

Identifying the key community-based child nutrition education interventions implemented by the different stakeholders in Namalu Sub County in Nakapiripirit district.

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#### ABSTRACT

The study sought to identify the key community-based child nutrition education interventions implemented by the different stakeholders in Namalu Sub County in Nakapiripirit District. The study was motivated by persistent high levels of child malnutrition in the sub region. Using a cross-sectional survey design, data were collected from 362 households using questionnaires. The study also used Focus Group Discussions (FGDs) and Key informant interviews to collect qualitative data. This study found that almost three quarters of the child caretakers had accessed community-based nutrition education programs mainly from health workers from government owned health facilities who educated mothers and child caretakers during routine integrated community medical outreaches and camps. UN agencies like WFP and UNICEF as well as other NGOs also supported and implemented the community-based education interventions in the study area. In this study, it was established that home visits were the most effective methods of delivering community-based nutrition education interventions while mass media and Information, Education, and Communication (IEC) material were the least effective because most people did not have access to radio and Television and could not read the IEC material because of low literacy levels. The study concluded that community-based nutrition education improves under five child nutrition. It is recommended that the implementing partners should improve the delivery of the intervention to enhance its effectiveness in improving under five child nutrition status.

**Keywords:** Child malnutrition, nutrition education and NGOs

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#### INTRODUCTION

Under nutrition among children under 5 years of age is still a public health concern globally. It is estimated that 165 million were stunted, 101 million were underweight, and 52 million were wasted, in 2011, with high prevalence levels of under nutrition in Africa (36%) and Asia (27%) [1]. Nutrition education, when combined with the access to nutritious, high-quality food already provided, is an effective strategy to encourage healthy eating behaviours, and improve child health outcomes [2]. Furthermore, it has been found to be an evidence-based cost-effective way to health outcomes and can foster healthy eating habits for a lifetime [3]. When nutrition education is done in a community/group education setting, it yields a wider variety of positive results than individual education settings [4].

In Nakapiripirit, a district located in northeastern Uganda, significant efforts and resources have been invested in nutrition education at community, institution level including health

units/service providers, packaged along with health programs as one of the avenues intended to contribute to reduction and prevention of malnutrition. Some researchers have documented a significant relationship between nutrition knowledge and nutrition behaviour and other studies have revealed that interventions focused on behavioural change and based on appropriate research into the target population and behaviour change theory were more effective than those simply focusing on the provision of information [5].

#### Statement of the Problem

In Nakapiripirit, 1 in 3 children still experience stunted development due to malnutrition [6]. This leaves questions to be answered on, how effective are the nutrition education interventions in the sub region. This study, therefore, sought to identify the key community-based child nutrition education interventions implemented by the different stakeholders in Namalu Sub County in

### **Justification of the Study**

Whereas child nutrition education interventions have been conducted specifically in Namalu Sub County in Nakapiripirit district, there seems to be a paucity of empirical studies on the outcome of these interventions in the sub-region. It was, therefore, important that research on the outcomes of these interventions in the sub region is

conducted in order to find out how the community-based nutrition education programs have impacted on the under-five child nutrition in the sub-region.

### **Aim of the study**

The project aims at identifying the key community-based child nutrition education interventions implemented by the different stakeholders in Namalu Sub County in Nakapiripirit district.

### **Study Design**

The study adopted a descriptive cross-sectional design because it enables systematic collection of data and reporting of various approaches of community nutrition education programs by various stakeholders and their effectiveness at one point in time [7].

The study adopted mixed methods research approaches where it used both quantitative and qualitative approaches to allow collection of numerical and qualitative data and perform effective analysis using statistical procedures. Using the mixed methods approach was aimed at maximizing the strengths and minimizing the weaknesses of each of the approaches.

### **Study Setting**

This study was carried out in in Namalu sub-county in Nakapiripirit district located in Northeastern Uganda. The district is bordered by Napak district to the North, Moroto district to the Northeast, Amudat district to the East, Kween district to the Southeast, Bulambuli district to the Southwest, Kumi district to the West and Katakwi district to the Northwest [8]. Most of the population are Karamojong and the language spoken is Karamojong [9]. The main activity in the district is animal husbandry and the majority of the population are pastoralists. However, in some areas, especially in the south, some agricultural activity takes place [10]. The study focused on Kaiku Parish in Namalu Sub County in Nakapiripirit district because the area was affected by high levels of child malnutrition despite nutrition education by the government and development partners like the World Food Programme (WFP) through her partners.

### **Population and Sampling Techniques**

The target population in this study consisted of all the households in Kaiku

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Parish and all the development partners supporting the community with nutrition interventions. The accessible population consisted of all the households with children under five years of age who benefited from the nutrition education interventions and those who did not benefit as well as the available development partners who operate in the area.

### **Study Population**

#### **Household population**

The study population was comprised of all the 10020 households in Kaiku Parish in Nakapiripirit District. According to the records at the District Planning Office, Kaiku parish in Nakapiripirit has total number of 10020 households. The study focus on the households at community level in order to assess the outcomes of the community-based nutrition education programs.

#### **Development and Implementing Partners' Population**

The study population was also composed of development partners from UN Agencies, local and international Non-Government Organisations (NGOs) government and local government operating in the Karamoja Sub Region. The study focused on the development partners in order to collect data on the different community-based nutritional education programs as well as the approaches used to implement these programs.

### **Sample size**

#### **Community/Household Sample Size**

The sample size of the household targeted 373 respondents. The sample size was arrived at using the predetermined sample size Table by Krejcie and Morgan (1970) as cited in [1] formula for obtaining a proportionate sample allocation.

$$n_i = \frac{n \times N_i}{N}$$

N

n<sub>i</sub>=Sample Size

n=sample size drawn from the population  
Nj= Population of the cluster

N=Target Population drawn from the margin.

**Table 1: Sample Size Table**

Category	Population (n)	$\frac{n*N_j}{N}$	Sample Size (ni)
Nakuyon	2620	$\frac{2620}{10020} * 373 = 98$	98
Naabore	1020	$\frac{1020}{10020} * 373 = 38$	38
Nakipenet I	1272	$\frac{1272}{10020} * 373 = 47$	47
Nakipenet Ii	1500	$\frac{1500}{10020} * 373 = 56$	56
Nakipenet Iii	1051	$\frac{1051}{10020} * 373 = 39$	39
Nakipenet Iv	957	$\frac{957}{10020} * 373 = 36$	36
Nakipenet V	1200	$\frac{1200}{10020} * 373 = 44$	44
Morua Loduk	400	$\frac{400}{10020} * 373 = 15$	15
<b>Total</b>	<b>10020 (Nj)</b>		<b>373 (N)</b>

Source: Namalu Sub County Head Offices

**Sample Size for Development/Implementing partners**

The sample size for the key informants consisted of 29 study respondents who

were drawn from development and implementing partners operating within the Karamoja sub-region as indicated in Table 2 below.

**Table 2: Sample Size for the Key Informants**

Agency	Population	Sample	Sampling Method	Data Collection Method
UN Agencies	2	2	Purposive	Key Informant Interviews
Central Government Programs	4	4	Purposive	Key Informant Interview
International NGOs and Development Partners	10	10	Purposive	Key Informant Interview
National NGOs	6	6	Purposive	Key Informant Interview
Local NGOs	6	6	Purposive	Key Informant Interview
Local Government	1	1	Purposive	Key Informant Interview
<b>Total</b>	<b>29</b>	<b>29</b>		

Source: Karamoja Donor Mapping Report 2019

**Sampling Techniques and Procedures**

**Quantitative Sampling Techniques and Procedures**

From each of the villages, households were proportionately selected to participate in the study using systematic sampling technique where every 5<sup>th</sup> household in the village with a child under five years was selected to

participate in the study. Systematic sampling technique was used because it ensures generalizability of findings and minimizes bias [11].

**Qualitative Sampling Techniques and Procedures**

After selecting the households, purposive sampling was used to select caretakers of

children below 5 years of age to participate in the FGDs. A purposive sample is a non-probability sample that is selected based on characteristics of a population and the objective of the study. Purposive sampling is known as judgmental, selective or subjective sampling [12]. The purposive sampling technique was also used to select key informants who provided in-depth information on the topic under investigation by virtue of the offices that they occupied. The participants in the key informant interviews and FGDs were selected based on the saturation of the data obtained, the researcher interviewed participants to the KIs and FGDs and stopped when the data got saturated. Saturation is the point at which “additional data do not lead to any new emergent themes” [3]. When the additional data could not lead to any emergent themes, the researcher stopped. For the KIs data got saturated at 24 people and for the KIs data got saturated at 16 sets of FGDs comprising 32 study respondents.

#### **Inclusion and exclusion criteria**

At household level, the study team focussed on households with children under the age of five years. Households without children under five years of age were excluded from the study.

#### **Variables and Indicators**

The study assessed the outcomes of community-based nutrition education in addressing child malnutrition in the Karamoja Sub Region of Uganda. In this study, it is assumed that effective community-based child nutrition education programs improve nutrition outcomes among the children under five years of age.

#### **Data Collection tools and Instruments**

##### **Semi structured Survey Questionnaire Method**

[5] defines a questionnaire as a research instrument consisting of a series of questions and other prompts for the purpose of gathering information from respondents. The study used the semi-structured questionnaire survey method to collect data from the household respondents in the community. The semi-structured survey questionnaire was used because it is cost effective and allows for the collection of data from a big sample as suggested by [1]. The semi-structured survey questionnaire for the households was largely composed of two subsections. The first subsection focused on the

demographic characteristics of the household, the caretaker, and the child. The second subsection focused on assessing the community-based nutrition intervention, the modalities of delivering the interventions and the outcomes of the interventions.

##### **Key Informant Interview Method**

[9] defines interview as a data collection method that involves presentation of oral verbal stimuli and reply in terms of oral verbal responses. Oral personal interviews generally involve a face-to-face contact or conversation using structured questions as they are aided by the use of an interview guide. The study employed the interview method to collect data from the key informants who included development partners and government officials who implemented the nutrition interventions. Interviews in this study were used to obtain more in-depth information on the topic under investigation which would not be obtained with the use of closed ended questionnaires as observed by [10]. An interview guide was developed to collect data from the key informants. The interview guide mainly focused on the various community-based child education nutrition interventions and the different approaches used to implement the programs by the different stakeholders.

##### **Focus Group Discussion Method**

The study used Focus Group Discussions (FGDs) to collect more in-depth qualitative data from the household members. FGDs are a qualitative way of collecting data from respondents [5]. It involves getting a representative sample of respondents for a guided discussion about the topic under investigation [8]. An FGD guide was developed to collect data on the existing interventions, the modalities for implementing the interventions and the outcomes of the interventions on improving child nutrition status.

##### **Document Review Method**

The researcher reviewed documents to obtain recorded information that is related to the issue under investigation as suggested by [6]. This method was used to obtain first-hand recorded information from the implementing partners. A document review checklist was developed to aid with the collection of secondary data. The researcher reviewed program documents on nutrition education as well as activity and evaluation reports on

nutrition education interventions.

### **Data Quality and Error Control Validity**

Validity refers to the extent to which a measurement procedure measures what it is intended to measure rather than measuring something else, or nothing at all [1]. Content validity was used. Content validity is concerned with the extent to which an instrument covers an appropriate sample of items for the construct being measured and adequately covers the construct domain [4]. The questionnaire was examined by three subject matter experts working in academia, and those directly implementing child nutrition programs. The experts were asked to rate the items on a 4-point scale of relevance in relation to the outcomes of the community-based child nutrition education programs. Where 1= not relevant, 2= somewhat relevant, 3= quite relevant and 4= highly relevant. Then, for each item, the item content validity index (I-CVI) was computed as the proportion of experts in agreement about relevance by giving a rating of 3 or 4. Then, the scale level content validity (S-CVI) was computed by averaging the I-CVIs. A value of .70 was recommended as the standard for establishing excellent content validity [1]. The CVI for the questionnaire was 0.8 and this was acceptable because it was higher than the .70 threshold that was suggested by [1]. A discussion with some of the evaluators was done to understand the reason for the ratings and how to improve. Issues of face validity, clarity, specificity of variables were also investigated.

### **Reliability**

Reliability refers to the consistency of the measuring instrument. According to [4] for an instrument to be reliable, it must yield the same measure when used on more than one occasion. Internal consistency reliability was assessed by obtaining coefficient alpha [7]. It was used as the index to estimate the extent to which different subparts of the instrument are reliable in assessing the effectiveness of the community-based child nutrition intervention as suggested by [1]. In general values, below .60 are considered poor, .60 to .69 are minimally acceptable, .70 to .79 are moderate or acceptable, .80 to .89 are considered good, above .90 are excellent. The questionnaire was piloted using 5% of

households by the research team to find out unclear or ambiguous questions. Ambiguous questions were reworked on or removed. The pilot testing of the questionnaire was used to help estimate the time that was taken to respond to the questionnaire. The respondents from the household involved in the pilot testing were included in the main study. The overall Cronbach's alpha coefficient for the tools was 0.80 which is good according to [10].

### **Qualitative Data Quality Control**

To ensure the quality of qualitative data, the researcher used the trustworthiness criteria. The aim of trustworthiness in a qualitative inquiry is to support the argument that the inquiry's findings are "worth paying attention to" [4]. [7] proposed four alternatives for assessing the trustworthiness of qualitative research, that is, credibility, dependability, conformability, and transferability. From the perspective of establishing credibility, researchers must ensure that those participating in research are identified and described accurately. Dependability refers to the stability of data over time and under different conditions. Conformability refers to the objectivity, that is, the potential for congruence between two or more independent people about the data's accuracy, relevance, or meaning. Transferability refers to the potential for extrapolation. It relies on the reasoning that findings can be generalized or transferred to other settings or groups [2]. The researcher mainly relied on the credibility test where interviews were conducted to determine whether the interview questions were suitable for obtaining rich data that answer the proposed research questions. Interview notes and transcribed text were examined carefully to critically assess the researcher's own actions for instance, questions were asked such as "Did I manipulate or lead the participant?" and "Did I ask too broad or structured questions?" Such evaluation did not only begin at the start of the study but was also supported by continuous reflection to ensure the trustworthiness of the qualitative data as advised by [12].

### **Data Collection Procedure**

Data were collected using community surveys and key informant interviews with the implementing partners operating in the Namalu Sub County in Nakapiripirit district. Using systematic sampling, every

fifth household in a village was selected to participate in the study. The surveys were conducted in 373 households in Kaiku Parish and each of them lasted about 30 minutes. The survey data were collected using *Survey CTO Collect* an application that is used to collect large scale community data [3]. In each of the households, a child caretaker was selected to participate in the study. Data were collected from them by use of Research Assistants because of low literacy levels in the district as reported by [2]. After interviewing the caretakers, the research team with the help of community health workers assessed the children's nutritional status using measures like Severe Acute Malnutrition (SAM), Moderate Acute Malnutrition (MAM) and Medium Upper Arm Circumference (MUAC). The Key informants were also selected to participate in the study. Data from the key informants were collected using interviews. Data were collected from a total of 29 KIs and each interview lasted for about 45 minutes. Data were recorded using a recorder, they were later transcribed and used to write the report. FGDs were used to collect detailed and more in-depth information from the household members at community level. Two sets of FGDs were conducted in each of the villages in Kaiku Parish. In every village FGDs were conducted for men and women.

#### **Ethical considerations**

The researcher obtained Institutional Review Board Approval from the Nexus International University in order to ensure adherence to ethical research guidelines. The IRB approval letter was presented to the authorities, households and participating development partners in Nakapiripirit district. Before the data collection, consent was obtained from the District Administration, namely the Chief Administrative Officer and the District Health Officer to provide access to study participants. A formally written letter that explains the objectives of the study, time of commitment, potential impact, and potential outcomes of the research was sent to Nakapiripirit District Local Government to obtain permission to carry out this research. As [10] asserts, "all social research involves consent, access, and associated ethical issues since it was based on data from people about people." Interviews of participants will meet the general protocols and procedures for interviewing. The study obtained

informed consent from the study participants. They were presented with full information about the research, including the reasons why they were chosen to participate.

Participants' privacy, confidentiality, and anonymity were guaranteed. Consent forms and cover letters were provided to the study respondents. To ensure confidentiality and anonymity, the Research Assistants were asked not to write the names of the study respondents on the questionnaire even at data entry, the names of the study respondents were not entered into the computer program for analyses, so it was not easy to know who said what. The Research Assistants were deployed in such a way that they do not collect data from their own communities. They were deployed in other communities. The research team also took precautionary measures to ensure that there was no harm to the respondents. Like earlier mentioned, the researcher ensured confidentiality and anonymity of the study respondents to avoid victimization of the study participants.

#### **Strategy for Data Processing and Analysis**

##### **Data Management**

Before data entry and analysis was done, the researcher processed, and consolidated data collected from the survey questionnaire and interviews to ensure completeness and consistency. Data was cleaned, stored, entered using SPSS version 16. Open ended data were coded and double checked to ensure consistency. For qualitative data, field notes were written, and work edited at the end of each working day to ensure accuracy in recording the information given by the respondents consistently. The data obtained from both the field notes and the recorders were transcribed for analysis.

##### **Quantitative Data Analysis**

Computer based analysis was used to analyse the findings of this study. This method was preferred since a large amount of data were gathered from all the 373 respondents and it is cumbersome to analyse such data manually. Before data entry and analysis was done, the researcher processed, and consolidated data collected from the survey questionnaire and interviews to ensure completeness and consistency. The researcher then used SPSS version 16 for

analysis where descriptive statistics and multiple response procedures were applied to generate frequency tables. The analysis relied on both descriptive and inferential statistics. The descriptive statistics involved use of frequency counts, percentages as well as the mean and standard deviation. Descriptive data were presented in the form of tables. Inferential statistics involved using the Chi-Square. The Chi-Square test was used to determine the association between the community-based nutrition education interventions and child nutrition status in Namalu Sub County in Nakapiriprit district as suggested by [7]. The analyses involved use of cross tabulations and chi-square statistical tests to determine if there was any significant association between the community-based nutrition education interventions and child

### Response Rates

This subsection focuses on the response rates of the study. Out of the 29 participants who were targeted to participate in the key informant interviews 21 participated representing a response rate of 72%. Out of the 372 household respondents who were targeted to participate in the study, a total of 362 participated in the study, representing a response rate of 97%. Overall, the response rate to this study was 97% which is acceptable according to Sekaran (2003) who puts the acceptable response rates at 30%.

### Demographic Profile of the Respondents

#### Gender of Household Heads

Up to 42.3% of the sampled households in Namalu Sub County were female headed (**Table 3 below**). This was more pronounced in Nakuyon, Nakipenet II and Nakipenet III villages, but lowest in Nabore and Morua Loduk Villages. Vulnerability to food insecurity and child malnutrition has been linked to female-headed households.

#### Age Distribution of household heads

In the sampled population, 38.7% of the household heads were within the age bracket of 20 to 29 years. Higher vulnerability is associated with the very young heads of household in the age group 15 to 19 years and the very old in the age group of 60 years and above. The results in **Table 3** show that 21% of the household heads were aged between 15 and 19 years of age, while only 1.6% were above 60 years of age. These two groups

nutrition outcomes and to determine if there was any significant difference between the households that participated and those that did not. Statistical significance was set at  $p$ -value  $< 0.05$ .

### Qualitative Data Analysis

Qualitative data were analysed using thematic analysis where themes were identified and put in coding categories to classify answers into meaningful categories so that the essential patterns of answers are brought out from the notes. A scheme of analysis was worked out following the coding categories using quotations and identifying literature which was used to discuss the findings. Qualitative data obtained from interviews were interwoven with results obtained from analysis of the household survey to explain the overall trends and phenomenon in the results.

## RESULTS

are vulnerable to food insecurity and child malnutrition.

### Education Levels of household heads

There is a positive association between level of education and household income, which could in-turn influence the household food security and child nutrition. Overall, 50% of the household heads had never gone through any formal education, followed by 37% who had attained primary school education and only 13% who had attained secondary school education (**Table 3**). Lower education levels are likely to increase household food insecurity and impact negatively on child nutrition status.

### Employment status of the household heads

Employment is strongly associated with household income and is therefore likely to affect food security and child nutrition [3]. It is worth noting that 16% of the household heads in the study area were unemployed (**Table 3**). Unemployment is likely to negatively impact family income, food security and child nutrition status.

### Polygamy

The results in **Table 3** show that 37.8% of the household heads were in a polygamous relationship. Household polygamy was lowest in Nabore and Morua Loduk villages and was highest in Nakipenet V, Nakipenet II and Nakuyon villages. Vulnerability to food insecurity and child malnutrition were linked to polygamous households during both key informant interviews and FGDs.

The link between polygamy and vulnerability was confirmed during interviews with key informants where it was revealed that polygamous households were vulnerable to poor food security and child malnutrition as attested to by one key informant who noted that: *“You find a man having so many wives and many young children, yet he cannot provide food for all of them. Such children end up falling sick or dying because of lack of food and malnutrition”* (Key Informant Interview, NGO). The findings suggest that polygamous households are prone to malnutrition because men cannot adequately provide for the big number of children in the households.

#### **Household Family Size**

The number of people who eat from the same household has a bearing on child nutrition and food security as illustrated in **Table 3**, household size ranged between two and five people for 60.8% of the households. It is worth noting that (39.3%) of the households reported having more than six people in the household. This is likely to have an impact on the food security and child nutrition in the household.

#### **Disability and Chronic Illness**

Disability and chronic illness are associated with reduced ability to work, which in turn influences the food security and child nutrition status level in the household. As illustrated in **Table 3**, 4.1% of the households were headed by persons with disabilities while 9.4% were headed by persons with chronic illnesses. Disability and chronic illness are likely to reduce the ability to work and impact negatively on food security and child nutrition status.

#### **Number of under-five year old children in the households**

Out of the sampled household heads, 50% had one child under five years of age, 25% had 3 children, 13% had 2 children and 12% had 4 children. As illustrated in **Table 3**, a big majority (88%) of the households had more than 2 children under the age of 5 years. Having many children below the age of

five is likely to negatively impact the quality of childcare, health and nutrition status.

#### **Child nutrition status in the households**

In order to obtain overall under-five nutritional status, the researcher collected data on child nutrition status indicators namely stunting, wasting, and MUAC. The results were combined to form the child nutrition status parameter. As clearly seen in **Table 3**, 35.6% of the children from the participating households were malnourished. This means that child malnutrition in Kaiku Parish stands at 35.6%. This is slightly higher than the regional average of 35%.

#### **Mothers' Characteristics**

##### **Age Distribution**

Most (70.4%) of the mothers who participated in the study were in the age category of 20 to 49 years. Those between 15 and 19 years were 29.6%. Findings from the key informant interviews revealed that teenage mothers and their children were nutritionally at higher risk because they did not have adequate knowledge to take care of their children.

##### **Education Levels**

Mother's level of education has a bearing and the child's nutrition status. The results in **Table 3** show that 55% of the mothers in Namalu Sub County in Nakapiriprit district did not have any formal education. Vulnerability to poor nutrition increases with low levels of mothers' education.

##### **Employment status**

Mothers' employment status has been linked with child nutrition. The findings in **Table 3** show that most (57.5%) of the mothers were peasant farmers, followed by 29.6% unemployed and then by only 13% who were doing business. High vulnerability to food insecurity and child malnutrition was linked with unemployed mothers during interviews. The key informants noted that the high levels of illiteracy and ignorance contributed to child malnutrition in the study area.

**Table 3: Demographic Characteristics of the Study Respondents**

Characteristics	Category	Frequency	Percentage
<b>Gender of Household Heads</b>	Male	209	57.7%
	Female	153	42.3%
<b>Age Distribution of Household Heads</b>	15-19	76	21.0%
	20-29	140	38.7%
	30-39	90	24.9%
	40-49	48	13.3%
	50-59	3	.8%
	60-69	3	.8%
	70-79	2	.6%
<b>Employment</b>	Pastoralist	178	49.2%
	Farmer	91	25.1%
	Business	36	9.9%
	Unemployed	57	15.7%
<b>Polygamy Status</b>	Polygamous	137	37.8%
	Non-Polygamous	225	62.2%
<b>Household Size</b>	2-5 People	220	60.8%
	6-10 People	136	37.6%
	Above 10 People	6	1.7%
<b>Disability</b>	Yes	15	4.1%
	No	347	95.9%
<b>Chronic Illness</b>	Yes	34	9.4%
	No	328	90.6%
<b>Child Nutritional Status</b>	Poor nutritional status	129	35.6%
	Good nutritional status	233	64.4%
<b>Mothers' Characteristics</b>	<b>Age Category</b>		
	15-19	107	29.6%
	20-29	193	53.3%
	30-39	54	14.9%
	40-49	8	2.2%
<b>Education</b>	None	199	55.0%
	Primary	105	29.0%
	Secondary	58	16.0%
<b>Employment status</b>	Farmer	208	57.5%
	Business	47	13.0%
	Unemployed	107	29.6%

#### **The key community-based child nutrition education interventions implemented** **Access to Community-Based Nutrition Education Interventions**

Out of the sampled 362 community respondents, (271) 74.9% indicated that they received community-based nutrition education (See **Table 4**). Further analysis showed that Nakipenet I, Nakipenet II and Nabore villages had the highest percentage of households which had accessed community-based nutrition programs. Further analysis shows that most of the respondents who accessed

the program were female (83.8%) the majority (100%) of whom were aged between 20-29 years and had attained at least some primary school education. Document review and key informant interviews revealed that community-based nutrition interventions were directly implemented under the; Karamoja Nutrition Program, Karamoja Livelihood Unit Program, Infant and Young Children Feeding (IYCF) Program, Zinc and Diarrheal Management Program,

Maternal and Dietary Supplement to Address Maternal and Child Under Nutrition Program, Addressing Iron Deficiency Anemia in Children and Iron Folate Supplementation for Pregnant Women Program, Treatment of Severe Acute Malnutrition (SAM) Program, Community-Based Supplementary Feeding Program for Treatment of Moderate Acute Malnutrition (MAM) Program, Vitamin A Supplementation (VAS) & Child Deworming Program and through routine integrated community medical outreaches by health workers and Village Health Team Members in the communities (See **Table 4**).

**Institutions that offered community-based nutrition education interventions**

Further analysis shows that nutrition education was mainly offered by the government with support from partners like UN, USAID, UKAID and the European Union as mentioned by 66.6% of the study respondents, followed by NGOs at 33.4% (See **Table 4**). This seems to suggest that government programs implemented by both local and central government agencies were the leading providers of community-based nutrition education in Namalu Sub County. Most people reported benefiting from government interventions through the routine integrated community medical outreaches camps that were conducted at community level by health workers and VHTs from the government owned Namalu Health Center III.

**Persons that delivered the Community-based Nutrition Education Interventions**

The research team was interested in finding out the persons who delivered the program. To this effect, the study respondents mentioned community health workers (VHTs) (28.8%), peer mothers (19%), Health Assistants (19%), health workers from the government owned health facilities (14.2%) and Nutritional Officers from the implementing partners (8%) (See **Table 4**). **Where were the interventions delivered from?**

When asked where the interventions were delivered from, in a multiple response question, the study respondents mentioned that the interventions were mainly delivered in the community (71.2%) and from home (28.8%) as indicated in **Table 4**.

**Topics Covered**

When asked what topics were covered, the household respondents mentioned complementary foods (21.6%), having food/grain stores (17.5%), giving children energy rich foods (17.2%), breast feeding practices (13.5%), giving children a balanced diet (12.9%), taking children for immunization so that they get Vitamin A and Iron supplements (8.7%), giving children protein rich foods (4.3%) and giving children clean food (See **Table 4**). These findings were confirmed by document review where most of the implementing partners' reports mentioned the topics outlined in Table 4.

**Table 4: The key community-based child nutrition education interventions implemented by the different stakeholders in Namalu Sub County in Nakapiripirit district.**

<b>Interventions</b>	<b>Category</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Received the Intervention</b>	Yes	271	74.9%
	No	91	25.1%
<b>Institutions that offered the intervention</b>	Government	450	66.6%
	NGOs	226	33.4%
	<b>Total</b>	<b>676</b> <b>(Multiple Responses)</b>	<b>100%</b>
<b>Venue of the Intervention</b>	Community	225	71.2%
	Home	91	28.8%
	<b>Total</b>	<b>316</b> <b>(Multiple Responses)</b>	<b>100%</b>
<b>Topics Covered</b>	Introducing complementary foods	225	21.6%
	Giving children energy rich foods	179	17.2%
	Giving children protein rich foods	45	4.3%
	Having a food/grain store in the home	182	17.5%
	Giving children clean food	45	4.3%
	Taking children for immunization	90	8.7%
	Giving children a balanced diet	134	12.9%
	Breast feeding practices	140	13.5%
	<b>Total</b>	<b>1040</b> <b>(Multiple Responses)</b>	<b>100.0%</b>
	<b>Persons that delivered the Community-based Nutrition Education Interventions</b>	Community health workers	271
Health care providers		134	14.2%
Health Assistants		179	19.0%
Nutritional Workers		179	19.0%
Peer mothers		179	19.0%
<b>Total</b>		<b>942</b> <b>(Multiple Responses)</b>	<b>100.0%</b>
<b>Venue where the interventions were delivered</b>	Community	225	71.2%
	Home	91	28.8%
	<b>Total</b>	<b>316</b> <b>(Multiple Responses)</b>	<b>100%</b>

## DISCUSSION

### **The key community-based child nutrition education interventions implemented by the different stakeholders**

The study sought to identify the key community-based child nutrition education interventions implemented by the different stakeholders in Namalu Sub County in Nakapiripirit District. This study found that almost three quarters (of the caretakers had accessed community-based nutrition education programs mainly by health workers from government owned health facilities who educated mothers and child caretakers during routine integrated community medical outreaches and camps. UN agencies like the WFP and UNICEF as well as other NGOs also supported the district health department and directly implemented the community-based education interventions in the study area. Given the resource constraints faced by the district health department, the support from the UN agencies gave the department a boost in fulfilling its mandate. This finding is supported by the [3] study which found that collaboration between the district health departments enhanced child nutrition in the Karamoja Sub Region. The community-based interventions were largely conducted at

home and the community. Home visits were more effective because they gave the caretakers enough time to learn, seek clarification and ask questions. They also enabled the facilitators to demonstrate to the mothers using domestically available resources in the home. The sessions were mainly delivered by VHT members. Use of VHTs has been found to enhance delivery of health service in the local communities [12]. This is because the VHT members understand the local context and can easily explain to the community in the local language. The facilitators covered relevant topics like introduction of complementary feeding, having food/grain stores, giving children energy rich foods, breast feeding practices, giving children a balanced diet, taking children for immunization so that they get Vitamin A and Iron supplements, giving children protein rich foods and giving children clean food. These are relevant topics that could address under five child malnutrition as observed by the [2].

However, unlike the above mentioned studies, which focused on health facility and school-based education contexts, this study focused on community-based contexts and found that it reduced child malnutrition at community level.

## CONCLUSION

The study sought to identify the key community-based child nutrition education interventions implemented by the different stakeholders in Namalu Sub County in Nakapiripirit District. This study found that almost three quarters of the caretakers had accessed community-based nutrition education programs mainly from health workers from government owned health facilities who educated mothers and child caretakers during routine integrated community medical outreaches and camps. UN agencies like WFP and UNICEF as well as other NGOs also supported and

implemented the community-based education interventions in the study area. Overall, the interventions were well implemented and effective in improving under five child nutrition in the Karamoja Sub Region. Thus, it can be inferred that the community-based nutrition education interventions implemented in the Karamoja Sub Region by the different stakeholders and partners improved the nutritional status and reduced malnutrition among children under five years of age in the Karamoja Sub Region.

## RECOMMENDATIONS

The Ministry of Health should strengthen Social and Behaviour Change Communication (SBCC) using Information Education and communication materials in the local languages to dispel myths and misconceptions on nutrition taboos for good nutrition. Enhance Community dialogues and awareness creation campaigns on the importance of good

nutrition especially for children, pregnant and lactating mothers. Strengthen early childhood development by improving the capacity of caregivers and infrastructure at the community centres, as well as creating greater awareness at community level about the benefits of nurturing care for children during the first five years of life.

The stakeholders should help local communities form civil society organisations like community-based organisations and local Non-Government Organisations to implement local community-based nutrition programs.

The stakeholders should use the local language in the IEC material. They should also use more pictures in the IEC material to ensure that the illiterate members of the community are able to understand.

## REFERENCES

1. Amin, M. E. (2005). *Social science research: Methodologies and conceptions*. Kampala: Makerere University Printery.
2. Black, R. E., Allen, L. H. and Bhutta, Z. A. (2008). Maternal and Child under Nutrition: Global and Regional Exposures and Health Consequences. *The Lancet*, 371 (9608), 243- 260, 2008.
3. Brace, A. M., Andrade, F. C. and Finkelstein, B. (2018). Assessing the effectiveness of nutrition interventions implemented among US college students to promote healthy behaviors: A systematic review. *Nutrition and Health*. 24(3):171-181. doi: 10.1177/0260106018785528.
4. Briggs, M., Fleschhacker, S. and Mueller, C. G. (2010) Position of the American Dietetic Association, School Nutrition Association, and Society for Nutrition Education: Comprehensive School Nutrition Services, *Journal of Nutrition Education and Behaviour* 42(6), 360-371.
5. Chianca, T. (2008). The OECD/DAC Criteria for International Development Evaluations: An Assessment and Ideas for Improvement. *Journal of Multidisciplinary Evaluation*, 5, 9
6. Choi, H., Kim, S. H. and Lee, J. (2010). Role of Network Structure and Network Effects in Diffusion of Innovations. *Industrial Marketing Management*. 39 (1): 170-177.
7. Contento, I., Balch, G. I., Bronner, Y. L., Lytle, L. A., Maloney, S. K. and Olson, C. M. (1995). The effectiveness of nutrition education and implications for nutrition education policy, programs, and research: A review of research. *Journal of Nutrition Education*, 27 (6): 277- 418.
8. Contento, I. R. (2007). *Nutrition Education: Linking Theory, Research and Practice*. Sudbury, MA: Jones and Bartlett Publishers.
9. Development Initiatives. Global Nutrition Report 2017: Nourishing the SDGs. Bristol, UK: Development Initiatives, 2017.
10. Elo, S., Kääriäinen, M., Kanste, O., Pölkki, T. and Kati, U. and Kyngäs, H. (2014). Qualitative Content Analysis: A Focus on Trustworthiness. Retrieved June 21, from <https://journals.sagepub.com/doi/full/10.1177/2158244014522633>
11. Gibbons, D. (2004). "[Network Structure and Innovation Ambiguity Effects on Diffusion in Dynamic Organizational Fields](#)" (PDF). The Academy of Management Journal (Submitted manuscript). 47 (6): 938-951. doi:10.2307/20159633. hdl:10945/46065.
12. Given, L. M. (2016). *100 Questions (and Answers) About Qualitative Research*. Thousand Oaks: Sage;