Reaching Out and Partnering in the Sudan through Integrated Community-Oriented Teaching

Samira Abdelrahman and Sumaia Al Fadil

Abstract

Community-university partnerships, if they are to be successful, must be firmly grounded in the context in which they take place. This paper describes the ways in which the University of Gezira in the Sudan from its very beginning was built on an understanding of rural communities. The university's Faculty of SaMedicine built its training around partnerships that expose students to a critical analysis of community health problems and shows them how those problems can be addressed through partnership. The paper concludes with a discussion of the challenges and opportunities for expanding this approach throughout a university.

In 1975, the University of Gezira (UoG) in the Sudan was established, and from the very outset, this Sudanese university's mission has been built around a philosophy of service. The university's mission statement "Community orientation and contribution to solving community problems, especially those of the most needy" captures the centrality of this commitment to service. Throughout the university, including in the Faculty of Medicine, which will be the focus of this article, this philosophy of service has guided all efforts. Faculties in particular disciplines (i.e., medicine, agriculture, economics, and engineering) were established based on actual need and service gaps. Rural areas rather than urban settings were made the focus of university field efforts because almost all development indicators pointed to the problems and needs as being more pronounced in rural than in urban settings. With this focus, the university has been centrally involved in identifying the needs of the poor and in promoting service to those most in need.

In subsequent sections we describe in detail how community-university partnership initiatives have been advanced through the Faculty of Medicine and we describe the innovative approaches that have been successfully adopted. We describe the ways in which, before visiting the field, medical students become equipped with knowledge and skills on the multi-disciplinary approach to rural development. We summarize the ways in which the faculty of medicine involve students in rural communities and rural hospitals. In the concluding section of the paper we then consider the possibilities for an interdisciplinary approach that would bring this approach to all faculties. Initially, the university succeeded in introducing such an interdisciplinary approach whereby students from different faculties would work together within a community with the objective of students receiving early exposure to critical analysis of community problems. This integrated approach included field training implemented by multidisciplinary groups of students from the faculties of medicine, agriculture,

economics and engineering. The approach did not last and we will discuss why that might be the case and how such an approach might be adopted in the future now that the Faculty of Medicine has established a successful model.

Faculty of Medicine, University of Gezira (FMUG)

In harmony with the UoG philosophy, the Faculty of Medicine (FMUG) has throughout its existence framed its mission as deeply linked to service. That mission is "the promotion of the health of the Sudanese community especially those in rural underserved settings through integrated education, contribution to service delivery and research." The curriculum, completed by students in 10 semesters, combines a focus on traditional classroom work and community-based education. The training strategies include community-based education (CBE) (which accounts for 20 percent of total credit hours), problem-based learning (PBL), student-centered learning and the integration of basic, social, and clinical sciences. Six courses include community-based education, and these are "Introduction to Medicine," "Interdisciplinary Field Training Research and Rural Development," "Doctor and Society," "PHC Center Practice and Family Medicine," "PHC Clerkship," and "Rural Residency." The first class of students entered the university's Faculty of Medicine in 1978, and each class since then has been exposed to the above.

How the Curriculum Creates a Supportive Environment for Partnership

To understand how the curriculum creates a supportive environment for partnerships, it is important to consider the CBE activities in greater detail. The CBE learning objectives address concepts and methods of health protection and promotion, comprehensive management of health problems, community involvement, intersectoral and intrasectoral collaboration, leadership development, and research methodology. These courses are intended to provide students with practical field training in urban and rural areas, focus on the underserved, and develop students' abilities in problem-solving, research, communication and building community interaction skills.

CBE activities are embedded in the curriculum in a longitudinal manner throughout all semesters with the objective of maintaining the link between the student and communities and the real future working environment throughout his/her engagement in the faculty. Comprehensive multidisciplinary approaches are emphasized that incorporate social, behavioral, ecologic, economic, cultural, and service delivery factors. As they progress through their training, students interact with relevant community sectors at increasingly deeper levels in order to implement a variety of developmental projects identified by students while working with communities. Students are encouraged to learn the concepts of health promotion, healthy life styles, and primary health care principles and approaches so that they can transfer the knowledge and skills of self care, self help, and self reliance to communities.

At all stages of planning, implementation, and evaluation, communities are mobilized and involved in the students' projects through community leaders and community organizations (village development committees, youth and women unions, and different community groups such as school children and teachers) become involved. Through this approach, communities become empowered and voiced.
It is important to note that the students embed themselves in the communities in which they build partnerships. Students are hosted by families in the community. They share with the community all aspects of their daily lives including meals, social events, and recreation. This immersive approach, we have found, greatly enhances students' commitment to communities, increases solidarity and boosts the norms and traditions of the Sudanese society.

Throughout this work, students utilize appropriate educational material, methods and tools of MOH programs. The result is that they strengthen national public health programs such as Integrated Management of Childhood Illness, Safe Motherhood, School Health, Control of Communicable, and Non-Communicable Diseases and Health Care of the Elderly.

The Experience of FMUG in Partnership

The FMUG relationship with partners is characterized by mutual trust, respect, and commitment. FMUG and all partners share equally the benefits of the partnership's accomplishments. This can be seen in many examples and many ways. Consider, for example, the students' postings and projects. All partners contribute to the student postings. Students receive financial support for their community projects from FMUG, material support from Ministry of Health (MOH) and related sectors, while the community provides material and logistic support. In turn, the community benefits from health days carried out by student in which students provide continuous health education and help to solve problems whether directly or indirectly related to health. Students are able to report these issues to the highest level of authority, thus increasing the likelihood that these problems will be addressed.
An important challenge in partnerships such as these is how to coordinate and share responsibility. To address this challenge, a joint committee was established to coordinate between FMUG and MOH at Gezira State as well as concerned districts. The committee is responsible for the selection of training sites, mobilization of necessary resources, monitoring and evaluation and reporting to top-level officials (UoG and state government) about the program.

Links between the Ministry of Health (MOH) and FMUG are important to the program in other ways as well. At primary health-care facilities such as health centers and rural hospitals, the MOH staff act as instructors to students, resulting in the promotion of both their technical skills and teaching abilities by engagement in students' training. Students also use MOH guidelines and health education material to teach families and communities. Students avail themselves of a wealth of information to MOH program managers through their assignment reports.

This program intended to improve the quality of life for rural village people includes active involvement of all community groups and members and involvement of local governments and NGOs. Community leaders often facilitate student activities, with different segments of the community involved in different ways. As a result of these experiences, students become well-prepared to understand local values and norms including gender sensitive interventions. These can be seen in the following examples.

Students' activities through the Primary Health Care Centre Practice and Family Medicine: An important way to evaluate effectiveness is to assess impact in exactly those areas of concern. That is to say, were health practices in communities changed by involvement of students from the Faculty of Medicine? We collected data to assess impact, and the data indicate that students' interventions within various courses have had a significant impact on raising family knowledge, attitudes, and practices regarding the promotion of their health, the prevention and control of health and health-related problems.

Throughout this work, surveys before and after community interventions by students have been given. As shown in Table 1, these surveys show improvements in areas such as management of diabetes (Wad Medani town; 2004 unpublished) and self examination for early detection of breast cancer (Wad Medani town, 2004, unpublished).

Table 1

Indicator	Pre-student interventions	Post
Adherence to diabetic diet	50%	75%
Regular self care of the feet	30%	75%
Knowledge of major diabetic complications	5%	75%
Knowledge of home management of hypo-glycaemia (low sugar in blood)	27%	93%
Knowledge of early detection of diabetes complications	0%	68%
Compliance of patients to treatment	50%	87%

Similarly powerful effects as a result of medical student involvement in rural communities have been found for the detection of cancer. As a part of the medical student partnership with urban community in Wadmedani town, students trained 230 rural Sudanese women on early detection of cancer, and do so utilizing locally prepared tools that were appropriate for the community and context. Women, who otherwise would not have had an opportunity to learn about this important step, learned about early detection for self health. By the end of the semester, four women reported the presence of breast lumps. They were referred by the students to the surgical department for appropriate care. Without the student involvement, these women would not have had their health threat recognized in a timely fashion.

Changing the lives of rural children to be healthier is also very important and has been a focus throughout these partnerships. The improvement of family and community practices affecting the health of children below the age of 5 years has been very important (Wadmedani town, 2004, unpublished). The medical students worked in partnership with rural communities to design community-appropriate interventions that addressed directly the sorts of health problems (such as disease carrying mosquitoes) plaguing local communities. Again, data were collected before and after student interventions and, as indicated in Table 2, students successfully impacted key components of rural health practices affecting children.

Table 2

Indicator	Pre-student interventions	Post
Presence of Mosquito breeding sites	85%	53%
Use of ITNs (insecticide treated bed nets)	49%	79%
Use of safe traditional methods to control mosquito	43%	63%
Practice of exclusive breast feeding for children < 6 months of age	42%	61%
Timely vitamin A supplementation to children < 5 years	34%	69%
Child completed vaccination as scheduled	67%	85%

In rural Sudanese communities, the health care of the elderly is also a very important focus for the efforts of medical students. During one cycle of interventions, specific messages regarding care of elderly people by themselves or by other family members were delivered by students to more than 680 families. This intervention was welcomed by families as care of the elderly by his/her own family is still very much the tradition in Sudanese society. Students covered areas such as nutrition, prevention of home accidents, personal hygiene, oral health, and social interaction. Without the involvement of the university and the students, this information would not have been available to families with elderly family members.

Health Education Health education is one of the most important activities provided by students. Respecting the culture of rural Sudanese communities, sessions are organized separately for women and men. The program addressed priority health problems in each village, identified determinants of those problems, identified necessary actions, and discovered the role of the community in taking these actions. Education to women groups focused on immunization, nutrition, eradication of harmful traditional practices, and personal hygiene. Rural women were also trained on preparation and use of oral rehydration solutions (ORS), active breast feeding, and home care of sick children. During all health education activities, students use information, education, and communication (IEC) material developed by the MOH.

Again, the intervention was successful. Results of students' interventions as measured by selected indicators (Wad medani town, 2004, unpublished) indicated that malaria prevalence in targeted areas was reduced by 12.6 percent, diarrhea prevalence was reduced by 8.9 percent, use of ORS increased by 13.2 percent, adherence to exclusive breast feeding increased by 10.4 percent, use of child-spacing methods increased by 13.5 percent%, and immunization coverage increased by 11.2 percent (The Rural Residency Course, Gezira state, 2004, unpublished).

FMUG Role in School Health. Students and faculties also contributed to school health activities in Gezira state. During the preparatory period preceding students travel to rural hospitals, students received training that was organized jointly by the faculty and school health administration at Gezira Ministry of Health (MOH). The training covered all aspects of the comprehensive school health approach including school health services, school environment, and school health education. School health services training covered screening of pupils to elicit important problems that might necessitate treatment and/or referral. Students used data collection tools and educational material prepared by the school health administration and the department of community medicine.

During the rural residency course, university students in collaboration with Sudan Red Crescent Society (SRCS) conducted short courses in first aid and management to common accidents in the school health program. The majority of participants (120) were school teachers and some volunteers (both genders were represented). A total of 668 children were screened in 102 basic schools. The students detected and managed the following problems: dental problems; impairment of vision, hearing, and speech; skin problems; respiratory infections; and vitamin A deficiency.

Interdisciplinary Field Training, Research, and Rural Development Program

The individual interventions and activities described previously give a glimpse into the breadth of partnership work being carried out by Gezira University. Indeed, since the establishment of Gezira University, more than 200 villages have been reached by this program. In the period of a mere four years from 1999 to 2002, for example, a total population of 34,000 was reached, and more than 63 villages have hosted students training and benefited of interventions. Throughout these efforts, many different sorts of interventions have been conducted by students. They include

- **Environmental protection and sanitation:** More than 6470 trees have been planted, over as many as 100 per village. There have been 83 campaigns for cleaning of houses and villages. The number of households covered by insecticide spraying has been raised by 53 percent, with students succeeding in overcoming villagers' traditional reluctance to have their houses sprayed.

- **Safe water supply:** Before student interventions, eighty villages did not have adequate safe water supply. Through students' contacts with water sector and community leaders, it became possible to construct artesian wells in five villages, maintain water pipes in six villages and construct water tanks in three villages.
- **Provision of health services:** In 19 villages, no health facility existed. In another ten villages there were inadequate supplies, equipment and drugs as well as high prevalence of tuberculosis, bilharzia and malaria. The students interventions through partners (MOH) resulted in the establishment of a PHC unit in six of the needy villages, health facilities were rehabilitated in five additional villages with necessary equipment and supplies being provided. Screening of villagers for common diseases was carried out, and the provision of treatment took place, including the referral of cases of tuberculosis, severe anemia complicated malaria and bilharzias to tertiary care hospitals. Students also assisted in establishment of a unit for the control of T.B at the district level in Abugoota locality.

When we think of medical students, the focus is naturally on health and disease. Yet in many of the villages the problems extend well beyond health care. How do medical students maintain their focus on health but also recognize that other problems made stand in the way of villagers being attentive to and concerned about health?

Problems in the Education Sector

Many problems occurred with the educational sector in the communities in which medical students operated in partnership with villagers. The students addressed these problems. There was a lack of basic schools in three villages, a shortage of teaching staff in nine villages, incomplete number of classrooms in four villages, and inadequate seating of pupils in six villages. Medical students' worked through the Ministry of Education to assist in the construction of schools in two villages, starting with a first-grade classroom and a teacher's office. In addition, the students mobilized communities to put in additional resources, resulting in two more classes and providing additional seating so that a greater number of rural students would have the opportunity to learn.

Outcomes and Impact of Community Teaching at FMUG

The initiatives of the University of Gezira Faculty of Medicine are intended to build partnerships that address rural Sudanese health needs while providing opportunities for students to learn their craft of medicine. Important as such partnerships are, they raise challenging questions. Some of these questions in the context of health practice in rural Sudan are described in the following sections.

The Importance of Social Accountability

Education institutions have an obligation to direct their education, research, and service toward addressing priority health concerns of the community, region, and nation they are mandated to serve. The priority health concerns are identified jointly by governments, health care organizations, health professionals and the public" (WHO,1995). Community-based education focuses on underserved communities; FMUG attempts to identify and respond to community needs, address priority health and related concerns, and play a major role in health service delivery whether for promotion, preventive, clinical outreach activities and comprehensive development of local communities. The resultant social accountability must be kept uppermost as a university struggles to meet the training needs of students while at the same time addresses the needs of rural communities for health care.

Wide Coverage of Community Settings/Groups

Some partnerships bring together a university with a single community. The impact of such partnerships is likely to be limited. There is a need for partnerships of the sort described here to include a wide range of community settings and groups. The program described in this paper included work with families in towns, in rural communities, in health centers, in rural hospitals, in administrative units, in schools, and with traditional healers. In one year, the area reached through this work included a total population of 1,052,315. In total, 62 villages in three administrative units have been impacted. Twenty-six rural hospitals and 16 health centers were visited by students, and a total of 3,828 school children in 90 schools have been impacted by receiving clinical care with assistance of university students. Although the program could focus its work exclusively with a single village, as these numbers suggest, the greatest impact is likely to be felt through wide and extensive coverage. A continued challenge is how to ensure that such coverage has sufficient depth that the effects will be significant and long-lasting.

Capacity Building of Local Communities

The medical students not only provided direct services but also involved communities in many capacity building activities. These included working with communities to develop local definitions of determinants of health and assisting communities in learning to identify and prioritize health and related problems. Students also worked with communities to assist them in developing skills in proposal writing and fund raising. They worked with communities to help them develop managerial skills that would assist in program planning, implementation, and evaluation. The result was that health interventions were not short-term single event activities but rather were focused on a series of trainings that would increase the capacity of villages to address their own challenges.

Conclusion: Learning from the University of Gezira Model

The role of universities in using community-oriented teaching is not limited to trying to change the student experience. Of equal importance is empowering communities in taking the lead in health and basic social services. The goal of this approach to education is to benefit students as well as the many communities they serve. Could this approach be used throughout all of the faculties at the University of Gezira, including agriculture, economies, education, engineering, and other faculties? Such an approach could encompass all of these faculties, but it is important to remain aware of the logistical challenges that can be obstacles to such an integrated approach.

Initially, the approach of the University of Gezira was to send students from different faculties to a community with the objective of early exposure of students to critical analysis of community problems. An integrated approach was used, with field training implemented by multidisciplinary groups of students from the faculties of medicine, agriculture, economics, and engineering. For logistic reasons, this strategy did not last long. These logistical challenges can be summed up as follows: large numbers of students needing transportation, accommodation (at the community level), in addition to the cost of field supervision of students. Shortage of budgets faced by the Gezira University resulted in the reduction of financial support to hosting communities and rural hospitals. As a result, only the faculty of medicine have continued to post students to rural communities and rural hospitals. If attempts were to be made to re-establish such programs in an integrated way across the different faculties, these logistical challenges would need to be addressed.

As we have seen, the University of Gezira model offers important lessons for how a university can combine a commitment to education with a commitment to serving the needs of its region. This model is one that shows great promise in ensuring the students receive a rigorous education but do so in ways the make that education a resource to the very region in which the education occurs.

Author Information

Samira Hamid Abdelrahman, M.B.B.S., is a member of the Faculty of Medicine University of Khartoum; has a Master's degree in Health Education from the University of Gezira (1992); has a diploma in Public Health (DPH) from the University of Gezira; is a member of the Fellowship of Community Medicine – The Sudanese Medical Specializations Board (SMSB) (2001); and currently is a professor of Community Medicine at the Faculty of Medicine, University of Gezira. Adelrahman also is a member of many academic committees in Gezira University and SMSB, a member of many consultative committees in the Federal & Gezira state Ministries of Health, and a principal and co-investigator in many research projects, sponsored by WHO & TDR. Recent research examples include "Risk Behaviors among University Students at Khartoum University (2007)"; Biobehavioural Survey among Female Sex Workers in Wadmedani Town (Using Respondent Driven Sampling) in Collaboration with TDR, 2008."

Sumaia Mohamed Al Fadil is a Public Health Physician, MD, with extensive experience in the field of policy planning, health system research, and maternal and child health. She has worked with the WHO office in Sudan for the last nine years as a national professional officer in the fore-mentioned areas and currently she serves as head of the unit of Health Promotion, Protection and Community Development. Also, she is serving in many national and internal advisory capacities in the field of public health including research for health and health research ethics. She has published papers in international journals and co-authored national publications and manuals.

Samira Hamid Abdelrahman
E-mail: Samhamid2002@yahoo.co.uk

Sumaia Mohamed Al Fadil
E-mail: alfadils@sud.emro.who.int