability (Table 2).

This study revealed that females were more able to identify and evaluate the village problems ($P=0.038$). Other determinants such as age, residency and type of certificate, did not show any significant relationship with the other variables. Table 3 shows P values for gender and residency of the participating students in relation to the study variables.

Table 3: P values for gender and residency of the participating students in the study 2016-2017. N=244

Variables	Percentage who agreed	P value–Sex	P value–residence
Acquaintance of Leadership skills	78.3	0.867	0.413
Gaining Team work skills	82	0.667	0.352
Engagement with village community	86.1	0.669	0.918
The Communication with the community was easy	58.6	0.813	0.522
Participation in the activities during village stay	97.5	0.778	0.564
Ability of problem identification	91.4	0.814	0.519
Problem evaluation	83.6	0.038	0.840
Participation in the project implementation	76.2	0.213	0.296
The community was reactive towards the implemented project	57.4	0.864	0.820
Problems encountered during implementation of the project	0.4	0.369	0.981
Achievement of the school philosophy	61.5 (75%-100%)	0.158	0.611
The objectives of this course	73.8	0.176	0.820
Usefulness of this course	72.5	0.505	0.356

Discussion

We found that most students had achieved the objectives of the IDFTRRD program. Most of the students achieved leadership and teamwork skills. This could be attributed to the fact that in various community-based courses the students work in groups and they lead effective initiatives towards the community. These initiatives empower the community to solve its own problems, hence result in a positive impact on the community health in general. This was consistent with a study which was carried out in The National university of Singapore where close to 80% of the participants reported improvement of these skills (15). As these courses are fulfilled by the students before the clinical years, there is no disparity between the preclinical students and their clinical counterparts. The learning experiences from such projects, would thus supplement the traditional educational methods i.e. community-based education equip students with competencies which they will never learn otherwise (such as leadership skills, team work, and the capability to interact with the community). During their field work students will have a unique opportunity to apply these skills, essential for their later professional life (16). There was no discrepancy in gaining these

skills between the two genders; in contrast to a Swedish study in which females reported more improvement in communication skills (17). Almost all the students participated actively in all activities of this course because they became a part of the community which they were sent to and were willing to serve it, not only to achieve high marks.

Most of the students were able to communicate and get engaged with rural community because the Sudanese community especially in rural areas are very kind and well known for their hospitality. Also, the villagers were very grateful and accepted the students and the services they provided. Furthermore, there was no significant difference in the accent, and the students were able to communicate as most Sudanese speaks Arabic.

Despite the fact that most of the students were from urban areas, only few students were neither able to communicate nor to engage with the community and most of them were from urban areas. This could be due to the variation in the personal characteristics of the urban students, so these students need more time and exposure to become fully engaged. Most students were able to identify and evaluate their community problems and this could be explained by the fact that these students were well prepared prior to visiting

the villages by lectures and exercises on how to detect problems and how to select the priority problem. This study revealed that females were more able to identify and evaluate the village problems ($P=0.038$). Moreover, some students were even able to formulate an additional questionnaire which focused on special issue according to the context of the village which reflects the motivation and the interest of students.

This study found that most of the students were able to implement the designed project but about half of them encountered financial problems during the implementation of the project.

In this study most of the respondents contributed actively in the final report writing about the village and its community, beside a detailed section about the problems of the village and the project that they implemented and its impact on the village's community. And most of them believed that they could conduct a scientific research in the future; as they had acquired the skills of problem identification, data collection, analysis, interpretation, and report writing.

Many students achieved the philosophy of University of Gezira and agreed upon being oriented and responsive towards the community. Nearly all students agreed that the objectives of this course were clear and they considered this course as a useful way to take their part in social accountability and community orientation, which is consistent with a previous study in Singapore (15).

Conclusion

This study revealed that CBE helped the students acquire important skills (leadership, communication and team work skills) which they would need in their future professional career. In addition, most of the students were able to identify the different problems in the community in a holistic approach, which will have the reflection on their approach in dealing with patients in the future.

These results also showed that most of the students had achieved the philosophy of the university in community orientation, responsiveness to community and social accountability, which may help motivate them to work in the underserved areas after graduation.

Recommendation

This is the first study to assess the perception of the students regarding CBE, it could be adopted by other medical schools according to their own background.

It could be of benefit to assess the community leaders and staff members' perspective to yield a full picture about BCE.

Attempts should be made to establish collaborations with Ministry of Health and related authorities to aid the students' interventions in all stages.

Moreover, the students' opinions regarding the CBE could be tested more objectively rather than being subjectively tested.

Conflict of Interest: None Declared.

References

1. WHO study group on community-based education of health personnel. Community-based education of health personnel: report of a WHO study group. Geneva: World Health Organization; 1987.
2. Starfield B. Primary care and health. A cross-national comparison. *Jama*. 1991;266(16):2268-71. Doi: 10.1001/jama.266.16.2268
3. Magnus JH, Tollan A. Rural doctor recruitment: Does medical education in rural districts recruit doctors to rural areas? *Med Educ*. 1993;27(3):250-3. Doi: 10.1111/j.1365-2923.1993.tb00264.x
4. Magzoub MEMA, Magzoub MMA, Saeed AA. The rural residency course. *Annals of Community-Oriented Education*. 1992;5:105-10.
5. Fulop T. (1985). Health personnel for

- tomorrow; the great challenge of the health for all movement, 27 March, 1985. (Required information of this reference is not complete. It is not clear whether it is a journal article or a book. It cannot be traced through internet.)
6. Richards R, Fülöp T, Bannerman J, Greenholm G, Guilbert JJ, Wunderlich M. Innovative schools for health personnel : report on ten schools belonging to the network of community-oriented educational institutions for health sciences [Internet]. Geneva: WHO Offset Publication; c1987. Available from: http://apps.who.int/iris/bitstream/handle/10665/38996/WHO_OFFSET_102.pdf?sequence=1&isAllowed=y
 7. Schmidt HG, Neufeld VR, Nooman ZM, Ogunbode T. Network of community-oriented educational institutions for the health sciences. *Acad Med*. 1991;66(5):259-63. Doi: 10.1097/00001888-199105000-00004
 8. Harris DL, Coleman M, Mallea M. Impact of participation in a family practice track program on student career decisions. *J Med Educ*. 1982;57(8):609-14. Doi: 10.1097/00001888-198208000-00005
 9. Erney SL, Allen DL, Siska KF. Effect of a year-long primary care clerkship on graduates' selection of family practice residencies. *Acad Med*. 1991;66(4):234-6. Doi: 10.1097/00001888-199104000-00014
 10. Neufeld VR. Community-based medical education: Some recent initiatives towards making medical education more responsive to national health priorities. *Annals of Community-Oriented Education*. 1989;2:65-84.
 11. Boelen C, Woollard B. Social accountability and accreditation: a new frontier for educational institutions. *Med Educ*. 2009;43(9):887-94. Doi:10.1111/j.1365-2923.2009.03413.x.
 12. The Training for Health Equity Network. THEnet's social accountability evaluation framework version 1 [Internet]. Monograph I (1 ed). Belgium: The Training for Health Equity Network; c2011. Available from: <http://thenetcommunity.org/wp-content/uploads/2013/05/The-Monograph.pdf>
 13. Abdel Rahim IM, Mustafa AE, Ahmed BO. Performance evaluation of graduates from a community-based curriculum: the housemanship period at Gezira. *Med Educ*. 1992;26(3):233-40. Doi: 10.1111/j.1365-2923.1992.tb00159.x
 14. Hamad B. Interdisciplinary field training research and rural development programme. *Med Educ*. 1982;16(2):105-7. Doi: 10.1111/j.1365-2923.1982.tb01234.x
 15. Wee LE, Yeo WX, Tay CM, Lee JJ, Koh GC. The pedagogical value of a student-run community-based experiential learning project: The Yong Loo Lin School of Medicine Public Health Screening. *Ann Acad Med Singapore*. 2010;39(9):686-91.
 16. Magzoub MEMA. (Dissertation). Studies in community-based education programme implementation and student assessment at the faculty of Medicine University of Gezira, Sudan. Maastricht: Rijksuniversiteit Limburg; 1994:141.
 17. Hoppe A, Persson E, Birgegard G. Medical interns' view of their undergraduate medical education in Uppsala: an alumnus study with clear attitude differences between women and men. *Med Teach*. 2009;31(5):426-32. Doi: 10.1080/01421590802216266