Empowering Village Health Workers to provide community-based geriatric support in rural Ugandan villages

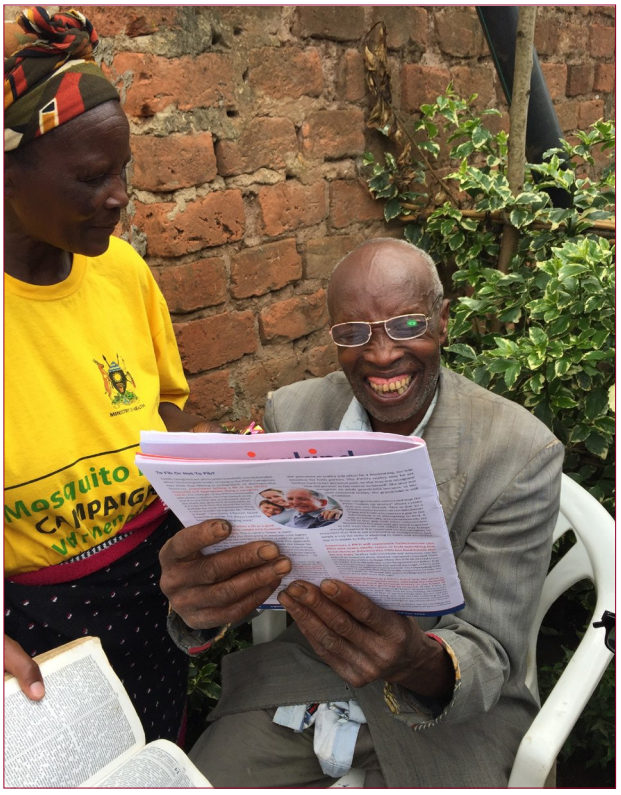
Iraguha et al describe a successful grass root intervention project that is changing the lives of elderly persons in Uganda.

Background

The entire world is aging rapidly. Currently, 9% of the world's individuals are over age 65; by 2050, this proportion will rise to 17%. By 2050, there are projected to be 2 billion people in the world over age 60, with 80% of them in developing countries. Uganda, one of the youngest countries in the world, anticipates that the number of individuals over the age of 60 will increase dramatically from 1.3 million in 2013 to 5.5 million in 2050. Like much of Sub-Saharan Africa, 90% of older Ugandans live in rural areas, many in abject poverty (<$2 USD/day). Public services and economic opportunities are scarce, and in many cases, middle-aged adults have migrated to the cities for work, leaving older adults unsupported and often with the burden of caring for their grandchildren. Although health care services may exist in towns and cities, barriers to care, such as lack of transportation, lack of an escort, and high costs, limit access to care for older adults.

Village Health Workers (VHWs) or Community Health Workers (CHWs) have been seen as an important sector of health care systems, vital to the goal of attaining universal health care and endorsed by the World Health Organization and the United Nations to improve health outcomes, especially in low-resourced countries. VHWs are trusted members of the community with limited medical training who can provide basic health care, preventive services, and health promotion and education.

Uganda is a low-income country with a critical shortage of skilled healthcare professionals, only 0.2 physicians per 1,000 people, according to the World Bank in 2020. There were initiatives by the Ministry of Health to mobilize Village Health Teams (VHTs) in 2001 and Community Health Extension Workers (CHEWs) in 2019 to increase health care access and improved outcomes, but success proved unattainable due to insufficient training, poor supervision, reliance on volunteerism, and lack of resources. A Ministry of Health document in 2022 noted 282,504 VHTs in the country, an average of 3-4 per village, many of whom were mobilized to assist during the COVID-19 pandemic, when they were paid an average of 100,000 Ush as a one-time incentive. It proposed short, medium, and long term plans, including a payment of 10,000 Ush per month to 2 VHTs per village with Primary Health Care funds, the revitalization of the VHT workforce, and the development over time of an extensive network of CHEWs.



Elderly gentleman happy with his new reading glasses
Courtesy of Patricia Bloom

Beginnings of the Kisoro Elders Project

The Kisoro Elders Project was established in 2017 with the goal of empowering VHWs to provide community-based geriatric care for rural older adults who lacked access to health care and social services. Accompanying goals were that the project be low cost, provide immediate benefit to health and quality of life, be sustainable by Ugandan health professionals and VHWs, and be an exportable model which could benefit other communities in developing countries. The term "Elders" was chosen for its traditional meaning of respect and wisdom.

Kisoro District in southwest Uganda is home to approximately 300,000 people, 86% subsistence farmers, in the district capital Kisoro and 513 villages. The Kisoro VHW program was established in 2007

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as one facet of a partnership between Kisoro District Hospital (KDH) and the community-based organization Doctors for Global Health (DGH) Uganda. VHWs have been providing preventive and clinical care, and health education to 52 villages in two surrounding subcounties for 18 years. VHWs were elected by their neighbors, are farmers, mostly women with a primary school education, highly respected and trusted in their communities.

A team of six clinical supervisors, all clinical officers or nurses from KDH, mentored by DGH's Global Health physicians from Albert Einstein College of Medicine in New York, USA, provided the initial training in six areas of health: children's health, women's health, non-communicable diseases, sanitation and hygiene, acute illness, and community health. Training took place over 6 days per month for 1-2 years and prepared VHWs to address acute problems (fever, cough, diarrhea), monitor and dispense medications for hypertension, diabetes, and other chronic diseases through the Chronic Disease in the Community (CDCom) program, provide prenatal care, other maternal/child care, and follow up care after hospitalization, and educate families. There are monthly continuing education sessions. VHWs receive modest stipends for each service and are visited twice monthly by a clinical supervisor to validate stipend sheets, monitor performance, and provide ongoing education. VHWs and other DGH staff perform a biennial health census during which the health status of all households in the village is assessed, including updated demographics, hospitalizations, screening for chronic disease, malnutrition, and risk factors such as households headed by adolescents or solitary elders, households with three or more children under age five, or those lacking of clean water or sanitation. Data are electronically collated into a family health sheet (FHS) carried by the VHW in a village binder, as well as a POCR (problem-oriented cross reference) book which contains lists of villagers with specific characteristics or health issues, such as chronic diseases, mental illnesses, recent hospitalizations or living alone.

Before the Kisoro Elders Program began in 2017, some village older adults were followed for their chronic diseases by their VHW and clinical supervisors during CDCom monthly village-based clinics, but most received little to no attention. Walking 5-10 km to district hospital clinics over rocky, hilly terrain was an insurmountable barrier for most. Prior to the initiation of the Kisoro Elders Project, focus groups were conducted by VHWs and the project leadership with village older adults and village leadership. Discussions revealed that older adults confronted challenges to their everyday function due to problems with vision, hearing, mobility, pain, isolated living without a source of light, and depression. Depression is common in older adults in Africa, often rooted in poverty, hunger, loss of family, loneliness, neglect, or abuse, physical, psychological, or financial. Project leadership, with input from VHWs and village chiefs, conceptualized low-cost strategies to address these needs. The strategies would layer geriatrics skills onto the already well-established skills of the VHWs.



Proud recipient of a solar light unit
Courtesy of Jonathan Wallen

Training in Screenings and Interventions

Intensive 2-day training modules were conducted between February 2018 and February 2019 by the authors (IM, PB, HB) and a mental health nurse specialist, supported by the clinical supervisor team and a cadre of eight senior VHW "co-supervisors". VHWs learned about the focus areas of the project, the screening tests for each problem area, simple therapeutic interventions, and criteria for referral for more specialized attention. Village adults over the age of 60 were recruited by VHWs to participate in large group screenings for vision, hearing, mobility and pain problems if they or their family suspected deficits in these areas. Groups of 20-30 older adults gathered at designated times at village meeting places, such as a field or storage building. Vision screening utilized an E-chart for far vision and tasks such as reading a Bible, threading a needle, or sorting beans from stones for near vision. Hearing screening utilized the standardized and validated Whisper Test, plus an otoscopic exam of the ear canals, mobility and risk of falls was assessed by history and using the validated and timed Up and Go Test, and pain was assessed using standardized questions and a numerical scale. VHWs administered the validated PHQ-9 screening tool for depression during one-on-one sessions with older adults with perceived depressive features. Lack of lighting was



VHW conducting ear inspection with otoscope
Courtesy of Jonathan Wallen

established by home surveys. VHWs also learned to administer the Six-Item Dementia Scale for Africa with older adults suspected of cognitive problems.

Interventions for identified problems are simple, low-cost items which provide immediate benefit. For problems with near vision, reading glasses are provided in three magnifications, +1.75, +2.00, or +2.50. The glasses to date have been purchased in the US and transported to Kisoro by various members of the DGH team. Efforts to source the glasses directly from merchants in Kisoro are underway. Older adults with significant far vision problems have been recorded in a data base; a system of referral to an optometrist for further testing and intervention with refractive lenses or cataract surgery is still in development. Elders with identified hearing loss undergo otoscopic exam and an ear washout if cerumen impaction is identified. It is often necessary to soften the wax with water or cooking oil drops for three days before the washout is successful. The otoscopes are available from online vendors, and the washout spray bottles have been transported from the US. Elders with profound hearing loss are provided with simple listening devices called "listenators", based on an ear horn model and sourced from an Asian manufacturer of products for older adults. Elders at risk of falls are measured for proper cane height, provided a customized sturdy cane made by the village carpenter, and given instructions for proper use. Despite initial concern that older adults would be reluctant to use canes in place of traditional walking sticks, the canes have proven extremely popular, and have given rise to a thriving carpentry business in town. Pain level was evaluated using questionnaires and numerical pain scales. Almost all older adults have musculoskeletal pain after a lifetime of digging in their fields; most have never had pain medication and so are quite responsive to Panadol (paracetamol), which the VHWs dispense in limited quantities. VHWs are also able to dispense non-steroidal anti-inflammatory drugs under clinical supervision. The program also employs an acupuncturist part-time, who conducts acupuncture clinics in the villages.

After initial group screenings, VHWs have used their POCR data base to monitor which older adults still needed screening, and conducted screenings and interventions during home visits. Home visits are also required for follow-up assessments of how well and with what benefits the interventions are being utilized. All group and home visits are incentivized by stipends and monitored by clinical supervisors.

Six pilot villages were initially identified for a depression intervention, based on the perceived potential for VHWs to be trained to be peer counselors. Village elders identified by the PHQ-9 to be mildly to moderately depressed were offered participation in small support groups. Those with severe depression or suicidality were immediately referred to the Mental Health Outreach team. Small groups of 6-10 participated in 8-week Interpersonal Therapy (IPT) groups. IPT is a peer counseling intervention developed for low-resourced countries and previously field-tested in Uganda, and in the US with older adults. The IPT methodology was adapted to be culturally appropriate for the Kisoro older adult population, and was taught in Rufumbira, the local language.

Although the prevalence of dementia in Uganda is not known, it is not rare among older adults in Kisoro, and is often attributed mistakenly to curses or spirits. VHW geriatric training sessions include instruction about signs of dementia, behavioral and personality changes, and communication strategies for interacting with people with dementia. This training is used to deliver a "home talk" to the families of persons with dementia, one of a series of 25 topics in the VHW home talk repertoire. VHWs make supportive home visits older adults and families needing special attention: those with dementia, or who are bedbound, frail, or isolated. The visits, like other tasks, receive a stipend.

In 2019, individual solar light units were added as an intervention to address energy poverty and social isolation, through a partnership with the US foundation Let There Be Light International.

DGH census data and VHW observational home visits were used to identify older adults in need of safe lighting. The lights are solar powered, can be easily recharged, and can illuminate a room throughout the night.

A geriatric data set was added to the biennial census, which identifies all older adults in the villages, their living situation, level of functional disability (using the Katz

Activities of Daily Living Scale), and level of participation in family and community affairs (using a Contributive Function Scale developed by the authors).

2024 saw the addition of an exciting new effort, the Healthy Foods for Healthy Aging Project, meant to address the dual problems of malnutrition and the climate crisis. A local international expert in sustainable agriculture, Mr. Gerald Nkusi, is teaching VHWs how to plant model family gardens that use improved agricultural techniques to grow more and healthier crops, while enriching the soil and providing carbon capture to reduce carbon emissions. 2 demonstration gardens and 10 family gardens have been planted, with much interest expressed in expanding the numbers.

Outcomes

Since the inception of the Kisoro Elders Program in 2017, the following screenings and interventions have been delivered to a population of approximately 5100 older adults:

Vision: 3895 screened, 2687 received reading glasses; Hearing: 2240 screened, 2175 wax removals , 93 listenators; Mobility/pain: 4891 screened, 702 received canes, 4747 received Panadol, 1056 acupuncture treatments; Depression 106 in 13 IPT groups; 1743 solar lights distributed.

Although it was beyond the scope of the project to measure the effect of interventions with scientific rigor, on follow-up home visits, beneficiaries of interventions for vision, hearing, mobility and pain problems almost universally reported improvements in function. Reading glasses enabled them to read, sew, prepare food, sort harvested crops, and perform personal care; earwax washouts and listenators improved hearing; canes provided improved stability on rocky and hilly terrain; pain medications improved musculoskeletal pain and acupuncture treatments often alleviated the need for medication for 1-4 months after treatment. Older adults who participated in depression support groups almost universally reported great improvement in their mood, with some likening their improvement to a miracle, and requesting that the groups be continued. Currently monthly socialization groups, with added members, have been continued, and an expanded depression group supervisory team, made up of 5 university trained supervisors, is expanding the number of groups and conducting a study of quantitative and qualitative results. Solar lights have been the most universally acclaimed intervention of the project. They reduce isolation, as family members are drawn into the home at night to study or converse, and improve safety and health by replacing dangerous kerosene candles, known to cause house fires and respiratory diseases.

The modest budget for the project depends on philanthropic contributions from the US. The project also benefits significantly from the pre-existent VHW and clinical supervision programs of DGH, and the operational infrastructure of DGH.

The Center for Aging in Uganda at Kisoro District Hospital was established in 2024 to advocate for the health and social wellbeing of older adults in Uganda and beyond. All of the VHW training materials for the Kisoro Elders Project are available on its website: aginginuganda.org

Project leadership is available to other communities interested in adopting any elements of the Kisoro Elders Program, and a limited number of scholarships are available for community leaders to learn more about the program by visiting it. For more information, contact the Corresponding Author or use the Contact tab on the website.

The Kisoro Elders Project demonstrates the feasibility of VHWs providing community-based geriatric support at low cost. Parts or all of it are adaptable to meet the needs of individual communities, utilizing the VHT, CHW, or VHW personnel available. This would help to address the needs of the rapidly expanding population of older adults for health and social service support in their communities.

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