

## Continuing education in geriatrics for rural health care providers in Uganda: A needs assessment

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### Abstract

Population trends in developing countries show an increasing population of older adults (OAs), especially in rural areas. The purpose of this study was to explore the geriatrics continuing education needs of health care providers (HCPs) working in rural Uganda. The study employed a descriptive design to collect data from HCPs working in Apac district, a rural district in northern Uganda. The 240 HCPs (mean age 33.8±10.5 years) from whom data were collected were nurses (52%), physician assistants (17%), social workers (12%), laboratory technologists (10%) and physicians (10%). Self-administered questionnaires composed of the Palmore's Facts on Aging Quiz (FAQ1) and Kogan's attitude towards old people (KAOP) scale were used for data collection.

*Results.* Most HCPs (63%) regularly cared for OAs but their professional education did not include geriatric-specific courses (69%). The majority of HCPs had a poor or fair geriatric knowledge (88%) (FAQ1 mean score 11.6±2.3), but had a positive attitude towards OAs (80%) (KAOP mean score 115.9±11.5). Positive attitude was associated with personal experiences with OAs and a desire for a future career in geriatrics ( $p \leq 0.05$ ).

*Conclusion.* In Uganda training curricula for health professionals have not evolved to address the changing demographic trends showing increasing numbers of OAs. Consequently, there is a significant knowledge gap in certain aspects of health care, such as geriatrics, among currently practising HCPs. There is need for tailored geriatrics continuing education programmes to bridge the knowledge and skill gaps to ensure quality health care for OAs.

### Introduction

The number of older adults (OAs) is increasing worldwide, and as the life expectancy in developing countries improves their populations will grow faster than in developed countries. Worldwide there are approximately 600 million OAs, of whom 370 million (60%) live in developing countries. By 2050, this proportion is estimated to increase to 80%.<sup>1</sup> In Uganda, the population of OAs (people  $\geq 65$  years) was estimated at 5% of the country's population of 30 million in 2002.<sup>2</sup> This has been brought about by the increase in life expectancy from 46.5 years to 48.1 years to the current 51 - 52 years for men and women, respectively.<sup>3</sup> Although the current life expectancy in Uganda is still below 65 years, projections indicate that in the next five decades the number of OAs and therefore potential geriatric patients in Uganda will be nine times greater than currently.<sup>2</sup>

The demographic transition from a young to an older population is usually accompanied by increased prevalence of chronic diseases, both physical and psychological.<sup>4,5</sup> Reports from developed countries show that as people become older, they experience more chronic and multiple health problems due to lowered immunity, existing medical conditions and difficulty in accessing health care services.<sup>6</sup> Other risks include accidents such as falls and fractures.<sup>7</sup> The increased risk of health problems is also associated with an increased risk of disability among OAs. In Uganda, 40% of OAs have a disability and as a group they are among those most affected by poverty, malaria, HIV/AIDS, poor housing, malnutrition, and poor access to health care and water.<sup>8,9</sup>

The two trends of increasing numbers of OAs and increased chronic health problems or disability are enormous challenges to health care systems, health professional training institutions and policy makers who are required to meet the changing and complex needs of OAs. The response to the challenges has generally been minimal because in developing countries the focus is mostly on infectious diseases, paediatrics and maternal health, and most curricula to train and educate health professionals currently do not include geriatrics.<sup>1</sup> As a result most health professionals are not formally trained to address health care problems specific to OAs.<sup>10</sup> Training in geriatrics (scientific study of the effects of ageing and age-related diseases on humans, including the biological, physiological, psychosocial, and spiritual aspects of ageing) is essential to address the health care needs of OAs.

Lack of geriatric knowledge and skills has significant implications for health care providers (HCPs) working in rural areas of developing countries because this is where most AOs live. Additionally, these areas are characterised by poor access to health care services and a wide gap between the health care needs of OAs and treatment skills of HCPs who serve them.<sup>11</sup> Some of the strategies suggested to address the lack of geriatric skills among HCPs include integration of geriatric content in training curricula and geriatrics continuing education programmes.<sup>11,12</sup> However, before undertaking curricula revisions or continuing education programmes it is important to establish existing geriatric knowledge and attitudes of currently practising HCPs. Negative attitudes towards OAs are one of the critical factors that impede provision of proper health care by health professionals.<sup>12</sup>

OAs in developing countries are at a disadvantage because as urbanisation and modernisation set in they become more socially isolated and economically vulnerable.<sup>13</sup> In developed countries other concerns such as abuse and neglect have also been highlighted as major problems, with health implications among OAs.<sup>14</sup> A combination of diminished vitality due to ageing, increased risk of poor health, and social and economic deprivation means that when OAs seek health care they present with more than one health problem. Therefore, if HCPs are not specifically trained in caring for geriatric patients, they are bound to face a major challenge and eventually provide inadequate care.<sup>15</sup> The unique characteristics and health care needs of OAs have to be specifically addressed to optimise health outcomes and quality of life.<sup>16</sup> Therefore, to achieve optimal health and quality of life for OAs, the HCPs must be knowledgeable and skilled in geriatrics.<sup>17</sup>

In several countries geriatrics or gerontological content is not emphasised in entry-level training programmes for health professionals,<sup>18</sup> and this gap in the curricula can lead to negative attitudes towards ageing and geriatrics by HCPs.<sup>19</sup> The attitudes of HCPs are important because unfavourable attitudes hinder delivery of quality health care.<sup>20</sup> Studies of students in health care disciplines, such as physiotherapy, have also shown that they often lack geriatric knowledge and require planned learning opportunities to develop positive attitudes towards OAs.<sup>21</sup> Training in geriatrics has also been shown to be the most effective approach to changing HCPs attitudes towards OAs.<sup>22,23</sup> The purpose of this study was to explore geriatrics continuing education needs of HCPs working in rural areas of Uganda.

## Study setting

The study was conducted among HCPs working in rural health facilities in Apac, a rural district in northern Uganda. The two health facilities (Apac Hospital and Aduku Health Center) are both in Apac district. According to Uganda's 2002 Population Census, Apac district is estimated to have a population of 12 400. Apac Hospital, the only hospital in the district, is staffed by 264 health professionals (nurses, physicians, physician assistants, social workers, laboratory technologists, dentists, dental assistants, physiotherapists and occupational therapists), and has a capacity of 120 beds. Aduku Health Center is a 50-bed facility located 25 miles from Apac Hospital and is staffed by 48 health professionals, including physicians, nurses, laboratory technologists, optometrists and dental assistants. The health centre provides mostly primary care services and in-patient care for patients with uncomplicated conditions. Apac Hospital and Aduku Health Center were selected because they are the largest health facilities in the district and regularly receive geriatric patients, both as in-patients and out-patients.

## Methods

A descriptive quantitative design was used to explore the need for geriatrics continuing education among HCPs working in rural health facilities. After obtaining approval from the Institutional Review Board of the College of Health Sciences at Makerere University, meetings were held with administrators of Apac Hospital and Aduku Health Center. At the two facilities the study was publicised and advertised on notice boards, by word of mouth, and during meetings a week before data collection. To participate in the study, participants had to be qualified health professionals registered by their relevant professional bodies, legally employed by the health facility, directly involved in patient care and not currently a student in any health profession training institution or programme. A convenience sampling technique was used to access the 257 participants in Apac Hospital and 48 participants at Aduku Health Center. The investigators went to each clinical unit or ward in the two facilities during day,

evening and night shifts to explain the study purpose to HCPs on duty. The HCPs were approached during their shift break in the break room. Those who agreed to participate in the study signed a consent form before they were given self-administered questionnaires in English, the official language in Uganda. Participants were given 2 hours to complete the questionnaire and to drop it off in the receiving box in the break room or lobby of the unit. Data were collected over 3 weeks in April 2010. Of the 305 participants who consented and received a self-administered questionnaire at the two facilities, 240 returned the completed form at the designated centres. Therefore the response rate for this study was 79%.

## Instruments

The self-administered questionnaire used for data collection had four sections, i.e. demographic characteristics, experiences with OAs, geriatric knowledge and geriatric attitude. In this study the need for geriatrics continuing education was determined by measuring rural HCPs' geriatric knowledge and attitude towards OAs. The section on experience with OAs generated data about prior personal and clinical experiences with OAs and was comprised of items such as: 'Have you ever lived with a relative of age 65 years and above?'; 'How often do you take care of patients older than 65 years?'; 'How comfortable are you with the knowledge and skills required to take care of OAs?' Living with a relative of age 65 years and above was emphasised because such experience gives a person close interaction with OAs, and an understanding of lifestyles and the social aspects of ageing.

The section on geriatric knowledge was composed of a standardised scale called the Palmore's Facts on Aging Quiz (FAQ1). The FAQ1 was developed by Erdman Palmore in 1977<sup>24</sup> and has been found to be a reliable measure of geriatric knowledge in a variety of cultures.<sup>25</sup> The FAQ1 has reliability values ranging from Cronbach's alpha of 0.66 - 0.68 and content validity of up to 0.82.<sup>26,27</sup> The FAQ1 is composed of 25 statements focusing on different aspects of ageing and OAs. The participants responded by stating whether a statement is true (T) or false (F). The FAQ1 include statements such as: 'Old people tend to react slower than young people'; and 'Lung vital capacity tends to decline with old age'. The statements that are answered correctly are assigned a score of 1 and the wrong ones a score of 0. The final scores for each participant are interpreted as follows: poor knowledge for scores of less than 10; fair knowledge for scores of 10 - 14; good knowledge for scores of 15 - 19; very good knowledge for scores of 20 - 24; and excellent knowledge for scores of 25.

The section on attitude towards OAs was composed of the Kogan's attitude towards old people (KOAP) scale. The KOAP measures attitude towards geriatric patients and has been used in several studies.<sup>28</sup> The reliability of the KOAP has been reported at Cronbach's alpha ranging from 0.79 to 0.82.<sup>29,30</sup> The KOAP is a 34-item tool with a 6-point Likert scale (strongly disagree = 1, disagree = 2, slightly disagree = 3, slightly agree = 5, and strongly agree = 6). The tool contains 17 positively rated and 17 negatively rated statements about OAs. For instance, the participants responded to items such as: 'Most OAs get set in their ways and are unable to change'; and 'Most OAs tend to let their homes become shabby and unattractive'. The range of scores for the KOAP is from 34 to 204, with higher scores representing positive attitude. The participants' scores on the KOAP are categorised as: poor attitude for a score of less than 103; neutral attitude for a score of 104; and positive attitude for scores greater than 105. The two standardised scales (KOAP and FAQ1) are tested and proven measures that have been used in several cultures, and when closely examined by the researchers their items were found to be culturally neutral and focused on general aspects of ageing and OAs. The details of the two scales are published in other studies.<sup>24-30</sup>

Although this is the first time the KOAP and FAQ1 are being used in Uganda, considering the above characteristics and that they were to be used to collect data from English-speaking participants, pilot testing was done on only six HCPs working in another rural health centre (nurse, doctor, dental assistant, social worker, laboratory technologist and dentist). The results of the pilot testing showed that the questionnaire was understandable, with no cultural biases or ambiguities, and required on average 60 minutes to complete because the HCP stayed on the ward/unit performing other routine duties.

## Results

### Demographic characteristics of participants

The sample was composed of 240 participants representing five different health professions. As shown in Table I, 51% of participants were male,

Variable	Frequency (N=240) percentage (%)
Gender	
Male	122 (50.8)
Female	118 (49.2)
Age (yrs) (M=33.8, SD=10.5)	
20 - 30	132 (55.0)
31 - 40	54 (22.5)
41 - 50	32 (13.3)
51 - 60	20 (8.4)
≥60	2 (0.8)
Profession of health care provider	
Doctor or physician	24 (10.0)
Nurse	124 (51.7)
Laboratory technologist	24 (10.0)
Physician assistant	40 (16.7)
Social worker	28 (11.7)
Years of clinical experience (M=4.0, SD=1.9)	
<1	20 (8.3)
1 - 3	92 (38.3)
4 - 5	34 (14.2)
≥5	94 (39.2)
Level of education	
Certificate	100 (41.7)
Diploma level or associate degree	104 (43.3)
Bachelor's degree	30 (12.5)
Master's degree	6 (2.5)

and 43% qualified with associate degrees and 42% with professional certificate-level education. The mean (+SD) age and years of clinical experience for the sample was 32 (±10.5) and 4 (±1.9) years, respectively.

### Participants' experience with OAs during professional practice

As shown in Table II, most participants had lived with a relative of age 65 years or older (85%), and during clinical practice they took care of OAs every day or regularly (63%). When participants were asked to list the five most common health problems among OAs, they reported depression (58%), hypertension and cardiovascular diseases (54%), diabetes (38%), arthritis (28%) and dementia (28%). Most participants (71%) agreed that they needed training in geriatrics to provide better care to OAs.

Variable	Frequency (N=240) percentage (%)
Experience with OAs in personal life	
Has ever lived with a relative of ≥65 years	204 (85.0)
Has never lived with a relative of ≥65 years	36 (15.0)
Takes care of patients of ≥65 years during clinical practice	
Every day	64 (26.7)
Regularly	88 (36.7)
Rarely	76 (31.6)
Not at all	12 (5.0)
Five most common health conditions seen among patients of ≥65 years (multiple responses from health care providers)	
Hypertension and other heart diseases	130 (54.2)
Diabetes mellitus	90 (37.5)
Arthritis	68 (28.3)
Dementia	68 (28.3)
Cataracts	36 (15.0)
Deafness	10 (4.2)
Depression	140 (58.3)
Fractures	16 (6.7)
Cancer	44 (22.0)
Benign prostatic hyperplasia	24 (10.0)
I need special training in geriatrics to provide better care	
Strongly agree	50 (20.8)
Agree	120 (50.0)
Neutral	46 (19.2)
Disagree	18 (7.5)
Strongly disagree	6 (2.5)

**Table III. Geriatric knowledge and attitudes of rural health care providers in Uganda**

Variable	Frequency (N=120) percentage (%)
Underwent professional training curriculum that included geriatric-specific courses	
Yes	60 (25.0)
No	166 (69.0)
Don't remember	14 (6.0)
Confident about knowledge and skills necessary for quality care of geriatric patients	
Very confident	62 (25.8)
Somewhat confident	102 (42.5)
Not confident	76 (31.7)
Definition of a person considered an OA	
Person of $\geq 45$ years	20 (8.3)
Person of $\geq 50$ years	38 (15.8)
Person of $\geq 65$ years	128 (53.3)
Person of $\geq 75$ years	54 (25.5)
Health care providers' knowledge about geriatric care as measured by FAQ1 (M=11.6, SD=2.3)	
Poor knowledge (score of <10)	46 (19.2)
Fair knowledge (scores = 10 - 14)	166 (69.1)
Good knowledge (scores = 15 - 19)	28 (11.7)
Health care providers' attitudes towards OAs as measured by Kogan's attitude towards old people (KOAP) scale (M=115.9, SD=11.5)	
91 - 99	14 (5.8)
100 - 109	66 (27.5)
110 - 119	68 (28.4)
120 - 129	64 (26.6)
130 - 139	26 (10.9)
$\geq 145$	2 (0.8)
Categorisation of participants' attitudes	
Poor attitude (KOAP score <103)	36 (15.0)
Neutral attitude (KOAP score = 104)	12 (5.0)
Positive attitude (KOAP score $\geq 105$ )	192 (80.0)

### Participants' geriatric knowledge

The knowledge of participants about geriatrics and care of OAs was measured using the FAQ1. Results presented in Fig. 1 and Table III show that most participants (88%) scored below 14. The majority of HCPs (69%) were in the score range of 10 - 14, while others (19%) had scores of less

than 10, representing fair and poor geriatric knowledge, respectively. The mean score for the sample on the FAQ1 was 11.6 ( $\pm 2.3$ ), which indicates poor knowledge. Results in Table III also show that the majority of participants (69%) reported that they were educated and trained on curricula that did not include geriatric-specific content or courses. However, despite the poor scores on the FAQ1 and lack of formal professional education focusing on geriatrics, some participants felt very confident (26%) or somewhat confident (46%) about their geriatric skills and knowledge levels.

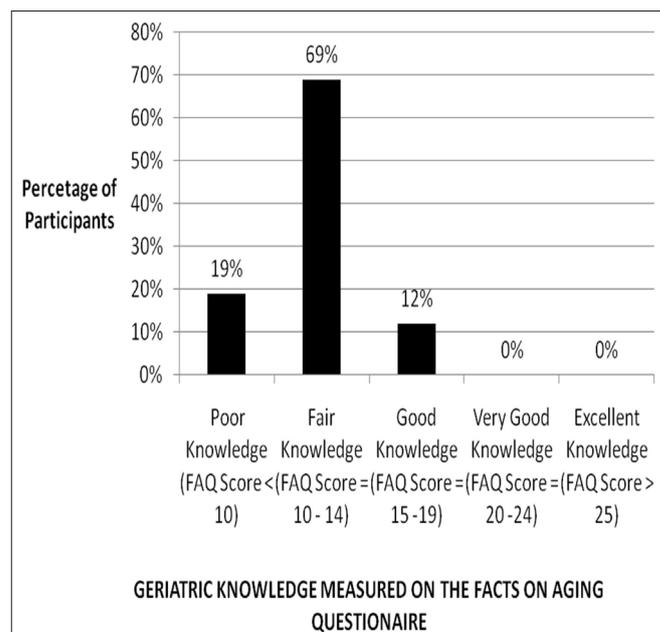


Fig. 1. Bar graph showing distribution of participants by scores on the FAQ1.

### Participants' attitude towards OAs

The attitude of rural HCPs towards OAs was measured using the KOAP and results in Table III show that a significant percentage (80%) of participants attained scores representing a positive attitude. The highest score attained by participants was 145 out of 170 and the mean for the sample score was 115.9 ( $\pm 11.5$ ). Results in Table IV highlight some of the factors associated with HCPs' attitude towards OAs. The findings show that a positive attitude towards OAs is significantly associated with having lived with an OA relative ( $r=0.207, p \leq 0.05$ ), desire for a future career in geriatrics ( $r=0.206, p \leq 0.05$ ) and feeling comfortable with current geriatric knowledge and skills ( $r=0.207, p \leq 0.05$ ). On the other hand, as years of clinical experience increase among rural HCPs their participation in caring for OAs diminishes ( $r=-0.416, p \leq 0.01$ ) and the desire for a career in geriatrics depreciates ( $r=-0.286, p \leq 0.01$ ). These factors are important to consider when planning implementation of tailored geriatrics continuing education programmes for rural HCPs. HCPs' geriatric knowledge was not significantly associated with any factors.

### Discussion

The participants in this study were mostly mid-career health professionals as indicated by the mean age ( $33.8 \pm 10.5$  years) and years of clinical experience ( $4 \pm 1.9$  years). The findings show that they had very good personal and professional experience with OAs, and therefore were able to identify the common medical problems that affect OAs. The common health problems identified, such as hypertension and heart diseases, dia-

**Table IV. Factors associated with participants' attitude towards OAs**

Factor (N=240)	ATOAs	LIVED	CARE	GERO	COMF	EXP
Attitude towards older adults (ATOAs)	1					
Ever lived with relative of ≥65 years (LIVED)	0.207*	1				
Cares for patients ≥65 years (CARE)	0.058	0.302†	1			
Would like a future career in geriatrics (GERO)	0.206*	0.205*	0.430†	1		
Comfortable with current geriatric knowledge and skills (COMF)	0.207*	0.287†	0.286†	-0.059	1	
Years of clinical experience (EXP)	0.114	-0.206*	-0.416†	-0.286†	-0.149	1

\* Correlation is significant at the 0.05 level (2-tailed).  
 † Correlation is significant at the 0.01 level (2-tailed).

betes mellitus, arthritis, dementia, cataracts, deafness, cancer, and benign prostatic hyperplasia, are all chronic and, without adequate care, may lead to other chronic complications and disability. When complications and disability occur there is a need for interdisciplinary teams of HCPs who are knowledgeable and skilled in geriatrics to provide quality health care. Similar health problems are common among OAs in Kenya and the rest of sub-Saharan Africa.<sup>31,32</sup>

Currently, good health care for OAs living in rural Uganda is difficult to achieve because, as shown by the findings of this study, the majority of HCPs who take care of OAs have a poor or fair geriatric knowledge and were educated on curricula that did not include geriatric content. However, the future is promising because most HCPs recognise their geriatric knowledge and skills deficits and are interested in attaining special training in geriatrics to provide better care to OAs. The lack of geriatric knowledge and skills is not unique to HCPs in Uganda. Other studies in countries such as Australia and Saudi Arabia show that HCPs in rural settings commonly have significant deficits in geriatric knowledge and skills.<sup>33,34</sup>

The geriatric knowledge and skills deficits have been mostly blamed on lack of geriatric content in curricula to train and educate health professionals before they enter into professional practice. The response to this problem has been mainly inclusion of geriatric content in training curricula for future health professionals. Although this is important in ensuring geriatric competencies of future health professionals, it is a partial response to the problem and only caters for the geriatric knowledge and

skills of those who are yet to join professional practice, and neglects the needs of those who are already in clinical practice. In this study we have been able to emphasise the extent of the geriatric knowledge and skills gaps of HCPs working in a rural health facility in Uganda. These results will be used to inform the planning and implementation of a pilot programme to enhance geriatric competencies through a tailored continuing education programme. The costs and details will be developed by a team of local and international experts in geriatrics and continuing education for health professionals.

However, even before implementation of the pilot programme, in this study there are significant results which show that the continuing education programme has a very good chance of being successful. For instance, the majority of rural HCPs had a positive attitude towards OAs. This study also revealed that in rural areas of developing countries like Uganda there are still some competent health professionals with good clinical experience (mid-career) who can be trained through continuing education to improve their care of geriatric patients. The viability of a continuing education programme in geriatrics is also further enhanced by the fact that most of the participants had personal experiences with OAs. This is very important, especially for adult learners, because it facilitates easy understanding of psychosocial problems of OAs. The other geriatric competencies commonly recommended for all health care disciplines include understanding age-related changes, risk assessment and health promotion, and mental, physical, affective, psychosocial and environmental aspects of health problems experienced by OAs.<sup>12</sup> All these aspects are easier to understand when you have lived with and later alone taken care of OAs.<sup>35,36</sup> Another general but important lesson from this study is that as years of clinical experience increase, HCPs become less interested in geriatrics as a specialty and are less likely to be working in clinical units where OAs are admitted. This finding suggests a need for balance when recruiting participants in continuing education programmes in geriatrics to ensure that there is good representation of junior to mid-career HCPs.

The factors highlighted above and the other findings of this study provide some baseline information on which to build a continuing education programme in geriatrics in a country where there are no data on geriatric competencies and where geriatrics has not yet been introduced as a specialty. In the immediate term a tailored continuing education programme in geriatrics is the most cost-effective approach to ensuring knowledge and skills acquisition by rural HCPs, because they are able to enhance their competencies without leaving the work station. This point is especially important in Uganda and other sub-Saharan countries which are currently experiencing shortages and migration of HCPs to developed countries.

## Limitations

The sample for this study was recruited using a convenience sampling technique from a rural district in Uganda which is mostly settled by people with limited incomes. This decision was taken because the current study was undertaken as a baseline assessment in preparation for the implementation of the pilot continuing education programme. Therefore, as the results are based on a sample obtained from a specific setting, the findings have limited generalisability. However, despite its limitations, this study is the first to focus on geriatrics and health professionals in Uganda and it highlights the gaps in geriatric knowledge and skills among rural HCPs. Furthermore, the results of this study have the potential to stimulate debate about curriculum revision in health professional training institutions to address the geriatric knowledge and skills gaps in preparation for the changing health care needs of the population of Uganda and other countries with similar characteristics.

## Conclusion

HCPs working in the rural Apac district of Uganda have deficits in geriatric knowledge and skills, and underwent professional training that did not emphasise geriatrics. The HCPs recognise this knowledge and skills gap and voiced a need for tailored continuing education programmes to be able to provide quality health care to OAs. The challenge of enhancing geriatric knowledge and skills may be easier to address, as most HCPs have positive attitudes, and professional and personal experiences with OAs, and are interested in attaining geriatric-related knowledge and skills. To ensure quality health care and health outcomes for AOs in rural areas of developing countries there is a need to address the geriatric knowledge and skills gap of practising HCPs, and one of the most cost-effective strategies that can be used to achieve this goal is tailored continuing education programmes in geriatrics.

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