SUMMARY OF RESEARCH FINDINGS ON THE NUTRITIONAL STATUS AND RISK FACTORS FOR VULNERABILITY OF OLDER PEOPLE IN AFRICA

HelpAge International
Africa Regional Development Centre

HelpAge International is a global network of not-for-profit organisations established in 1983, with a mission to work with and for disadvantaged older people to achieve a lasting improvement in their lives.

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Summary of research findings on the nutritional status and risk factors for vulnerability of older people in Africa

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FOREWORD

This publication is a compilation of summaries of reports of research surveys conducted under the auspices of the HelpAge International Africa Regional Nutrition Programme, in partnership with academic and training institutions in a number of African countries.

Perhaps the single most important factor in determining the nutritional and health vulnerability of older people in general as well as those in emergency situations, is the ageist attitude of society at large, which results in the general view that older people 'have had their day' or are 'a waste of resources'. These attitudes result in very few programmes that meet the specific needs of older people. In addition, the design of most humanitarian interventions discriminates against them.

We hope that the surveys that have been carried out will provide information and evidence of the nutritional needs of older people in general and those in emergencies and bring about a change in attitudes and practice for their benefit.

As the world wakes up to the realities of increasing numbers of older people, it is important that we recognise and respond to the needs that their growing population presents.

This report attempts to bring together some of the key issues affecting the nutrition and health of older people and offers some suggestions for ways in which the rights and needs of older people can be more effectively addressed.

In publishing this report, we acknowledge the information gaps and challenge all those who read the report to help address this problem by collecting and sharing information and by contributing to constructive debate regarding the way forward. We hope that with your help, we will be able to publish an updated version of the report in the near future.

Tavengwa M Nhongo
Regional Representative HelpAge International - Africa

ACKNOWLEDGEMENT

The Regional Nutrition Programme for older people in Africa within which the grants that supported the research were administered would not have been realized without the support and goodwill from various ones.

Firstly, thanks go to all the older men and women in several countries in Africa who agreed to be measured and interviewed during the research. Without them, this publication would not have been possible.

Our appreciation also goes to the researchers who undertook the surveys and compiled the invaluable information that has gone into this publication.

Special thanks go to our major donor, Department for International Development Joint Fund Scheme (DFID-JFS) for the 50% co-funding facility which enabled HelpAge International to implement all the programme activities and also to access funding from various other donors. We are grateful to the UNFPA, World Bank, Dutch government, Commonwealth Foundation and several other organizations that gave donations to undertake the Regional Nutrition Programme.

HelpAge International would also like to thank Karen Charlton of Chronic Diseases of Lifestyle Unit, South African Medical Research Council, for editing this publication and for authoring one of the articles.

For further information, or for access to full copies of the research reports, contact: HelpAge International Africa Regional Development Centre, P.O. Box 14888, 00800 Nairobi, Kenya; E-mail: helpage@helpage.co.ke

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1 INTRODUCTION

Health and nutrition challenges of Africa's older people

Most Africans enter old age after a lifetime of poverty and deprivation, poor access to health care and a diet that is usually inadequate in quantity and quality (Suraiya and Manandar 1999, Charlton & Rose, 2001). However, nutrition interventions in African countries are directed primarily towards infants and young children, as well as pregnant and lactating women. Similarly, in emergency situations, older people are also not targeted as a priority group for humanitarian assistance. Even if nutritional programmes do include older people, they are generally implemented within an environment where there is little expert guidance on the specific needs of this age group, resulting in interventions which are often inappropriate. The efforts of organisations working with and for older people are required to increase awareness of the vulnerability of this age group, in order to result in their inclusion in poverty alleviation programmes and other intervention strategies which may improve their health and nutritional status.

In Africa, as elsewhere in the world, food intake and food patterns of older people are influenced by financial status, physical and functional ability, as well as age-associated changes in physiological and psychological status (Horwath, 1991). Vital organs such as the kidney, lungs and the gastrointestinal tract function less efficiently with ageing, while a reduced immune competence makes an older person more susceptible to infections. The progressive decline in immunity associated with ageing has been attributed, in part, to nutritional deficiencies (Chandra, 1990). Muscular and skeletal changes may result in a functional decline (Cajanus, 1999), which could adversely affect food acquisition and preparation. Poor appetite, taste acuity, dental problems, prescribed diets, the presence of chronic degenerative diseases, as well as drug use also affect food intake and nutrient absorption and utilisation. Lack of social contact, loneliness, bereavement, and feelings of worthlessness or rejection can lead to a loss of interest in food and eating (Schlenker, 1993).

Over the years, many strategies have been implemented with the aim of improving the health and well-being of people in Africa. However, vast disparities exist in the health and nutritional status of different groups, according to age, ethnicity, education and income. For instance, there is little understanding of the living conditions, health conditions and risk factors affecting the nutritional status of older people.

Throughout Africa, older people rank health as one of their primary concerns. Health problems are compounded by poor access to health facilities, a limited understanding among health-care professionals about older people's health needs, as well as the high costs of medication. In many countries, older people rely on traditional healers for curative services since the associated costs are lower than in the conventional health-care system, and services are generally more accessible within communities. Traditional medicine is not without challenges, in particular the often-unproven efficacy of therapies, the steady shift towards cash payment (rather than the barter systems that prevailed in the past) and, in some cases, links of traditional healers to practices of witchcraft.

In many African countries, the high unemployment rates, together with the low remuneration packages, are inadequate to enable adults to make adequate financial provision for old age.
Upon retirement from active employment, they often become dependent on their families and communities for support as state social support systems are generally non-existent.

It is only within the past few years that tools for the assessment of the nutritional status of older people in Africa have been published (Suriaya & Manandhar, 1999). These tools are being used by some organisations, but there is no consensus among health professionals about the best means of assessing the nutritional status of older people of African descent, nor about the cut-off values of measurements which are appropriate to determine different degrees of malnutrition.

Most countries in Africa lack vital registration systems that provide reliable data about the various causes of death. In addition, data on the prevalence of disease in older adults is limited to sporadic individual studies, usually conducted in non-nationally representative samples, or alternatively, information is extrapolated from studies of younger populations. Thus, information on the overall burden of disease in older people is sparse.

There have been notable successes in the health sector at national and local levels throughout the region. For example, Uganda has begun to reverse a devastating epidemic of HIV infection among young people, while Kenya has made great strides in family planning and health care financing. There have been successful pilot programmes undertaken in various areas, which have differentially targeted men, women and influential decision-makers (political and religious). Types of interventions include social marketing, integration of health services, provision of youth services, training in methodologies related to health management and health informatics. These examples, together with other successful efforts, provide a promising array of better practices, which, if adopted using a life cycle approach in the region, could have a significant impact on health practices and health outcomes.

Nutrition research dissemination workshop

The HelpAge International Regional Nutrition Programme

Eating habits, food beliefs and taboos, tradition, race and local economies are key factors in determining the nutrition and health problems of older people. The need for country-specific studies to elucidate the nutritional problems of older people in Africa was identified by several nutritionists at the start of a regional three-year nutrition programme launched by HelpAge International in April 1999 and funded by DFID. The programme was preceded by several years of collaborative research conducted by HelpAge International and the London School of Hygiene and Tropical Medicine (LSHTM). This research focused on issues of nutritional assessment and risk factors affecting the

nutritional status of older people, and resulted in the development of training manuals and other materials for use in the community.

The three-year programme has trained nutritionists from several nutrition centres (academic and government) within Africa on issues affecting older women and men. In addition, training programmes have been developed and implemented for HelpAge International members, partners and humanitarian organisations so that they can improve the targeting of older people in assessment and intervention programmes. Other key components of the programme have been administration of small grants to support nutrition work with older people, resource development, awareness creation, dissemination of information and advocacy for older people with key nutrition policy makers in Africa and worldwide. This programme is considered to be a first-step approach in creating an awareness of the factors contributing to the nutritional and health status of older people in Africa.

This booklet is a compilation of summaries of reports of research surveys that have been conducted under the auspices of the Regional Nutrition Programme, in partnership with academic and training institutions in African countries. The purpose of the work was to reduce gaps in the current understanding of the health and nutrition-related issues affecting older people in Africa.

The publication is targeted at government policy-makers, academics at institutions of higher learning, non-governmental organisations, as well as any other agencies or individuals concerned with issues of ageing. The findings provide an overview of the health, nutrition and social problems identified by older people themselves and provide a basis for informing research and policy. Good practice examples from community-based programmes that are improving the lives of older people in emergencies are also provided. Recommendations are given to help prioritise older people and their carers within wider development policies, programmes and research activities. The countries which have been included in the report are Benin, Botswana, Cameroon, Ethiopia, Ghana, Kenya, Malawi, Mozambique, Senegal, Sierra Leone, South Africa, Sudan, Tanzania and Uganda.

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2 METHODOLOGY

Background to the development of the research methodology and the recruitment of participating research centres

The HelpAge three-year Regional Nutrition Programme was designed on the premise that many nutritionists in Africa did not have skills relating to geriatric nutrition and that information pertaining to the nutritional status of older Africans and the implementation of nutritional interventions in this target group was virtually non-existent. The programme was planned to support policy development and practice broadly, as well as to include research initiatives. Original research undertaken in Malawi, Tanzania and India, by investigators from the London School of Hygiene and Tropical Medicine (Chilima & Ismail, 1998, 2000; Pieterse, 1999; Pieterse, Manandhar & Ismail, 1998) culminated in the development of a training manual and other practical training materials for the assessment of older people in developing countries (Suraiya & Manandar, 1999). These materials were used as the basis for training workshops organised under the HelpAge International Africa Regional Nutrition Programme.

The programme began with three train-the-trainer workshops, one held in Nairobi for English-speaking countries, one in Senegal for French-speaking countries and a third in Mozambique for Portuguese-speaking countries. One of the authors of the LSHTM training manual (Manandhar) facilitated the process of orienting workshop participants to the nutritional assessment methods described in the manual. For the French-speaking countries, Dr Sall, the Director of Health in Senegal, assisted HelpAge International to co-ordinate the in-country training workshops while Sonia Khan, the Head of Nutrition at the Ministry of Health provided similar support in Mozambique . The training manual was translated into both Arabic and French.

The aim of these workshops was to build a body of nutritionists on the African continent who are influential within their respective institutions and Ministries of Health, in terms of the development of national programmes for older people, as well as educational curriculum development for individuals and agencies involved in the care of older people. Critical links were forged between the HelpAge Africa Regional Development Centre (ARDC) and institutions of higher education in various countries, with the assistance of HelpAge International country offices, thus resulting in a network of interested academics who were willing to participate in the nutrition surveys.

The methodology for the study was developed following broad consultations with several country team members who had previously participated in the train-the-trainer workshops. In addition, Dr Hellen Young from Tufts University, USA, and Dr Peter Salama of the Centre for Disease Control, USA, contributed to the development of the research methodology. A Valid International consultant, Annalies Borrel, author of the HelpAge International publication *Addressing the Nutritional Needs of Older people in Emergencies: Ideas for Action*. The final tool was designed by ARDC.

Potential researchers (i.e. individuals who had attended the train-the-trainer workshops, members and partners of HelpAge International) were invited to submit grant proposals in order to access the research grants which were made available under the HelpAge International Regional Nutrition Programme.

Further dissemination of information about the research programme and more widespread recruitment of partners was undertaken through the HelpAge International network in Africa, the HelpAge International country offices in Africa and the regional newsletter *Ageing in Africa*, as well as joint research and programmatic initiatives undertaken with UNICEF, Oxfam and Save-the-Children, and through contacts made with nutritionists at local and international nutrition conferences.

Funding for the research surveys was allocated on the basis of submission of an appropriate research protocol.

Finalised Research Instruments

Researchers at all centres that participated in the surveys were provided with research instruments and data collection guidelines. Exceptions are surveys conducted in South Africa, Botswana and Malawi, which had different objectives to the other studies. The methodology for each of these three studies is given in the report summary for those countries.

The research tools used in the situational analyses surveys (Chapter 3) included three questionnaires/ guides:

(1) A health-related questionnaire which included questions on illnesses in the past month, use of health facilities or other health-care strategies, reasons for not using health facilities, habitual lifestyle behaviours, interviewers' observations of symptoms associated with impaired mobility or poor nutritional status (eg. oedema, dehydration, kyphosis, etc.), and sources of income (See Appendix 1).

(2) A questionnaire on socio-economic circumstances which covered living conditions, care-giving responsibilities and functional ability. Anthropometric measurements (halfspan, armspan, weight, height and Mid Upper Arm Circumference) were included in this part of the survey methodology (See Appendix 2).

(3) An unquantified food frequency check-list (See Appendix 3).

(4) A focus group discussion facilitator's guide (See Appendix 4).

The research tools used in the surveys of older people in emergency situations (Chapter 5) were adapted as relevant to the assessment of rations provided in food aid programmes, and are provided in Appendices 5 - 7.

The in-country researchers trained fieldworkers to administer the questionnaires, facilitate focus groups, as well as to take anthropometrical measurements in a standardised manner. Ms Dolline Busolo, the HelpAge International Regional Nutritionist, assisted with the training of participating researchers and in the data collection phases in Uganda, Cameroon, Kenya, Tanzania and Sierra Leone.

The methodology for taking anthropometric measurements was based on that described in the HelpAge /LSHTM manual titled *Better Nutrition for Older People: Assessment and Action Manual* (Suraiya & Manandhar, 1999). Where appropriate, researchers were encouraged to adapt the research tools to their particular country situations. For example, the food frequency check-list was not all-inclusive and may have omitted important food items which are commonly consumed in certain countries.

Format of the Research Report

Summaries of the research reports from each of the survey sites are presented in alphabetical order, according to country. Throughout the report, methodology related to data collection is not provided, however sampling methods are included for each of the surveys.

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3 SITUATIONAL ANALYSIS OF FOOD SECURITY, NUTRITIONAL STATUS AND HEALTH NEEDS OF OLDER PEOPLE

BENIN

Assessment of the nutritional status and risk factors facing older people in urban (Cotonou) and rural (Dangbo and Akrop-Missérété areas)

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Background

Benin is currently ranked 147 out of 162 on the UN Human Development Index and over 50% of the population live below the poverty line. Four percent of Benin's population of 4.6 million are over the age of 60, a figure projected by the United Nations to increase to 9% by 2050. In 1994, it was demonstrated that seasonal variations in food supply increased the prevalence of underweight (BMI<18.5 kg/m^2) in the general population from 18 – 23% to between 46% and 60%, in periods of food scarcity (Nago *et al.*, 1994). No specific policies or programmes exist which are targeted towards the nutrition and health needs of older people. A cross-sectional survey was therefore conducted to generate updated information on the nutritional status of older adults in urban and rural Southern Benin, in order to inform health policy review.

Hein Du Plessis/HelpAge International

An older man ploughing a field using an ox-drawn plough

Objectives

(1) To determine the prevalence of undernutrition and overnutrition; (2) To assess the living conditions and the food intake of older people; (3) To identify risk factors associated with nutritional vulnerability.

Methodology

465 older men and women aged 60 years and above were recruited using cluster sampling from urban Cotonou (N = 240; 16 older people, each from 16 sectors) and from rural Dangbo and Akpro-Missérété (N = 225; 15 older people, each from from 12 villages).

Main Findings

The average age of older men and women was between 68.9 and 70.8 years.

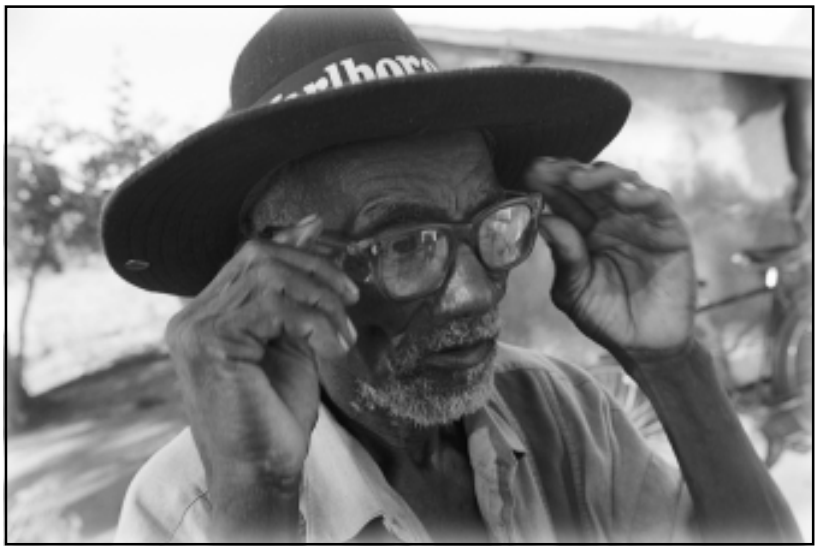
Anthropometry

Rural dwellers were taller and lighter than their urban counterparts (mean weight = 57.1 kg and 67.9 kg, respectively). Men were taller than women, but no difference was found in body weight. The MUAC (Mid Upper Arm Circumference) for the total sample was 29.5 cm, and was higher (31.4 cm) in urban, compared to rural (27.5 cm) dwellers. For men, the mean MUAC was 28.3 cm and for women was 30.5 cm.

The overall prevalence of malnutrition determined by Body Mass Index (BMI <18.5 Kg/$m^{2)}$) was 11.8% and 8% for women and men, respectively. In rural areas a higher prevalence of underweight was found than in urban areas (22.2% versus 17%, respectively). 14% of older people assessed were obese (BMI = 30kg/m^2) - 11% of women, compared to 3% of men.

Functional ability and independence

More than 85% of the older people were able to undertake activities of daily living, despite some of them needing help in procuring food (6%), fetching water (15.7%), preparing food (13.5%) and using the toilet (3.9%). Older people received assistance from their grandchildren (24.8%), sons or daughters (16.2%), neighbours (6.%), spouses (5.2%) and daughters or sons-in-law (4.7%). The majority of the persons surveyed still live within the family setting, with 74% of them living with an average of three dependants. Two percent of them lived alone. When faced with psychological or social problems, older people relied on family members for assistance, mainly their children (45.4%), spouses (20%), as well as friends (17%) and other relatives (9%).



Hein Du Plessis/HelpAge International

An older man adjusts his glasses

Health status

Regarding health conditions in the month prior to the assessments, backaches were more common among older women (39.6%) than men (29.6%). Forty percent in rural and urban areas reported malaria/fever. Thirty-seven percent reported having poor eye sight, more so those in urban areas (39%) than in rural areas (35.9%). Twenty-two percent of the older people had self-reported hypertension, with a higher prevalence among urban compared to rural residents (25.7% versus 17%, respectively), while 4.1% of men and women reported that they had diabetes. Self-reported incidence of gastric ulcers were common (8.4%), particularly among those who live in the rural areas.

Over a quarter (28%) of the older people (30 % of the women and 25.1 % of the men) had evidence of oedema on examination. The higher prevalence in the rural areas could be due to lateness in seeking medical attention. A third (34%) of the older adults were dehydrated (41.3% in rural areas

and 26.6% in urban areas). Again, women were more affected (37.3%) than men (29.1%).

When ill, only 58.5% of the older people visited public hospitals due to the high cost of the service (67.6% in urban areas and 48.4% in rural areas). A third (32%) of urban residents used private medical facilities, compared to 3.6% in rural areas. A high proportion (44.1%) accessed the services of traditional healers, particularly those in rural areas (65.0%). A fifth (21.9%) of older people in rural areas self-medicate, when ill, while city dwellers were less likely to resort to this practice, presumably due to public awareness campaigns on the hazards of self-medication, which are mostly carried out in cities. A quarter of older people interviewed did not access any formal health facility when ill due to both a lack of financial resources and a strong belief in traditional medicine.

Economic status

About 30% of the older persons interviewed depended on the financial support of a relative, mostly their children. This rate of dependency is higher in towns than in the rural areas (32.4% as opposed to 24.2% respectively) and is also more noticeable among older men. Important sources of income in the rural areas were the sale of agricultural produce and animals, an activity that is essentially dominated by men (43.8% compared to 9.6% of women). About 45% of the older people also obtained part of their income from business, an activity that is essentially practiced by women (61.9% compared to 23.2% of men). Only 16% of the sample (29% of urban older people) was made up of former salaried employees who are now supported by a pension.

Dietary intake and alcohol consumption

In both the city and rural areas, the majority of older people consume three meals per day. The main meal typically consists of maize meal, often eaten with a gravy made from various vegetables, such as leafy greens, lady's fingers (okra), tomatoes, onions, garlic, pepper, local mustard, as well as oil. The consumption of meat is rare, whereas fish is eaten at least once a day by nearly all the older people under study (96.8% in the rural area and 94.2% in the city). Cereals (maize) are the staple food for 93% of the persons surveyed in the city and 98.2% of older rural dwellers. Other foods such as cassava, yams, potatoes and beans are also eaten. The intake of fruits is not widespread among older people; only 14% of urban dwellers and 11.6% of rural dwellers eat fruit daily, while 30% of those in the city and 21% in the rural areas consume fruit 2 - 5 times/week. Milk and dairy products are not regularly consumed.

The mean daily energy intake of older people living in urban areas is lower (1 930 ± 822 kcal/person/day) than that consumed by older people in the rural areas (2 348 ± 967 kcal/person/day). Likewise, protein intake in rural areas is higher (66 ± 27 g/person/day) than in the urban setting (58 ± 36 g/person/day). It is important to note that most of the protein is obtained from vegetable sources.

Alcohol consumption was reported by 66% of the older people, with the practice being more common in the rural areas (81.2%) than in urban Cotonou (51.9%). More men (75.4%) than women (58.5%) were consumers of alcohol.

Conclusions

About three out of four older people in Southern Benin still have children or grandchildren under their care. This situation, which is much more noticeable in urban areas, is a constant source of stress to older people and could be a factor limiting their ability to deal with health crises, considering their sources of income, which remain generally low and uncertain. The high rate of dependency on family members for both financial and functional assistance indicates a highly vulnerable group. Women are particularly financially dependent, which is explained by the fact that in a traditional African society, from a young age, most of the women are dependent on their husbands for income. The present economic situation in Benin hampers the setting up of policies (such as a national social security system) to care for older persons. The high occurrence of oedema and dehydration indicates nutritional risk. A high rate of self-medication, especially in the rural populations, poses questions about nutrition-related problems associated with polypharmacy.

Key messages

- A very high prevalence of underweight, together with a largely inadequate dietary intake, both in terms of quantity and quality, identified in this study has demonstrated that both the rural and urban older population of Southern Benin are at high risk of undernutrition.
- The high and frequent consumption of alcohol, the low consumption of animal protein as well as the low levels of energy consumption, especially in the urban areas, are nutritional practices which need to be addressed in order to improve the health of older people.

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BOTSWANA

Alcohol consumption patterns and some relevant health measures in older adults

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Background

The aim of the study was to investigate the alcohol consumption patterns, in relation to health problems, among older persons in Botswana.

Methods

Data were collected in 1998 and 1999 as part of a national medical survey undertaken in Botswana for people above 60 years of age. A national representative sub-sample of 372 respondents were visited at home, interviewed using a structured questionnaire and subjected to a medical examination. AUDIT, a WHO approved 10-item questionnaire to detect hazardous alcohol drinking was applied to all current drinkers. The AUDIT instrument categorises respondents according to current drinkers, previous drinkers and lifetime abstainers.

Main findings

The age distribution of the study population comprised 45% in the age group 60-69 years, 30% aged 70-79, and 25% above 80 years. Gender balance was maintained. Of the total study population, 34% were current drinkers, 24% previous drinkers and 42% were lifetime abstainers. A sorghum based homemade beer (alcohol content of 2.3 - 8.5%) was the most commonly consumed alcoholic drink.

Three times more men than women reported being consumers of alcohol. Multinomial logistic regression analyses show that a higher socio-economic status and being a Christian reduces the likelihood of being a current drinker, whereas marital status and age are not significant determinants as to whether one drinks or not.

Among the 126 current drinkers, 36% had an AUDIT score of 8 or above, which indicates a level of drinking that may result in a social problem or added health risk. No significant trends or differences were noted when comparing various health outcome indicators in the two groups of current drinkers - those with AUDIT scores of 7 or below and those with AUDIT scores of 8 or above.

In contrast, when the group of current drinkers as a whole is compared with the previous drinkers and life-time abstainers the following differences were found:

➲ 10% of the current drinkers reported to have severe health problems; 33% of previous drinkers and 8% of life-time abstainers reported the same.

➲ 9% of the current drinkers have BMI above 30 compared with 20% of previous drinkers and 23% of lifetime abstainers. For BMI below 18.5, the corresponding figures were 24%, 17% and 13%, respectively (P= 0.008). Among the current drinkers, 30% also smoked tobacco, whereas only 6% of

previous drinkers and 7% of lifetime abstainers did so.

Conclusion

Factors that contribute to low levels of alcohol intake or total abstinence include being female, having a higher socio-economic status and being a Christian. Half of the women and one third of the men reported to be lifetime abstainers. These rates are high compared to those in many western communities, but abstinence is common in an African setting. Current drinkers were found to have higher rates of undernutrition (low BMI) compared with non-drinkers. This indicates a less favourable nutritional status among current drinkers. Previous drinkers report more health problems than current drinkers and life-time abstainers. Even though current drinkers generally report their health status to be good, risk factors such as smoking and poor nutritional status are common in this group.

Key messages

- A third of older people in Botswana consume alcohol. In those that do consume alcohol, a third have levels of consumption indicative of health risk or social problems.
- Alcohol consumption is associated with a poor nutritional status.
- Interventions to improve nutritional status in older people in Botswana need to include strategies to reduce alcohol consumption in men.

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* This assessment was carried out in 2002

CAMEROON

Assessment of nutritional status and socio-economic vulnerability of older people in Bangoua, Western Province

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Background
To date, there is no available evidence related to the nutritional status of older adults in Cameroon.

Objectives
A cross-sectional, descriptive study was undertaken to assess the nutritional status, the functional ability and the dietary intake profile of older people in Bangoua.

Methodology
531 older people aged 55 to 120 years were recruited from Bangoua, a rural community in the Western Province of Cameroon, 250 km from the capital city, Yaoundé.

Main Findings
The sample comprised 63% of women and 37% of men. Mean age was 70 years for men and 69.5 for women; over half (53%) of the older persons were aged between 55 and 69 years. Kyphosis, dehydration and oedema were evident in 14.9%, 14.9% and 5.3% of the older people, respectively. The most commonly reported health conditions were joint pains/arthritis (66.8%), back pain (37.7%), poor eye sight (18.8%), fever/malaria (18.5%), abdominal pains (13.0%) and respiratory infections (14.1%). Blindness affected less than 1% of the older people. Eighty-two percent reported that they were able to function independently, while 3.2% were immobile.

Three quarters (74.6%) of the respondents sought medical care from government hospitals when ill; 18.6% from traditional healers; and 12.7% practiced self-treatment. The main reason for not utilising government and private health facilities was lack of money (25%).

Two-thirds of the older persons were consumers of alcohol, 43.5% sniffed tobacco and 18.5% smoked (cigarette or pipe).

Men had an average BMI which was significantly lower than that of women (22.8 and 25.0, respectively). Similar results were observed using MUAC (27.0 cm and 29.1 cm for men and women respectively). Men were taller than women (165.9 vs 155.5 cm respectively) and heavier (63.9 kg and 60.7 kg, respectively). The prevalence of underweight (BMI<18.5) was 5.5% (7.7% among men and 4.2% for women). Older adults over 70 years had a higher prevalence of underweight (7.0%) than those younger than 70 (4.5%). Using MUAC, 6.7% of men were classified as being malnourished, compared to 1.5% of the women. On the contrary, 23.3% of men and 16.5% women were obese with BMI >30 kg/m².

People caring for children, living alone and those who sniffed tobacco were more affected by an inadequate access to food. On average, 83.9% of the respondents ate at least two meals per day. 84.2% took breakfast, 44.8% lunch, 87.2% dinner and 22.2% had a snack between meals. Low consumption of fruits was reported. In times when fruits were consumed, they were eaten as snacks rather than part of a meal. Twelve percent drank something other than water. Among those who

drank, the main drinks were raffia wine (51.8%) and beer (44.5%). Snacks eaten comprised cola nuts (59.5%), various fruits (37%) and groundnuts (15.5%). The main foods that people excluded from their diets were milk (15.8%), pork (10.3%) and alcohol (11.7%), mostly for medical and/or health reasons (56.2% of the cases).

The main sources of income were remittances from family members (52.7%) and sales of food produced on the farms (40%). Sixty-nine percent reported that they were providing care to others, mainly sons/daughters (58.7%) and grand- sons/daughters (46.3%). On average, an older person cared for five additional persons. Counselling during times of stress was provided by the church (32.1%), friends (17.8%) and spouses (17.4%).

Conclusions and Recommendations

The results of this study indicate that the nutritional status of older people in Bangoua is quite different from what is observed in other countries of the sub-Saharan region. The prevalence of underweight here is relatively low (5.5%), but men were more affected than women. Dietary profile data suggests that food intake is adequate, in terms of quantity and quality. The problem of overweight and obesity is higher than that of undernutrition in this population. It is recommended that the assessment of overnutrition be included, in addition to that of undernutrition, in future nutrition surveys of older people in Cameroon and that health outcomes associated with being overweight be investigated in this age group.

Due to variation in food availability and eating patterns in other parts of the country, the findings of this study cannot be generalised to reflect the overall nutritional status of the total older population in Cameroon.

Key messages

- A low prevalence of undernutrition was found in older people in a rural area of Cameroon.
- Obesity was more common, and found in almost a quarter of older men and 16% of older women.
- Health conditions associated with overweight and obesity in this age group require further investigation.

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ETHIOPIA

Assessment of the nutritional status of older people in Zeway, Central Ethiopia

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Background

Data on the prevalence of malnutrition in Ethiopia are generally scarce and little is known about the nutritional status of older people.

Objective

To assess and compare the nutritional status of older people living in three different areas of central Ethiopia, and to identify possible determinants of malnutrition.

Methodology

A cross-sectional study was conducted in and around Zeway town, which is located 160 km south of Addis Ababa in central Ethiopia. Three adjacent sites representing an urban (Zeway), semi-urban (Adami-Tullu town, 7 km south of Zeway) and a rural setting (Woshgulla village, 5 km west of Zeway) constituted the study area. A required sample size of 288 older persons was calculated, assuming a prevalence of undernutrition of 25% in those aged 50 years and above. In the semi-urban and rural sites, all individuals in the specified age group who were available at home during the two visits were enrolled for an interview, physical examination, and anthropometric measurements. In the urban study site, 4 out of 37 clusters were randomly selected and all eligible individuals in the four clusters were enrolled through a house-to-house visit. Trained final year medical students of Addis Ababa University administered the questionnaires and took anthropometric measurements.

Main findings

The realized sample included 250 older persons (87% of estimated sample size) and the mean age of the study population was 64.7 years for men and 61 years for women. The prevalence of under nutrition was high (30.5%). Over 93% of the older persons reported that they were able to feed themselves and go about their daily duties without support. Older men in the study area were on average taller and heavier than their female counterparts, but no differences were found in the prevalence of under nutrition between women (30%) and older men (31%). Using the FAO/WHO sex-specific MUAC cut-off points (23cm for males and 22cm for females), the prevalence of under nutrition was found to be 50% in older men and 23.3% in older women.

Visual impairment, joint pains, and problems of mastication were reported by 58.4%, 54.4%, and 48% of the older persons, respectively. Other self-reported clinical and physical conditions included physical disabilities that affect food procurement, joint pain or visual problems that affect food preparation, and ill-fitting or absent dentures which affects food intake. In focus group discussions, older men and women reported that long-term medication adversely affected their appetite and resulted in a reduced sense of taste, while few meals per day were associated with the occurrence of undernutrition.

Conclusions

This study identified an older population at high risk of undernutrition, regardless of whether they live in an urban, semi-urban or rural setting. Their poor nutritional status is due mainly to recurrent failure of rains, resulting in recurrent drought and famine, and widespread household food insecurity.

No government policy exists in Ethiopia which addresses the health and nutritional problems of older people. In addition, NGOs operating in the country do not incorporate the needs of older people into their relief and development strategies. Against this background, there is a need to protect the extended family network to enable older people to obtain the necessary care and attention at household and community levels. The rights of older persons to basic needs, such as food and health care, have to be actively protected and promoted in Ethiopia.

Key messages

- A very high prevalence of under nutrition was found in the older population in Ethiopia, with almost a third of the older persons being underweight.
- High rates of poverty, together with adverse environmental conditions (drought and famine), result in inadequate household food security in older adults.
- Immediate strategies to address the problem of malnutrition in older people in Ethiopia are required.

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KENYA

Nutritional risk factor analysis amongst older persons in Nairobi and Machakos Districts

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Background

Unlike other demographic groups, the nutritional needs of older persons in Kenya are neither clearly understood nor documented. The nutritional status of older persons has not been viewed as critical as that of mothers and children under five years of age. Older persons have been acknowledged as being vulnerable. However, their nutritional needs are not being adequately met.

A few localized studies have addressed the nutritional and food security issues of older persons (Kigutha, 1998; Ethangatta *et al.*, 1996 & Waswa *et al.*, 1988) in Kenya. No baseline data exists on their nutritional and health status at national or district levels. In addition, their nutritional status is not given emphasis in curricula and programmes dealing with nutrition. It is against this background that the present study was undertaken to establish the vulnerability of older persons and to determine the risk factors to malnutrition.

Objectives

(1) To determine and compare the nutritional status of older persons with that of children aged 6 – 59 months (2) To assess risk factors for malnutrition, and to recommend strategies for promoting better nutrition among older people in the Machakos and Nairobi districts in Kenya.

Methodology

This study was undertaken in Nairobi (urban) and Machakos (mostly rural) districts in communities where HelpAge Kenya is supporting day care programs. In Nairobi, the study targeted slum areas of Kibera and Kawangware, while in Machakos, a peri-urban community of Mumbuni and a rural community in Ngunga participated in the study.

Purposive sampling was used to recruit beneficiaries of the HelpAge Kenya projects from day care centres. The calculated sample size was 400 older persons, 100 per geographical area, assuming a prevalence of undernutrition of 50%. The realised sample included 374 older people aged between 50 and 100 years.

Both quantitative and qualitative (focus group discussions) methods of data collection were utilised.

Major findings

Background characteristics

62% of the older people assessed were over 70 years. Most were women (74.1%) and more than half (56.6%) of the total sample were widowed. Seventy-six percent of the older persons lived with other people while 24.1% lived alone. Those who lived alone were mostly from the urban area of Nairobi. A third of the older persons interviewed (31.7%) lived with their grandchildren; 32.3% lived with their spouses.

The mean monthly income was Kshs 1,625 (± £15) in Nairobi, compared to Kshs 1,221 (± £11.30)

in Machakos. Income was mostly obtained from remittances from children, while 57% of the older persons were also involved in some form of income-generating activity.

Prevalence of malnutrition

The overall prevalence of malnutrition (BMI<18.5) was 29.8%, with a substantially higher prevalence in the rural area (Machakos) compared to the urban community in Kibera (36.1%% and 18.5% respectively). In Nairobi, more men (32.6%) than women (12.8%) were underweight and a similar trend was found in Machakos (32.3% and 24.7% respectively). The average weight for the total population was 53.9kg. Men were heavier than women (56.3kg and 52.0kg, respectively) and taller (165.9 cm and 154.5 cm, respectively).

Risk factors for nutritional vulnerability

During Focus Group Discussions (FGDs), older people noted that poverty affected the quality and quantity of foods they consumed and was responsible for their poor health status. It emerged that a web of many issues, particularly HIV/AIDS, compounded their poverty situation. The major problem faced by older people interviewed was lack of adequate food.

It was identified that consequences of the HIV/AIDS pandemic had reduced the time that could be spent in food production, and had changed the food consumption and food intake patterns of surviving family members, resulting in chronic malnutrition. Older people felt that the traditional extended family, as a social institution caring for them, is now weakening due to the impact of the HIV/AIDS epidemic. They reported that when their children die, the orphaned children are left in their care, a responsibility they take on as they grapple with chronic poverty. The resultant effects of increased poverty and reduced farming activities (most of their time is taken up caring for their grandchildren) were identified to be a problem, specifically in the peri-urban areas in Machakos.

Various responses were given by the older persons regarding the perceived causes of their poor nutritional status - eating too much of the wrong variety of foods, not eating enough high fibre foods, loss of appetite and poor food preparation methods. Older people said that with age, their preference for certain types of foods, such as sugars, is increased compared to foods with sour tastes. Those with memory impairment often forget to eat, while others with physical impairment are unable to go to market places to purchase food unless they get assistance.

Most older persons indicated that they had experienced traumatic events in their lives, such as the loss of their children and loved ones and these were reported to have precipitated emotional and psychological distress, which consequently affected their appetite. Living alone without care services was cited as an issue that weighed heavily on their mental, physical and emotional wellbeing.

HIV/AIDS, modernisation and urbanisation were said to have affected the social support systems that would otherwise have been provided to older persons. By implication, lack of social support systems, poor social integration and reduced social contact all impact on older persons, resulting in increased isolation and loneliness. This in effect has been translated into poor eating patterns, hence an increased risk of malnutrition amongst older persons.

Health conditions

The majority of the older people interviewed (89.6%) indicated that they had been ill during the two week period prior to the study. The most common ailments suffered were coughs and chest pains (30.5%), malaria (11.6%), and pain in the joints that could be associated with osteoporosis (16.8%)

An assessment of the health-seeking patterns indicated that 71.4% of those that were ill had sought medical attention. Half (48.3%) of those who had sought medical attention went to government health facilities, while 48.1% utilized private clinics. During FGDs, it was reported that the quality of care was unsatisfactory in the more affordable governmental health facilities. The cost of health care was further described as unaffordable in all cases. Distances to health care facilities were identified as a major constraining factor. Although there has been talk of exempting vulnerable groups from charges at health facilities, this has not been implemented. Long queues, unavailability of drugs, the excessive cost of drugs and the negative client-health provider relationship, coupled with perceived neglect on the part of health workers, were major deterrents to access to health care services during bouts of illness.

Dietary intake

Most older persons (64.6%) consumed proteins only occasionally (less than once a week) due to their high cost. Carbohydrate-rich foods were consumed on a daily basis (maize - 53.3%, potatoes - 24.5% and bread - 17.0%). Vegetables were also consumed daily by most older adults, and the commonest vegetables consumed were kale (57.1%), followed by cabbage (31.1%) and cowpea leaves (20.3%). Fruit intake was poor and was determined by seasonal availability. Tea was cited as the most popular beverage, taken by 82.5% of the older people on a daily basis.

Disability and functional dependency

Dental problems (loss of teeth and gum problems) were the most commonly experienced disability in both Nairobi and Machakos (65% and 77.1%, respectively). Older people reported that loss of teeth, and pain and discomfort associated with chewing, resulted in low food intake. Partial/total loss of sight were also reported as major problems in Nairobi (62.1%) and Machakos (65.1%). Other reported disabilities included physical impairments (37.9% and 37.6%), poor hearing (35.9% and 33.0%), injury due to falls (16.5% and 18.3%) and cognitive impairment (3.9% and 2.8%).

Older people appear to be able to take care of themselves despite the physical constraints they face. Only 9.4% reported that they needed assistance with feeding, 10.8% with bathing, and 9.4% with dressing. Although respondents were able to carry out daily activities, they nonetheless suffered from impaired physical mobility, and were able to walk only short distances, performed household tasks with difficulty and experienced constant fatigue. Both impaired mobility and eyesight were reported to affect older people's ability to prepare food.

Conclusions

The impact of the HIV/AIDS pandemic has resulted in compromised household food security in Kenya, and has disrupted traditional family and community support systems for older people.

Older persons in Kenya are at high nutritional risk. Older men, particularly those in rural areas, are more vulnerable to malnutrition than older women. The development and implementation of government policy which addresses the nutrition and health needs of the older population in Kenya is required. In addition, NGOs and donor communities need to incorporate this population group into their intervention strategies.

Key messages

- A high prevalence of undernutrition is evident in the older population in Kenya.
- There is a need for the development and implementation of policy related to improving the health, nutritional status and wellbeing of older persons in Kenya.
- The existing national nutrition policy should advocate for the rights of older persons to adequate nutrition and health-care services.

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KENYA

Baseline survey on oral health, feeding patterns and nutritional status of older people in Dagoretti Division, Nairobi District

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Background

The older population in Africa, currently estimated to be slightly over 42 million, is projected to reach 205 million by 2050, a six-fold increase in five decades. Over this time period, it is estimated that the population aged 60 years and above in Kenya will have increased from the current 1.3 million to 7.2 million. The majority of Kenyans do not retire from work until they are physically incapacitated. The traditional support system for the older people which is the nuclear and extended family system, has been eroded over the years due to rural-urban migration and the consequences of the HIV/AIDS pandemic.

Objectives

A baseline survey was conducted in Dagoretti Division of Nairobi Province, Kenya, to assess the dietary patterns and oral health of the elderly.
The objectives of the survey were to:

(1) Assess oral health status, nutritional status and associated risk factors in older people;
(2) Develop recommendations for policy planning and programme development for the health and nutrition of the older people;
(3) Advocate for inclusion of older people in health and nutrition policies in Kenya, and in the training curricula of oral health personnel.

Methodology

As well as the quantitative and qualitative information collected using a semi-structured questionnaire, oral health status was assessed by dental examination using a modified version of a World Health Organization (WHO) examination form. Dental and nutritional assessment were conducted among older people aged 45 years and older.

Main findings

A total of 289 randomly selected households were included in the study, from which one person aged 45 years and above was interviewed per household. The mean household size was 3.26, ranging from 1 - 8 persons per household. The mean age was 60.6 years (range = 45-115 years). Level of literacy among the respondents was low, with only 8.3 % and 7.6% having completed primary education and secondary education, respectively. Few (2.1%) of respondents had tertiary level education, beyond secondary school. About half of the respondents were widowed, separated or divorced, and over half (54.5%) of the households were female-headed.

The major problem faced by the elderly was lack of access to finances (58.5%). Their main sources of income included small businesses, casual work, small-scale farming, gifts and livestock keeping. Only 9.7% were in formal employment. The monthly household income was distributed as follows: 56.0% had an income of US$ 38.5 and below; 32.2% had an income of US$ 38.6-102.6; while only 11.8% had an income of more than US$ 102.6.

Most respondents lived close to a health facility (mean distance of 2.24 km), and 86% sought treatment at these facilities when they were ill. Most respondents (76.6%) paid for the services. The most common health conditions affecting the older people across all age groups were reported to be malaria (60.6%), upper respiratory tract infections (11.3%), arthritis (8.4%), and prolonged cough/ tuberculosis (6.6%).

Most of the households purchased their food from the market and, of those who grew their own food, only 20.5% indicated that the food they grew was sufficient to meet their household needs. The majority (71.1%) indicated that their budget allocation for food was inadequate and three-quarters (75.8%) of respondents considered themselves live in poverty.

Cereals such as maize sorhgum and millets, starchy staples (potatoes, yams etc), fruits/vegetables, grains and legumes were commonly consumed foods, eaten on a weekly basis. The prevalence of malnutrition, using a MUAC reference of <24 cm was 18.8%, and using a BMI reference of <18.5 was 11.4 % (15.3% and 10.0% in men and women respectively). Forty-six percent had a desirable nutritional status while a large proportion (40.9%) was overweight (48.0% of women and 25.9% of men).

The main risk factors for the older people were poverty (75.8%), eye problems (45%), caring for grandchildren (37.0%) a low budget for food (70.6%), disease (56.7%), death of a loved one (35.6%), poor physical strength (22.5%), and 35.3% were on medication. Amost half of the older people (49.1%) were suffering from dental and chewing problems. The most common dental problems were gum disease, tooth decay, tooth mobility and missing teeth.

Conclusion

The major problem faced by older Kenyans in urban areas is inadequate access to economic resources, food and health care. The responsibility of having to care for abandoned and orphaned grandchildren further contributes to their economic difficulties.

Over a tenth of older adults are underweight, but obesity was not uncommon. The study identified that dental problems are evident in over half of the older people, but that dental care services were not affordable.

Key messages

- There is need to improve access to dental health services of older adults within the Nairobi district of Kenya.
- The high levels of poverty in this age group require the development and implementation of income-generating strategies.
- Government social welfare policy needs to address the burden of child-care experienced by grandparents.

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MALAWI

Nutritional status of older people in rural Lilongwe

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Background

The total population of Malawi in 1998 was 9.9 million and the population of older people aged 55 years and over was 7.3%. Until 1996, no surveys had been conducted in Malawi to assess the nutritional status and functional ability of older people although there was ample evidence suggesting that the population of older people was increasing. Most of the nutritional studies and programmes to date have focused on children and pregnant women, particularly Iodine Deficiency Disorders (IDD), Protein Energy Malnutrition (PEM), Vitamin A deficiency and nutritional anaemia. One possible reason for this emphasis could be that a child's nutritional status is seen as a proxy for the nutritional status of the family (FAO, 1990) or community (Government of Malawi, 1992). In addition, in 1992 life expectancy was low (43.5 years among males and 46.8 years among females). These demographics had been interpreted to mean that few people survive into old age. However, life expectancy at birth is heavily determined by infant mortality rates which do not necessarily match mortality rates in other age groups.

Objectives

To assess the nutritional status and functional ability of older adults in Malawi.

Methodology

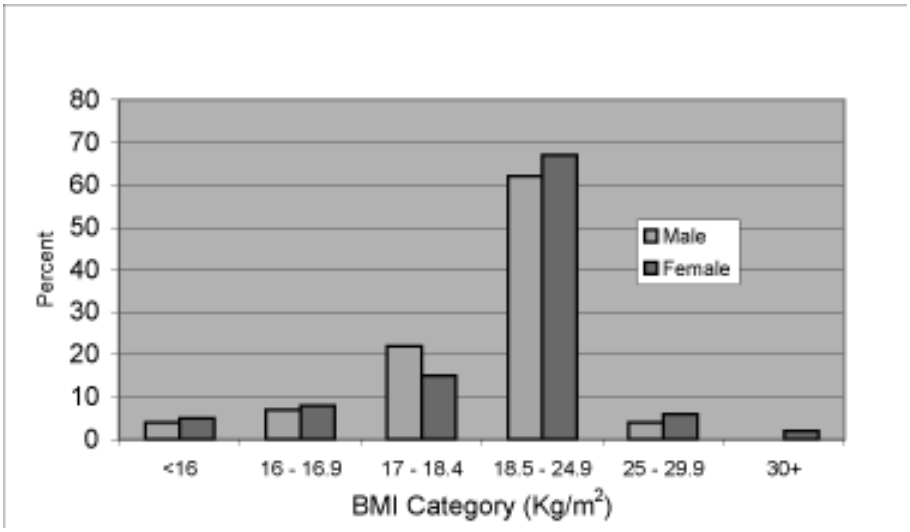
A cross-sectional study was undertaken among older people aged 55 to 94 years in rural Malawi. The study population comprised a total of 296 older persons (97 men and 199 women) selected from three traditional authorities (Chiseka, Kabudula and Mazengera) from 11 villages in Lilongwe District. Data analysis was carried out using the Statistical Package for Social Science (SPSS) software versions 5.0 and 6.1.

Main findings

Over 90% of the participants were still actively involved in agriculture. 83% of the sample were married, 11.7 % were widowed and 5.3 % were separated. Four percent of participants lived alone. A third (34.5%) of the men and 56.4% of the women had received no formal education.

Under nutrition (BMI < 18.5) was found in 36.1% of the men and 27.0% of the women (See Figure 3.1). It was not clear whether underweight increased with advancing age. The main factors contributing to low BMI in men were a history of smoking, fear of being dependent, living alone, poverty and disability. In women, a low BMI was attributed to low food intake during post harvest periods. One of the limitations of the study was that few men participated.

Figure 3.1: Distribution BMI among older people by sex



Conclusion

A high proportion of older people in rural Malawi are underweight. It is recommended that issues of poverty among older people need further research in order to develop strategies to improve household food security in this vulnerable age group.

Key messages

- In a rural area of Malawi, access to adequate food is dependent on seasonal variations.
- Men who live alone should be targeted for nutrition intervention strategies, due to their vulnerability towards malnutrition.
- Sustainable poverty alleviation programmes, which include older adults as a priority group are required in Malawi.

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SENEGAL

Comparative study of the nutritional status and risk factors for older people in rural (Ndramé Escale) and urban (Ouakam) areas

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Background

In Senegal, the rate at which the number of older people is increasing (3.5%) far exceeds the birth rate (2.7%). The proportion of the population aged 60 years and older is 7.5%, compared to 60% for the youth aged between 0 and 20 years. 38% of households in Senegal with more than 10 children are managed by older people without any financial aid. The older people are forced to participate in income-generating activities to subsidise the needs of their dependants. Most older people do not receive a retirement pension and their families are expected to be responsible for their social and health welfare.

The sub district of Ouakam has an estimated population of 50,000 inhabitants and its proportion of older people aged 60+ years is 7%. The largest ethnic group is the Lébou (61% of the population). The rural community of Ndramé Escale is situated in the Kaolack region. The main activity is farming. The vegetation consists of trees and herbaceous shrubs and the climate has a rainy season for four months and a dry season for eight. The total population consists of 11, 233 habitants, 2% of them older people. The largest ethnic group is the Ouolof (80%) and 99% of the population is Moslem.

The main economic activities are farming and livestock rearing. Agriculture is the principal activity of this community and contributes up to 80% of the wealth, followed by animal rearing. The area is affected by many problems - lack of vaccinations, poor infrastructure, lack of social services, insufficient grazing land and few watering points for the cattle, among others. Primary health care facilities are unsatisfactory and there is a shortage of drugs. Lack of awareness on health and hygiene issues leads to high cases of illnesses among children.

In Senegal, there is a willingness to address the issues of older people as evidenced by a seminar organised by the Ministry of Health and Prevention in January 2000, and the subsequent development of a Ministerial Council on Ageing in December 2001.

Objectives

(1) To identify and compare the nutritional status and health problems of older people in the urban areas of Ouakam in Dakar and in the rural community of Ndramé Escale (CRNE) in Nioro du rip Department.

(2) To identify risk factors for malnutrition in order to make practical recommendations to reduce malnutrition among older people.

Methodology

Eight trained fieldworkers collected data from 400 older people aged 60 + were recruited. The older persons were categorised according to age (60 - 69, and 70+), social status, presence of a disability, economic status, choice of meals, presence or absence of appetite, oral health, presence of conjunctivitis and their nutritional status (Suraiya *et al* 1999). Data analysis was performed using Epi-Info version 6.0.

Main findings

More men (53.5%) than women (46.5%) were recruited. More of the older persons in Ouakam village (51.5%) than in the CRNE (36.5%) were aged 70 + years. Older people from the CRNE reported more visual and hearing disabilities than those in Ouakam village (33.5% and 9.6%, respectively). Generally, visual impairment is the leading disability affecting older people (51%) followed by impaired mobility (37.5%) and then hearing disabilities (21.5%).

Loss of appetite affected one in three older people. Appetite loss was higher in older people living in the CRNE (83%) than those living in Ouakam (68%). The proportion of older people with self-reported poor oral health was similar in Ouakam (65.5%) and in the CRNE (60%). The proportion of older people suffering from paleness of mucous membranes, indicative of anaemia, was similar in Ouakam village (42%) and the CRNE (38%).

Undernutrition (MUAC < 24 cm) was found in 16.7% of older people (23.5% and 10.5% in the rural and urban areas, respectively). Based on a cut off value of BMI <18.5kg/m^2, the prevalence of malnutrition was 28% in the rural community and 14% in Quakam village (overall prevalence = 12.2%). No significant association was found between occurrence of malnutrition (using MUAC < 24cm) and the following: appetite loss, hearing disability, motor disability and being able to choose the kind of meal to eat. Malnutrition was associated with advancing age, paleness of mucous membranes, visual disability and poor oral health.

Older people reported that the main clinical disorder they suffered from was cataracts (51.2%) followed by co-ordination disorders (37.5%) and hearing disabilities (21.5%). These findings are similar to those of a WHO study, conducted in Senegal, in collaboration with the L'Institut Santé et Dévelopement (Institute of Health and Development) in which prevalence rates of 59.9%, 55% and 30.9%, respectively, were reported for cataract, co-ordination and hearing disorders.

Conclusions

A high prevalence of malnutrition was found in older adults in the present study, particularly in those living in rural areas. Of major concern is the finding that 1 in 10 older adults in the rural areas was found to be severely malnourished.

The high prevalence of visual and physical function disabilities has major implications for impaired food preparation and dietary intake.

Key messages

- Older adults living in rural areas of Senegal are at high risk of malnutrition.
- Dedicated health services for older persons are required in rural areas, accompanied by improved training of health-care workers regarding the specific medical and social needs of this age group.
- Intervention strategies to address the high levels of physical and functional disability among older people are required.
- Improved dental health and opthalmological services for older persons are integral to improving the nutritional status of this vulnerable group.

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* This study was carried out in 2002 and received financial support from HelpAge International

TANZANIA

Nutritional status of older people in Magu District

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Background

The assessment was undertaken in Magu District, one of seven districts in Mwanza region, in the western part of Tanzania. Five of the six administrative divisions were sampled. Main economic activities in the district are farming and livestock-keeping (85%), fishing (5%) and other activities (10%). The district per capita income was estimated to be 40,000 Tshs per annum in 2000.

The population densities are very high, while the soil is "Sukuma Catena" (dark grey, loamy sands and clay with poor drainage). Annual rainfall is erratic and low, at 700 – 850 mm. Land is in short supply. Food insecurity is experienced seasonally, particularly between July to September/November, when traditional storage food facilities reach low levels.

Objectives

(1) To determine the nutritional status and the causes of nutritional vulnerability among older people in Magu (2) To make recommendations for development, training and interventions for the community and to use the survey results to lobby for older people to be recognised as a vulnerable group.

Methodology

Cluster and random sampling of villages was conducted where Chabula, Mwamanga, and Kinango village were selected from zone "A" and Mwasamba, Nyakaboja, and Mwamagigisi were selected from zone "B". Fifty-five villages in the two zones were cluster sampled. The estimated sample size was 1,097 older persons aged 60 + years, but the realized sample size included 819 (76.8%) men and women. Age was mostly determined by historical events that occurred in Sukumaland since most older people in the sample area did not know their ages.

437 older men and women were interviewed for nutrition-related risk factors while anthropometric measurements were performed in 819 older people. Secondary data were reviewed from the District Planning Office, dispensaries and the District Medical Office. Data analysis was done using SPSS/PC+ (Statistical Package for Social Sciences).

Main Findings

The age distribution of older people was 60-69 (54.7%), 70-79 (32%), 80-89 (12.1%) and 90 + (1.4%). The sample comprised 59 % women and 41.1% men.

Nutritional status and food intake

Using a BMI of < 18.5kg/m^2 as a key indicator, women had a higher prevalence of malnutrition (10.6%) than men (7.6%) which was attributed to differences in eating patterns, witchcraft accusations due to cultural beliefs and differences in activities undertaken by the two groups. One and a half per cent of older men and women interviewed had oedema, an indicator of severe malnutrition. Prevalence and severity of malnutrition was highest in the youngest age group (60-69) years, with 1.8%, 2.6% and 5.3% having severe, moderate and mild malnutrition, respectively.

Older people reported that though fishing was the major economic activity in villages situated close to the shores of lake Victoria, the high demand for the most available species "*Sangara"* (Nile perch) by fish processing industries and for export markets limits their access to the fish. This has led to unaffordable prices for fish. Fishermen sell high quality fish to the export markets and substitute their meals with another type of fish "*Dagaa*" which is generally not enjoyed by older people. Fish intake has therefore declined. The availability of protein-rich legumes is dependent on rainfall.

Most older people living alone suffer food insecurity. Only 5.5% had access to income to cater for their basic needs; the majority (94.5%) had no income. Widows are denied rights to inherit land and therefore face land tenure problems. The main risk factors affecting food intake were food scarcity (80.3%) due to drought and poor harvest, food wastage (16%) due to poor storage, poor appetite (24.5%), lack of fruits and vegetable intake (23.6%) and the cultural practice of giving food as gifts to other relatives (31.1%) or for the purpose of feasts and celebrations.

Other major causes of food scarcity were inadequate access to land. Fifty-eight per cent of the older people who were ill also reported having land problems. Regarding food procurement, 42.1% produced their own food, 35.5% purchased it while 22.4% received assistance from different sources. A poor appetite was recorded in 15.1% of older people interviewed. This was attributed to poor health, psychological problems, unavailability of fish (the preferred food) and solitude (eating alone is culturally unacceptable and is associated with greed). These factors contribute to a low food intake, increasing the risk of malnutrition.

Health status

Of the 437 older persons interviewed, 67% of them reported being ill at the time of the interview. Only 30.7% of them had access to medication through dispensaries; 69.3% visited traditional healers when sick. Thirty-eight percent of the older persons were smokers and 26% consumed alcohol. Smoking and consumption of alcohol resulted in a higher risk of inadequate food intake and loss of appetite among older people.

Statistics were obtained from the "dispensaries" (i.e. community-based health centres headed by a qualified nurse). This information is entered into the district information system, and then fed into the national health information system). It showed malaria to be one of the top five diseases in the district. Most of the sick older people (85.3%) did not have mosquito nets, and may have been suffering from malaria. Most older people complained of Acute Respiratory Infection (ARI) and chronic coughing. Data from dispensaries identified a high prevalence of pneumonia among older people. Sixty-one percent of older people in the surveyed villages had impaired vision problems, while 16.5% had physical disabilities and 53.1% had chewing problems which influenced their choice of foods.

It was reported that 23.3% of the respondents had mobility problems, which limited their access to food and to health facilities. Seven percent suffered from poor co-ordination, needing full time assistance to live a normal, functional life.

Living conditions

Over a tenth (12.6%) of the older persons, mostly women accused of witchcraft practice, lived alone, while the majority (87.4%) lived with relatives. 28.6% received regular care from care-givers. Those who reported having no assistance (71.4%) attributed their situation to a breakdown in extended family support, caused by the HIV/AIDS pandemic and rural-urban migration of younger people. Grandparents commonly care for orphans, whose parents have either died of HIV/AIDS or moved to town and cities to look for employment. This is an added burden on older people, who often require care themselves.

Most older people lived in mud houses that are poorly thatched and therefore leak during rainy seasons. Many of the houses had no windows and had portable reed doors that offered no protection from attacks by intruders or elements such as rain, cold and insects. Only 8.7% of the older people owned blankets. The three main water sources were identified as sources provided by NGOs (37.5%), traditional wells (48.1%) and Lake Victoria (14.4%). Villagers walk, on average, 5 -10 kms to fetch water from the lake or other sources. Few (4.2%) older persons boiled their drinking water, mostly because they found it to be unpalatable when boiled and in practice it consumes valuable fuel.

Conclusions

Since fish (previously the main source of animal protein) is no longer widely available in the district under study, plant sources of protein should be actively promoted among older adults through nutrition education activities.

Household food security is unacceptably low and income-generating and agricultural initiatives are required to improve access to adequate food. Traditional taboos regarding food intake need to be discouraged to promote intake of a balanced diet, given the limited access to food. Low consumption of fruits and vegetables can be addressed through the promotion of food gardening.

The poor mobility of older adults indicates that nutrition-related interventions need to include a component of physical activity.

Key messages

- The recent decline of fish intake in older adults in Tanzania requires nutrition education strategies to encourage intake of vegetable protein.
- Health policy that mainstreams the needs of older people into existing health programmes is required to improve their access to medical services.
- The high prevalence of poor vision in the district indirectly impacts on nutritional status and improved ophthalmologic services are required to address sight-related problems in older persons.
- The finding that most of the older people who face land tenure problems are widows identifies a need for intervention by civic and legal rights bodies. Poor housing and infrastructure for older people in the district requires attention from development and government agencies.
- Malarial parasite control needs to be improved in Magu district.

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UGANDA

Nutritional status and risk factors for nutritional vulnerability among older people in urban Kampala and rural Soroti

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Background

Uganda is currently ranked 141 out of 162 on the UN Human Development Index (UNHDI), with over 50% of the population living below the poverty line. According to the 2002 Population and Housing Census, out of a population of 24.6 million people, older persons aged 60 years and older, comprise 6.1% of the total population (N = 1.5 million).

During a baseline survey conducted among older people in Uganda in 1994 (Anyuru & Anyuru, 1994), food shortage was found to be common in Tororo and Luwero. Half (48%) of the 375 older people ate only one meal per day, and some reported going without food for two days. A high dependency on relatives for food acquisition was identified. Most of the older people were caring for orphans, which reflects the findings of the UNHDI which reports that of an estimated 1.2 million orphans in Uganda, 50% are under the care of grandparents. Lack of income to pay school fees and buy non-food items was found to be a key risk factor affecting older women. Nutrition and health programmes in Uganda do not adequately address issues of older people and there are currently no interventions targeted at older people in emergency situations, despite the present volatile situation in the northern part of the country. Instead, issues relating to children, women and the disabled remain a priority.

A focus-group discussion with Mabira Women's Group in Kampala

Objective

To describe the nutritional status and risk factors for nutritional vulnerability among older people in the city of Kampala and the rural area of Soroti.

Methodology

A total of 362 older people, 50 years and above were interviewed. 52% of them were from Kampala and 42% from Soroti district. In each of the districts, four parishes were surveyed. To reach the study parishes within Kampala district, two stage random sampling was performed. In the first stage, two divisions were selected from the eight divisions. In the second stage, two parishes were selected from each of the selected divisions. Kisenyi I and II from Kampala Central Division and

Makindye II from Makindye Division were selected as study parishes. In Soroti District, a similar approach was used in selecting the study parishes from the two sub-counties. The study parishes from Soroti District were Kateta and Oliyo from Serere County and Arapai and Gweri from Soroti County.

Before pre-testing and data collection, permission was sought from the National Council for Science and Technology as well as from the respective local authorities and local communities in the study areas. In each parish, 50 study older persons were selected for recruitment. During focus group discussions the risk factors and interventions were discussed and observations made. Data analysis was conducted using EPI INFO (version 6.04) and SPSS (version 10 for windows).

Main findings

Using FAO and WHO age specific MUAC reference values of <22cm for women and <23cm for men, the prevalence of underweight was 2.7% in Kampala and 11.6% in Soroti (overall =7%). The prevalence of underweight, using a BMI value below 18.5kg/m^2 was 22.5%. Overall, 4.3% of older men and women were severely malnourished (BMI < 16), 5.2% had moderate malnutrition (BMI = 16 - 18.5), 14.9% were overweight (BMI = 25 - 29.9), while 13.4% were obese (BMI = 30).

The clinical signs observed for older people with malnutrition were dehydration (26.5% of all older people assessed) and self-reported extreme weakness (18.4%). The presence of these symptoms was irrespective of age group and urban/rural location.

The most common health conditions reported by men and women in both areas were fever/malaria (45.3%), poor eyesight (56.7%), joint pain/arthritis (54.2%) and abdominal pains (41.6%). Self-reported health status deteriorated with age.

Older persons prefer to attend private health facilities when sick due to the neglect they experience in public health sector facilities and to avoid queuing. Most also visit traditional herbalists for treatment. The older persons who do not access health facilities cited lack of money, long distances to facilities and lack of available drugs in public health clinics as the main reasons.

Care of and/or loss of children or a spouse affected about 70% of the older men and women in both urban and rural areas. The economic status and functional ability of older people was seen to be adversely influenced by loss of animals, at least in rural Soroti. Older people in Kampala were responsible for the care of more dependants (average = 7.28 people) than those in Soroti (5.47 dependants).

Regarding food consumption, older men and women reported substantial consumption of cooked bananas (80%), while fewer men than women consumed vegetables. Red meat was eaten once a week (by 42% of the respondents). However, its consumption was more prevalent in urban compared to rural areas.

Most of the respondents who consumed alcohol, or smoked/sniffed tobacco came from Kisenyi I & II (Kampala). The practices could be associated with the environment in which they live and work, where stimulants such as miraa, opium and tobacco are sold openly. Unemployment rates are very high in Kisenyi, hence the practice of illegal trading in drugs.

Conclusions and Recommendations

The prevalence of malnutrition, particularly severe malnutrition, is very high among older people in Uganda. Several risk factors contribute to nutritional risk, such as a poor health status, inadequate food intake, impaired mobility and harmful lifestyle behaviours.

A national governmental policy, which encompasses health and welfare sectors, is required to address the plight of the older population. Such a policy needs to promote good nutrition in older people, increase community understanding of issues relating to ageing and nutrition and enable skills development (at community level) in assessing their nutritional status. Strategies that improve household food security and result in greater income generation in older persons are integral to nutrition-related interventions.

Key messages

- A national policy is needed to address the poor nutrition and health status of older adults in Uganda, particularly in rural areas.
- Income-generating strategies are urgently required to improve older people's access to adequate and nutritious food.
- Older people are unable to access public-sector health facilities and perceive the services to be largely ineffective.
- Malarial control programmes need to better target older adults who appear to be at high risk.

References

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* This study was carried out in 2002 and received financial support from HelpAge International

4 ASSOCIATION BETWEEN NUTRITION AND SOCIO-ECONOMIC STATUS

BOTSWANA

Nutritional status of older adults according to socio-economic status in Botswana

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Background

Prior to this study, little was known about the nutritional status among older people in Botswana.

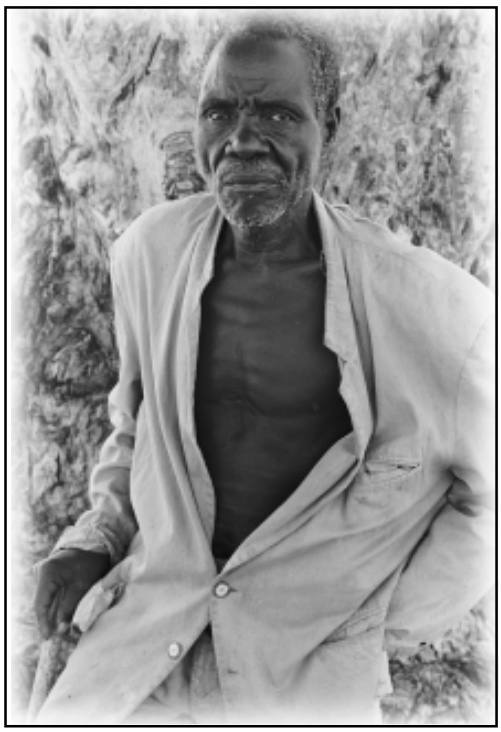
Objective

To describe food consumption patterns in relation to wealth status, age and gender among older adults in Botswana.

Methodology

Data were collected in 1998 as part of a national household survey of 1,085 inhabitants aged 60 + years in Botswana. A medical survey was carried out on a representative sub-sample of 372 respondents (the response rate was 72%) who were visited at home, interviewed with questionnaires (including a food frequency questionnaire) and subjected to a medical examination and weight and height measurements.

A socio-economic status index (SES) was constructed from the questionnaire used in the household survey by combining data in an additive index based on housing standards, ownership of livestock, access to arable land, ownership of residential property and educational background. The sample was divided into three groups according to SES scores (SES1= High, SES2 = Medium, SES3 = Low.)



Hein Du Plessis/HelpAge International

An older man living in poverty

Major findings

In this summary, only data related to health and nutritional status are reported. The age distribution of the study population was 60-69 years (45%), 70-79 years (30%) and above 80 years (25%). Gender balance was maintained.

The most commonly consumed items by this population were tea (usually with a lot of sugar), sorghum meal porridge and maize meal porridge. These were taken on a daily basis by 91%, 78% and 47% of the sample, respectively. Other common foods that were taken less frequently but at least once a week by more than 50% of the population were (in declining order of their popularity) bread, green leaves, milk, vegetables, meat and rice.

No significant differences were found between the high (SES1) and low (SES3) socio-economic strata with regard to the proportion consuming tea, sorghum meal, maize meal and rice. These food-items are relatively cheap, staple foods which can easily be stored for a long time. For the other foods (bread, green leaves, milk, vegetables, and meat) significant differences were found in consumption between the SES1 and SES3 groups. These are mostly "fresh" produce, which are more expensive and used in addition to the above-mentioned foods if the person or the household can afford them. The number of meals eaten daily in the population varied most commonly between two and three meals, with a significantly higher proportion of older persons in the SES1 group having more frequent meals than those in the SES3 group. Food consumption patterns did not differ between men and women.

BMI varied according to gender and age. 28% of women and 7% of men were obese (BMI = 30), while 15% and 20%, respectively, were underweight (BMI < 18.5). Underweight did not follow an age trend: 38% in the 60-69, 28% in the 70-79 and 34% in the above 80 age groups. 65% of those with a BMI above 30 were found in the youngest age group. SES was an important factor affecting BMI. Of the respondents with BMI below 18.5, 12.5 % were within the SES1, compared to 45% in the SES3 group. More respondents in the high SES1 group (37%) had a BMI above 30 compared to those in the lowest SES3 group (20%). 52% of the females and 36% of the males with BMI above 30 reported that they perceived their body weight to be "too low"

Conclusion and Recommendations

Tea and either sorghum or maize meal porridge are the most commonly consumed items among older people in Botswana. More expensive, fresh produce such as meat, vegetables, milk and bread are eaten more often by respondents in the SES1 group than those in the SES3 group. The number of meals is also positively associated with SES. In addition to higher SES status, obesity is associated with female gender and being aged between 60-69 years (compared to older age groups).

Key messages

- The development of culturally appropriate community-based strategies to improve the nutritional status of older adults in Botswana is complicated by the coexistence of both undernutrition and overnutrition in the same population.
- The prevalence of obesity is higher in those with the highest socioeconomic status, while underweight is highest in the poorest third of the population.
- Staple foods, maize or sorghum porridge, together with tea, are consumed equally by the older population in Botswana regardless of socioeconomic status.
- Frequent consumption of meat, vegetables, milk and bread is related to a higher socioeconomic status.

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GHANA

Nutritional status and socio-economic profiles of older persons in Accra

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Background

In recognition of the fact that the nutritional problems of older people are often related to the socioeconomic status at the household level, a study was undertaken in Ghana to assess risk factors for nutritional vulnerability in older adults, specifically their main sources of income, dietary habits, food intake and expenditure patterns. The information will contribute to the knowledge base on the nutrition issues of older people in Ghana, for the purpose of future lobbying for inclusion of this age group in programme and policy work.

Objectives

To identify sources of income, the care and living arrangements, food expenditure, dietary habits and food intake problems of older people in Accra, Ghana.

Methodology

Fifteen communities in Accra were selected through cluster sampling, from which 519 older people aged 65+ years were recruited. They were self-dependent, non-institutionalized, ambulatory and resident in Accra. Eligible older persons were not suffering from memory loss, were able to speak audibly and could respond to questions. Informed consent was sought of the respondents. Data storage and analyses were performed using EPI-INFO version 6. Students' *t*-test, Pearson's linear correlation analysis and multiple regressions were used to ascertain relationships between variables.

Major findings

Socioeconomic characteristics

The sample comprised 35% men and 65% women. A quarter of the older persons (26%) were married and living with their spouses, most (55%) were widowed, while 14 % were divorced and 5 % were single. More women (62%) than men (20%) had not received formal education. Most (68%) of the older people were not engaged in any economic activity, while 20% were employed in the formal sector. Of those who were working, petty trading and other vocational work and farming were the main occupations.

Monthly remittances from children and pensions comprised a major source of income for the older people. About 24% received monthly retirement benefits or a monthly pension. The key sources of pension were government (23%) and social groups such as churches and unions. The monthly pension received ranged from cedis 40,000 to 400,000 (USD$ 6.0 – 57.0) with an average of 100,000 (US$15) per month. Significantly more older men (51%; average monthly income = 140,000 cedis,(US$ 21)) than older women (10%; average = 100,000 cedis (US$15)) receive pensions. The mean total income received from pensions and other sources was 150,000 cedis (US$ 22.5) per month.

Of the 59% of the older persons who received regular remittances, 83 % of these received them from family members, mainly their own children and occasionally their spouses while 13.6% received remittances from other relatives, and the remaining 3.4 % of cases obtained support from benevolent organisations such as the church, HelpAge Ghana, St. Vincent de Paul Day Centre and philanthropists. No gender differences were found for sources of remittances.

The range of daily food expenditure was cedis 2,000 – 20,000 (US$ 0.3- 3), which amounts to a monthly food expenditure range of 60,000 – 600,000 cedis (US$9-90), the average being 150,000 (US$22.5). Mean reported monthly food expenditure matched reported monthly income.

83% of the older people had no financial investments that they were able to rely on for income in old age. In those who did have investments, the asset was usually a building or land (10% of the older persons). A quarter (24%) of the older persons lived in houses they owned, while the majority (67%) lived in houses owned by the extended family, and 9% lived in rented rooms. 61% lived with their nuclear family (their children and a spouse), while 14% lived alone. Those in the latter group were most prone to undernutrition either through lack of support and care or loneliness.

Social support

About 79% of the older people received visits from members of the extended family, 76% from their nuclear families and others (24%) from churches and benevolent organisations. 29% were visited at least once a week while 58% were visited at least once a month.

Nutritional status

The mean weight was 59.1kg and 62.5kg for men and women, respectively. Mean BMI was 18.0 for men and 19.5 for women. 62.2% of men and 44.6% of women were underweight, using a BMI reference value of below 18.5. Prevalence of underweight is given, according to age and sex, in Figures 4.1 and 4.2. A further breakdown of the BMI categories, according to sex is shown in Figure 4.3. Using a MUAC cut-off value of < 24 cm, the prevalence of underweight was 25.3% for men and 12.2 % for women, with an overall prevalence of 16.8 %.

Figure 4.1.
Nutritional status of older men in Ghana, by age group, using a BMI reference value of < 18.5 for underweight

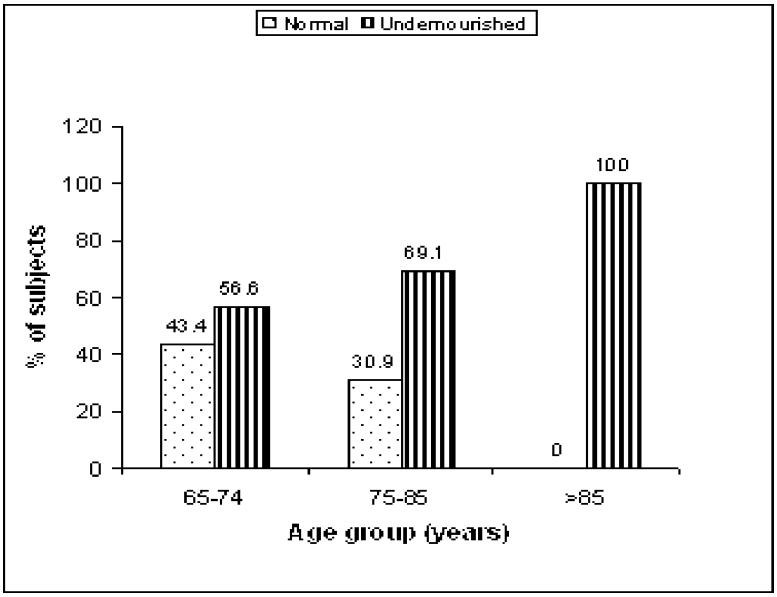


Figure 4.2.
Nutritional status of older women in Accra, by age group, using a BMI reference value of < 18.5 for underweight

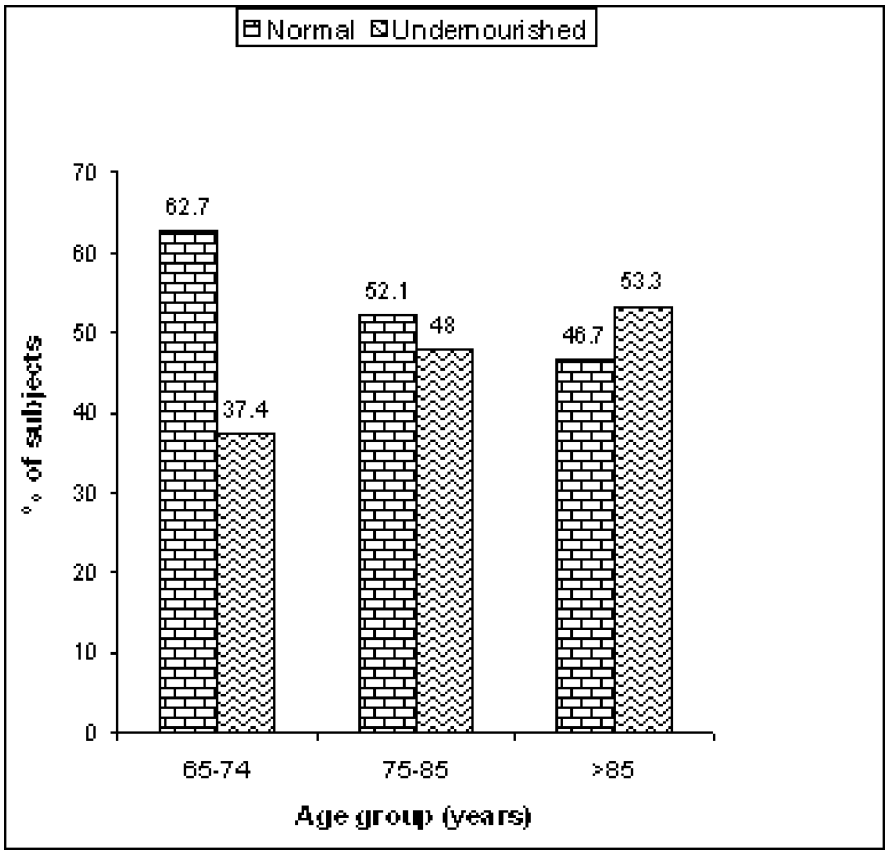
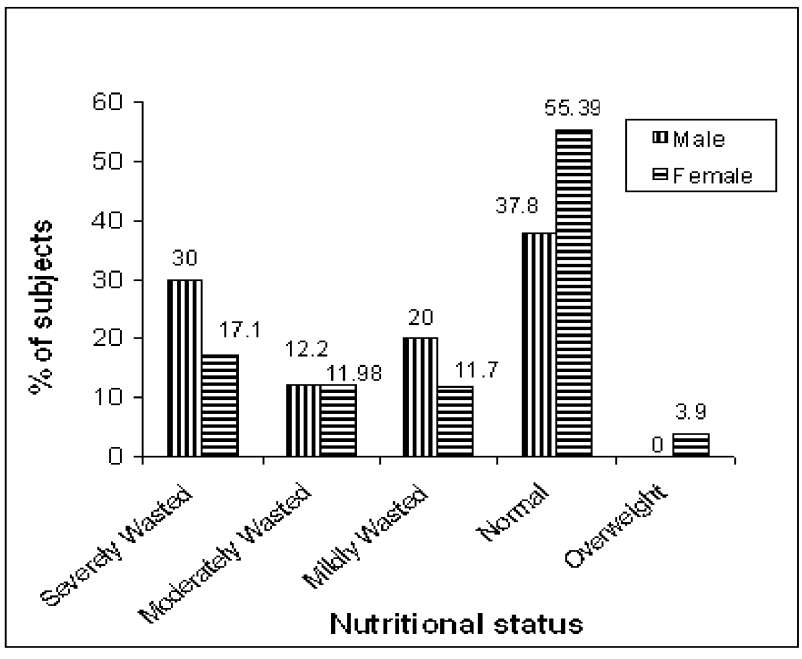
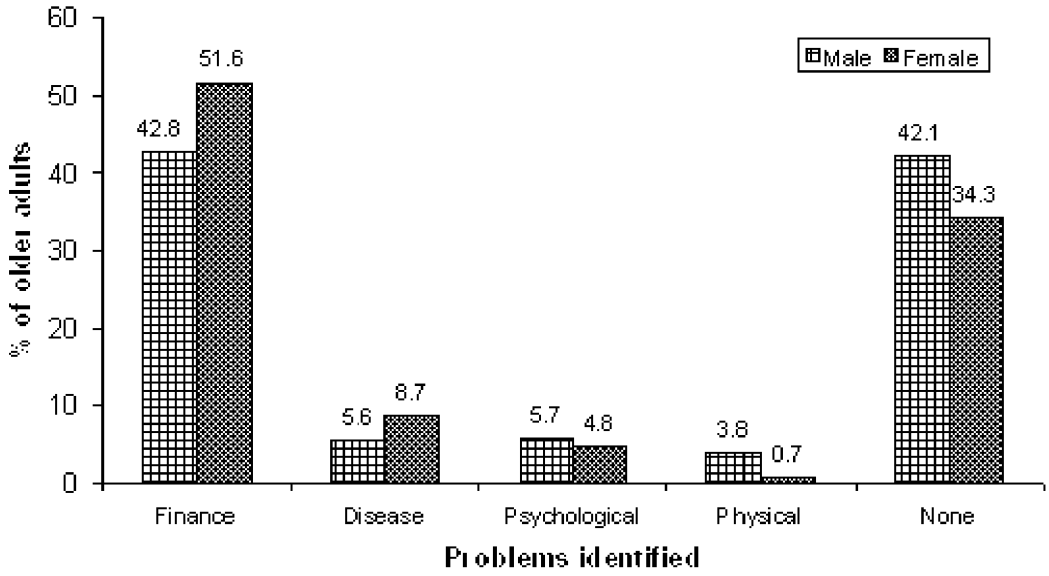


Figure 4.3
Nutritional status of older persons using BMI, according to sex



Over half of the older adults (58%) purchase their cooked meals from road-side vendors and kiosks (See Figure 4.4). Over a third (37%) were unable to identify problems affecting their food consumption. The major problem affecting food intake was lack of finances (identified by 49% of the older people). Psychological problems such as loneliness, bereavement and unhappiness were identified by 5% of the older people, while physical impairment was identified by 4% of the men and 1% of the women.

Figure 4.4
Self-reported "main problem" affecting food consumption by older Ghanaians



In terms of food security, 24% of the older people reported that they missed meals. Lunch was the meal most frequently skipped, with 33% eating only in the morning and evening. 87% reported having "breakfast" almost every day, but this generally comprised only a cup of coffee.

18% of the respondents relied on their nuclear families for food-related support, while 24% turned to benevolent organisations for meals. Only 20% of the people interviewed claimed that they never run short of food, a proportion that corresponds to the number that had formal employment.

Conclusions

The study findings have provided evidence that the older population in Ghana is living well below the internationally recognized poverty line (less than 1 US dollar per day). The nuclear family remains a major source of financial and social support for older people in Ghana. This is a group which is highly vulnerable to undernutrition, with a large proportion, particularly men, being underweight. Those at highest risk are those aged 75 years and over.

Key messages

- A subsidised feeding scheme targeted at older persons who are either already undernourished or who are most vulnerable (i.e. men, those aged older than 75 years and those without family support) is required.
- Retirement benefits are inadequate to meet the needs of older adults. It is recommended that pensions of spouses be transferable to the surviving spouse upon the death of a husband or wife.
- The nuclear family provides the main financial and social support to the older population in Ghana, but basic food needs are not being adequately met through this informal support system.

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KENYA

Structure of employment and income-generating opportunities for older persons in Machakos and Nairobi

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Background

This paper presents findings from a survey on the economic activities of older persons in Kenya and forms part of a major study conducted among older persons in Nairobi and Machakos districts. This paper focuses on one of the themes in the main study, namely the contribution of older persons to human welfare. The research question was "In what ways do the older persons in Nairobi and Machakos districts contribute to development?"

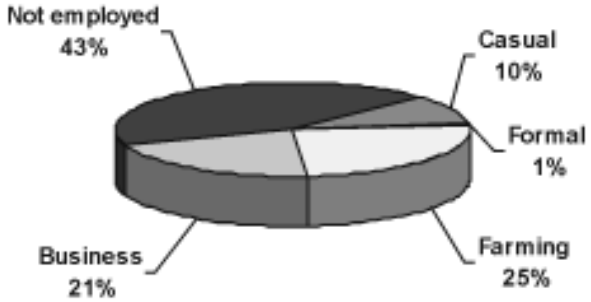
Methodology

Data was gathered using face-to-face interviews with 212 older persons over 50 years of age in the city of Nairobi and in Machakos District (a rural town) in Kenya. Through the logistical input from HelpAge Kenya staff, respondents were randomly selected from existing HelpAge Kenya projects - two in Nairobi and two in Machakos. In order to ensure socio-economic representation, the four projects were selected from middle-to-high-income areas (Lavington in Nairobi and Mumbuni in Machakos) and low-income areas (Kibera in Nairobi and Nguga in Machakos). Data gathered was analysed qualitatively and quantitatively using the SPSS programme. The chi-square test was used to analyse the significance of the employment patterns by different factors. Tests of significance (ANOVA and T-test) were used to test the significance of differences noted in income patterns of the sample.

Major Findings

57% of older persons in Kenya are employed in the informal sector, undertaking jobs such as businesses, farming activities and casual employment (digging/gardening, domestic work, security guarding and masonry) as reflected in Figure 4.5. Those not engaged in any form of employment comprised 43% of the older persons interviewed. In comparison, fewer respondents (1%) held

Figure 4.5
Employment status of older Kenyans



formal jobs than those who held informal ones.

More older people in urban areas were mainly involved in non-farming activities such as business (52.5%) compared to those in rural areas (21.9%). In the rural areas, farming comprised 70.3% of the activities undertaken, compared to 15.9% in urban areas. This trend is expected, given that the main source of livelihood of majority of persons in rural Kenya is agriculture-related. Adults are expected to acquire land either through purchase or inheritance. Older persons would therefore be expected to have land readily available for farming.

28.1% of urban dwellers were employed in casual labour, while in the rural areas 7.8% were casual workers. Despite attempts to find employment in the formal sector, many older people reported age discrimination. The Kenyan public sector workforce was downsized at the start of the 1990s, resulting in forced retirement of a number of older people. A total of 38,123 jobs were lost by June 1998 (Kenya (1998); Reform News (July – September 1998:6).

Analysis of employment by age demonstrated that respondents in the younger age group (50 – 59 years) were more involved in casual employment than the older people. The middle age group (60 – 70) concentrated mainly on business, followed by farming. The older age group (70+ years) undertook farming as a main source of employment. Some of the retired professionals were engaged in providing health services on a part-time basis to the community.

The study revealed that those with no formal education were more likely to engage in business (36.4%) and farming (36.0%); those with some formal education were more involved in farming. Small-scale business does not have many legal requirements, is easy to enter and exit, requires a variable starting capital and allows both the skilled and unskilled persons to participate (Aleke-Dondo *et al*. -undated, Daniels *et al*., 1995; Kenya, 1992). Activities included in this sub-sector include trade in groceries, charcoal/firewood, grains, clothes and hawking. Women are more likely to be involved in the sale of groceries while men sell mostly firewood and charcoal.

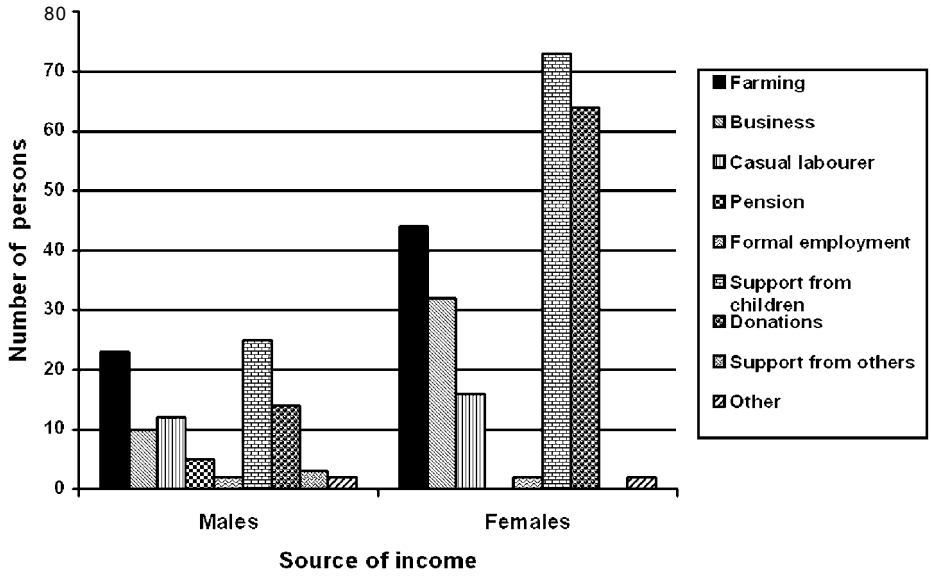
The total mean monthly income was Kshs.1,429 (US$18.3), which equates to less than a dollar a day. The main reported sources of income were support from children (30%), followed by donations (23%), business (12%), farming (15%), casual work (8%), support from others (5%), pension (1%) and formal employment (1%). Donations include food, clothes and money received from churches and organisations such as HelpAge Kenya (Figure 4.6).

Significant differences were observed in the mean monthly income based on gender, level of education and marital status. Men had a higher mean income (Kshs. 2,583=US$33.11) than women (Kshs. 1,025=US$13.1). Traditionally, women are expected to provide food for family subsistence, resulting in little produce being available for sale. Both men and women rely heavily on financial support from children, followed by donations and farming (Figure 4.5).

Older persons with no formal education had a lower mean income (Kshs. 1,078=US$13.8) than older persons with formal education (Kshs. 1,301=US$16.7 for those who had attained lower primary school and Kshs. 2,491=US$32 for those with upper primary school education). Only 3.3% of the older people had obtained secondary school and beyond (mean income = Kshs. 1,774=US$23.1). Those who were married had a higher income (Kshs 2,296=US$29.65) than other groups.

The following factors were associated with a poorer nutritional status: low levels of education, low income, male gender, rural area of residence, and older age. The rate of underweight among all men was 32.6% and 20.5% among the women. When the data was disagreggated by districts, Nairobi

Figure 4.6
Sources of income, by sex



men had a prevalence of 32.3% and women 12.8%. In Machakos 32.7% of men were underweight, compared to 24.7% of women. These gender differences were statistically significant ($p<.0.01$). The following self-reported factors were not associated with nutritional status - presence of injuries, physical disability, condition of eyesight, health status, frequency of meals, dependency levels and marital status.

Conclusions

Over half of the older people in Nairobi and Machakos districts in Kenya are involved in formal and/or informal employment activities such as farming and running small-scale businesses. This indicates that older people are still economically active, are able to use their initiative and skills to generate income and are able to contribute to the development of society.

Remittances from children and other types of donations make an important contribution to older persons' total income. Average income was Kshs. 1,429 (US$18.28) per person per month.

Key messages

- Low income, poor education, male gender, advanced age and living in a rural area are major risk factors for poor nutritional status of older Kenyans.
- Older people themselves and other stakeholders should be involved in designing and implementing beneficial income-generating projects.
- Older adults with appropriate skills could be incorporated in development projects, especially those aimed at improving the welfare of the population.
- Despite over half of older adults working for pay, reliance on remittances from family members remains an important source of income.

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* This survey was carried out in 2000 and received financial support from HelpAge International

SOUTH AFRICA

Analysis of food poverty of older people from different ethnic groups in South Africa

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Background

Food insecurity is a root cause of undernutrition in Africa. Nationally representative measures of household food insecurity are therefore useful for the targeting of nutrition interventions.

Objective

To determine the prevalence of food insecurity in older adults in South Africa according to ethnic group, size of household and area of residence, using secondary data analyses.

Methods

Secondary data analyses were conducted on data obtained in the 1995 Income and Expenditure Survey, a large representative survey of South African households conducted by Statistics South Africa. A quantitative, objective measure of food insecurity, termed *food poverty*, was created to indicate whether the amount spent by a household on food was inadequate to purchase a basic subsistence diet. A basic subsistence diet was calculated as the cost of purchasing a very low-cost food ration, using data obtained from the household subsistence levels series by the University of Port Elizabeth. This data takes into account cost of foodstuffs in 24 urban centres around the country, as well as the required nutrient requirements of the household, according to age and sex categories. The data were analysed by age of household (HH) head. Older HHs were defined as those headed by persons aged 60 years and older (n = 7 194), while young households (n = 21 510) were defined as those headed by persons younger than 60 years.

Main findings

Fifty percent of older person-headed households were considered to be in food poverty compared to 40.1% of young households ($P<0.001$). Overall, 43% of South African households were in food poverty in 1995. Dramatic differences in food poverty were evident according to ethnicity and age of household head, with black older person-headed households having the highest food poverty rates of all groups (65.4%) (Figure 4.7).

With the exception of Indian households, older person-headed households had higher food poverty rates than young households ($P< 0.05$). In small households of 1 - 2 persons, adjusting for per capita income, households headed by older persons had lower rates of food poverty ($P<0.001$), which was found for both urban and rural areas.

Opposite trends are seen in larger households. The state old-age pension income of older persons, per se, cannot be an explanation for the lower food poverty rates in smaller households, since these analyses controlled for per capita income from all sources.

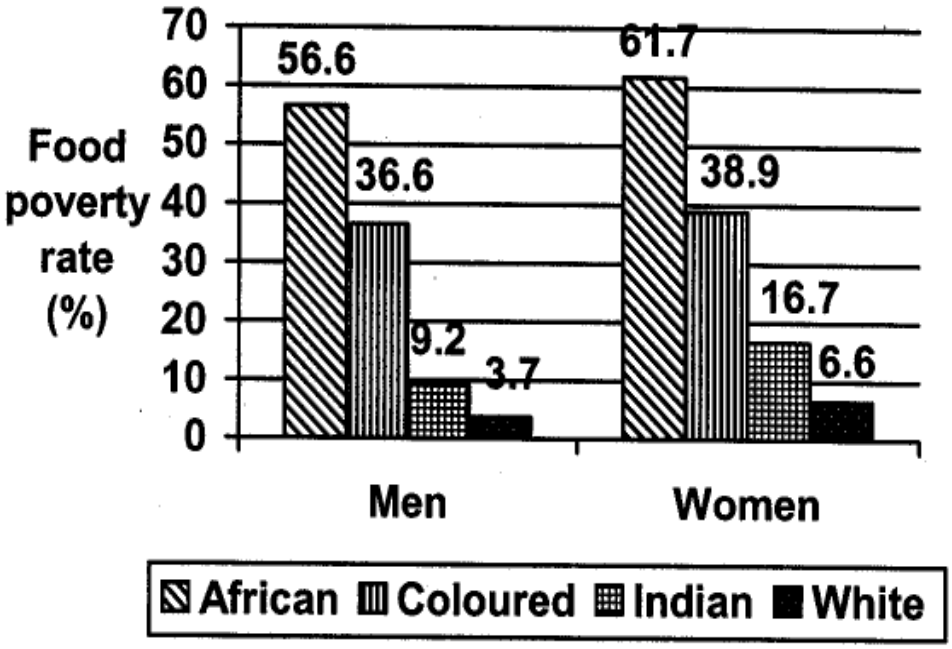
A possible explanation is that older persons are more likely to have assets that are not accounted for in survey questions on annual income. For example, they are more likely to own their houses and thus will have lower housing expenses compared to younger couples that are just starting up.

Thus their disposable income may be greater, enabling greater spending on food, and thus lower food poverty. The higher food poverty rates among larger older person-headed households is probably a demographic effect. Households headed by older persons will comprise more adults, whereas those headed by younger people, will comprise more children. The cost of a basic diet is higher for adults than children, so even spending a bit more, older person-headed large households may not be making up for the higher costs of feeding more adults.

Food poverty rates are higher in rural, compared to urban households, and this was found for all the ethnic groups. For black households of five persons (the average household size), food poverty rates in rural and urban areas were 71.2% and 61.1%, respectively (P< 0.001), for older person-headed households, compared to 63.1% and 47.9%, respectively (P< 0.001), for younger households.

Older person-headed households had lower annual income than younger households, expressed either as total household income (R26 442 versus R44 789, respectively; P<0.001) or per capita income (R9 243 versus R14 198, respectively; P<0.001).

Figure 4.7
Prevalence of food poverty in older person-headed South African households, according to ethnic group



Conclusions

Forty-three percent of all households in South Africa could not afford a basic subsistence diet in 1995, with older person-headed households being at greatest risk of food poverty. This study highlights the important role of household context in understanding the nutrition problems of older persons. Differences in risk of food poverty in South Africa are influenced by household size, urbanisation, and ethnicity.

Key messages

- An unacceptably high proportion of older South Africans, particularly black older persons, do not have access to a basic subsistence diet, placing them at high risk of malnutrition.
- Despite the existence of a non-contributory, means-tested state old-age pension in the country, it is evident that nutrition intervention programmes for older persons need to be implemented in order to improve household food security.
- At present, older South Africans are not included as a target group in any governmental nutrition programmes.
- Effective nutrition interventions will need to take into account social and demographic factors such as household size, urbanisation, and race.

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5 NUTRITIONAL STATUS OF OLDER PEOPLE IN EMERGENCIES

KENYA

Assesment of the nutritional status, food security, socio-economic status and care of older people in Lokitaung Division, Turkana District

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Background

Turkana district has a population of 447,705 people (1999 Kenya census) and is prone to recurrent droughts that often decimate over 50% of the livestock, which form the community's main source of livelihood. The three to five year cyclical droughts are caused by erratic and poor rainfall patterns and distribution. A drought had commenced in 1998 and by the time of the assessment, livestock reproduction rates and productivity in terms of meat and milk yields were low. In collaboration with Oxfam Great Britain and a UNICEF-led health and nutrition sub-committee, a nutrition assessment of older adults took place in Lokitaung, Turkana district, at the same time as Oxfam was undertaking their regular six-monthly assessment of children younger than five years. Older people are considered the custodians of the Turkana culture and they care for young children. They are highly respected and receive care from the community and family members, but due to the loss of animals, caregivers are threatened. Unlike children, older persons are not targeted for supplementary feeding schemes.

John Cobb/HelpAge International

An older woman carrying food rations

The assessment was an effort to gather information for advocacy of the needs of older people in emergencies since older persons had previously been excluded from regular assessments by aid agencies.

Objectives

(1) To describe the situation of older people in emergency situations, with special focus on their nutritional and socio-economic status; (2) To test tools used to identify malnourished older people in emergency situations; (3) To identify risk factors for older people in Lokitaung Division , to make recommendations for targeting older people in emergencies

Methodology

Both older people and children under five were assessed. Oxfam focused on children under the age of five, while HelpAge International focused on the situation of older people above 50 years of age. The 30-by-30 cluster sampling method was used in the survey for children. For older people, a 30-by-15 cluster method was used since the number of older people is about half of that of children under five, who make up 20% of the population. A list was made of all villages in Lokitaung division, together with their respective population. Assigning probability ensured that selection was proportional to the population size and that each village had an equal chance of selection. A total of 30 clusters were selected from 24 villages.

Within the selected villages, a centre that divided the populations into two equal parts was found. A random direction was selected from the centre of the village by spinning a pen. The team then walked to the periphery of the village, counting the houses in the given direction. After this, a random number was selected to determine the starting point. The group focusing on older people went in the opposite direction to those assessing under fives. A check list of key indicators was discussed in groups and anthropometry/ household questionnaires were administered at household level.

Children between 6 and 59 months (measuring 65-110cm) were included in the survey. Children of a height less than 85 cm were measured lying, while standing height was measured in those above this measurement. Weight/Height index was used and a child considered malnourished (wasted) if he/she had a Weight-for-height (WFH) which fell below –2 Z scores from the median of the reference healthy population, or had oedema. A child who had a Z score below -3 or who suffered oedema was defined as being severely malnourished. Oedema was defined as the remains of a visible dent on the foot after normal bilateral thumb pressure was applied on both feet for three seconds.

A total of 457 older people were assessed. Key indicators for health and nutritional vulnerability in older people including morbidity, functional ability, psychosocial problems, changes in economic and social risk factors were identified. The same indicators were assessed at household level, including anthropometric measurements and observation of clinical signs.

A total of 12 focus group discussions (FGD) of older people and their caregivers were held. Focus groups were randomly chosen from the 30 clusters based on their livelihood activities. Four of these clusters were from a fishing area, four from a pastoral zone and four from peri-urban centres. Discussions were participatory and gender balance was observed in each group. Data was analysed using Epi Info 6.04 with the nutritional analysis performed by the EPINUT programme.

Major findings

22.9% and 20.5% of older persons had a BMI indicative of moderate (BMI = 16-16.9) and severe (BMI < 16) malnutrition, respectively. The prevalence of malnutrition assessed using a MUAC reference value of less than 22cm was 19.5% for men and 17.7% for women. No association between age and nutritional status (assessed using either BMI or MUAC) was found.

Loss of economic livelihood negatively affects the nutritional status of older people. Older people who reported having received gifts from their family (in the form of livestock products, money, indigenous fruits and part of the food ration given by humanitarian agencies) had a better nutritional status (higher MUAC and frequency of meals/day) than those who did not receive donations.
Other factors that were found to adversely affect the nutritional status of older people, based on MUAC assessment, were loss of a caregiver, loss of formal employment (during the first year of retrenchment), and evidence of symptoms of severe depression and reporting of raids by Karamojong neighbours in Uganda. During raids, younger people escape, leaving behind older persons and the livestock.

The presence of dehydration, extreme weakness, oedema, vomiting, immobility and kyphosis (extremely bent backs) were entered into regression models to determine predictors of poor nutritional status (MUAC < 22cm). Oedema, dehydration, immobility and extreme weakness were found to predict the nutritional status of older people, followed by vomiting. Musculoskeletal conditions, such as arthritis (53.8%) and backache (43.3%), as well as abdominal pains (37.2%), loss of teeth/dental problems (28.7%), poor eyesight (43.9%), having child-care responsibilities (12.7%), and impaired mobility (3.1%) adversely affected older people's nutritional status.

During focus group discussions, older adults claimed that the transition from livestock-trading to a cash economy had negatively affected their well being and ability to cope. Being a predominantly pastoral community, with little or no literacy skills, the repeated droughts and political unrest had diminished grazing opportunities for their livestock, and had depleted the availability of indigenous fruits. Older people measure their food security in terms of the number of animals they own, and were thus experiencing severe food insecurity. They had learnt to eat maize and beans, provided by food relief agencies, in order to survive. Older adults reported that they felt powerless and depressed in their current circumstances, but that the church met their emotional needs.

Since 1999, registration for food aid has depended on the presence of a child, pregnant or lactating women or a caregiver. Thus, a group of older people were unable to register for aid. Many agencies do not have the skills to screen older people for selective feeding programmes. The general food ration, comprising yellow maize and beans, was not appropriate for older people. 81% reported disliking the yellow maize because of chewing difficulties (60%), tastelessness (32%), and difficulty to mill (19.3). "Unimix" (a corn, soya bean and powdered milk supplement, with added vitamins and minerals) is commonly provided to children under five, and is occasionally given by the World Food Programme to older people in supplementary and therapeutic feeding schemes. Unimix is preferred to the maize and beans by the older adults.

Older people had no access to health facilities due to lack of money. Some obtained income by selling part of their food ration. Among the various groups, malnutrition among older persons was highest in the peri-urban community (18.8%), followed by the fishing community (15.3%) and then pastoralists (11.5%).

In children, the prevalence rate of global acute malnutrition (wasting: WFH < -2 and >-3 Z score) was 19.1% (95% Confidence Interval = 16.6 – 21.9%). Severe acute malnutrition (WFH < -3 Z score) was 2.6% (95% CI = 1.7 – 3.9%). The situation had rapidly deteriorated from March 2001, when global and severe malnutrition was found in 9.9% and 1.0% of children, respectively. The high levels of malnutrition were attributed to several factors:

- Reduced coverage of relief food aid to a destitute population who had already lost their livelihood.
- Reduced coverage of the under fives with Unimix supplements (i.e. 72%).
- High crude mortality rate of 2.0/10,000/day and under 5 mortality rate of 3.1/10,000/day.

The Centre for Diseases Control (CDC) references interpret this data as a *relief program in a very serious situation*.

Overall, the nutritional situation of older people and children under five in Turkana can be considered serious. This is expected, given that this is an emergency zone where the population depends on food aid due to persistent drought. The main food-related coping mechanisms of older persons was relief aid (72%), support from family (7%), livestock products (7%), crops (4%), purchase from the marketplace (6%), and wild foods (6%). In addition, sale of local brew helped to generate income to purchase food for the family.

Conclusions

NGOs and donor communities need to incorporate the older population group in their intervention strategies.

Due to the complex nature of the underlying problems in drought-stricken areas and areas of political unrest, there is a need for multi-sectoral and multi-disciplinary approaches when carrying out research in emergency situations and in the subsequent implementation of programmes.

Key messages

- In pastoral communities, older people suffer from serious malnutrition during emergency situations and should be targeted for nutrition-related assessments and interventions. Older people targeted for selective feeding programmes can be identified using key indicators such as clinical signs, lack of social support and anthropometric measurements.
- Older people are often excluded from food aid programmes due to their nomadic lifestyles. Ways to improve the access of older persons to food aid requires investigation.
- The unacceptability of some of the food items provided by food aid programmes by older adults warrants consideration of appropriate alternatives with similar nutritional value.
- Though different indicators were measured, the prevalence of global and severe acute malnutrition was high among both the under fives (data not shown in this report summary) and older persons, identifying both as vulnerable groups.

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* This assessment was undertaken in 2001 and received financial support from HelpAge International

KENYA

Assessment of the nutritional status, food security, socio-economic status and care of older people in Wajir district

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Background

Wajir is located in Northeast Kenya and borders Somalia and Ethiopia. According to the 1999 census, Wajir has a total population at 320,000 people and is classified as an arid area, prone to drought. The average rainfall is 250 mm, occurring twice a year with the *Gu* or long rains taking place from March to May, and the *Dehr* or short rains occurring between October and November. Nomadic pastoralists of Somali ethnicity comprise almost 80% of Wajir's population. Livestock-keeping is the mainstay of the community. The staple diet consists of meat, milk and grains. Families migrate seasonally in search of pasture and water sources, and may settle for weeks before moving off again. During times of drought, families are forced to cover long distances in search of food and pasture. Faced with such adversity, family members who are unable to make the journey (children, mothers, older people and disabled people) are left behind in the care of other relatives. Wajir District has experienced a series of climatic disasters since 1990, which have impacted heavily on the nutritional status of the inhabitants, resulting in high levels of food insecurity.

Objectives

(1) To understand the situation of older people in the prevailing drought situation; (2) To identify risk factors that contribute to older people's increased nutritional vulnerability; (3) To determine the prevalence of malnutrition among older men and women in Wajir, in order to recommend strategies to address the nutritional needs of older people in emergencies.

Methodology

The nutrition survey was conducted in September 2001, in Central and North West divisions. The survey was undertaken in collaboration with Save the Children (UK). Using the 30-by-30 cluster sampling method (FAO/WHO) for children under five, every older person living within a household with children was assessed. Thirty clusters were selected from each region, resulting in a total of 60 clusters for the entire survey. The households were selected by first locating the centre of the cluster, and then randomly selecting the first household.

The questionnaire requested for anthropometric and health information (weight, height, and MUAC), clinical indicators, social risk factors and health problems. The care and food questionnaire sought information on functional ability, availability of care givers, household food distribution patterns, number of meals eaten in a day, acceptability of general food rations, and habits that impacted on health. The mortality component of the questionnaire obtained information on the number of older men and women that had died one month prior to the study and the likely causes of death.

Main Findings

The mean weight for men was 56.6 kg and 49.7kg for women, while the mean BMI was 19.6 and 20.1 for men and women, respectively. 19.6% of men and 20.1% of women had a BMI < 18.5.

The mean MUAC for the population was 24.1cm for men and 24.6 cm for women. At household level, joint pains and backache were reported as the main health problems. Other commonly reported disease conditions were (in descending order of frequency) fever/malaria, poor eyesight and coughing. Although 44% of older people seek medical help from government hospitals, 34.5% do

not seek medical help. The main reasons (accounting for over 60%) for non-attendance at clinics were wanting to be alone and feeling too sick/weak to attend.

Registration for food aid, which was completed in 1999, was based on the presence of a child, a pregnant or lactating woman or a caregiver. As a result, there are a group of older people who are not eligible to register for food aid.

The general food ration was not appropriate for older people as they report disliking yellow maize and prefer *Unimix* (soya/milk powder supplement) and softer food that was easier to digest. The general food ration per adult per month composed of maize (13.8kg), pulses (2.4kg) and oil (0.75 litres). At times, availability of the ration was unreliable. Older people observed that the types of foods provided were not commonly consumed by their community and were therefore disliked by the majority of the older people. Some sold their rations to buy other foods that they preferred e.g. milk, tea and sugar. The maize was sometimes ground to make flour for porridge. The very old people preferred fluid foods due to dental problems. A 58-year-old reported "*When maize is issued without oil, it is unpalatable and pulses give us a lot of stomach problems*."

The following factors which affect the nutritional status of older people in emergencies were identified: relief rations are often given away since the food is unfamiliar to older people and requires a long cooking time; and reduced coping mechanisms, due to unavailability of wild fruits and losses of livestock.

Conclusions

Donor agencies do not currently consider older people to be a high-risk group, to be targeted for food aid, in emergency situations. In addition, the types of food rations provided are largely unsuitable for older persons. A greater awareness relating to the health and nutrition needs of older people in emergency areas is required among community based organisations and local and international NGOs involved in relief programmes.

Mobile clinic outreach programmes are needed to address the health problems of older persons living in the Wajir district of Kenya.

Longer-term strategies, such as animal restocking programmes, are required in pastoralist communities, to supplement the general food rations provided during emergency situations and to help re-build the local food supply. Older people need to be included in micro-enterprise initiatives and localised income-generating activities to help reduce poverty and create economic independence.

Key messages

- Older people in emergency situations are excluded from food relief programmes unless they are caring for children.
- The high prevalence of underweight has identified that older adults are highly vulnerable to undernutrition in emergency situations, and should therefore be targeted by donor agencies as a priority group.
- The types of food items provided in food aid rations should be revised, according to the usual food consumption patterns of this age group.

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MOZAMBIQUE

Traditional foods eaten by older people in Chokwe

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Background

In Mozambique, during food crises, older people collect plants and fruits from forests, lagoons, riverines and plains as food for their families and for selling to generate income. In March 2002, the Ministry of Health in Mozambique in collaboration with Vukosha, a non-governmental organisation, undertook an assessment of the indigenous foods consumed by older people in Chokwe District. The study took place in 8 villages of Chokwe District, namely Machinho, Djodjo, 25 de Setembro, Lhate, Chokwé, Bombofo, Lionde and Marrambajane.

Objective

To identify the most commonly consumed wild foods by older people in Chokwe.

Methodology

240 older people were randomly selected from 30 households. The eligible age for inclusion in the survey was 55 years for women and 60 years for men. Data was collected through administration of a semi-structured questionnaire and a food frequency questionaire, focus group discussions, and observations. The data was analysed using the statistical programme Epi-Info, 6.1.

Main findings

The frequency of food consumption by older people varied between one and two meals per day. The most commonly consumed foods were cereals, tubers, vegetables, leguminous plants and traditional fruits. Animal protein foods were consumed once in a month or not at all. The low consumption of animal proteins was attributed to lack of money.

The main sources of carbohydrates consumed were maize (99.9% of older persons) and rice (81%). Cassava (91.2%), pumpkin (88.7%) and orange-fleshed sweet potato (79.2%) were the most commonly consumed tubers. In this group of tubers, Mativu *(Cleonse stricta)* a traditional tuber was consumed by 57% or more of the older people throughout the year, particularly during the dry season.

Traditional vegetables (Mutangau) and the dark green leaves (pumpkin, sweet potato, nhemba and cassava) were already well known (95.3%) and were identified as part of the normal diet of older people during the rainy season. The other commonly consumed vegetables were Borrovolo (*Garcínia livingstone*), Bangala, Guche (*Xanthocereis zambesiensis*) and M´boa /Tseke (*Carchorus tridem*).

Timongo (*Amaranthus gracciazans*), a leguminous plant, was consumed by 90% of the older people. The historical canhu nut is consumed by over 60% of the older people. Being one of the main ingredients of the local cuisine, it is more popular than the cashew nuts, which are consumed comparatively less frequently (18.6%). More than 50% of the older people interviewed ate Tintoma (*Euclea crispa*), Tinhiri (*Sophora inhambansis*) and Tinwambo (*Sponea aquatica*), which are indigenous fruits predominantly eaten during the dry and rainy seasons.

60% of the indigenous foods were obtained from the forests, 23% along the rivers, 11% from home gardens and about 5% from lagoons and plains. Some poisonous indigenous vegetables, specifically Vutchingua *(Amasathus liybriduis),* were reported to cause leg swelling when consumed excessively.

Conclusions

Older persons play a role in contributing to household food security by providing indigenous sources of food during food shortages. During times of famine, a high reliance on indigenous foods is evident. The easily acquired foods were generally consumed on a daily basis, while those that needed to be purchased were consumed rarely. It is recommended that a biochemical analysis of these traditional foods is undertaken, to assess the contribution to macro- and micronutrient intake in this population.

Key messages

- Older people in the Chokwe district of Mozambique rely heavily on consumption of indigenous, wild foods during times of drought and famine.
- The biochemical composition of these food items should be determined in order to assess their contribution to the total nutrient intake of older people.

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SIERRA LEONE

Risk factors for older people in Kenema

Dolline Busolo, HelpAge International Africa Regional Development Centre, Kenya.

Background

Each year, disasters and conflicts affect millions of people all over the world. In 2000, over 53 million people were estimated to be refugees or internally displaced people (IDPs). Population displacement, conflict, family separations, food insecurity and loss of livelihoods contribute to the erosion of social support systems in emergency situations.

Older people are vulnerable during emergencies due to individual and population risk factors. While they are commonly accepted as being a vulnerable group at present, very little is done to meet their particular needs in emergencies. Humanitarian interventions often ignore this group, partially due to lack of clear targeting indicators. Agencies have spent significant resources in developing and improving best practice protocols for emergency nutrition interventions for children. However, significant gaps exist in the knowledge, skills and capacity of the humanitarian agencies to respond to the nutritional needs of older people. HelpAge International (HAI) is in the process of refining key indicators that will improve the targeting of older people for emergency interventions.

In February 2002, the Current Evangelism Ministries (an NGO in Sierra Leone) in collaboration with HelpAge International, undertook a nutritional assessment in older people in Kenema District, prior to a relief food distribution programme in the area. At that time, 1.5 million IDPs in Sierra Leone had lost their economic and social support systems.

Objective

To assess the nutritional status of older people in Sierra Leone and to identify community based risk factors that could lead to reduced food in older people at nutritional risk.

Methodology

Functional ability, trauma, self-reported health status, socio-economic factors and perceived change in food security were the key factors assessed. Anthropometric measurements were taken for weight, height and mid-upper arm circumference (MUAC). Data was collected using non-structured interviews using checklists, key informant interviews, focus group discussions, observations of clinical signs (oedema), and household surveys. A sample of 167 older people from an inventory of 1300 vulnerable older people responded. EPI-info 200 and SPSS was used for data analysis. Correlation analysis was undertaken between the risk factors, clinical signs and the anthropometric indicators (BMI and MUAC) to determine best predictors for nutritional status.

Main Findings

60% of the older people depended on relief (maize) as their main source of food. According to BMI categories, 20% of the older people were of desirable weight (BMI = 18.5 - 25), 4% were overweight, while 31% were mild to moderately underweight (BMI = 16 – 16.9), while most (45%) were severely underweight (BMI < 16) (42% of men and 46% of women). Average BMI was 17.4 in women and 16.7 in men (no gender-related difference). Using MUAC values revealed similar results, with 41% suffering severe malnutrition (MUAC <16 cm). Women had an average MUAC of 18.4cm, and men an average of 17.7 cm.

80% of the older men and 40% of older women prepared their own food. The most prevalent risk factor for poor nutritional status, which was identified by the older persons themselves was caring for children (43%). Severe malnutrition was found to be highest in those living alone (50%), followed by those who had lost animals (50%) and in those who had lost children/spouses (49%).

46% of men and 64% of women reported joint pains/arthritis. Clinical signs of the following were observed: dehydration (24.3% of men and 32.0% of women) and oedema (19.3% of men and 6.8% of women). 44% of older people were not able to walk more that 2 km.

50% of the men and 55.72% of the women sniffed tobacco. Men also identified chewing of kola nuts as a risk factor for nutritional well being. They reported spending a relatively large proportion of their money on kola nuts, in order to delay hunger pangs, rather than purchasing food.

Conclusions

A very high proportion of older people living in an emergency area of Sierra Leone are malnourished. Severe malnutrition is particularly common. It is proposed that risk factors for nutritional vulnerability among older people may be a sensitive indicator of a household's nutritional status when considered in conjunction with levels of undernutrition in children under five years.

The risk factors that predicted nutritional vulnerability among older people were living alone, child-care responsibilities, immobility, loss of a source of income, and reported psychosocial problems. The key clinical signs of undernutrition were dehydration and oedema.

Both MUAC and BMI are useful indicators of nutritional status in older men and women. These key indicators should be considered for targeting of older people during emergency rehabilitation and assessment programmes. In the absence of anthropometrical measurements (MUAC and BMI), the identified risk factors could be used to identify older people at highest nutritional risk.

Key messages

- Older people in emergency situations are at extreme risk of undernutrition, assessed using either BMI or MUAC measurements.
- Risk factors for malnutrition in this vulnerable group include living alone, having child-care responsibilities, the loss of nuclear family members, the loss of livestock, as well as the presence of psychosocial problems.
- Older persons need to be considered, together with children under five years, as a priority target group in nutrition programmes, including food aid, undertaken in emergency situations by humanitarian organisations.

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SUDAN

Case study of supplementary selective feeding programmes by *Action Contre la Faim* and HelpAge International in Juba

Action Contre La Faim (ACF) and HelpAge International (HAI) in Juba

Background

During the International Year of Older Persons in 1999, HelpAge International (HAI) undertook awareness-raising activities on the situation of older persons in Juba, Sudan. In the process, it was recognized that many older persons had no access to feeding programmes due to lack of family support or neglect.

In August 1999, community mobilization efforts began to identify cases of housebound older persons with severe malnutrition who required therapeutic feeding. By April 2000, 100 cases had been assisted and recovery was observed to be successful with no individuals regressing back into the state of severe malnutrition.

In August 2000, HAI began implementing a community-based programme designed to improve older people's access to health and nutrition services. Further cases of severe malnutrition, particularly amongst housebound older people or those with poor mobility, were identified. In October 2000, at the request of HAI, *Action Contre La Faim* (ACF) agreed to increase its capacity at the Therapeutic Feeding Centre (TFC) to admit severely malnourished older people referred by HAI community workers. The project was aimed at providing therapeutic feeding facilities to older persons with severe malnutrition in Juba and surrounding accessible areas and to provide supplementary feeding to patients who were discharged from the therapeutic feeding programme.

Objective

To document the feeding programme provided to severely malnourished older persons admitted to an NGO-operated therapeutic feeding centre in Juba, Sudan.

Major Findings

Between October 2000 and February 2001, 103 adults and elders were admitted into the ACF Therapeutic Feeding Centre and treated as follows:

The nutritional treatment of severe malnutrition in adults and older persons is based on the same formula used to treat children, F75, F100 or HEM[1] , porridge, family meal and fruits/vegetables), with added minerals and vitamins. However, the amount of milk given per kilogram of body weight is much less for adults than children as dairy-related energy needs decrease with age. The nutritional treatment is divided into four phases.

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[1] F75 and F100 are therapeutic milks used in Phases I and II in the treatment of severe malnutrition. F75 has an energy value of 75 kcal per 100 ml, while F100 provides 100 kcal/100ml. Both milks are fortified with vitamins and minerals. HEM = High Energy Milk formula is Dry Skimmed Milk + Oil + Sugar + Complex of minerals and vitamins.

Phase 1: During the acute phase of the treatment, older people and other adults receive only a diet of F75 milk, which contains low levels of protein, fat and sodium. The initial goal of this phase is to prevent further tissue loss. The average duration of Phase 1 is four days. When appetite is regained and, as in the case of kwashiorkor, as the oedema is reduced, individuals are promoted to the transition phase.

The transition phase: This_allows gradual increase in the amount of protein and fat, in order to restore the physiological imbalances and avoid any abrupt changes in diet (from F75 milk to F100 milk). After 2 days in the Transition Phase, older adults enter Phase 2.

Phase 2 (Rehabilitation phase): Beneficiaries begin to regain lost weight and appetite increases. During rehabilitation, older persons and other adults become very hungry and often refuse the formula feed (i.e. milk), demanding solid foods.

At this stage, meals are given, based on the recipient's traditional foods with added oil, minerals and vitamins. The diet comprises a variety of foods and allows the older people to eat as much as they desire. The variety of food includes vegetables (tomatoes and green leaves), beans, meat, fish and fruits. Older adults continue to receive the formula feed (F100 milk), which is supplemented with porridge made from corn soya bean (CSB), oil and sugar, and enriched with vitamins and minerals. At this stage, eight meals (7 servings of milk and 1 of porridge) are provided to the beneficiaries each day, as they still require intensive care. The beneficiaries move onto the Consolidation Phase (Phase 3) once they reach a BMI equal to or above 15 (for older persons) or a BMI equal or above 17 for other adults.

Phase 3 (Consolidation Phase): This is the final stage of the treatment where the beneficiary is prepared for discharge. The beneficiary continues to receive a formula feed (F100 milk) but the number of meals is reduced to five. They continue to receive porridge made from CSB, oil and sugar and enriched with a mineral and vitamin complex. The family plate (pulses, vegetables, meat and fish) and fruits continue to be provided for adults and older persons in this phase.

All adults and older persons received systematic treatment, which included vitamin A, folic acid, amoxycillin, mebendazole, ferrous sulphate and chloroquine. They were attended to by a medical assistant every day in Phase 1 to assess and follow up on their underlying medical problems. In Phases 2 and 3, older adults were attended to once every two days. For those whose condition was deteriorating, reviews were increased to once a day until their condition improved. Specific treatment was given according to diagnosis.

During the treatment, health education relating to the prevention and management of malnutrition was imparted to the beneficiaries on a daily basis.

Health educators also tackled the problem of defaulters from the centre. During the reporting period, the number of defaulters among adults and older persons was 5.4%, which was considered to be satisfactory (target of the ACF is <15%). ACF health educators and home visitors continued to spread messages in the community about malnutrition. The main reason for defaulting was the preference for special solid food instead of the formula diet (i.e. milk).

Adults, mainly pregnant and lactating women, are discharged from the feeding centre when they are considered to be eating well, have gained weight, have maintained a BMI of equal or above 17.5 for 8 days, no longer have oedema for 15 days and are able to walk. For older people, the same criteria apply, with the exception that BMI should remain equal to or greater than 16.5 for at least 8 days.

The outcomes of the individuals followed up during the study period study were as follows:

- Of the 103 admitted, 68% (17 adults and 53 older persons) were successfully treated during the period. By the end of Feb 2001, 19 adults and older persons were still being treated in the TFC.
- 2 adults and 8 older persons were transferred to hospital. Among the 8 transferred older people, two died (one due to TB and the other due to severe pneumonia), while the remaining 6 were later discharged from hospital and went home.
- Four older persons defaulted during the reporting period (Default rate = 5.4%).
- No deaths of adults or older persons occurred in the TFC between October 2000 and February 2001.
- The average weight gain for both adults and older persons was 6.6g/kg/day and the average length of stay for both adults and older persons was 42.1 days.
- The average weight gain was lower than ACF's general recommendations[1] and the length of stay longer than recommended. Thus, treatment of severe malnutrition in these two groups takes longer than in children.

After discharge, ACF planned to follow-up the nutritional status of the older persons and other adults for six months after discharge. However, in January 2001, the period of follow up was reduced to three months due to lack of food supplies from the World Food Programme. During the first month of follow up, adults and elders were visited weekly and their nutritional status assessed. They received a ration of CSB, oil and sugar which provided a total of 1019 Kcal per day. For the second month, beneficiaries were seen every two weeks and then once during the third month. They continued to receive a ration that provided 509 Kcal per day in the second month and 255 Kcal per day in the third month.

Challenges faced and solutions

The main constraints that the TFC staff faced were:

- The absence of adequate numbers of carers to accommodate the additional needs (i.e. assistance with toileting, bathing, and laundry) of adults or older persons that were very weak or disabled.
- Some of the adults and older persons preferred to eat solid and were unwilling to consume the formula diet (milk).

To address this problem, HAI appointed a social worker to care for those adults and older persons who were disabled or too weak. A family meal (lentils, vegetables, meat and fish) was provided from Phase 2 onwards. It is usually recommended to introduce the family meal only during Phase 3 as the most efficient treatment regimen is based on the specific nutritional products (F75, F100 or HEM). The introduction of the porridge and family meal is only to prepare the person for the food that she/he will receive at home.

Conclusions

The results achieved were satisfactory and, moreover, no relapses were observed in the patients treated in the TFC.

During the period of treatment, carers were willing to stay throughout the day and night to give full support to those who were not able to care for themselves. Moreover, it was clearly identified that the severely malnourished cases occurred in isolated persons suffering from loneliness. It was important to offer emotional support and comfort to these individuals during their treatment at the TFC.

Key messages

- This case study, undertaken in Sudan, provides a good practice example of the therapeutic treatment of severely malnourished older people.
- It is recommended that similar nutrition regimens be implemented in other treatment centres that treat malnutrition in this age group.

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* ACF's objectives: Gain of Weight: 10 to 20 gr/kg/day; Length of stay: 30 days

6 SUMMARY AND RECOMMENDATIONS

The prevalence of undernutrition (BMI < 18.5) in older populations of the countries sampled ranged between 7.6 % in Tanzania to 62.2 % in Ghana for men (See Table 6.1), and between 2.2% in South Africa to 44.6 % in Ghana for women, (See Table 6.2). Prevalence figures for undernutrition for both men and women combined are presented in Table 6.3. Not all countries included in the surveys provided prevalence figures, according to this BMI cut-off reference value. However, the figures of those countries that did are much higher than those reported in non-institutionalized older populations in either Europe or the United States. Older adults in emergency situations in Africa are at particular risk for malnutrition, and in Sierra Leone, for example, over three-quarters of older adults sampled were underweight.

It has been suggested that conventional Body Mass Index reference values may not be appropriate for identifying poor nutritional status in elderly people, because of changes in body composition and kyphosis. The mid-upper arm circumference (MUAC) is an easy-to-perform measurement which requires only a tape measure. Collaborative studies of the London School of Hygiene and Tropical Medicine and Helpage International ((Chilima & Ismail, 1998, 2000; Pieterse, 1999; Pieterse, Manandhar & Ismail, 1998) have demonstrated that an arm circumference cut-off value of 21.7 cm had 86 % sensitivity in relation to a BMI cut-off of 16 (i.e. severe undernutrition) in two African populations. The researchers proposed MUAC as an alternative to BMI as a screening tool, particularly in the acute phase of an emergency. However, there are no agreed standard cut off points for MUAC for older persons and other adults in emergencies. Some researchers in the studies preferred to use the FAO/WHO age specific cut off points of 22cm for women and 23cm for men.

The provision of nutrition services to older people in urban areas is complicated by the apparent double burden of nutrition-related disease. On the one hand, there is evidence of energy and micronutrient undernutrition in older adults while, on the other hand, there is evidence of high risk for chronic diseases of lifestyle in certain groups. Coupled with this complex situation is the current prioritization of other sectors of the population, namely women and children, for the targeting of nutrition services. An example of this double burden of disease is demonstrated by the data from Senegal and Cameroon presented in this report, where a high prevalence of obesity was found, particularly in women, in both countries (19.0% and 16.5%, respectively). Frequent and excessive consumption of alcohol, associated with urbanization patterns, has been reported in older people in some of the countries, such as Benin and Botswana, and is associated with an adverse nutritional and health status.

The findings from the surveys included in this report indicate that, as well as anthropometrical indicators of malnutrition, it is important to consider social and economic risk factors and clinical signs of a poor nutritional status, such as the prevalence of dehydration and oedema. Assessment of the living conditions, level of income and education, degree of family support, care-giving responsibilities and accessibility of health services is essential in the determination of nutritional risk in older Africans.

The increasing burden of care-giving responsibilities (for children and/or grandchildren) of older Africans, resulting largely from the consequences of the AIDS pandemic, was identified in many of the country studies to be a major factor contributing to inadequate household food security. The

impact of the HIV/AIDS-related morbidity and mortality in communities has also disrupted traditional family and community support systems for older people. The care-giving situation is reported by older people themselves to be a constant source of stress, which is a factor limiting their ability to deal with health crises, considering their sources of income, which remain generally low and uncertain. Governmental social welfare policies in African countries need to address the burden of child-care experienced by grandparents.

In almost all the countries surveyed, there was a high rate of dependency by the elderly on family members for both financial and functional assistance, indicating a highly vulnerable group. Older women are particularly financially dependent, which is explained by the fact that in a traditional African society, from a young age, most women are dependent on their spouses for income. Erosion of the extended family situation, resulting from urbanization trends, where younger family members move to cities to seek employment, leaving behind the older members in rural areas with little formal infrastructure, further places older Africans at nutritional risk.

Adverse environmental conditions such as recurrent drought, famine and seasonal variation in food availability, together with inadequate access to land tenure, are major contributors to inadequate household food security on the African continent. Coupled with circumstances associated with socio-political turmoil and civil war, older men and women in emergency situations are at least as vulnerable as young children with regard to nutritional inadequacy. However, donor agencies do not currently consider older people to be a high-risk group, to be targeted for food aid, in emergency situations. In addition, the types of food rations provided are largely unsuitable for older persons. A greater awareness relating to the health and nutrition needs of older people in emergency areas is required among community-based organisations and local and international NGOs involved in relief programmes.

Dedicated health services for older persons are required, particularly in rural areas, accompanied by improved training of health-care workers regarding the specific medical and social needs of this age group. Specifically, improved dental health and opthalmological services for older persons are integral to improving the nutritional status of this vulnerable group, and to improving their functional independence. In some of the countries, such as Tanzania and Uganda, there was evidence that malarial control programmes need to better target older adults who appear to be at high risk.

In conclusion, there is an urgency to develop geriatric nutrition policy in African countries and to implement programmes, and this will require intersectoral co-operation between ministries of Health and Welfare in African countries, as well as Non Governmental Organisations (NGOs) and Aid agencies. The support of NGOs in advocacy and training is essential, and where possible, government–funded strategies should be implemented within the infrastructure of NGOs. The integral existence of informal services, social support networks and kin support needs to be engaged and public-sector finance made available to support these systems. It may be argued that nutrition service programmes should be included in such support systems.

Older women outnumber men and are more likely to be widowed, poorer and burdened with caregiving and domestic responsibilities. Older women are often the primary care-givers in multi-generational households, particularly in terms of caring for AIDS orphans. Targeting of nutrition education to older women may have the benefit of improving nutritional status at household level, including younger family members.

Optimal nutrition in older persons has implications for improving their health status and general wellbeing, as well as reducing their utilisation of health-care resources. The challenge is to identify

and tackle the basic and underlying causes of poor nutritional status in older adults in African countries, which may differ from country to country.

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Table 6.1

Mean anthropometric measurements and prevalence of underweight and overweight in older adults (60 + years) in African countries: Men

Country	Weight (kg)	Height (cm)	BMI	MUAC (cm)	BMI categories (% subjects)				MUAC categories (% subjects)
					<16	<18.5	25 29.9	≥30	≤24 cm
Benin	63.5	160.5	21.8 (5.2)	28.3)	-	8		3.0	
Botswana	62,4 (14,0)	167.5 (6.7)	22.2 (4.4)	-	4.2%	20.1	16.4%	7.9%	-
Cameroon	63.9 (11.8)	165.9 (7.5)	22.8 (3.6)	27.0 (3.2)		7.7		23.3	6.7
Ethiopia	55.6 (9.5)	167.0 (6.4)	19.9 (2.3)	23.0 (2.2)		30.1			50*
Ghana	59.8 (11.6)	165.8 (6.8)	18.0 (3.3)	27.5 (5.6)	30.0	62.2	0		25.3
Kenya	56.3 (11.5)	165.9 (6.5)	20.5 (3.9)	24.8 (3.1)		15.3[a]			
Malawi	54.1 (7.3)	165.7 (5.9)	19.8 (2.5)	25.0 (2.4)	4.0	36.1	4.0	0	23.0 (2.2)
Senegal	61.6	166.9	27.2	21.8	4.0	14.5	16.5	5	18.5
South Africa	65.0 (14.0)	165.1 (7.9)	24.0 (5.6)	27.5 (4.0)	5.8	19.2	25.5	14.7	21.2
Tanzania					0.8	7.6	4.8	0.3	
Uganda	59.7 (11.2)	169.8 (9.0)	20.7 (3.95)	26.6 (3.9)	2.9	13.3	4.0	2.3	
Emergency situations									**<22 cm**
Kenya (Turkana)	55.7 (11.0)	170 (8.5)	19.1 (2.8)	23.6 (2.8)	15.2				19.6
Kenya (Wajir)	56.6 (8.5)	170.4 (7.9)	19.6 (2.6)	24.1 (2.3)					
Sierra Leone (Kenema)	44.2 (5.4)	162.7 (6.0)	16.7	17.7	42	-	-	-	86

* MUAC < 23 cm.

[a] Kenya sample reported by Ngatia *et al*. Rest of data taken from study of Wagah *et al* .

Table 6.2
Mean anthropometric measurements and prevalence of underweight and overweight in older adults(60 + years) in African countries: Women

Country	Weight (kg)	Height (cm)	BMI	MUAC (cm)	BMI categories (% subjects)				MUAC categories (% subjects)
					<16	<18.5	25 29.9	≥30	≤24 cm
Benin	62.1	147.2	23.3	30.5	-	11.8		11.0	
Botswana	64.7 (19.2)	156.6 (6.9)	26.3 (7.3)	-	1.6%	14.8	21.3	27.9%	-
Cameroon	60.7 (13.0)	155.5 (6.7)	25.0 (4.7)	29.1 (4.3)		4.2		16.5%	1.5
Ethiopia	48.5 (9.5)	154.3 (7.3)	20.3 (3.6)	23.8 (3.4)					23.3*
Ghana	62.3 (14.4)	154.6 (6.5)	19.5 (4.5)	30.5 (4.8)	17.1	44.6		3.9	12.2
Kenya	50.3 (11.0)	153.3 (5.6)	21.7 (4.4)			10.0 [a]			
Malawi	49.0 (8.0)	155.2 (5.3)	20.3 (3.0)	25.9 (32)	9 (4.9)	27.0	5.0	1.0	
Senegal	62.1	156.5	29.2	25.3	3.0	9.0	32.5	19.0	14.0
South Africa	78.5 (19.1)	154.0 (6.4)	33.1 (7.8)	33.9 (6.2)	1.3	2.2	20.5	65.1	4.8
Tanzania					2.0	10.6	2.1	0.2	
Uganda	58.8 (11.4)	156.7 (8.4)	24.2 (6.3)	28.5 (4.7)	1.4	9.4	10.9	11.1	28.5 (4.7)
Emergency situations									**<22 cm**
Kenya (Turkana)	49.7 (11.2)	160.6 (8.4)	19.2 (2.6)	23.8 (2.8)	12.5 (2.8)		7 (2.1)		17.7
Kenya (Wajir)	49.7 (7.2)	158.9 (8.4)	20.1 (9.5)	24.6 (3.3)					
Sierra Leone (Kenema)	44.3 (8.2)	159.9 (7.0)	17.4	18.4 (5.2)	46.0				77

* MUAC < 22 cm.

[a] Kenya sample reported by Ngatia *et al*. Rest of data taken from study of Wagah *et al* .

Table 6.3
Mean anthropometric measurements and prevalence of underweight and overweight in older adults (60 + years) in African countries: Total

Country	Weight (kg)	Height (cm)	BMI	MUAC (cm)	BMI categories (% subjects)				MUAC categories (% subjects)
					<16	<18.5	25 29.9	≥30	≤24 cm
Benin	63.1	162.1	22.7 (4.1)	29.5					
Botswana	63.5 (16.8)	162.1 (8.7)	24.2 (6.4)	-	3.0	17.5	18.8	17.5	
Cameroon						5.5		19.0	11.9
Ethiopia			20.1 (3.0)		4.2	30.5	5.0	1.3	
Ghana			19.4 (4.2)		21.6	48.3	2.5		16.8
Kenya	54.0 (3.0)	159.6	21.1 (4.2)	25.1 (3.4)	9.0 [a]	29.8 [a]	14.0 [a]		
Malawi					13 (4.7)	30.1			
Senegal	61.9	161.7	28.2	23.6	3.5	12.2	12.4	12.0	16.7
South Africa	76.0 (19.0)	156.1 (7.9)	31.4 (8.2)	32.7 (6.4)	2.1	5.3	21.4	55.5	7.8
Tanzania			18.2						
Uganda	59.3	163.3	22.5	27.6	4.3	22.7	14.9	13.4	7.0*
Emergency situations									**<22 cm**
Kenya (Turkana)					20.5				
Kenya (Wajir)	52.9 (8.6)	164.1 (10.0)	19.9 (7.2)	24.4 (3.0)					
Sierra Leone (Kenema)					45.0	76.0	4.0	0	78.0

* <23cm (men) and < 22 cm (women).

[a] Kenya sample reported by Ngatia *et al*. Rest of data taken from study of Wagah *et al* .

APPENDIX 1

ASSESSMENT OF NUTRITIONAL STATUS OF OLDER PEOPLE

HEALTH QUESTIONNAIRE

Date ..... District ..... Location ..... Name of Interviewer .....

Older Person No.	**Household No.**	**Older Person Tribe**	**Age Yrs**	**Sex M = 1 F = 2**	**Disease in past 30 days** Back pains = 1 Abdominal pain =2 Joint pains/ Arthritis = 3 Fever/malaria = 4 Poor eyesight = 5 Poor chewing = 6 Coughing = 7 Scabies = 8 Constipation = 9 Hypertension = 10 Headache = 11 Diabetes = 12 Ulcers = 13 Any other = 14	**If sick, treated where?** Health Facility = 1 Private=2 Traditional = 3 Self = 4 Spiritual = 5 None = 6 Other (specify) = 7	**Reason for not going to HF in last 30 days** No Money=1 Weak = 2 Too far = 3 Use trad. Med. = 4 Not sick = 5 Staff unkind = 6 Not applicable = 7 Other (specify) =8	**Habit: Take** Alcohol = 1 Smoke = 2 Drugs = 3 Sniff tobacco = 4 None of above = 5 Other specify = 7	**Observe any signs** Oedema = 1 Immobile =2 Extreme weakness = 3 Dehydrated = 4 Vomiting = 5 Kyphosis (bent back) = 6 Mental disability = 7	**Source of Income** Family member =1 Sell of crops =2 Sell of animals/ poultry = 3 Hired labour =4 Business = 5 Rent of property = 6 Sell of milk/eggs = 7

APPENDIX 2

ASSESSMENT OF NUTRITIONAL STATUS OF OLDER PEOPLE

ANTHROPOMETRIC, SOCIAL ECONOMIC, CARE AND FUNCTIONAL ABILITY QUESTIONNAIRE

Date ..... District ..... Location ..... Name of Interviewer .....

No.	WEIGHT Kgs	HEIGHT Cms	MUAC Cms	ARMSPAN Cms	Social economic risk factor Live alone = 1 Physically disabled = 2 Care of children/ spouse =3 Loss of children / spouse = 4 Loss of land =5 Loss of animals = 6	No. of dependants under your care	**Mobility** Uses support = 1 < 1Km =2 1-2 Kms =3 > 2 kms =4	**Able to:** Cook = 1 Feed = 2 Dress = 3 Bath = 4 Toilet = 5 N/A = 6	**Need help to:** Get food from source = 1 Get water from source = 2 Food preparation = 3 Get fuel = 4 Milling = 5 HF = 6 No need = 7 Other specify = 8	**Who helps** Husband. = 1 Wife = 2 Son = 3 Daughter = 4 Brother = 5 Sister = 6 Neighbour = 7 Daughter in-law = 8 Son in -Law = 9 Community = 10 Grandson = 11 CHW = 12 Grand daughter= 13 Charity = 14 NGO = 15 Other (specify) = 16	**Helpers are** Friendly = 1 Respectful = 2 Respect beliefs = 3 Respect Privacy = 4 Consult us = 5 Shown respect = 6 Not kind = 7 Other specify = 8	Where do you go when you are faced with psychosocial problems?

APPENDIX 3

MINISTRY OF HEALTH

(SAMPLE FROM UGANDA)

ASSESSMENT OF NUTRITIONAL STATUS OF OLDER PEOPLE

FOOD FREQUENCY DATA COLLECTION FORM QUESTIONNAIRE

Date ..... District ..... Location ..... Name of Interviewer .....

FOOD	DAILY	2 to 5 TIMES A WEEK	ONCE A WEEK OR NEVER
Red meat e.g. mutton, beef, pork, game			
White meat e.g. chicken, turkey, duck, guinea fowl, pigeon			
Liver, offals			
Fish e.g. mukene, tilapia and nkejje			
matooke, Irish potatoes, sweet potatoes, fresh cassava, cassava flour, pumpkins, yams			
Cereal & cereal products e.g. rice, maize meal, millet bread, chapatti and bread, ugali, sorghum			
Termites, ants, nsenene			
Nuts and seeds e.g. soya, groundnuts, sunflower, simsim, cashew nuts			
Legumes e.g. peas, beans			
Leafy Vegetables e.g. pumpkin leaves, pumpkin seeds, jobyo, cowpea leaves, nakati, dodo, buga, sukuma wiki, spinach			
Other vegetables e.g. egg plants, ntula, tomatoes, okra, cabbage, mushrooms, malewa, carrots			
Fruits e.g. mango, banana, paw paw, orange, lemon, wild fruits, passion fruit, water melon, pineapples, guava, jack fruits, tamarind,			
Milk and milk products e.g. yogurt, cheese			
Animal fats e.g. ghee, butter			
Vegetable fats e.g. cooking oil, red palm oil, shear oil			
Alcohol Specify			
Tea /coffee with milk			
Tea /coffee without milk			
Snack (eaten between meals) e.g. banana, roasted/dried potatoes, pan cakes, porridge and improved porridge, etc			

Number of meals eaten per day: .....
Foods not eaten: .....
Reasons why they are not eaten: .....
Source of foods: .....

APPENDIX 4: Focus Group Discussion Guide

General

- How does the local community define older men and women.
- What is the role of older people in the home, in the community (*probe care for children food preparation, H/H custodian, home guard etc*).
- To what extent do older people normally contribute to household food resources/decision-making? (*probe for any change that has occurred*).
- How do older people perceive their changing roles/statuses? (*probe for changing access to resources)*.
- How do the older persons cope with this changes *(Probe for coping mechanisms)*.

Access to Health Services

- What is the average distance to the nearest Health facility for older men and women in this community? (probe for status of H.F mentioned).
- What is your opinion about the services older men and women receive from these H.F? *(Probe for cost, drug availability and affordability)*.
- Are there any outreach programmes for older men and women in this community? *(probe for types of services offered)*.
- How do older men and women get information on their health? *(probe for source of health information- health persons, H.F, CHW, fellow elderly, Radio, TV, etc)*.

Care and Support

- How are older men and women normally 'taken care' of in the H/H, community? *(probe for feeding, social, Health Care)*.
- How do older men and women feel about themselves (Probe for physical, psychological and social perceptions).
- Who gives physical, emotional / spiritual care to older men and women in this community?
- What role do children play in the care of older men and women? (probe for direct children and grand- children).
- What are the opinions of older men and women on support and care they receive at home, community, Health facilities. (*probe for respect, hospitality, privacy)*.
- What should be done by the family, community, agencies (Govt., NGOs, Charity organisations) and older men and women **themselves** to improve their health?

APPENDIX 5

HEALTH CARE AND MORTALITY (Emergency situations)

Date **.....** Division.....Location..... Village .....

Cluster..... Team Leader.....

Older Person No.	**If sick, treated where?** HF Gok = 1 Private = 2 Trad = 3 Self = 4 Spiritual = 5 None = 6 Other (specify) = 7	**Reason for not going to HF in last 30 days** No money = 1 Weak = 2 Too far = 3 Use trad. Med. = 4 Not sick = 5 Staff unkind = 6 Not Applicable=7 Other (specific) = 8	**Have any older people died in last 30 days?** Yes = 1 No = 2 None = 3	**If yes, how many** Older Men = 1 Older Women = 2 Not applic.=3	**Likely cause of death** Pneumonia = 1 Malaria = 2 Diarrhoea = 3 Accident = 4 Coughing = 5 Natural = 6 Other (specify) = 7	**Habit** Take Alcohol = 1 Smoke = 2 Miraa = 3 Sniff tobacco = 4 None of above=5 Other specfy=6	**Walking** Uses walk stick = 1 Walk to neighb. = 2 Walk mkt = 3 Walk HF = 4 Walk to church = 5 Walk to Mosque = 6 Walk to River = 7 None of the above = 8	**Able to:** Cook = 1 Feed = 2 Dress = 3 Bath = 4 Latrine = 5 None above = 6	**Need help to** Get food =1 Get water = 2 Daily work = 3 Firewood = 4 Milling = 5 Health = 6 Emotional support = 7 None above = 8 Other (specify) = 9	**Who helps** Husb. = 1 Wife = 2 Son = 3 Daugt = 4 Bro. = 5 Sis. = 6 Neigh = 7 D-law = 8 S-law = 9 Com = 10 Fmily =11 CHW = 12 Elder = 13 None above = 14 Other (specify) = 15	**Care givers are** Friendly = 1 Respectful = 2 Respect beliefs = 3 Resp. Privacy = 4 Consult us = 5 Show no respect = 6 Not kind = 7 Other (specify) = 8
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APPENDIX 6

ANTHROPOMETRIC AND HEALTH QUESTIONAIRE (Emergency situations)

Date **.....** Division.....Location..... Village .....

Cluster..... Team Leader.....

Older Person No.	**HH No.**	**Older Person Ethnic Group**	Do you know your age? Yes = 1 No = 2	**Age** (Yr)	**SEX M=1 F=2**	**WEIGHT (Kgs)**	**HEIGHT (cms)**	**MUAC** (cms)	**Observe any signs.** Oedema = 1 Immobile = 2 Extreme weakness = 3 Dehydrated = 4 Vomiting = 5 Kyphosis(bent back) = 6 Elephantitis = 7 Loss of memory = 8 None = 9	**Social risk factor** Live alone = 1 Physically disabled = 2 Lost livestock = 3 Lost family member = 4 Abandoned = 5 Physically abused = 6 Care of orphans = 7 Loss of appetite = 8 Mental disability = 9 None = 10	**Economic Risk** Less than 50 heads of livestock = 1 Loss of carer = 2 Loss of employment = 3 Destruction of crop = 4 Loss of land = 5 Other (explain) = 6	**Disease in past 30 days** Back pains = 1 Abdominal pain = 2 Joint pain/ Arthritis = 3 Fever / malaria = 4 Poor eyesight = 5 Poor chewing = 6 Coughing = 7 Scabies = 8 Kala Zar=9 Cholera=10 Constipation = 11 Cancer = 12 Other (specify) = 13
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APPENDIX 7

FOOD RATION AND PREFERENCE (Emergency situations)

Date: …….. **Division……**

Location…… **Village: ……**

Cluster:…… **Team Leader ……..**

Older Person No.	**Reason for not going to get food ration in last 30 days:** Cannot walk = 1 Weak = 2 Sick = 3 Not informed = 4 Not applied = 5 Other specific = 6	**Food returns liked?** Beans = 1 Lentils = 2 White maize = 3 Yellow Maize = 4 Oil = 5 Unimix = 5 Other specific = 6	**Reason liked Taste = 1** Easy prep. = 2 Easy to chew = 3 Cultural good = 4 Other (specify) = 5	**Food ration disliked** Beans = 1 Lentils = 2 White maize = 3 Yellow maize = 4 Oil = 5 Unimix = 6 Other (specify) = 7	**Reason disliked** Tasteless = 1 Not easy to chew = 2 Not easy to mill = 3 Not easy to cook = 4 Not Cultural = 5 Loss of Appiite = 6 Other (specify) = 7	**Preferred food** Meat = 1 Milk = 2 Rice = 3 Sphag. = 4 Ugali = 5 Porridge = 6 Other (specify) = 7	**How food is distributed in H/H** Male Child = 1 Female Child=2 Head of HH = 3 Older men = 4 Older women = 5 Younger women = 6 Younger men = 7 Other (specify) = 8	**Food eaten** Like taste = 1 Adequate = 2 Easy prep. = 3 Easy Chew = 4 Easy digest = 5 Other (specify) = 6	**Meal** One Per day = 1 Twice per day = 2 One per 2 days = 3 One per 3 days = 4 Quarter day = 5 Once per week = 6 Other (specify) = 7	**Source of income** Business = 1 Family support = 2 Government pension = 3 Salary = 4 Other (specify) = 5
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