

Knowledge, attitude, and practices towards prevention of malnutrition among caretakers of children below five years at Kikuube Health Centre IV, Kikuube District. A cross-sectional study.

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Abstract

Background:

The aim of the study is to assess the knowledge, attitude, and practices towards the prevention of malnutrition among caregivers of children below five years at Kikuube Health Centre IV, Kikuube District.

Methodology:

A cross-sectional retrospective study where Quantitative methods. Simple random sampling was used to select 50 respondents/caretakers from the list developed from village health team registers.

Results:

Majority (54%) attained only primary education, (92%) earn less than 50,000 shillings a month, (56%) said food which is not balanced caused malnutrition, (40%) talked of pale hair as a major sign of malnutrition, (84%) were aware that breast milk is the main source of food for children below six months 76% (38/50) said they always initiate breast feeding immediately after birth 68% (34/50) of the respondents practiced exclusive breast feeding for complete six months 60% (30/50) feed their children three times a day, 96% of the respondents agreed that it's important for children suffering from malnutrition to be taken to the health center for management, 68% of the care takers agreed that children should be breast fed exclusively for the first six months.

Conclusions:

Caregivers had knowledge of the causes of malnutrition, and this is good in such a way that caregivers will do what is within their means to prevent it. Caregivers, especially mothers, demonstrated a satisfactory practice of breastfeeding. Caregivers had generally positive attitudes towards the desired practices in the prevention of malnutrition. The majority of caregivers had positive beliefs towards breastfeeding, delivery from.

Recommendations:

There should be internal strategies and policies developed by the government to change the caretaker's mindset about the causes and effects of childhood malnutrition.

Keywords: Knowledge, Attitude and Practices, Prevention of malnutrition, Caretakers of children below five years, Kikuube Health Centre IV.

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Background

Malnutrition can be defined as a lack of proper nutrition. The nutritional status of a child, as with any individual, is assessed through dietary, anthropometric, biochemical, and physical observation for signs of malnutrition. These methods of measurement are usually done in combination for more accurate results. When there is a deficiency in the

amount and nutritional value of the food consumed, the growth pattern of a child becomes disrupted owing to nutrient deficiencies. Malnutrition in hospitalized children at a tertiary hospital in South Africa. (Oosthuizen, 2019). Malnutrition remains a major cause of mortality and morbidity among children under five years, especially in developing countries. 155million children under the age of

5years were suffering from stunting, while 41million were overweight or obese. (WHO, 2017). Around 45% of deaths among children under 5years of age are linked to undernutrition. These mostly occur in low – and middle–income countries. At the same time, in these same countries, rates of childhood overweight and obesity are increasing. Whilst some governments have started providing manufactured fortified foods to prevent and treat acute malnutrition in children, there are still critical challenges that need consideration. Food commodities distributed may be unfamiliar and unacceptable to beneficiaries in certain contexts. The cost-effectiveness of food approaches has been recently questioned; however, a recent study has highlighted the costs that can be saved by reformulating RUTFs. (Puet et al., 2019). Uganda has ratified a range of international conventions and committed itself to ending hunger and malnutrition (UMNAP, 2017). However, malnutrition remains a serious health and welfare problem affecting children under five, to whom it contributes significantly to mortality and morbidity. According to the Uganda Demographic and Health Survey of 2016, nearly four in ten Ugandan children under five years of age (38percent) are stunted (short for their age), six percent are wasted (thin for their height), and sixteen percent are underweight. The persistently high rates of malnutrition in children under 5years are symptomatic of the larger problems of inadequate access to food, suboptimal feeding practices, and poor health, sanitation, and hygiene practices by many within the country. This has resulted in 38% suffering from chronic malnutrition (stunting), 16% being underweight, and 6% suffering from acute malnutrition. Kikuube district and Kikuube Town Council are not any different; malnutrition contributes around 30% of the OPD cases at Kikuube Health Centre IV (HMIS, 2017). What is surprising, however, is that the Kikuube district and western Uganda generally are known to be the food basket of Uganda. The aim of the study is to assess the knowledge, attitude, and practices towards the prevention of malnutrition among caregivers of children below five years at Kikuube Health Centre IV, Kikuube district.

Methodology

Study design

A retrospective study was carried out to determine the knowledge, attitude, and practices of the caregivers attending Kikuube Health Centre IV towards the prevention of malnutrition among children below five years. Quantitative methods were used to collect data from caregivers and were later described, compared, and analyzed in different variables.

Study population

The study population comprised mothers/caretakers of children below 5 years of age in Kikuube Health Centre IV. These mothers were the target population. Uganda is a highly patriarchal society where the duties of child care are left entirely to the caretakers. Caretakers are with their children most of the time, especially those below five years; hence contribute much to how they feed and what they feed. Only caretakers who reside in Kikuube Health Centre IV were interviewed.

Sample size determination and Sampling Procedure

The study sample was determined using Kish and Leslie (1998), which is as follows;

Kish and Leslie's formula, $n = (Z^2pq) / d^2$, where n is the required sample size, z is the standard deviation at 95% confidence interval, and d is the allowed error

P-The estimated proportion of caregivers who have or have had children with malnutrition in Kikuube district

$z = 1.96$. $p = 18.5\%$. $q = 0.185$. $d = 0.5$ $q =$

$1 - p$. $q = 1 - 0.185 = 0.815$ $n = (1.96 \times 1.96$

$\times 0.185 \times 0.185) / 0.5 \times 0.5 = 232$

Using modified Kish and Leslie's formula, $N = n / (1 + n/popn)$

Where N is reduced sample size, $n = 232$, $Popn =$ target population is 70

$N = 232 / (1 + 232/70) = 50$

Therefore, my sample size was 50 respondents

Sampling procedure

The sampling procedure was arrived at from the population of caregivers with children below five years in hospital registers. Simple random sampling was used to select respondents/caretakers from the list developed from village health team registers.

Selection Criteria

Inclusion criteria

All caretakers with children below 5 years had equal chances of being randomly selected. The selected respondents were requested to consent before they could be asked to take part in this study.

The respondents who could ably use Runyooro, Rutooro, Rukiiga, Runyankole, Luganda, and English were interviewed.

Exclusion criteria

Care takers who had children above five years of age.

Care takers who do not attend Kikuube Health Centre IV for health services.

Care takers who could not understand the questions because of limited intellectual ability or were severely mentally ill.

Care takers who refused to consent.

Care takers who were not interested in participating in the study.

Study Variables

Independent variables

Independent variables in this study were “knowledge, attitude, and practices towards prevention of malnutrition among caretakers of children below five years in Kikuube Health Centre IV, Kikuube district.” These are factors that influence the type of food caretakers give to their children and how often. They also influence the preparation, storage, and feeding practices.

Dependent variables

In this study, the dependent variable was “prevention of malnutrition among caregivers of children below five years.”

Demographic characteristics

Demographic characteristics that were collected in this study include the age of the mother, religion, tribe of the mother, age of the child, and sex of the child.

Study instruments

The interviewer administered a questionnaire written in simple English and translated into Runyoro/ Rutooro, Runyankole, and Rukiiga as the main tool for collecting data in this retrospective study. The questions were designed to find information about demographic characteristics, signs and symptoms of malnutrition, community beliefs related to child feeding, and different practices carried out that are employed by caretakers to treat malnutrition in the community.

Pretesting and reliability of data

The participants of this study were caregivers, especially mothers of children below five years. The questionnaire was tested prior to the collection day on the same category of people in an area with the same characteristics.

Questions that looked to be irrelevant were revised, and questionnaires were interpreted and analyzed for completeness, accuracy, and precision.

Data collection procedure

I first sought clearance from the authorities at Kikuube Health Center IV before I proceeded to collect data, using the health facility’s previous quarter reports; I developed a database of caregivers with children below five years. Simple random selection was used to select participants. The purpose of the study was explained to them, and given consent forms to assent; a questionnaire was administered by the interviewer, who is the researcher. Questionnaires were in English and were translated into Runyoro, Rutooro, Rukiiga, and Luganda. Clarification was given to participants where necessary. Each questionnaire was checked for completeness before leaving the respondent.

Data Management Analysis

Data was cleaned and edited as soon as the questionnaire was administered to each participant. Each questionnaire was given a unique code to prevent incidences of omission and double entry in the analysis. Data was stored in a computer whose password is only known to the researcher.

Ethical consideration

The study was reviewed by the research committee of Kampala School of Health Sciences- Buloba.

Privacy and confidentiality of respondents were maintained by using codes on questionnaires, not including their names, and keeping information in a computer that is only accessed by the researcher.

Before getting any information from any respondent, they were told the purpose of the study and asked if they were willing to participate voluntarily.

A respondent would be told that she was free to continue with the study or discontinue at any time she felt like.

Consent was sought, and the respondents were given equal treatment whether they decided to participate or not.

Study limitations

The resources available for this research were limited, and hence, data collection was limited.

Poor record-keeping; hence, limited data available.

Some patients were not willing to give some information during the study.

Language barrier due to differences in tribes and language experiences.

Quality Control

The quality of the study was ensured by the following

The questionnaire was checked for completeness before the researcher left the respondent

The questionnaire was pre-tested on persons of similar characteristics to the study population to check if they understood the questions.

Thereafter, questions that looked irrelevant were adjusted accordingly.

Questions were made as clear and precise as possible to limit errors in the study.

Questionnaires were translated into the local language to reduce the language barrier.

All questionnaires were coded with identifiable serial numbers to avoid loss of data and confusion.

Questionnaires were kept safe in the researcher's bag to ensure proper storage.

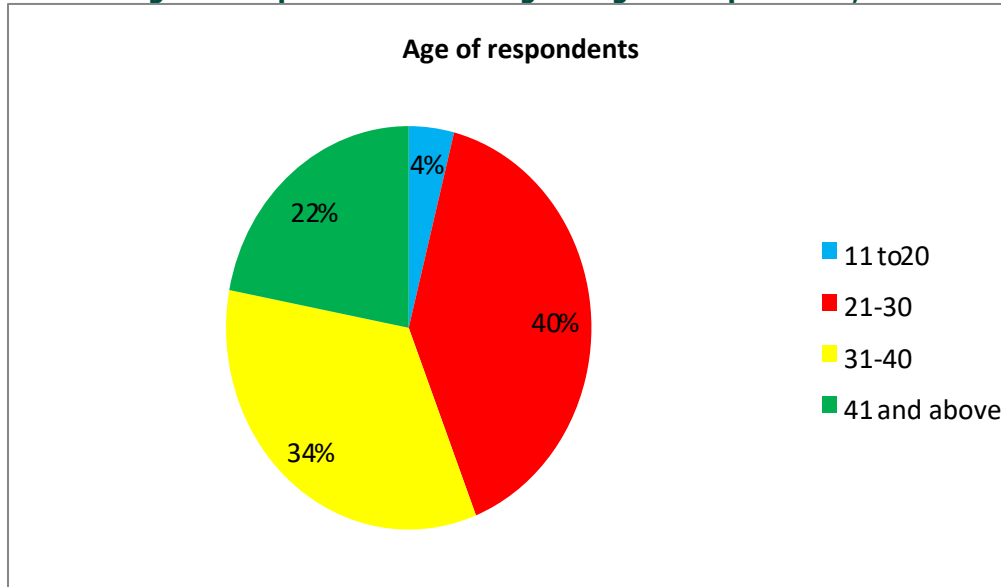
Results

Socio-demographic Characteristics of respondents.

Table 1: Socio-demographic Characteristics of participants N=50

Variable	Frequency (n)	Percentage (%)
11- 20	2	4
21-30	20	40
31-40	17	34
41 and above	11	22
TOTAL	50	100

Figure 1: A pie chart indicating the age of respondents, N=50



1.

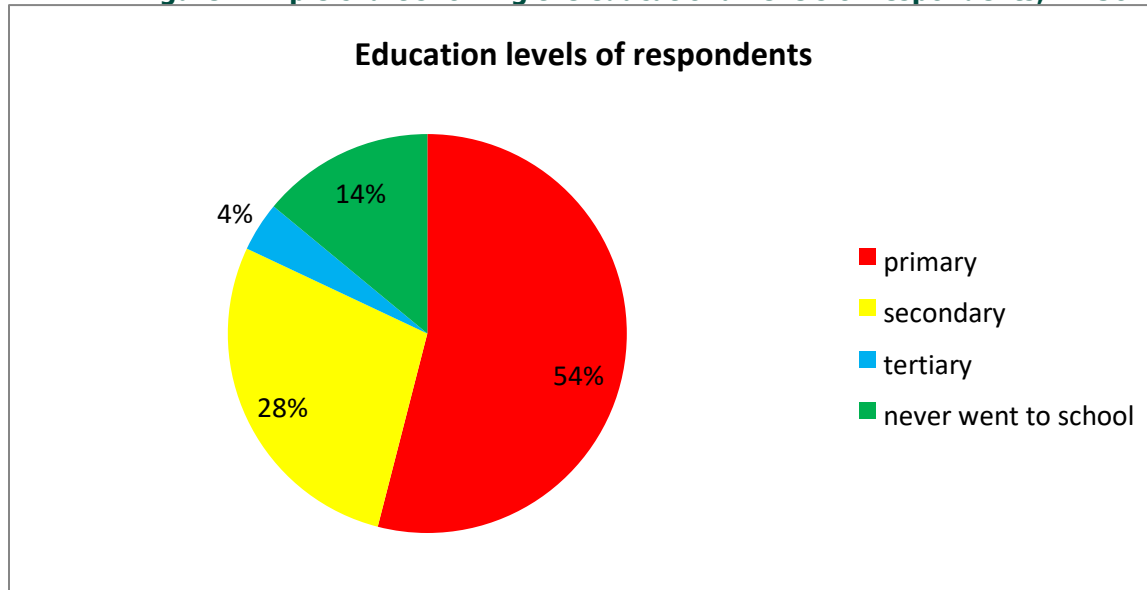
Education of the respondents

Table 2, the majority (54%) attained only primary education, followed by secondary with 28%. Only 4% attained tertiary education, and 14% never went to school.

Table 2: Shows the education of respondents, N=50

Variable	Frequency (n)	Percentage (%)
Primary	27	54
Secondary	14	28
Tertiary	02	04
Never went to school	07	14
TOTAL	50	100

Figure 2: A pie chart showing the educational levels of respondents, N=50



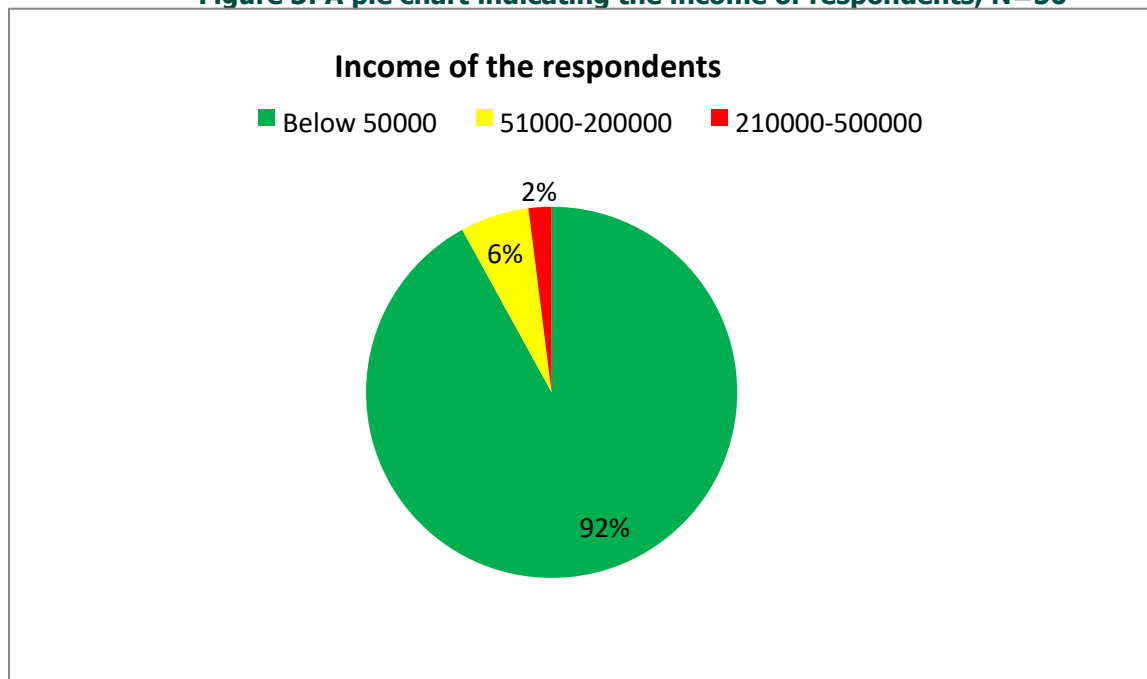
Income of the respondents

The majority of respondents (92%) earn less than 50,000 shillings a month. 6% earn between 50,000 and 200,000, and the least 2% of respondents earn between 210,000 and 500,000 shillings.

Table 3: Shows the income of the respondents, N=50

Income	Frequency(n)	Percent (%)
50,000 below	46	92
51,000-200,000	03	6
210,000-500,000	01	2
TOTAL	50	100

Figure 3: A pie chart indicating the income of respondents, N=50



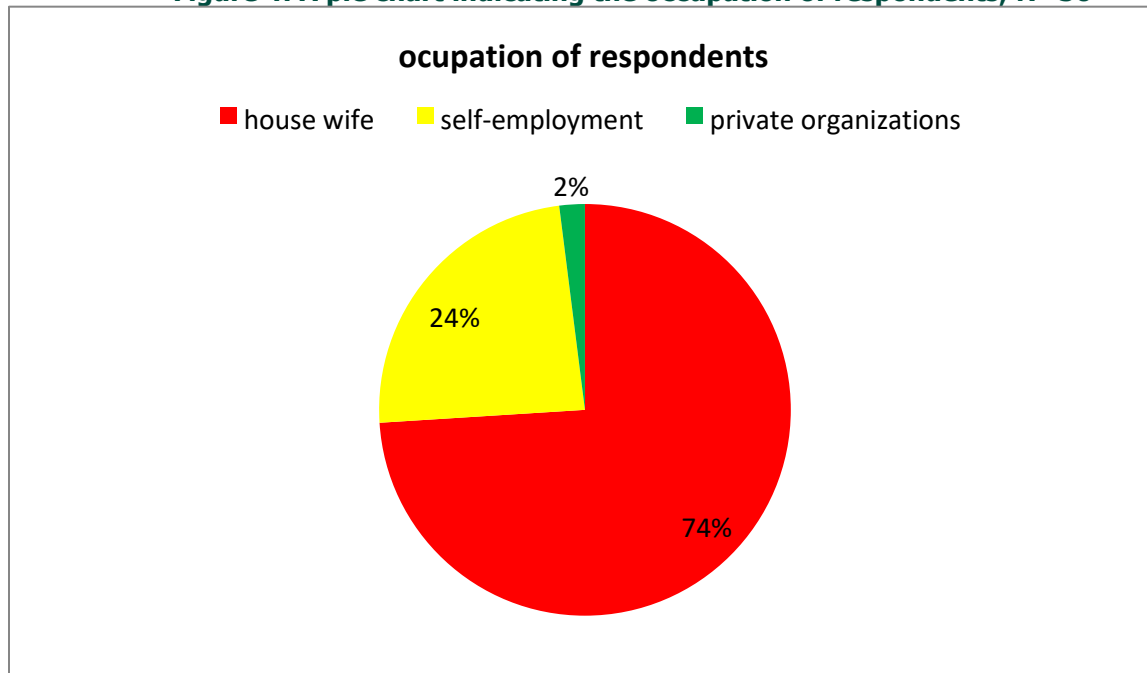
Categories of respondents

The majority of caregivers interviewed (74%) are housewives. Only 24% of the respondents are self-employed, while 02% are working in private organizations. None of the interviewed respondents is in formal employment.

Table 4: Shows occupation of respondents N= 50

Occupation	Frequency (n)	Percent (%)
House wife	37	74
Self-employment	12	24
Private organizations	01	02
TOTAL	50	100

Figure 4: A pie chart indicating the occupation of respondents, N=50



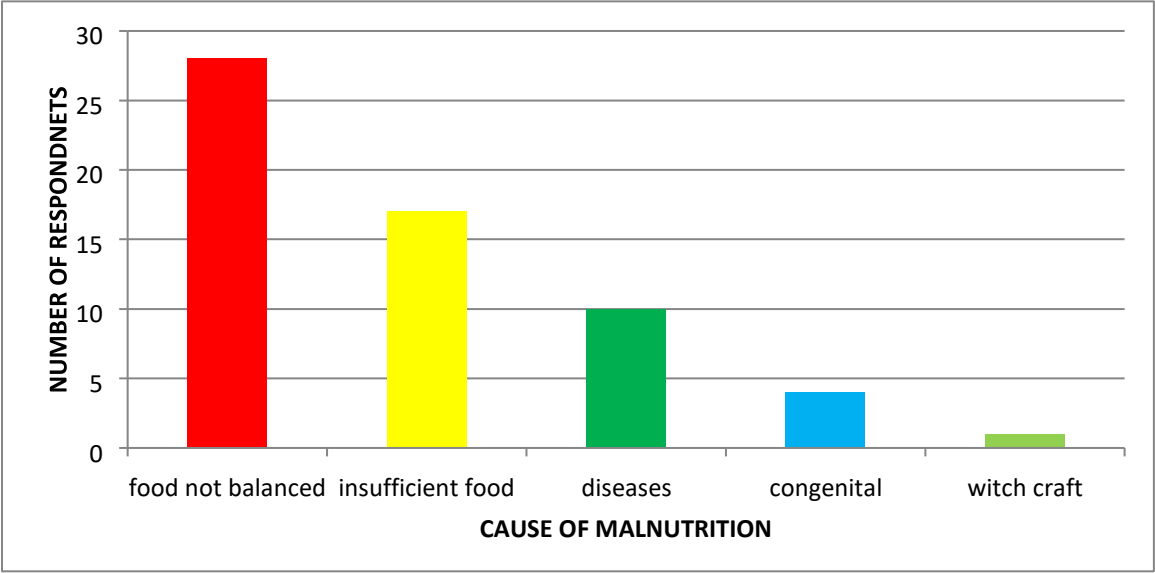
Causes of malnutrition in children below five years in Kikuube Health Centre IV

The majority of respondents (56%) said food that is not balanced, 34% said it's insufficient food, while 08% talked of diseases. 02% of the respondents said with craft.

Table 5: Showing causes of malnutrition as mentioned by the respondents, N=50

Cause of malnutrition	Frequency (n)	Percentage (%)
Food not balanced	18	36
Insufficient food	17	34
Diseases	10	20
Congenital	04	08
Witch craft	01	02
Total	50	100

Figure 5: A bar graph showing causes of malnutrition as mentioned by the respondents, N=50



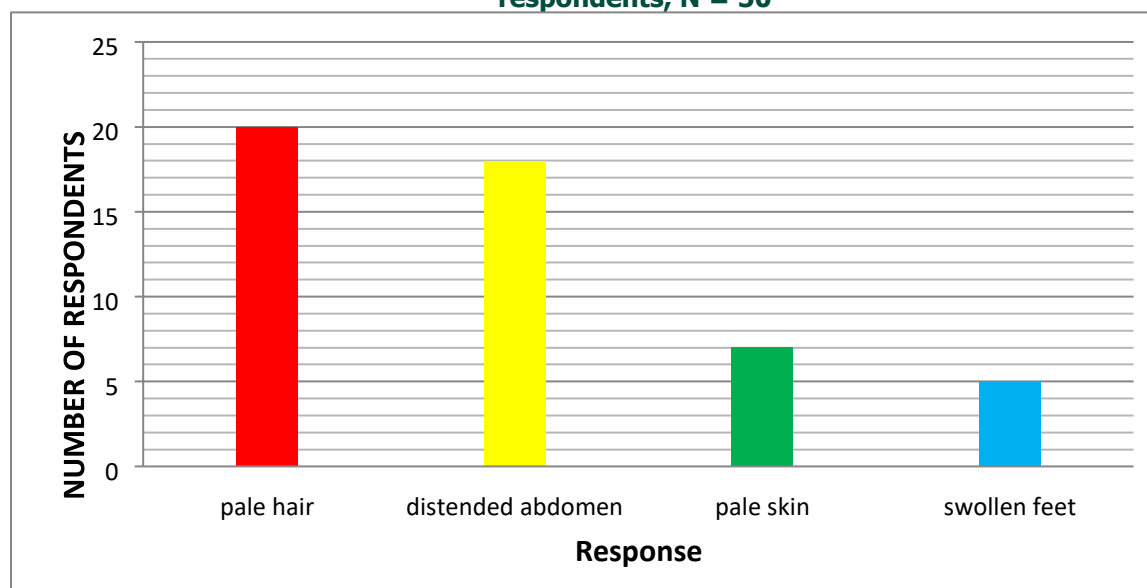
Signs and symptoms of malnutrition

The majority (40%) of the respondents talked of pale hair as a major sign; 36% talked of a distended abdomen. 14% of the respondents talked of pale skin as a sign of malnutrition, whilst the least of the respondents (10%) mentioned swollen feet.

Table 6: Showing signs and symptoms of malnutrition mentioned by respondents N=50

Signs and symptoms	Frequency (n)	Percentage (%)
Pale hair	20	40
Distended abdomen	18	36
Pale skin	07	14
Swollen feet	05	10
Total	50	100

Figure 6: A bar graph indicating signs and symptoms of malnutrition mentioned by respondents, N = 50



The main source of food for children below five years old

A major source of food

84% (42/50) revealed that it's breast milk, while 16% (08/50) intimated that it's artificial foods.

Breastfeeding initiation

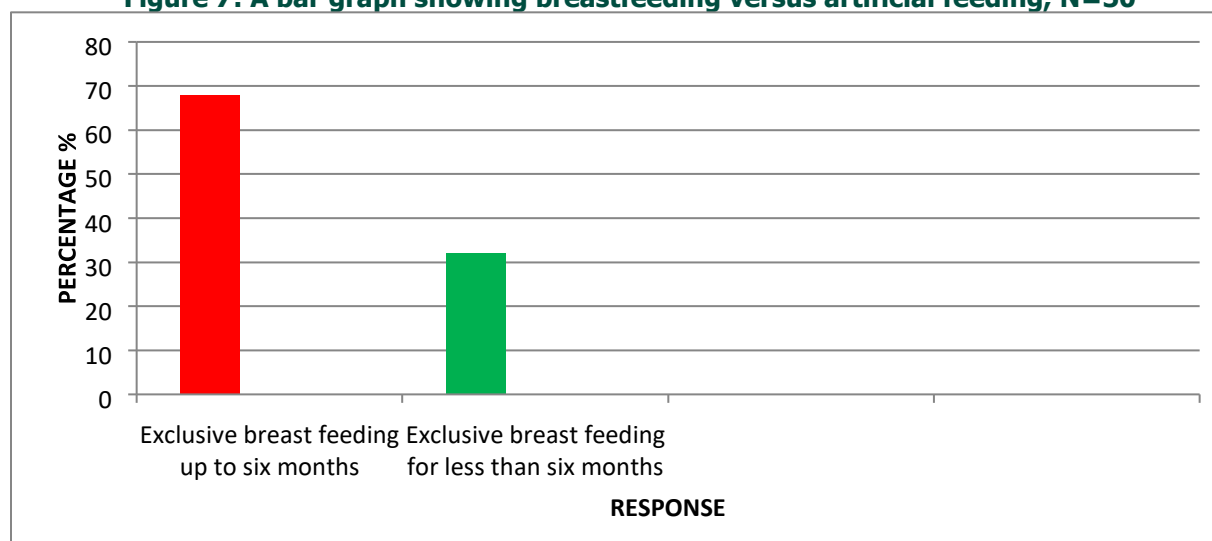
76% (38/50) of respondents said they always initiate breastfeeding immediately after birth, and 24% (12/50) of

respondents said that they only initiated breastfeeding between one hour and six hours after birth.

Exclusive breastfeeding

The majority, 68% (34/50) of the respondents, practiced exclusive breastfeeding for a complete six months, while only 32% (16/50) of the respondents could do it for less than six months.

Figure 7: A bar graph showing breastfeeding versus artificial feeding, N=50



Feeding pattern

The majority of the caretakers sampled, 60% (30/50), feed their children three times a day, followed by 22% (11/50) who feed their children less than three times a day. At least

18 % (09/50) of the respondents feed their children more than three times a day.

Food types for children

The majority (70%) of the respondents indicated that they mainly serve solid foods like matoke, millet, rice, cassava, posho, etc. About 45% indicated that they included liquid foods like milk and porridge in their menu. Only 20% of respondents included green vegetables in their while only 8% of respondents added fruits to the menu of young children below five years.

Mixing food for babies

35% of the caregivers mix food for infants before serving, and the majority of the caregivers (65%) do not mix food.

A major source of food

96% of the respondents have gardens as the main source of food, while only 4% obtain their food from the market.

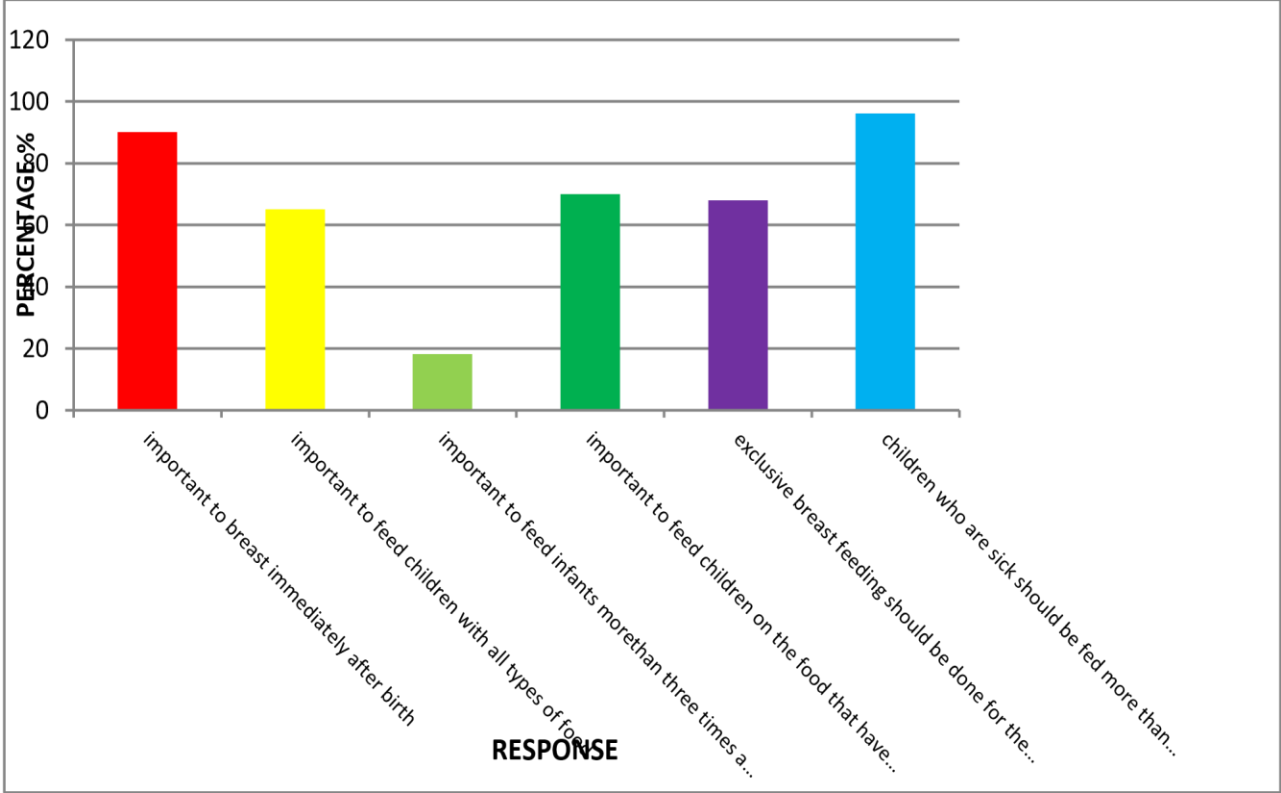
Supplementary food

90% of the sampled caretakers supplement their main diet with food brought from the market. Only 10% of the families' diet is obtained from other sources, which include donations, etc.

Attitude of caregivers towards the prevention of malnutrition

90% of the sampled caretakers with children below 5 years agreed that it's important to breastfeed immediately after birth. Only 65% of the caregivers agreed that it was important to feed children all types of food in a balanced way, and 35% neither agreed nor disagreed with this statement. Only 18% indicated that it's important to feed their infants more than three times a day, and the rest (82%) disagreed with this statement. Caregivers were asked whether it's important to feed children with food that has stayed overnight before warming. About 70% agreed with this statement, and 18% neither agreed nor disagreed. 96% of the respondents agreed that it's important for children suffering from malnutrition to be taken to the health center for management. Care takers were investigated on exclusive breastfeeding, and 68% of the care takers agreed that children should be breastfed exclusively for the first six months. The caretakers were asked whether sick children should be fed more than those who are healthy children. 25% of the respondents agreed with this statement, and the majority (68%) disagreed with it. Only 7% did neither agree nor disagree.

Figure 8: A bar graph showing the attitude of caregivers towards management of malnutrition, N=50



DISCUSSION

Knowledge of caregivers on the causes, signs, and symptoms of malnutrition among children below five years

Most of the respondents could mention at least two causes of malnutrition, except a few who included witchcraft and congenital conditions. With the knowledge of the causes, caregivers are able to take precautions accordingly. Most of the respondents (40%) say that pale hair is a sign of malnutrition. 36% talked of a distended abdomen. 14% of the respondents talked of pale skin as a sign of malnutrition, while the least of the respondents (10%) mentioned swollen feet. These statistics show that most of the caregivers lack knowledge of the signs and symptoms of malnutrition, and this could lead to a delay in seeking appropriate care. This agrees with the research from the World Health Organization, children with malnutrition may exhibit signs such as stunting, wasting, underweight, and macronutrient deficiencies (WHO, 2018). The majority of caregivers (84%) were aware that breast milk is the main source of food for children below six months. However, 16% mentioned artificial food as the best food for babies below six months. This reveals an information gap that must be filled by health workers through health talks. All respondents could mention at least one of the benefits of breast milk to both the mother and the child. Some of the benefits mentioned by the respondents are: helping the child to grow well and increasing the baby's immunity. These statistics show that mothers know the benefits of breastfeeding, hence are motivated to practice it. Breastfeeding protects infants against diarrheal mortality and morbidity through immunological mechanisms and by reducing exposure to contaminated fluids and foods. WHO and UNICEF recommend that children be initiated to breastfeeding within the first hour of birth and be exclusively breastfed for the first 6 months of life- meaning no other foods or liquids are provided, including water. Infants should be breastfed on demand, that is, as often as the child wants, day and night. (WHO, 2020)

Practices of caregivers that hinder normal growth and promote malnutrition among children below five years

In practice, children should be fed exclusively for the first six months before they are introduced to other foods; however, statistics from this survey reveal that some caregivers (32%) introduce other foods before the age of six months. Formula feeding can change the baby's intestinal bacteria. This could increase the baby's risk of infections in the digestive tract. It could also increase their risk for immune problems later in life and expose them to illness. Considering the impact society has on mothers' initiation and duration of breastfeeding, public education on breastfeeding should be intensified so as to stimulate societal support for exclusive breastfeeding practice. This can be achieved through midwives, public health, and community health nurses getting involved in targeted education at close relations of the pregnant woman during

antenatal and postnatal periods to enhance support for exclusive breastfeeding. Based on their educational and cultural background, mixing and preparing food for babies is a complex issue that they can't manage. Overreliance on bottle feeding and formula milk can lead to malnutrition and stunting in children. This was in agreement with (Olang'o et al., 2018). The statistics further reveal that the majority of respondents do not mix food for babies before serving. This act predisposes infants to malnutrition as they lack some essential nutrients. Food for babies should be mixed with a view to a balanced diet which contains all the food values in correct quantities. More so, even those who mix food, 35% do it once in a while, and only a few practice it regularly. This inconsistency may not yield the benefits of mixing food fully. With routine health education, all this can be changed and perfected. Interventions promoting behavior change with regard to breastfeeding and infant feeding should focus on dispelling the beliefs and practices that result in suboptimal breastfeeding practices and building on the positive ones, while involving spouses and other family members, as they are important sources of information on breastfeeding and infant feeding. Most caretakers feed their children three times or fewer in a day, which is not a good practice. Young infants should be fed well-mixed food several times (more than four times) but in small portions. This is because their bodies are not yet used to this type of food.

Attitudes of the caretakers towards the prevention of malnutrition

All caretakers, especially mothers, showed a positive attitude towards delivering at the health facility and taking their children for vaccination and deworming. This can be attributed to health talks from the Ministry of Health on different platforms, as well as sensitizations done by health workers. The majority of the respondents are okay with breastfeeding immediately after birth, and they also agree that after six months, children should be fed on all types of food in a balanced way. More so, most mothers had positive attitudes towards the desired practices with the exception of a few, which can be attributed to the varying social demographics and educational background. This is in line with the caregivers' beliefs and attitudes towards infant feeding practices, which influence their likelihood of adopting optimal practices. (Kumar et al., 2019)

Conclusions

Caregivers have knowledge of the causes of malnutrition, and this is good in such a way that caregivers will do what is within their means to prevent it. However, caretakers are still ignorant about the signs and symptoms of malnutrition. With no clear knowledge of the signs and symptoms, caregivers may not seek appropriate care.

Caregivers, especially mothers, demonstrated a satisfactory practice of breastfeeding. However, exclusive breastfeeding for the first six months is still lacking. In supporting grown-up infants for complementary feeding, caregivers' practice

was not satisfactory either. Most caretakers never mixed food for babies, and hence, this practice could predispose them to malnutrition. Even those who practiced mixing, it was revealed that it was done once in a while.

Caregivers had generally positive attitudes towards the desired practices in the prevention of malnutrition. The majority of caregivers had positive beliefs towards breastfeeding, delivering from the health unit, taking children for vaccination, and immunization. A few concerns were, however, raised about some attitudes, such as not feeding a sick child more often. This kind of attitude may extend the healing period of a child.

Recommendations

There should be internal strategies and policies developed by the government to change the caretaker's mindset about the causes and effects of childhood malnutrition.

More so, in the formulation of breastfeeding policies, culture should be mainstreamed since it plays an important role in determining when one should initiate breastfeeding and when foods are introduced.

Strategies should be put in place to increase caregivers' income, especially mothers, since no single community can grow the food they need, and hence, caregivers need money to purchase supplementary foods.

Research should be conducted to establish why most women do not complete an ordinary level of education despite the government introducing UPE and USE education.

Health professionals need to conduct regular health education to educate the masses on when complementary feeding should be initiated.

Health outreaches should be conducted to improve uptake of health messages in places that are 5km away from the health unit.

Government to employ a nutritionist to be based at Health Center IIIs. This will help to sensitize caretakers and the general public on eating healthy foods and healthy habits.

Finally, the study concludes that culture, low levels of knowledge, and lack of constant education messages have a great impact on malnutrition in Kikuube Health Center IV. And this may not be an issue of Kikuube Health Center IV alone, but the entire Kikuube District. Similar studies conducted on cultural taboos around certain foods can lead to inadequate dietary diversity and malnutrition. (Kumar et al., 2019)

Acknowledgement

Specifically, I give thanks and honor to the Almighty God for giving me life and supporting me in tough situations I went through during my academic journey. I extend my sincere appreciation to my supervisor MR. WERE AMIRI for his valuable time, guidance, support, and encouragement in the preparation of my research. I acknowledge the role played by the staff and administration of Kampala School of Health Sciences in guiding and developing me morally, especially the principal, Mr. Mubangizi Prosper. My heartfelt gratitude goes to my beloved daddy, Mugenyi Jackson, my mother, Kusiima Joan, and my uncle, Mwesigwa Denis, who supported me financially.

List of acronyms

HMIS: Health Management Information System

RUTF: Ready to Use Therapeutic Feeds

UNICEF: United Nations International Children's Emergency Funds

WHO: World Health Organization

Source of funding

The study was not funded.

Conflict of interest

The author did not declare any conflict of interest.

Author contributions

David Tusabe collected data and drafted the manuscript of the study

Were Amiri supervised all the study processes

Data availability

Data is available upon request.

Ethical approval

A letter of introduction was obtained from the Kampala School of Health Sciences Research Committee, introducing the research and seeking permission to carry out the study with assurance of confidentiality.

Informed consent

The study commenced after the objectives of the study were well explained to the participants, and they consented to participate in the study.

Author biography

David Tusabe is a student at Kampala School of Health Sciences

Were Amiri is a research supervisor at Kampala School of Health Sciences

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9. WHO. (2018). Children with malnutrition may exhibit signs such as stunting, wasting, underweight, and macronutrient deficiencies.
10. WHO. (2020). Infants should be breastfed on demand, that is, as often as the child wants, day and night.