

The Successful Implementation of Community Based Education and Research Services Programme at a Rural Health Sciences Faculty in Uganda: Case of Busitema University

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Abstract

Background: Despite health being a fundamental human right, health inequality continues to be a challenge to many societies and is a threat to sustainable development. One major contributing factor is lack of human resource for health especially in rural and remote areas. One of the interventions to reduce this burden is medical education training that includes innovations that take the health worker closer to the environment and community he/she is likely to serve. In order to bring this to a reality, Busitema University Faculty of Health Sciences (BUFHS) undergraduate courses were designed with a strong Community-Based Education, Research and Services (COBERS) program since its inception in 2013. Included along were Inter-Professional Education (IPE) approach and research education. IPE as a new innovation in the COBERS, was innovated with a target to create different professionals of health workers that will appreciate learning and working together rather than run in silos to solve community needs. This communication is aimed at providing a platform from which health training institutions can learn from our experience and the successes and probably challenges of COBERS.

Materials and methods: We implemented COBERS with IPE in our curriculum for the undergraduate students of nursing and medicine during their community attachment. Students under the different programmes were randomly chosen to go to the COBERS sites for their community training and cross-cutting courses were designed to be undertaken during that period. The same groups of students are maintained, and same facility and preceptors and mentors are maintained for the duration of the training. They were assigned a preceptor at the site and a supervisor at the faculty. Follow up of

of the successful implementation of the programme was done on a daily basis by the trainers led by the preceptor and an interim assessment is done by the supervisor. At the end of the placement students write a report that is marked together with their log books.

Results: COBERS program significantly has improved year over year. In addition to the value of the community experiences to the students, tangible program outcomes have been recorded. Some of the program outcomes include capacity building in research skills for faculty mentors, research skills introduced in undergraduate training, a strong research mentorship program, health promotion in the communities, and a strong relationship between the university and the community training sites.

Conclusion: The program did not only allow the university to rethink traditional learning strategies and programs but also improved the skills of the academic staff and preceptors.

Keywords: Community Based Education and Research Services (COBERS) • Inter-professional education • Community-involvement • Community entry • Community diagnosis • Busitema University

Abbreviations: BU: Busitema University; COBERS: Community Based Education and Research Services; BUFHS: Busitema University Faculty of Health Sciences; GOU: Government of Uganda; HEPI: Health Professional Education Partnership Initiative; IPE: Inter-Professional Education; PHC: Primary Health Care; NDP III: Third National Development Plan; RHITES: E-Regional Health Integration to Enhance Services-EAST; SWOT: Strength Weaknesses Opportunities and Threats

Introduction

Health is a fundamental right of human beings and thus recognising it as one obliges states and governments to ensure access to timely, acceptable and affordable health care. Despite being one, disparities exist across the world between the rural and the more affluent areas and across different geographical planes [1,2]. The reason the need for equity has been echoed within the Sustainable Development Goals (SDGs) [3]. These inequalities are also evident in Uganda [4,5].

To bridge this gap, there must be concerted and targeted efforts that resonate with the gravity of the problem and this may include changing the training needs and trends of health workforce. Busitema University, Faculty of Health Sciences (BUFHS) opened as the fourth public medical school in Uganda, after Makerere University College of Health Sciences, Mbarara University of Science and Technology, and Gulu University. BUFHS promotes a rich culture of service-learning, a commitment that extends to every faculty in the university. Internationally, the focus of education in medical schools has shifted from traditional hospital-based training to learning in the community [6].

The development of community-based medical education has been driven by the desire to train doctors and nurses where they will base their future practice a practice that occurs increasingly within communities. This is in contrast with the more traditional method of teaching students from large urban hospitals. Underlying this change is the idea that medical practice is place-dependent, and that learning in one location does not necessarily equip the student to practice somewhere else [7]. The training of health workers who can, and who want to, practice in rural communities is best done experientially in rural settings and calls for a multifaceted approach [8-10].

Informed by the wider place-based education movement, it is this idea that led to the development of the community based education research and service program at faculty of health sciences, Busitema University. The difference between BUFHS COBERS programmes and that of other universities in the country is the component of research while at the site of community placement. Thus Community-Based Education and Service (COBES) is upgraded to COBERS. We hinged our upgrade on the positive impact COBES had had at Makerere University, college of health sciences as described in a study by Mwanika, et al. [11,12].

The university's commitment to the Community-Based Education Research and Service (COBERS) program was built on several basic values that continue today: The fundamental dignity of all; poverty and lack of opportunity breed problems; and to understand community problems, one must live in and embrace the community. These values are very evident in BUFHS's educational, research and service program.

The BUFHS's mission statement is "To promote innovations in teaching, learning, and research for enhanced access to quality health care".

To carry out this mission, four of the BUFHS six institutional goals are related to community service-learning programs:

- To increase the number of high-quality health professionals in the country.
- To produce graduates with high morale and motivation to work in rural (including hard-to-reach) areas as their training will be based in such communities.
- To strengthen the district hospitals and health centres through a strong community training and research program.
- To maintain a leadership role in forming health care policy at the university, district, and national levels.

Related to its mission and goals, BUFHS has a set of competency statements, many of which are related to community programs: "A graduate of the medicine and nursing programs at BUFHS will be competent to:

- Apply the fundamental principles of the behavioural sciences as they relate to patient-centred approaches for promoting, improving, and maintaining health
- Employ the interpersonal and communication skills necessary to provide health care to a diverse patient population and to function in a multicultural work environment
- Evaluate various models of health care management and delivery.
- Apply the principles of ethical reasoning and professional responsibility as they relate to patient care and practice management.

COBERS was designed to connect classroom-based learning with meaningful community involvement by preparing students to be participating members of a community through health care delivery and wellness promotion which, in turn, advances sustainable socio-economic development. Rural communities struggle to retain doctors and this contributes to health inequities characterized by higher rates of disease morbidity and mortality. Increasing access to health care services in rural communities remains a key priority of

BUFHS and is clearly in line with attainment of SDGs specifically 3 and 5 and Government of Uganda (GOU) Third National Development Plan (NDPIII) strategic plan [13].

We describe the elements of the community based education research and service program, introduction of inter-profession education therein at BUFHS and the environment that has helped it become successful. This report validates OBERS from 2013 to 2019.

Materials and Methods

The study site

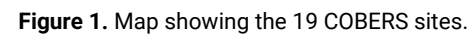
These sites included Moroto regional referral hospital, Katakwi general hospital, Amuria Health Centre IV (HCIV) currently upgraded to a level of a general hospital, Serere HCIV, Ngora HCIV, Bukedea HCIV, Busiu HCIV, Busolwe hospital, Kibuku HCIV, Busia HCIV, Masafu hospital, Kidera HCIV, Bugono HCIV, Bududa hospital, Bugobero HCIV, Muyembe HCIV, Kapchorwa general hospital, Kapraron HCIV, and Bukwo general hospital (Figure 1).

The Uganda health sector is organized in a bottom-up approach with the village health teams at each village level, that feed into and are provided with technical support by the health centre II, the latter feeding into health centre III and health centre into health centre IV, to the general hospital and then to the regional referral hospital and finally to the national referral hospitals. At each level of health care, there is a different level of the target population and the nature of services provided and thus the different skills and technical knowledge and mix of health workers. Description of the health care system in Uganda has been earlier explained by Wani, et al. [14].

Each COBERS site had to sign a Memorandum of Understanding (MOU) with BUFHS. The MOU covers aspects of areas of collaboration (teaching, patient care, and research), data and intellectual property rights, ethical considerations, evaluation of the MOU, review, and amendments of the MOU. The criteria used for choosing the COBERS sites included; availability of health facility that serves as student base and link to the community, availability of a medical doctor and or graduate nurse) to serve as a preceptor for the student's community program and a variety of community disease case burdens for students to learn from. Conversely, highly specialized health facilities were deliberately excluded since the curriculum was designed for general exposure to communities with disease case mix. Health units with a catchment population of above 2,000 people within a distance of 5 Km radius to communities and preferably not linked to other universities in the country for implementation of COBERS activity were chosen.

In 2013 a total of 10 sites met the criteria and were used for COBERS placement. In 2014 two of the ten sites were dropped because of the absence of medical officers to work as preceptors. In 2015, with the increase in the number of students, there was a need to increase the number of COBERS sites.

Therefore, between 2015 and 2016 the committee assessed more sites and this took the number to 17 sites. With three groups of students for community placement, namely students in the year I, II, and III, the 17 sites were not adequate hence the number of sites is rose to the current nineteen. Below is a map showing the COBERS sites (Figure 1).



The faculty holds training and orientation meetings with preceptors annually to equip them with teaching and learning methods. The faculty also arranges for supervision visits during the community placement. These visits provide an opportunity for faculty staff to interact and support the preceptors during a community placement. The preceptors also participate in assessing students in knowledge, attitude, and skills and give feedback to the faculty. In-house surveys have revealed consistent students' enthusiasm

The community-based medical education research and service program at BUFHS is not housed in a particular department. It is headed by a coordinator appointed by the Dean and supported by the committee appointed by the faculty board (Figure 2).

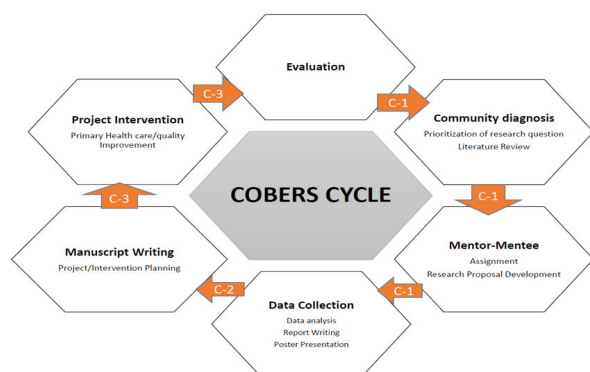


Figure 2. The COBERS cycle at Busitema University faculty of health sciences.

Resources for the COBERS program: The COBERS program is quite resource-intensive but the program objectives and thus outcomes continue to indicate that it is a worthwhile investment. Collaboration with several stakeholders helped ease the resource pressure. The program's success relies much on the commitment of the faculty and the preceptors rather than monetary investments. Funding for this program comes from the university budget. During the routine budgeting process, activities for community placement are routinely included. Funding majorly goes to accommodation facilities, transport for the students to and from the sites, facilitation, and travel for the site supervisors and preceptors' allowances. The students are also provided with gas stoves for cooking and stationery for learning activities. Furthermore, efforts have been taken by the faculty to equip each site (save for very few) with a desktop loaded with e-books and other materials to aid students learning and research.

Program outcomes: Student support for the COBERS program remains strong. The community experiences are valued by students who enjoy the relatively supervised clinical 'independence' while in the community sites. The students have gained skills in problem identification, proposal writing, research methods, and scientific writing. Several papers have been published from the COBERS program.

Through the health promotion projects, there has been increased awareness about health issues and general improvement in the quality of health care. The University management continues to offer strong support for the program as evidenced in the budgetary allocation and believes that it is fundamental for a first-class education.

The faculty have continued to support the program through the research mentorship and supervision provided to the learners. This has helped improve scientific writing skills of both the faculty and learners. This initiative helps break the barriers of research training-the 'Four I's' (lack of initiative, impulse, incentive and idols). The impact of research inclusion in the COBERS programme has been reported by Delport, et al.[15]. Subsequently, several publications have been churned out with the students. In turn, these publications have increased the scientific knowledge base and raised Busitema University visibility.

As a university, we have been able to reach out to the community through the COBERS program, and through dialogue with the community members, we have been able to identify gaps that need to be addressed (Table 1).

Strength, Weaknesses, Opportunities and Threats (SWOT) analysis for the COBERS program

Strengths	Weaknesses
<ul style="list-style-type: none"> Focused and committed BUFHS leadership Committed and experienced coordinator: Available to run the program A team of research mentors willing to guide students in research A strong team of preceptors willing to support students while in the community sites Cooperating COBERS sites Availability of e-books that students can use while in the community Access to the E-learning platform Accessibility to the national road network and utilities Goodwill and support of local leaders Computers present in 9 of the sites; good asset for effective student learning Part of the curriculum Continued financial and logistical support from the University 	<ul style="list-style-type: none"> Limited staff to run the entire program Lack of accommodation facilities at the community sites Not all sites have computers Lack of internet connectivity at the COBERS sites Lack of transport during in-district movements for the students High turnover of preceptors in the community sites. Some districts are hard to reach due to poor road networks Temptation of the yet unqualified students to participate directly in the treatment of patients
Opportunities	Threats
<ul style="list-style-type: none"> The poor health worker retention in the rural settings will continue to drive demand in the rural facilities Districts willingness to provide land for accommodation facilities Health facilities were willing to offer vehicles for in-district transport if fuel is provided by the university Partnerships with implementing partners within the districts to support student research e.g. RHITES E project Grants like HEPI to fund student research projects Possibility of undergraduate students to apply for University research fund Development of the database on health care/systems in Eastern Uganda 	<ul style="list-style-type: none"> Unpredictable retention of key staff due to lack of motivation: Staff turnover Unforeseen calamities natural or other could derail progress Insecurity to students associated with poor accommodation facilities Poor student supervision due to conflicting priorities among preceptors Sexual harassment, especially with regard to female students Students contracting diseases Students developing fear against working in rural areas

Table 1. SWOT analysis for the COBERS program.

Conclusion

BUFHS COBERS program as a training model is worthwhile.

Despite needing resources for implementation, it is a model that we would recommend for health sciences faculty as it may help bridge

the gap between remote and rural health inequalities. Furthermore, it may help build capacity in research skills for the faculty, preceptors and students.

Suggested area of research

How universities harness community resources to substantially contribute resources for this community can based training? These resources may include but are not limited to identifying retired civil servants and other community persons who could offer accommodation to students at no fee as long as the university could meet minimum maintenance costs.

Strength of this narrative

Authors walk the journey through the programme from its inception and document its invaluable achievements but not forgetting the challenges. This could help inspire other health training institutions planning to have COBERS in their models.

Funding

Whereas Busitema University mobilizes resources to run the program, no funding was provided for documenting and publishing this manuscript.

Ethics and Consent to Participate

The written ethical approval was considered not applicable for this manuscript by the Busitema University, faculty of health science since it is a documentation of the successes and challenges in the implementation of a community based program.

Also, no participants were recruited to contribute to the information presented in this manuscript, therefore, consent to participate was not applicable.

Authors' Contributions

RN coordinated the COBERS program and conventionalized the documentation of the evolution and success of the program, PO, JN, YG, LS, IJS reviewed the document and also mentored students in the program, JML, JW, P W supervised and mobilized resources for the program. All authors read and approved the final version to be published.

Competing Interests

We declare no conflict of interest.

Availability of Data and Materials

All data on which conclusions of this manuscript are drawn has been included in this manuscript and whatever may be missing is available on request from the corresponding author.

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1R25TW011213. The content is solely the responsibility of the authors and does not necessarily represent the official views of the national institutes of health.") was very instrumental in funding the students' research projects. The top administration of Busitema University has always supported the evolution and success of the program from its inception.

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