

ORIGINAL RESEARCH

Influence of the training experience of Makerere University medical and nursing graduates on willingness and competence to work in rural health facilities

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A B S T R A C T

Introduction: The global human resources crisis in the rural health sector is characterized by an unwillingness or inability of health workers to locate to a rural area, and/or function effectively there. To assist in addressing this issue in Uganda, Makerere University Faculty of Medicine designed and implemented a problem-based learning (PBL) curriculum in which health students underwent experiential training on community placements. This study sought to assess the influence of this training experience on students' willingness, readiness and competence to work in rural health facilities by surveying 60 recent graduates of Makerere University Faculty of Medicine, who completed their studies during the transition from traditional to PBL curriculum.

Methods: During a comprehensive evaluation of the PBL curriculum conducted from 19 to 31 October 2008, 60 graduates were assessed. Their distribution between the traditional and PBL curricula was equal. Using a participatory approach and open-ended questionnaires, the 2 groups were compared for the effect of their training on willingness and readiness to work in a rural location. Influential training experience factors were compared according to whether the students were educated in the PBL curriculum or the traditional curriculum (with or without PBL influence).

Results: The community based training experience of graduates significantly influenced their choice to work in a rural and underserved area of Uganda, compared with their counterparts from the traditional curriculum. In addition, PBL/community based



curriculum graduates showed greater motivation to take up employment in a rural area, and confidence about practicing there effectively.

Conclusion: While personal values may impact on a decision to work in a rural area, training experience also shapes these personal values and choices.

Key words: community based training, human resources in health, rural workforce, Uganda.

Introduction

Human resources have been described as ‘the heart of the health system in any country’, ‘the most important aspect of health care systems’, and ‘a critical component in health policies’^{1,2}. Despite the importance of rural health workers, and doctors in particular, to rural health systems, the lack of an adequate rural health workforce is a worldwide issue. Various policies to address this have been reported as decentralization of the location of training institutions, the introduction of recruitment quotas to ensure that the most peripheral areas are represented among medical students, and making rural field experience compulsory during medical training³⁻⁷.

Sub-Saharan Africa faces a human resources crisis in the health sector. The demand for improvement in health services is hampered by a scarcity of health workers, especially in rural areas^{8,9}. The severely weakened and under-resourced health systems characteristic of these countries increase the difficulty of producing and recruiting skilled health professionals for underserved areas, and then retaining them¹⁰. In order to reduce the critical shortage of doctors in rural areas, it has been suggested that medical students should be provided with rural experience^{3,11}. Rural-based training placements enable urban trainees to overcome the culture shock of relocation to a rural area¹².

However, even if graduates are partially trained in a rural environment, the motivation to practice in a rural area comes from a complex interaction of personal, situational and environmental factors^{4,5,13-15}. Understanding these factors and implementing strategies to support them may increase

the recruitment and retention of health personnel in rural areas⁶.

Both educators and health administrators strive to identify factors associated with an acceptance of the rural working environment; however, most studies into these factors have concerned physicians. By enabling medical students to learn in rural communities for significant periods, universities can contribute to meeting the medical workforce needs of the communities they serve while also providing intrinsic educational advantages to their students^{11,16-18}. The decision to practice in a rural area is facilitated by exposure to rural practice during training, having a clear understanding of rural needs and being exposed to rural role models; while knowledge of the rural context and work environment influence the decision to remain there^{7,15}.

Despite plentiful Ugandan health professionals completing their training and a national policy that supports strengthening health care in all areas of the country, many rural and remote areas in Uganda have insufficient health professionals. This is partly due to a failure to recruit, deploy and/or retain health workers in these underserved areas. There is thus an urgent need for effective strategies to address this issue.

With this imperative, the Makerere University Faculty of Medicine, Uganda, changed the traditional training of medicine and nursing students to a problem-based learning (PBL) curriculum in 2003. The first of the nursing and medicine PBL graduates completed their studies in 2007 and 2008, respectively. A comprehensive evaluation of the PBL curriculum aimed to assess the influence of graduates’ training on their choice of workplace. The objective of the



evaluation reported here was to assess the influence of training experience on the willingness, readiness and competence to work in rural health facilities. To this end 60 recent graduates of Makerere University Faculty of Medicine, who completed their studies during the transition from traditional to PBL curriculum, were assessed.

Methods

Setting

The assessment was part of the comprehensive Makerere University Faculty of Medicine PBL curriculum evaluation conducted from 19 to 31 October 2008 at Metropole Hotel, Kampala, Uganda.

Participants and curricula

The participants were 60 selected Makerere University graduates:

- 16 medicine or nursing graduates who completed their undergraduate training in 2003 (traditional curriculum, not influenced by PBL)
- 14 medicine graduates who completed training in 2007 (influenced by the PBL curriculum but trained in the traditional curriculum)
- 30 medicine or nursing graduates who completed in 2007 and 2008 and were trained in the PBL curriculum.

The participants were randomly selected to be generally representative of their group. They were listed alphabetically in MS Excel (2003), contacted and invited to participate in the curriculum evaluation. All participants gave written informed consent prior to participation and were assured of confidentiality.

Study design

Using a participatory approach, an open-ended questionnaire was first administered to participants to assess training experience factors that might influence their willingness, readiness and confidence in working in a rural health facility. The issues enquired about included what motivated them to choose a career in a medical field; whether they had ever worked in a rural area; what enhanced their confidence for rural practice; what would discourage them from working in a rural area; and the perceived skills required for successful rural practice. The participants were also asked if they had experiential training at a rural health facility during their undergraduate studies and, if so, which aspects of the community training experience were instrumental in future practice learning. Finally they were asked about factors that could enhance their willingness, confidence and competence to work in a rural health facility in the future.

After completing the questionnaires the participants were asked to record their answers to each question on small cards which were subsequently collected and displayed on notice boards. Participants in the traditional and PBL curricula were then requested to identify criteria for clustering and ranking from their own responses written on the cards. They were permitted to give explanations or clarifications in defense of these. The individual card responses were collected, after which participants were required to cluster the responses according to an agreed thematic area. They then developed and agreed on a theme title for the clustered responses, as well as a ranking system for the suggested responses, based on selected criteria. Some of the issues considered in ranking or prioritizing the responses were feasibility, time, cost-effectiveness, sustainability and social or economic impact.

The group then evaluated each response cluster for relevance (high, medium or low) relative to the others. These factors were compared for graduates trained in the traditional medical and nursing curriculum before and during the implementation of the PBL curriculum, and for graduates trained in the PBL curriculum. The initial questions were further explored during identification of clusters and themes.



Throughout ensuing discussions, clarifications and reflections, the information on each card was justified and eventually agreed upon.

Analysis

The open-ended answers from the questionnaires were initially entered in a MS Excel spreadsheet, then reviewed, summarized into related thematic areas and post-coded. These data were analyzed using STATA v 9 (StataCorpLP). The clustered entries were summarized into frequencies. The participants' responses were compared according to training curriculum (PBL or traditional with or without PBL influence).

Ethical considerations

Each participant received an in-depth explanation of the evaluation. Written agreement to participate was requested. The evaluation was approved by Makerere University Faculty of Medicine Ethics Committee.

Results

Participants' age and sex

Of the 60 participants, 26 were female (43.3%) and the mean age was 26.5 ± 2.5 years. The proportion of females in the various curriculum categories were 8/16 (traditional); 9/14 (traditional with PBL influence); and 9/30 (PBL only).

Motivation to seek a career in a medical field

The majority of participants (39 graduates; 65%) reported the desire to save lives or help others as their primary motivation for seeking a career in a medical field (Table 1). The remaining 21 graduates nominated the scarcity of health workers and the many diseases for which there is no cure, as well as personal factors such as the prestige of the profession, family influence, having obtained good grades, a well paying job and job security.

Essential skills for rural practice

Graduates of the traditional and PBL curricula reported clinical, leadership, problem-solving and communication skills as essential to graduates succeeding professionally in rural practice (Table 2).

Perceived challenges faced by health workers in rural practice

The respondents identified the following among challenges faced by health workers in rural practice: inequitable and poor remuneration, overwork due to understaffing, having no time for holidays, and the overwhelming responsibilities of clinical care, planning and administration in the context of limited resources or prior experience. Among other discouraging factors (Table 3) were a work environment lacking stimulation and characterized by inadequate supplies, equipment and support supervision from the ministry of health or district officials, and low access to continued professional education. Another area mentioned was the limited opportunity for career progression, such as specialization or short-term courses for skills and competence updates, especially for long-term rural health workers. Also mentioned was the lack of transparency in recruitment and deployment (leading to some health workers feeling unfairly bypassed for opportunities), and discrimination in remuneration (with similarly qualified personnel with similar responsibilities being paid different salaries and allowances).

Overall, there was no marked difference in responses among graduates of the different curricula. However, in the discussion, community based training was identified as the main factor shaping the values and attitudes of those who were in favor of rural practice, and were confident and willing to work in a rural area. Issues identified included the availability of social amenities and affordable cost of living; ease of communication (no language or cultural barriers); personal safety and security considerations; the opportunity for career advancement; and considerations about workload.



Table 1: Graduates' motivation for choosing a career in medicine or nursing, according to curriculum

Motivation	Graduates of traditional curriculum		Graduates of PBL curriculum <i>n</i> = 30
	Prior to PBL implementation <i>n</i> = 16	During PBL Implementation <i>n</i> = 14	
Primary motivation:			
– Desire to help others	8	8	23
– Personal reasons (prestige and family influence)	8	6	7
Secondary motivation			
– Desire to help others	8	8	22
– Personal factors (prestige, financial or family influence)	8	6	8
Exposure to rural health facilities			
– Yes	15	14	28
– No	1	0	2

PBL, Problem-based learning curriculum.

Table 2: Essential skills for graduates' successful rural practice, according to curriculum

Characteristic	Graduates of traditional curriculum		Graduates of PBL curriculum <i>n</i> = 30
	Prior to PBL implementation <i>n</i> = 16	During PBL implementation <i>n</i> = 14	
Factors that enhance graduates' confidence to work in rural facilities:			
– Training related	3	14	8
– Community related	8	0	6
– Good clinical/surgical or nursing skills	4	0	16
Factors that discourage graduates from working in a rural area:			
– Remoteness	2	2	6
– Facility-related, such as limited supplies/resources	7	4	12
– Personal factors, such as financial/ career or family	6	7	12
Essential skills for rural practice:			
– Communication	7	7	7
– Clinical	5	5	9
– Leadership/management	2	1	5
– Problem solving innovation/ improvisation)	1	1	9
Ever trained at a rural facility	14	13	30
Aspects of rural training that increase graduates' confidence:			
– Community placement training	10	9	11
– Clinical	4	2	6
– Teamwork	0	0	7
– Communication	0	0	2
Aspects of rural training that increase graduates' competence:			
– Community placement training	11	8	21
– Communication	1	2	1
– Clinical skills and hands-on training	4	4	8

PBL, Problem-based learning curriculum.



Table 3: Factors that discourage graduates from working in a rural area

Factor	Factor detail
Social amenities and cost of living	Availability of transport to site; ease of communication; ability to stay with family members; available entertainment venues when not on duty; low cost of living; adequate salary and benefits, the culture of the local population, opportunity for recreation, schools for children, opportunity to earn extra income
Ease of communication (no language or cultural barriers)	Able to communicate easily with patients and community members; ease of communication with patients (no language barrier)
Security	Politically stable area; personal safety; isolation and remoteness of the health facility location
Workload	Presence of other staff in adequate numbers and professional mix; doctor : patient ratio; understaffing (support from other health workers)
Facilities at the health unit	Equipment; infrastructure; opportunities for continuing education; adequate supplies
Opportunity for career development or advancement	Regular continuing medical education; opportunity for later graduate training; support from and supervision by senior colleagues

Coping strategies suggested by the doctors included looking for ways to earn extra income to support their families. These might include working in a rural area for a short period where the cost of living was perceived to be cheaper; having more than one job; running a small to medium business; and operating a private clinic. Noted as having influence on personal values were stage of life, characteristics of the rural work site, rural background, and the need to care for family members. These, in turn, impact on recruitment and retention.

The interaction of medical and nursing graduates with the community during the PBL curriculum's community based training appeared to prepare trainees for rural practice by changing their attitude to working in a rural area. Participants identified community, job and regional aspects when describing why they would competently and confidently work in a rural area. These included personal background, security and ease of communication.

Discussion

This study shows that community based training experience can play a significant role in influencing health workers to choose rural practice or to work in underserved areas in Uganda. Training experience in the community may motivate rural practice or increase the competence and

confidence of health workers taking up rural employment, possibly by shaping ideals and values related to rural practice. Problem-solving skills acquired and experience in interaction with the community emerged as important.

The methods used in this study enabled participants to transform individual responses into ranked and discussed thematic areas. The study findings are in agreement with existing literature that suggests working conditions (including organizational arrangements, management support, high-risk work environments and the availability of equipment) are a major factor in determining whether health workers remain in remote areas^{1,19,20}. Community based training experience prepares trainees for their future work environment because they have been exposed to the conditions and problems of the workplace.

Career advancement has a strong link with workforce retention. Evidence from a six-country study in Africa (Cameroon, Ghana, Senegal, South Africa, Uganda and Zimbabwe²¹), based on interviews with between 5% and 20% of skilled public-sector health personnel in each country, showed a strong correlation between career advancement opportunities and retention, a feature more common in Africa than in developed countries. Many health professionals value having access to further training. One of the main reasons for departure to a foreign destination



among health workers in Ghana and Cameroon, for example, was the desire for further professional training²¹.

Sponsoring agencies and government are more likely to support postgraduate training for a university employee than for a health professional working in a non-educational institution²¹. This makes training institutions more attractive for health professionals who wish to obtain higher qualifications, at the expense of rural locations.

Other elements that attract staff include higher rates of remuneration, more satisfying working conditions and a safe working environment, as well as broader factors such as quality of life, freedom from political persecution, freedom of speech and educational opportunities for children²²⁻²⁶. The presence of social unrest and conflict has a major influence on where health workers seek employment, both within and outside their home countries²¹.

Also influential are the research projects of global health initiatives, which often offer attractive employment terms and benefits and draw health workers from the public sector. Many staff at central and district health facilities leave public sector postings for such projects, or for positions sponsored by foreign universities or nongovernmental organizations⁹. In this way, such initiatives can weaken the national health sector, rather than strengthen it, particularly if issues of sustainability have not been sufficiently addressed.

While providing training in rural areas may have a role in improving recruitment to rural areas²⁴⁻²⁹, other issues that dissuade health workers from rural practice must be addressed. Of the many other factors mentioned by the participants (eg communication issues and lack of social amenities such as schools and recreation facilities) the generally poor socioeconomic conditions for rural health workers is important, because most participants reported they would only work in a rural area if the financial situation of the health workers was improved. The current rural-urban, public-private salary disparities for health workers is a major consideration for graduates in their choice of

practice location. Financial incentives from central or local governments would attract health workers to rural areas.

There are other issues that need to be addressed, such as poor rural health infrastructure, the lack of equipment or supplies in rural facilities and the understaffing that leads to ask shifting among available staff. Finally, political interference in the running of rural health units and ineffective leadership and management further discourage health graduates from seeking positions in rural areas.

Conclusion

Interaction with the community during community based training prepared these medical and nursing graduates for rural practice by changing their attitudes to working in a rural area and shaping their personal values. Health sciences programs designed to attract students who are likely to practice and remain in a rural area will succeed only if relevant retention factors are addressed.

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