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NUTRITIONAL STATUS OF HIV/AIDS ORPHANED CHILDREN IN HOUSEHOLDS HEADED BY THE ELDERLY IN RAKAI DISTRICT, SOUTH WESTERN, UGANDA

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ABSTRACT

Although a lot of research has been conducted on the role of good nutrition in mitigating the effects of HIV/AIDS, little is known about the health and nutritional status of HIV/AIDS orphaned children who mostly live with their elderly grand parents. The major objective of this study was therefore to assess the nutritional status of HIV/AIDS orphaned children (<10 years) living with their elderly relatives in Rakai District, Uganda; compared to non-orphaned children living with both parents in ordinary homes. The study was a cross-sectional comparative survey that employed both qualitative and quantitative methodologies. A questionnaire was administered to 100 caretakers of the orphaned children and 50 caretakers of non-orphaned children, which explored the effect of socio-demographic factors on the nutritional status of the children. The children's nutritional status was assessed anthropometrically using the weight for age nutritional indicator. Key information was sought from those with authority in the area. The results revealed high levels of malnutrition among orphaned children as almost half of them (47 %) were found to be underweight. This level of underweight was significantly ($p < 0.05$) higher than the figure of 28 % found in the children with both parents. In addition, whereas the usual situation is for the under-nutrition to decline as the child grows older, for the AIDS orphans, it was the opposite with levels of underweight rising from 7 % through 16 % to 24 % in the 0 - 24, 25 – 60, and above 60-month age groups, respectively. Underweight prevalence among the orphans was twice that found in the general population for under-five children, ie, 47 % in the AIDS orphans compared to 23 % of the children in the general population. More than half of the elderly care-takers (59 %) had no formal education, making adoption of improved child rearing practices a challenge. The findings show that malnutrition in Rakai District is a big problem resulting from a number of factors among them poverty, illiteracy, big family sizes, and the effects of the HIV/AIDS pandemic. Homes visited did not have enough of both material and psychological support to sufficiently care for their families. Overall, the study findings reveal that HIV/AIDS orphaned children living with their elderly relatives have poor nutritional status and recommends that the extent of support to meet the needs of these children and their elderly caretakers be increased.

Key words: HIV/AIDS, Orphans, Nutritional status, Elderly, Uganda

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ÉTAT NUTRITIONNEL DES ENFANTS ORPHELINS DU SIDA DANS DES MÉNAGES DIRIGÉS PAR DES PERSONNES ÂGÉES DANS LE DISTRICT RAKAI, SUD-OUEST DE L'OUGANDA

RÉSUMÉ

Bien que de nombreuses recherches aient été menées sur le rôle d'une bonne nutrition dans l'allégement des effets du VIH/SIDA, très peu d'informations sont connues sur la santé et l'état nutritionnel des enfants orphelins du SIDA qui, pour la plupart, vivent avec leurs vieux grands-parents. Le principal objectif de la présente étude était donc d'évaluer l'état nutritionnel des enfants orphelins du SIDA (<10 ans) qui vivent avec leurs parentés âgées dans le District de Rakai en Ouganda, par rapport aux enfants non orphelins qui vivent avec leurs deux parents dans des ménages ordinaires. Cette étude était une étude trans-sectorielle comparée qui a employé des méthodologies tant qualitatives que quantitatives. Un questionnaire a été administré à 100 personnes qui s'occupent d'enfants orphelins et à 50 personnes qui s'occupent d'enfants non-orphelins, et ce questionnaire a exploré l'effet des facteurs socio-démographiques sur l'état nutritionnel de ces enfants. L'état nutritionnel de ces enfants a été évalué sur le plan anthropométrique en utilisant l'indicateur nutritionnel poids/âge. Des informations-clés ont été recherchées chez les personnes qui sont habilitées dans ce domaine. Les résultats ont révélé des niveaux élevés de malnutrition chez les enfants orphelins étant donné que près de la moitié d'entre eux (47%) manifestaient une insuffisance pondérale. Ce niveau d'insuffisance pondérale était beaucoup plus élevé ($p < 0,05$) que le chiffre 28 % trouvé chez les enfants vivant avec leurs deux parents. En outre, alors que la situation habituelle est que la sous-alimentation diminue au fur et à mesure que l'enfant grandit, pour les orphelins du SIDA c'est tout à fait l'opposé : l'insuffisance pondérale monte de 7 % - 16 % à 24 % dans les groupes d'âge 0 - 24, 25 – 60, et plus de 60 mois respectivement. L'insuffisance pondérale trouvée chez ces orphelins était le double de celle trouvée dans la population générale des enfants de moins de cinq ans, et 47 % des orphelins du SIDA étaient affectés par rapport à 23 % des enfants de la population générale. Plus de la moitié des personnes âgées qui s'occupaient d'orphelins (59 %) n'avaient pas fait d'études, et de ce fait l'éducation améliorée des enfants devient un grand défi pour elles. Les résultats montrent que la malnutrition dans le District de Rakai est un grand problème qui découle d'un bon nombre de facteurs tels que la pauvreté, l'analphabétisme, des familles trop nombreuses, ainsi que les effets de la pandémie du SIDA. Les ménages visités n'avaient pas assez d'appui matériel et psychologique pour qu'ils puissent subvenir adéquatement aux besoins de leurs familles. Dans l'ensemble, les résultats de l'étude ont révélé que les enfants orphelins du SIDA qui vivent avec leurs parentés âgées ont un état nutritionnel insuffisant ; c'est pourquoi cette étude recommande que soit augmenté l'appui à ces enfants et à ces personnes âgées qui prennent soin d'eux.

Mots-clés: VIH/SIDA, orphelins, état nutritionnel, personne âgée, Ouganda

INTRODUCTION

Malnutrition in its many forms persists in all countries of the world, but it is worse in developing countries where an estimated 174 million children under five years of age are malnourished, as indicated by low weight for age [1].

In Uganda, despite its favourable natural and human resource potential, successive Health and Demographic Surveys have reported unacceptably high levels of child hood malnutrition with 38 – 39 % of the children below five years of age stunted, 23 – 26 % underweight and 3 - 4 % wasted [2, 3]. Among the many contributing factors to this situation is the HIV/AIDS pandemic. In addition to its devastating impact on infected individuals, HIV hurts all those who are linked to them by bonds of kinship, economic dependence or affection. Different vulnerabilities become evident when a child loses one or both parents to HIV/AIDS; basic needs may not be met, hence the risk of malnutrition increases. The nutritional status of young children is one of the most sensitive indicators of sudden changes in health status and food availability acting as an early warning sign of distress, ill health, famine and eventual death [4, 5].

Since 1982, there has been great disruption of society in Rakai District due to large numbers of families affected by loss of parents to HIV/AIDS, resulting in economic destabilization and a big proportion of orphans. The District is said to have had over 10,000 orphans since the HIV/AIDS pandemic started in the early 1980's [6]. Of all children below 15 years in rural areas of Rakai and Masaka districts, 14.8 % and 10.4 %, respectively, have lost one or both parents [7, 8]. Uganda is reported to be among the countries in the world with a high proportion of AIDS orphans with foster-hood reported to be at 58 % of children below 18 years of age living with both parents, while 18 % live with neither natural father nor mother [9]. Rakai District is said to have got the first cases of HIV/AIDS in Uganda identified at a landing site in Kasensero in 1981, just two years after the 1979 Liberation War between Uganda and Tanzania. The impact of this devastating epidemic is the main reasons for the existence of the elderly headed families from which the study was carried out. Lutheran World Federation 2001 Report states that the principal manifestation of the extent of HIV/AIDS is the growing number of orphans in the District. The reported number of orphans in Rakai District was 38,729 in August 1999, up from 36, 661 in September 1995 [9]. Kooki and Kabula Sub-counties have a combined population of almost 200, 000 including more than 20,000 orphans. It is on this basis that the researchers chose Kabula County in Rakai District as the study area.

This study, therefore, was aimed at assessing the extent to which HIV/AIDS has led to malnutrition in children in Rakai District, establishing some of the factors related to malnutrition and identifying possible directions for designing a plan of action for a program to improve nutrition status of the vulnerable children.

METHODOLOGY

Area of Study and Study Population

The study was conducted in Rakai District, which is located in the South Western part of Uganda, West of Lake Victoria. The location as well as physical characteristics of Rakai give it a peripheral District status especially the pastoral areas of Kabula, Kooki and Kakuto. Kabula County was purposively selected for the study and all its six Sub-counties of Kasagama, Mpumudde, Kinuuka, Kaaliro, Lyantonde rural and Lyantonde urban participated in the study.

The study targeted homes headed by the elderly in which orphaned children under the age of ten lived. Lutheran World Federation - Rakai Community Based AIDS Project (LWF-RACOBAP), an NGO in the area, identified families in which children who had lost both parents to AIDS lived.

Sample Size and Sampling Techniques

The sample size was determined according to Donald [10] with error of assumption as 9.56 %, (with p = 0.05) and a 95 % confidence limit. A representative sample size of one hundred (100) elderly headed homes was calculated. Fifty (50) homes of children with both parents were randomly selected to act as a comparison group. A single child under the age of ten was randomly picked for anthropometrical measurements in each selected home.

Purposive sampling technique was used based on its usefulness in identifying the potential families. Informants made work easy by using research assistants from LWF-RACOBAP who work directly with these families and are based in the area. They therefore had knowledge of nearly all the target families and assisted in identifying the elderly headed homes with orphaned children.

Ethical Consideration

Ethical clearance for the study was granted by Uganda National Council of Science and Technology (UNCST) in Kampala, Uganda. The study objectives and methodologies were explained to the participants who agreed to participate and gave their verbal consent. They also put their signatures or thumb prints to the written consent form.

Anthropometric Assessment

Weight-for-age of both orphaned children in elderly headed homes and non-orphans in the comparison homes was determined during this study as adapted in other studies [11]. This method was preferred to stunting and wasting as has been explained by World Federation of Public Health Associations [12]. Weight was measured twice to the nearest 0.1kg using a 136 kg digital Scale (Tanita Corporation Tokyo Japan, THD-305 Made in China) with the subjects shoeless and in light clothing. Age was established from birth certificates, immunization cards or by use of local events calendars.

Research Instrument

A questionnaire that focused on respondents' social-demographic/economic characteristics and their influence on the nutritional status of the children was developed. The questionnaire was validated by the "jury" method [13]. The questionnaire collected information on background characteristics, level of knowledge about nutrition, feeding information, food supply potential, family size and food distribution, as well as child feeding. It was pre-tested on selected families in a setting similar to the study area. The questions were posed in local languages while recording responses was done in English by trained interviewers. To ensure that good quality data was collected, questionnaires were cross-checked continuously.

Interviewing Key Informants

The co-researcher in this study directly interviewed key informants who included the Assistant Chief Administrative Officer (ACAO), LWF-RACOBAP staff and other persons with key knowledge that backed the qualitative study in this research, using a pre-set question guide.

Data Analysis

Collected data was edited during and after collection, coded, classified, tabulated, and explored to adjust for any missing information and correcting for outliers. Epi-INFO (version 6.14) analysed anthropometric data while Statistical Package for Social Scientists (SPSS version 10.0) was used for the descriptive data. Chi-square was used to test for associations between the dependent variable (weight for age) and a number of socio-demographic independent variables. A p-value of 0.05 or less was considered to be significant.

RESULTS

Demographic Characteristics

The demographic characteristics of the respondents are presented in Table 1. A large proportion of the respondents (33 %) were elderly in the age-range of 70 - 74 followed by those in the 60 - 64 age-ranges (23 %). None of the elderly respondents were below 50 years of age. On the contrary, the comparison group showed a younger age structure than the study group. A large proportion of the comparison group (24 %) was in 30 - 34-age range, while none was above 50 years. Females constituted the biggest proportion in both the study (77 %) and comparison (60 %) groups.

More than half of the elderly respondents (59 %) had no formal education while 40 % had primary education. A negligible proportion (1 %) of the study sample had gone to secondary School and none had had tertiary level education. On the contrary, in the comparison group, the majority (70 %) had primary education while about 20 % had had secondary education and only 2 % had no formal education.

Almost every elderly caretaker (99 %) was a peasant compared to only 30 % in the comparison group. The rest of the respondents in the comparison group were in

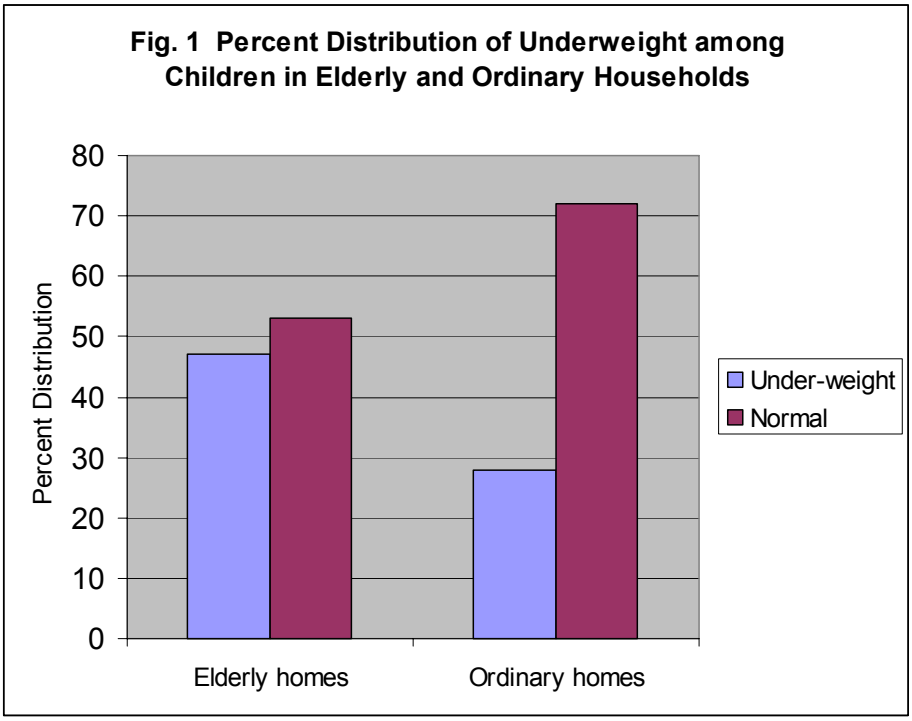
informal business (37 %), housewives (20 %) and other occupations. A large proportion (36 %) of the elderly households had 5 - 7 people. This was comparable to the comparison group with 42 % of the households having 5 - 7 people. The smallest household sizes (< 5 people) were 26 % and 24% in the study and comparison groups, respectively, while the largest household sizes (7 - 10 people) were 28 % in the study group and 22 % in the comparison group (Table 1).

Nutritional Status of the Children

The results of the nutritional status of the children in both the study and comparison households are shown in Table 2 and Figure 1. The findings show that overall, underweight of the orphaned children in Kabula County, Rakai District is very high with almost half of the children (47 %) being underweight. This is almost double the rate for the comparison group with 28% of the children being underweight. Underweight of the children in the study group increased as the child grew older with 7 % of the children 0 - 24 months being underweight compared to 16 % of those aged 25 - 60 months and 24 % of those aged 61 months and above.

The trend among the comparison group differed greatly as shown here, the older a child became, the lower the levels of malnutrition. Children in the 0 - 24, 25 - 60 and above 60 months age ranges had 20 %, 6 % and 2 % underweight rates, respectively.

Fig. 1 Percent Distribution of Underweight among Children in Elderly and Ordinary Households



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Access to Information on Child Care and Feeding

The results show that 69 % of the elderly caretakers received feeding information while 31 % had never received any information on child care and feeding (Figure 2). The number of respondents who had had some feeding information in the comparison group was more or less the same as that in the study group with 70 % and 30 % informed and uniformed, respectively (Figure 3). The majority of those who had had nutrition information were from Mpumudde, the only sub-county where Nutrition and Early Childhood development Project (NECDP) was operating.

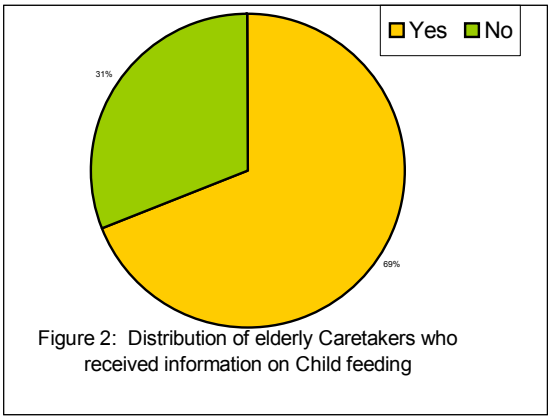

Figure 2: Distribution of elderly Caretakers who received information on Child feeding

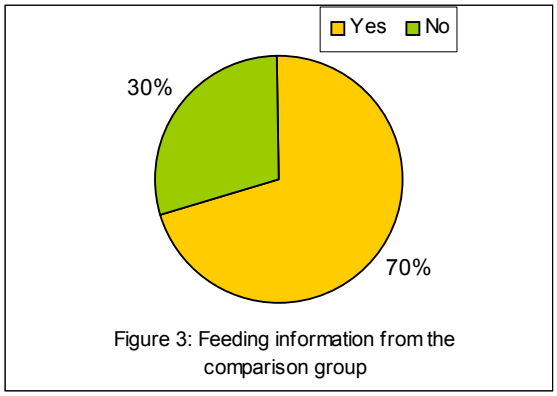

Figure 3: Feeding information from the comparison group

Of those who had received the information in the study group, 42 % had received it from health units where they had gone either for their treatment or that of their children; 8 % through the media, particularly radios while 4 % received the information through either a friend, relative or religious leaders. Radios were reported to be the most convenient means of acquiring information in the area. This is because different areas can access information in the language they understand best and radios are moderately affordable. Others obtained information through other sources such as Community Based Organizations (CBOs).

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Perception about the Causes and Consequences of Malnutrition

In order to assess the caretakers' knowledge of the factors that may contribute to poor nutrition among children, the respondents were asked to mention any factors that they knew could cause malnutrition among children. More than half (51 %) reported poverty was the main cause of malnutrition, 29 % reported it was because of lack of awareness, 13 % say it was due to inadequate food supply, while 6 % did not know of any cause of malnutrition. One respondent said that malnutrition was due to disease.

It was also important to assess the caretakers' knowledge about the dangers of poor nutrition among children. The respondents were therefore asked to mention any consequences of malnutrition they knew. More than half of the respondents (52 %) mentioned Kwashiorkor, 38 % said it would result in poor health, while 10 % said it would result in death (Figure 4). Poor knowledge about nutrition significantly ($p < 0.05$) influenced the nutritional status of the children negatively.

In the comparison group, the biggest proportion of respondents (72 %), said that the main cause of malnutrition was poverty, while 28 % said it was lack of awareness. None in this group gave "inadequate food" as a cause of malnutrition. In all cases, poverty takes the lead of the perception to the causes of under-nutrition. Data about the perceptions on consequences of poor nutrition in the comparison group was similar to that of the elderly group. A large proportion (76 %) of the respondents reported that poor nutrition results in Kwashiorkor while 8 % reported that poor nutrition results in poor health. A relatively large proportion (22 %) reported that poor nutrition results in death (Figure 4).

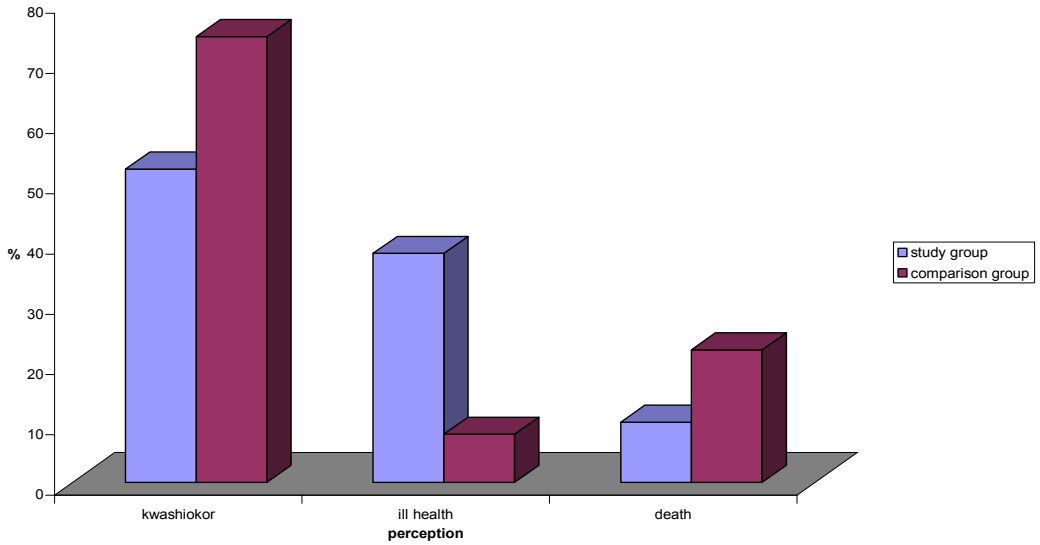

Fig. 4 Perceptions on the consequences of malnutrition

Child Feeding Practices

When asked about suitable foods for children, 34 % of the elderly respondents in the study group said it was milk, more than half (53 %) mentioned vitamin-providing foods, while 13 % talked of carbohydrate-rich foods. The comparison group said suitable foods were breast milk (80 %), carbohydrates (18 %) and 2 % mentioned vitamin-providing foods.

The elderly headed households did not have unique meals given to the children 24 hours prior to the study (24 hour food recall); everything was dictated by the foods available in the household. Resources in these homes are scarce, and it was therefore normal to have a combined meal for lunch and supper. There rarely were four meals a day, except during harvest times when there is more food available. There are some taboos and or negative beliefs that may restrict the foods given to the children but not much was established on this, in this study.

The normal diet of the comparison families consisted of breakfast and two main meals, lunch and supper, unlike in the elderly headed homes. The diet changed as to the food available for the day in question, but there were no large variations.

Food Supply Potential

From the study, 97 % of the elderly respondents had cassava available in their households at the time of the interview, 91 % had cooking banana (matooke), 46 % sweet potatoes and 9 % had maize meal (posho). None had rice, while only one respondent had other foodstuffs that included yams, millet and Irish potatoes (Figure 5).

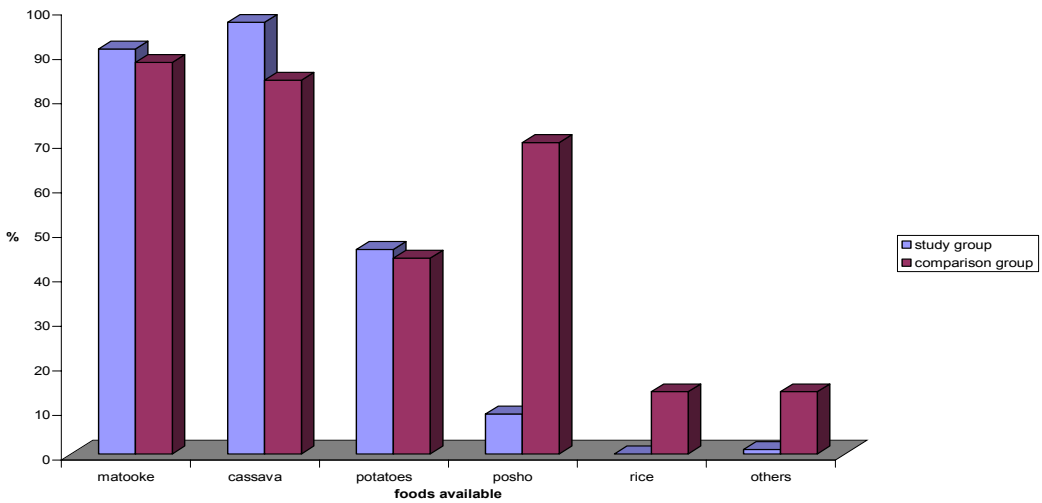

Fig. 5. Foods available in the household

In the comparison group, foods available in the households at the time of study also comprised mostly the starchy foods (Figure 5). However, fewer respondents kept

Matooke (88 %), Cassava (84 %) and Potatoes (44 %) respectively, compared to the elderly group. Since these people have better incomes than the elderly, they can afford to access food from the market; hence 70 % had posho while 14 % had rice. In addition to staple foods, both groups had foods normally consumed together with staples as sauces such as beans, peas, meat, fish, groundnut and local vegetables. In both groups, nearly all homes (96 %) had a garden around their homesteads to grow their own food that was supplemented with food from the market.

DISCUSSION AND CONCLUSION

The objective of this study was to assess the extent to which HIV/AIDS has led to malnutrition among orphaned children in elderly headed households in one rural district in Uganda, compared to non orphaned children in normal households. The children's nutritional status and some related variables were examined.

Females constituted more than fifty percent in both the study and comparison groups because in the African tradition, and indeed worldwide, women are believed to be the caretakers of children, while men serve as the bread winners. There was great contrast in the age ranges of the study and comparison groups; none of the elderly respondents was below 50 years of age while none of the respondents in the comparison group was above 50 years of age. These results are in agreement with earlier studies by Hunter [14] who reported that 43 % of those who care for orphans are the elderly, of over 50 years of age.

The nutritional status of the children

The nutritional status of children is an outcome of many interrelated factors, including environment, economic status, education, culture and food security [15]. The results of this study show that a large proportion of the orphans (47 %) are malnourished when compared with only 28 % of malnourished non-orphans found in the normal homes. These results are in agreement with results of other studies conducted in Uganda which found many of the HIV/AIDS orphans stunted, underweight and wasted [16]. In some of these studies, the underweight rates were indeed very high, with over 60 % of the orphaned children underweight [17].

In addition, our study findings revealed that the older the orphans (0 - 10 years) living with the elderly get, the higher the level of underweight. This is in contrast to the national trend whereby 23 % of children (under-five) are found to be underweight with the trend ascending sharply till 10 - 11 months old [2]. This is a major finding of this study and has many implications as discussed below.

Having obtained such a trend and considering the fact that these children lost parents to HIV/AIDS, one may suggest that some of them could have been infected and therefore a combination of factors weakened the body's immunity as the child grew older, while HIV progresses to AIDS. (The HIV/AIDS status of the children, however, was not assessed in this study). Malnutrition is often seen in environment of high prevalence of

infections; HIV-AIDS represents this example [18]. This, when coupled with the widespread lack of resources to meet the basic needs of the big families, contributes highly to malnourishment. In an infected child, who is often anorexic, the marshaling of nutrient resources from endogenous sources to promote optimal functioning of the immune system and combat the infective agent is a high priority.

Most people living with HIV/AIDS are also known to be malnourished with both macro and micro-nutrient deficiencies leading to wasting due to Protein Energy Malnutrition (PEM). Both the immune system and the levels of the nutrients are correlated with the progression of the disease [18]. Infection itself affects nutrition, and wasting is associated with an increased metabolic rate, a rate not matched by added intake [19]. The degree of wasting parallels the severity of infection [20].

The trend among the comparison group differs greatly from the study group and follows the normal trends. In the comparison group, the older a child became, the lower the levels of malnutrition. The underweight rates in the age groups of 0 - 24, 25 - 60, and above 60 months were found to be 20 %, 6 % and 2 %, respectively. In the national data, underweight affects 23 % of the under-five children and rapidly rises from 3 % among 0 - 6 months to 38 % at 10 - 11 months, then decreases as the child grows older [2].

Factors influencing the nutritional status of the children

The nutritional status of the children was negatively influenced by a combination of factors which included low levels of education of the caretakers, large household sizes, low levels of income and orphanage due to HIV/AIDS.

The education of the caretakers had a significant ($p < 0.05$) influence on the nutritional status of the children with children of those with no formal education being more malnourished. This is in agreement with other studies which found that malnutrition was most prevalent among children whose mothers had no formal education [21, 22]. Although more than half of the elderly caretakers (69 %) were informed about nutrition, the children in their care were still malnourished because of the high rates of illiteracy (59 % never having had formal education). Illiteracy makes adoption of improved technologies including child care and feeding, very difficult. Large households were also found to have a negative influence on the nutritional status of the children. There was a significant and positive correlation ($p < 0.05$, $R^2 = 0.680$) between the size of the household and the rate of childhood malnutrition with children from large households (> 5 people) having higher chances of being underweight than those from smaller households (< 5 people). Income levels of the households too, significantly ($p < 0.05$) influenced the nutritional status of the children. Households which were in the lower income bracket had significantly higher proportions of underweight children compared to those households in the higher income bracket. The elderly caretakers study group which had 99 % peasantry had poor incomes and hence a larger proportion of malnourished children compared to the younger families with better occupations and incomes. Other factors contributing to poor nutritional status of

the children included the quality and quantity of food given to the children, marital status of these guardians, availability of household resources such as fuel wood, and the like.

The role of the extended family in the context of HIV/AIDS

The HIV/AIDS pandemic has reversed the socio-cultural system of the African extended family system where younger people looked after the old [23]. Whereas in the past, the younger generations were known to care for their aged and sick parents and grand parents, more recently the younger people are dying of AIDS leaving their aged relatives to look after their children [24]. Indeed, it is now common to find a large number of the elderly taking care of their sick children and grand children in AIDS hit communities [25]. Earlier research conducted in Rakai District affirms that when children lost parents, grandparents or any other close relatives often took them in [26]. In his research in the same study area, Hunter [14] found that 31 % of the AIDS orphans in Rakai District were under the care of their grand parents.

The role of the extended family, particularly the elderly grand parents, has therefore become critical in the HIV/AIDS era, in resource poor countries in sub-Saharan Africa. In many of these countries, there is no welfare to cater for families whose bread winners have been wiped out by AIDS. The grand parents have come in, of necessity, to fill this gap. However, before they can adequately do that, issues concerning their health and wellbeing, which in the past were ignored, need to be attended to. Recent research by Kikafunda and Lukwago (27) found that the elderly in Uganda are themselves in poor health with high levels of malnutrition. How then will they cater for the nutrition of the children under their care if their own nutrition is at stake?

The study findings reveal that HIV/AIDS orphaned children below 10 years of age living with their elderly grand parents are highly malnourished and recommend that the extent of support from both Government and the international community to meet both children's and their care takers' needs be increased at all levels.

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Table 1 Percent (%) Distribution of the Background Characteristics of the Respondents

Characteristic	Elderly (n=100)	Control (n=50)
Age		
20 – 24	-	14
25 – 29	-	10
30 – 34	-	24
35 – 39	-	16
40 – 44	-	22
45 – 49	-	14
50 – 54	8	-
55 – 59	15	-
60 – 64	23	-
65 – 69	19	-
70 – 74	33	-
75 – 79	8	-
80 – 84	5	-
Gender		
Male	23	40
Female	77	60
Education Level		
None	59	2
Primary	40	70
Secondary	1	20
Tertiary	-	8
Occupation		
Peasant farmers	99	30

Housewives	1	20
Formal Business	-	10
Informal Business	-	37
Civil Service	-	3
Household Size		
Small (<5 people)	26	24
Average (5-7 people)	36	42
Large (7-10 people)	28	22
Extra large (>10 people)	10	12

Table 2 Frequency and Percent (%) Distribution of Underweight among the Children (< 10 years of Age) in the elderly and Normal families

	Children in elderly headed families n=100		**Children in normal families n=50**	
Age groups	**Weight-for-age (WAZ<-2SD)**		**Weight-for-age (WAZ<-2SD)**	
	Frequency	**Percent (%)**	**Frequency**	**Percent (%)**
0 – 24	7	7	10	20
25 – 60	16	16	3	6
61 +	24	24	1	2
Overall	47	**47**	14	**28**

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