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FACTORS CONTRIBUTING TO MALNUTRITION AMONG CHILDREN BELOW FIVE YEARS AT PAEDIATRICS WARD AT KIBOGA DISTRICT HOSPITAL, KIBOGA DISTRICT. A CROSS-SECTIONAL STUDY.

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Abstract

Introduction

Malnutrition is a deficiency or improper intake of energy and nutrients. It includes under nutrition (wasting, stunting, underweight, and micronutrient malnutrition) and over nutrition (obesity, some malignancies, and non-communicable illnesses).

Objectives of the study

To identify the social demographic factors, to determine the economic factors, and to assess the knowledge of parents or caregivers on factors contributing to malnutrition among children less than five years old in Kiboga District Hospital, Kiboga District.

Methodology

A cross-sectional descriptive study design was used, using both qualitative and quantitative approaches. The researcher conveniently sampled 100 respondents. Data collection was by using self-administered questionnaires which were filled and later analyzed using tables and pie charts.

Results

Out of the 100 respondents, the Majority; 71 (72%) of the respondents' children were female and 29(29%) were male. The majority 80(80%) reported that poverty leads to malnutrition and 20(20%) which is the minority reported that it doesn't. The majority 65(65%) reported that the caretaker's occupation can lead to malnutrition and the minority 35(35%) reported that it does not affect malnutrition. The majority of the respondents 60(60%) knew the causes of malnutrition while the minority 40(40%) did not.

Conclusion

The study identified that poverty, caretaker's occupation; sex, age, and residence are contributing to malnutrition among children below five years at Kiboga District Hospital, Kiboga district. It also established that respondents had good knowledge about factors contributing to malnutrition.

Recommendation

The in-charge of Kiboga District Hospital should ensure health education about malnutrition among children below five years of age through outreaches to enrich the community with more knowledge about the condition.

Keywords: Malnutrition, Under nutrition, Over nutrition, Children below five years
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Background

Malnutrition refers to deficiencies or excesses in nutrient intake imbalance in essential nutrients or impaired nutrient utilization (WHO, 2018). The double burden of malnutrition consists of undernutrition & overweight and obesity as well as diet-related non-communicable diseases. Undernutrition Manifests in four broad forms; wasting, stunting, underweight &micronutrient deficiencies (WHO). Overnutrition includes overweight, obesity & diet-related non-communicable diseases (NCDs) such as diabetes mellitus, heart diseases, and some forms of cancer &stroke. (Dukhi 2020)Globally, there are 178 million children that are malnourished and at any given moment, 20 million are suffering from the most severe form of malnutrition. Malnutrition contributes to between 3.5 and 5 million annual deaths among under-five children. (WHO, 2018)Wasting is low weight for height(Maingi, Kimiywe, & Iron-Segev, 2020). It indicates current weight loss.

Because a child consumes insufficient food or they are exposed to infectious diseases like diarrhea, which causes them to lose weight. Stunting is low height for age. Stunting indicates children who are too short relative to their age. Stunting is the result of poor nutrition in early childhood which can last a lifetime. Globally, about 149 million under 5 children are stunted, it results from chronic undernutrition, typically related to poor socio-economic status, inappropriate maternal nourishment, recurrent illness & or improper child feeding & care in infancy. (Manalu et al 2021)

A study carried out in Pakistan about factors associated with undernutrition revealed that the mother's age and maternal education lower than primary school were the main factors for childhood malnutrition. Other factors were household food insecurity, birth interval; socioeconomic status, father's educational level and initiation of complementary feeding at the age of 6 months were important determinants of undernutrition among children. (Pravana NK 2017)

A study was done in Debra Berhan town, Ethiopia &in the overall sample the total prevalence of undernutrition below the age of 5 years was 61(15.8%), the corresponding figures of underweight stunted, and wasting were 26%,41%&38% respectively. Factors that contributed to under-five undernutrition were intestinal illiteracy, not breastfeeding exclusively, preterm birth, absence of antenatal care exposure to infectious diseases & diarrhea (Manalu et al. 2021). According to the study done in Nigeria, out of 749 under-five children studied,18(2.4%) children were wasted, 20(35%) of the children studied, 11(1.5%) subjects were overweight while,11(1.5%), subjects were obese. The significant risk factors for undernutrition included low economic class and high wealth quintile & the significant risk factors for overnutrition were high birth weight, upper socio-economic class, high birth order & low wealth quintile (Binagwaho et al 2020).

A study was done in Tanzania on risk factors associated with undernutrition among children under 5 years was showed that malnutrition was associated with the young age of mothers, caregivers, elderly age of initiating complementary foods, diarrheal-related diseases in the past one month, large family size, large family size, low frequency of feeding, low birth weight & source of drinking water (Agho et al,2019)

In Uganda, a study was done at Mubende Regional Referral Hospital &it involved 50 respondents. The study discovered that the leading factor of malnutrition among children under 5 years was poverty and other factors were early pregnancy, family size, mothers' & fathers' levels of education, chronic diseases, perceptions &early introduction of supplementary feeds. Malnutrition in Uganda is accountable for 60% of the deaths among those under 5 &it's the leading cause of premature deaths among the same age group in Mubende Regional Referral Hospital (Namusoke & Atuhaire, 2019)

General objective

To assess the factors associated with malnutrition among children less than 5 years old in Kiboga District Hospital

Specific objectives

1. To identify the social demographic factors contributing to malnutrition among children less than 5 years old in Kiboga District Hospital.

2. To determine the economic factors contributing to malnutrition among children less than 5 years old in Kiboga District Hospital.

3. To assess the knowledge of parents or caregivers on factors contributing to malnutrition among children less than 5 years old in Kiboga District Hospital.

Study Design

A cross-sectional study was used to investigate factors contributing to malnutrition among children below five years at Kiboga District Hospital, Kiboga District. The researcher used this study design to collect qualitative data and quantitative data within a short period to explain the relationship between malnutrition and socio-demographic, and economic factors, and knowledge of parents or caregivers about mal-nutrition.

Study Area

The study was carried out at Kiboga District Hospital in the pediatric ward. The health center is located along Kampala Hoima Road in the central business district of the town of Kiboga. It is also known as the main hospital of Kiboga District. It is about 120 kilometers northwest of Mulago National Referral Hospital in Kampala. It serves districts like Kyankwanzi, Kibaale, Nakaseke, Mubende, and Hoima. (Fsmatovu 2020)

The hospital is a general hospital with an outpatients' department (OPD), Antenatal department, pediatric department, TB clinic, maternity, medical and surgical department with a theatre, special clinics such as dental clinic, eye clinic, ear nose and throat (ENT) clinic, nutrition clinic and mental health clinic. Laboratory services and radiological services are also provided.

Study Population

The study population was children of 0-5 years. The researcher used this population in the study because it was where malnutrition was most prevalent.

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Sample Size determination

The sample size of the respondents to participate in this study was generated using a statistical formula of Kish and Leslie (1965)

$$n = \frac{Z^2 P (1-P)}{d^2}$$

Where

n=Sample size, Z=1.96 (standard normal deviation at 95% confidence interval=proportion of the population was estimated to have a particular characteristic (in this case malnutrition).

In the absence of a known estimate I used, p=prevalence (0.5) since it gives the most conservative sample size

d = acceptance marginal error of 9.8%

$$N = \frac{(1.96)2 \times 0.5(1-0.5)}{(0.098)2}$$

N≈100 respondents

Therefore, the total number of respondents that were interviewed in the study was 100 respondents.

Sampling Technique

A purposive sampling technique where every parent or caretaker of a child below five years who consents to participate was considered making it easy and precise to conduct, and it minimized bias as every nth name will be taken.

Sampling Procedure

The researcher determined the study population (N), then the sample size (n), and then obtained a sample frame

Determined interval = study population (N) /sample size (n)

= nth person

Then determine the start point between 1 and N then take every nth name.

Data collection method

The researcher used the questionnaire method to collect data from the caretakers of children below 5 years where the caretakers were identified and consent was obtained from them. The questionnaire contained easy-to-understand close-ended questions. This method enabled data collection in a short period at relatively low costs and it was also easy to quantify the data for analysis.

Data Collection Tool

A self-administered questionnaire was used to collect data from the caretakers because it enabled the researcher to collect data from many respondents in a short period. The questionnaire contained a chapter of questions on socio-demographic information, economic factors, and knowledge of caretakers of children below 5 years about malnutrition. Other tools like pens, calculators, and papers were also used to record data from respondents

Data Collection Procedures

A letter of introduction to the facility was obtained from Medicare Health Professional's College. Permission was sought from the DHO Kiboga district and medical superintendent to carry out a study in their areas of jurisdiction.

The researcher introduced herself to the caretakers of children below 5 years, then explained the procedure, meaning of the study, level of confidentiality, and purpose of the study. The researcher also sought consent by offering a consent form to voluntary participants who were to be administered the questionnaires afterward. The researcher then asked the respondents to fill the gaps where necessary or tick in the box with appropriate answers (yes or no), those respondents who were unable to read and write were helped to read and interpret questions and were also guided when answering by research assistants.

Study Variables

Dependent variable: Malnourished children below five years at Kiboga District Hospital, Kiboga District Uganda.

Independent variable: Factors associated with the occurrence of malnutrition among children below five years, that is to say, demographic factors, knowledge of the caretakers, and economic factors.

Quality control

The researcher assured quality by pre-testing of the research tool. Pre-testing of the questionnaire was carried out in Bukomero Health Center IV because of similar facilities and services that the village shares in common with the study area. The questionnaire was pretested for time, cost-effectiveness, flexibility, reliability, and validity.

The researcher also ensured quality by having clear inclusion and exclusion criteria for the respondents. Patients of age 0-5 years were included in the study and those greater or equal to 5 years were excluded from the study.

The researcher trained the research assistants on how to use the questionnaire for two days.

Inclusion criteria

All caretakers of malnourished children below five years at Kiboga District Hospital and consented to participate in the study.

Exclusion criteria

All caretakers of malnourished children below 5 years at Kiboga District Hospital who did not consent to participate were not considered to be part of this study.

Data Analysis and Presentations

Data was recorded, categorized, coded, and analyzed manually tallying using summarized data master-shed and reviewed for accuracy, consistency, and completeness. Later data was analyzed using SPSS (Statistical Package for Social Sciences) and results were presented using graphs, pictures, and tables.

Ethical Considerations

The researcher first submitted the research report to the research committed for approval then a letter of introduction to the facility was obtained from Medicare Health Professional's College; Permission was sought from the DHO Kiboga district and medical superintendent to carry out a study in their areas of jurisdiction

The researcher gained consent from each caretaker by giving a consent form attached to the questionnaire. In the consent form, caretakers were given a right to deny or withdraw from participation in the study.

The information obtained from the caretakers was kept with utmost confidentiality by the researcher by not disclosing the caretakers' information to anyone during and after the study and in the same way, the information obtained was only used for study purposes.

The welfare of care taker was assured by explaining the research procedure, the purpose of the study, and the level of confidentiality to them before issuing a consent form.

The caretakers were assured of anonymity, as no names of the respondents were taken by the researcher and the data to be collected was only used for statistical purpose

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Table 1: Showing the respondents' social demographic data. (n=100)

FACTORS	FREQUENCY	PERCENTAGE
AGE(YEARS)		
<18	10	10
18-24	45	45
25-35	30	30
Above 35	15	15
TRIBE		
Mukiga	25	25
Munyankole	16	16
Mufumbira	20	20
Others (Baganda)	39	39
SEX		
Male	18	18
Female	82	82
LEVEL OF EDUCATION		
Primary	33	33
Secondary	40	40
Tertiary	15	15
University	4	4
Others(Never gone to school)	8	8
MARITAL STATUS		
Married	35	35
Single	30	30
Widowed	9	9
Divorced	26	26
OCCUPATION		
Farmers	45	45
Government worker	5	5
Shopkeeper	20	20
Unemployed	22	22
Others	8	8
RELIGION		
Catholic	35	35
Muslim	20	20
Protestant	30	30
Others	15	15

Source: Primary data (2023)

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Results

Respondent's Particulars data.

From table 1, out of the 100 respondents, most 45(45%) of the respondents were between age group 18-24 years.The reason is most likely to be that these people are sexually too active hence giving birth because most of the care takers were the children's parents.

Majority 39(39%) of the respondents were Baganda and this is because these are the biggest residents in Kiboga district.

Majority 82(82%) of the respondents were females and the rest 18(18%) were males . The reason for this is probably that mothers are more concerned about their childrens health compared to the fathers.

Majority 40 (40%) had stopped in secondary level of education and minority 4(4%) reached university level reason being that many of them became pregnant before they completed secondary level.

Most 35 (35%) were married and minority 9(9%) were widows possibly because married women give birth more compared to other categories.

Most 45(45%) were farmers and minority 5(5%) government workers and this is because most of them are not too educated and farming is the most available job for them.

Most 35(35%) were Catholics possibly because most of their parents belong to this church and so they were born belonging to that church.

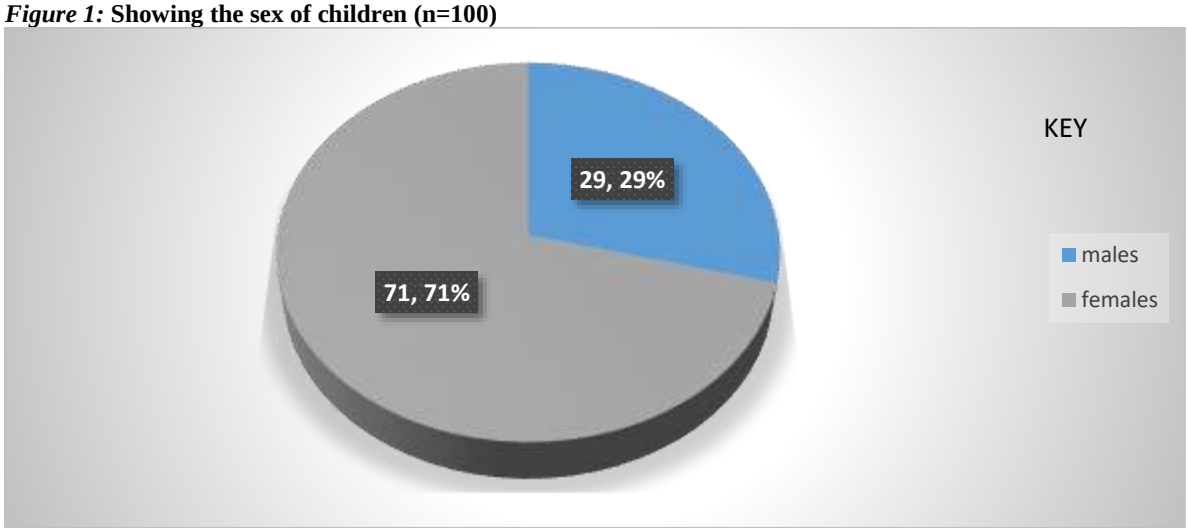
Socio demographic factors contributing to malnutrition among children below five years

From figure 1, majority of the respondents' children; 71(71%) were females and only 29(29%) of the children were males.

From table 2, most of the respondents; 50(50%) thought that malnutrition was common among children aged 1year, 20 (20%) thought it was common among children aged 2 years, 10(10%) thought malnutrition was common among children aged 3 years, 8 (8%) thought it was common among children aged 4 -5 years and 12(12%) thought that it was common in those aged some months. Figure 2 above shows that the minority of the respondents, 32(32%) resided in rural areas while majority, 68(68%) in urban areas.

Figure 3 shows majority of the respondents, 72(72%) agree with the residence effects on malnutrition and the rest, 28(28%) disagree.

Figure 1: **Showing the sex of children (n=100)**



Source: Primary data (2023)

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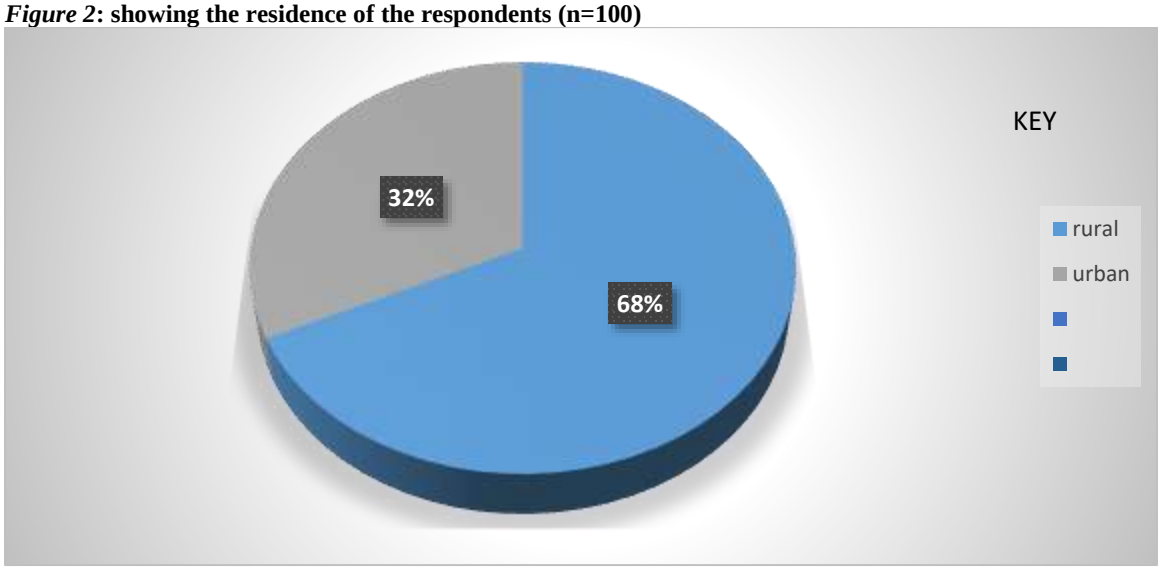
Table 2: Showing the age groups in which malnutrition is thought to be common and the period when care takers started giving supplementary feeds to their children (n=100)

AGE GROUP	FREQUENCY	PERCENTAGE
Some months	12	12
1 year	50	50
2 years	20	20
3 years	10	10
4 -5 years	8	8

Source: Primary data (2023)

***Figure 2*: showing the residence of the respondents (n=100)**



***Source:* primary data (2023)**

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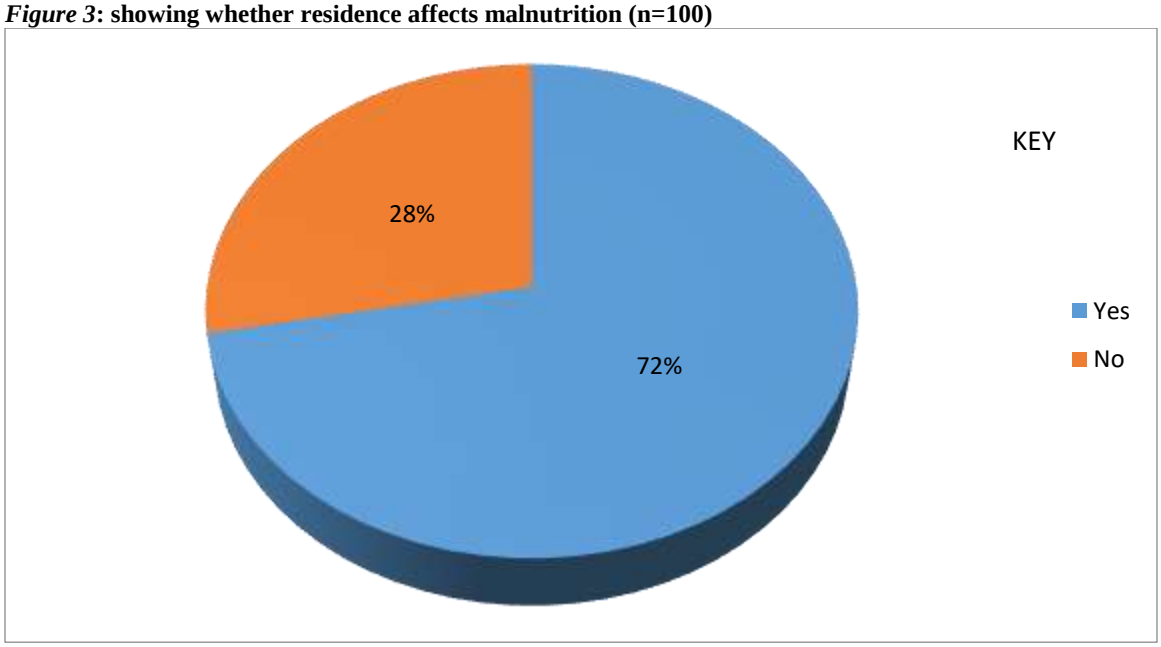
***Figure 3*: showing whether residence affects malnutrition (n=100)**



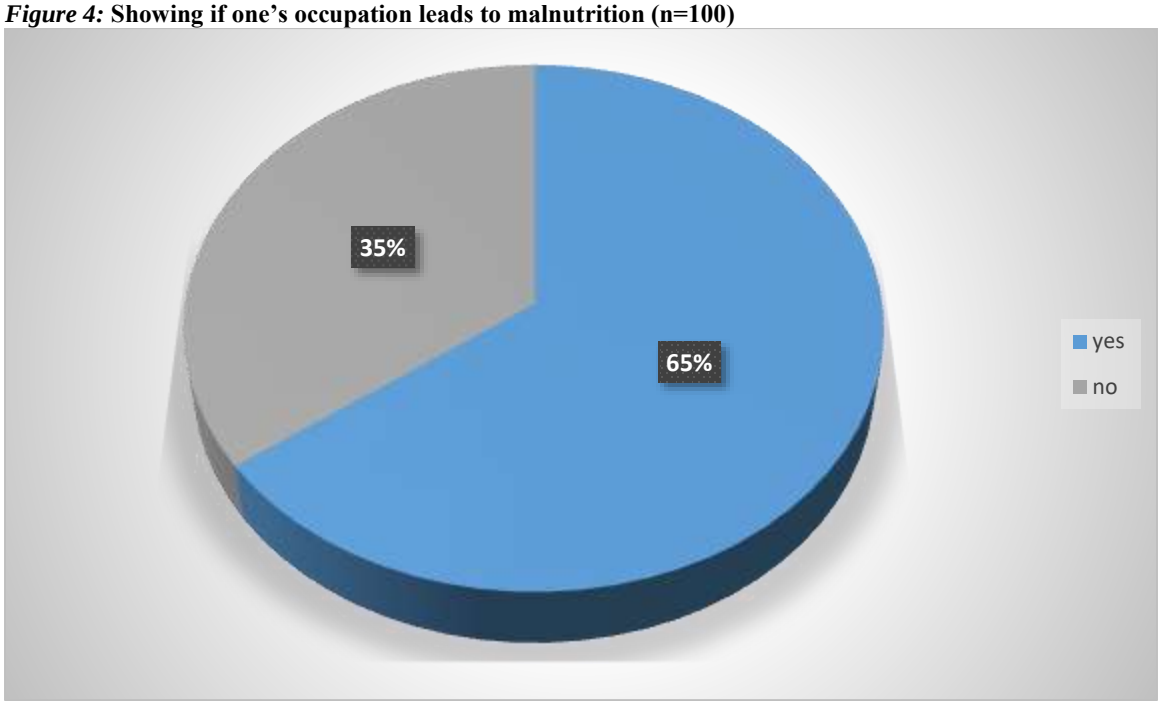
***Source:* primary data (2023)**

Table 3: showing whether lack of money and basic needs cause malnutrition (n=100)

FACTOR	FREQUENCY	PERCENTAGE
LACK OF MONEY CAUSING MALNUTRITION		
YES	80	80
NO	20	20
DOES HIGH COST OF BASIC NEEDS LEADS TO MALNUTRITION		
YES	53	53
NO	47	47

***Source*: Primary data (2023)**

Figure 4: **Showing if one's occupation leads to malnutrition (n=100)**



***Source*: primary data (2023)**

Table 4: showing respondents response to who decides to spend family income (n=100)

The person who decides to spend family income	FREQUENCY	PERCENTAGE
Husband	84	84
Wife	16	16

Source: Primary data (2023)

Economic factors contributing to malnutrition

Table 3 shows that majority of the respondents 80(80%) agreeing with lacking money causing malnutrition and the rest, 20(20%) disagree,also the majority of the respondents, 53(53%)agree on high cost of basic needs leading to malnutrition and the rest, 47(47%) disagree.

Figure 4 shows that majority of the respondents, 65(65%) agree that one's occupation leads to malnutrition and the rest, 35(35%) disagree.

Table 4 shows that majority of the respondents 84(84%) reported that husbands decided on how to spend family income and 16(16%) reported that mothers decided on how to spend family income.

Knowledge of caretakers of children below five years about malnutrition

Table 5 shows that majority of the respondents 70(70%) had knowledge about the causes of malnutrition and the rest 30(30%) lacked the knowledge, well as 60(60%) knew the preventive measures of malnutrition and the rest 40(40%) didn't.

From the table 6, 65(65%) of the respondents knew the supplementary feeds to give to the baby while weaning and the rest 35(35%) didn't know, then also majority of the respondents 60(60%) didn't know first milk is important to the baby while the rest 40(40%) knew.

Table 5: showing respondents knowledge about the causes and preventive measures of malnutrition (n=100).

Knowing about the causes of malnutrition	frequency	Percentage
Yes	70	70
No	30	30
Knowing about the preventive measures		

Yes	60	60
No	40	40

***Source*: primary data (2023)**

Table 6: showing the knowledge of respondents on which supplementary feeds to give to a baby while weaning and whether the first breast milk is important (n=100).

Knowing supplementary feeds to give to a baby	frequency	Percentage
Yes	65	65
No	35	35
Whether the first breast milk is important		
Yes	40	40
No	60	60

***Source:* primary data (2023)**

Discussions

Socio-demographic factors associated with the occurrence of malnutrition among children below five years

The study established that the majority, 71(71%) of the respondents' children were females, 29(29%) were males. This is possibly because of the greater reluctance among parents to invest money and time in the treatment of daughters over sons. In the communities, the girls are expected to leave homes after marriage while the boys are expected to go on to provide financial and non-financial support to their parents in later years. Hence faster action is taken when they are sick and the need for admission will be more compared to the girls who are reluctantly cared about and eventually brought to the hospital with the severity of the conditions they have. This agrees with a study done in Pakistan by Ahmad et al, (2020) about factors associated with malnutrition among children where 47.78% were male and 52.22% were female children.

The study revealed that most respondents; 62(62%) thought that malnutrition was common among children aged between some months to 1 year, 30(30%) thought that it was common among children aged between 2 years and 3 years, 8(8%) thought that it was common among children aged 4-<5. This was probably because this is the time when active growth takes place and much first-time interaction with the environment making the child prone to diarrheal diseases which can cause undernutrition. However, this is contrary to a study done in Pakistan by Ahmad et al, (2020) about factors associated with malnutrition among children where 23.39% were aged some months, 18.5% were children aged 1 year, 19.18% were children aged 2 years, 20.14% children as of 3 years and 18.78% children were aged 4 years or above while below 5 years.

The majority 55(55%) of the respondents thought that household size contributes to malnutrition and the rest 45(45%) didn't think so. Many people 67(67%) thought that malnutrition is more common in a family that has between 6 to 10 members and this is probably because with a large family size, there are limited

provision of needs including enough food for the entire family. This is in line with a study done in Kenya by Gudu et al (2020) which revealed that undernutrition was more common in large families of more than 6 occupants.

Findings revealed that the majority, 68(68%) of the respondents, resided in rural areas and the minority, 32(32%) of them, resided in urban areas. This is most probably due to the nature of the main source of income for most of them which is farming and it needs vast land that is available in rural areas. This agrees with a study done in Pakistan by Ahmad et al, (2020) about factors associated with malnutrition among children where 42.13% of children were inhabited in urban areas while 57.8% were inhabited in rural areas.

Majority 45(45%) reported that malnutrition is more common in divorced mothers and minority 15(15%) reported that it is more common in married mothers. This is possible because divorced mothers have less time to mind and spend on their children's nutrition as they are always busy looking for money to take of the entire families which is not the case for married mothers whose husbands are the ones who provide for the families majorly hence them having enough time at home to mind their children's nutrition. This is in line with a study conducted in Indonesia by Laksono, 2022 which showed that toddlers with married mothers have a low risk of being stunted compared to toddlers with divorced mothers.

The majority 80(80%) reported that poverty leads to malnutrition and 20(20%) which is the minority reported that it doesn't. This is probably because most of the respondents resided in rural areas and practiced farming which yielded less income. Therefore, with less income there is little or no opportunity to provide good quality food and good health services, there is failure to get family planning programs and failure to improve sanitary facilities which could lead to inadequate dietary intake, infections, poor hygienic habits, and low education status. Majority 65(65%) reported that the caretaker's occupation can lead to malnutrition and the minority 35(35%) reported that it does not affect malnutrition. This is probably due to the limited time given to the children since the main source of income for most families was working as farmers on a day-to-day basis. This is in line with a study done in Sri Lanka by Galgamuwa et al (2017) about nutritional status and correlated economic factors among preschool children in plantation communities which showed that 73% had limited time to care for children since the main source of income for most families were working as laborers in tea plantations on a day-to-day basis.

Most; 84(84%) reported that husbands decide on how to spend family income and 16(16%) reported that mothers decide on how to spend family income.

Knowledge of caretakers on factors associated with malnutrition among children below five years

The study revealed that 65(65%) of the respondents had heard about malnutrition and the rest 35(35%) did not know about malnutrition and majority of those who knew defined malnutrition as having either underweight or overweight which shows average knowledge about malnutrition. The majority of the respondents 70(70%) knew the causes of malnutrition while the minority 30(30%) of them did not. Some of the causes mentioned were diarrheal diseases, and eating an unbalanced diet, among others. This is probably due to observations made in the change in the children's weight when they are suffering from diarrhea. The majority of respondents 60(60%) knew preventive measures for malnutrition whereas the minority 40(40%) did not know any preventive measures. The preventive measures given by the respondents included deworming, child immunization, family planning, and exclusive breastfeeding with deworming taking the lead. This is probably due to the availability of Village Health Teams that move from door to door while administering deworming tablets to children above 1 year while teaching the importance of these tablets too. Majority 90(90%) of the respondents reported that they started their supplementary feeds for their children between 6 and 9 months and most of them said they were giving their children mixed foods containing carbohydrates, proteins, and fats but most didn't know the right proportions, the rest 10 (10%) reported that they started their supplementary feeds for their children before 6 months. This is likely to be because nutrients in breast milk alone are no longer adequate for proper child growth at 6 months. This agrees with a study done in Kenya by Maingi et al, (2020) which revealed that 98% had knowledge about the supplementary feeds to give to a child and when they should be given.

The majority of the respondents 60(60%) did not know that the first breast milk was important to the child whereas the minority 40(40%) knew that the first breast milk was important to the child. This is probably because most of the respondents were farmers and resided in rural areas where such information about the first breast milk (colostrum) is hard to access due to the few health facilities available. This is in line with a study done in Nigeria by Olusegun Fadare,(2019) about mothers' nutrition-related knowledge and child nutrition outcomes which showed that 38% of mothers knew the importance of colostrum to the newborn.

Conclusions

The study concluded that the socio-demographic factors contribute to malnutrition as evidenced that the majority 71(71%) of the children were female, malnutrition was commonest among children of 1 year 62(62%) and the majority 73(73%) resided in rural areas. Therefore sex, age, and residence are contributing to malnutrition among children below five years at Kiboga District Hospital, Kiboga District.

It also concludes economic factors like poverty, the person who decides on how to spend family income, and caretaker occupation also contribute to malnutrition because the majority 80(80%) of the respondents reported that poverty leads to malnutrition, 84(84%) reported that husbands decide on how to spend family income, majority 65(65%) reported that caretaker's occupation can lead to malnutrition.

The study also established that caregivers had good knowledge about malnutrition among children below five years even though the majority did not reach the university level of education as evidence that the majority of the respondents 70(70%) knew the causes of malnutrition, 60(60%) on preventive measures of malnutrition, 65(65%) had knowledge on the supplementary foods to give to a child

and 55(55%) did not know that the first breast milk was important to the child.

Recommendations

To the Government

Empowerment of more VHTs to reach out to the mothers equipping them with knowledge and services like deworming that enhance the nutrition of children.

Sensitization of the mothers through Televisions and radios about nutrition and malnutrition among children below five years should be emphasized

To the Facility

Health education the mothers about nutrition and Malnutrition among children below five years should be done more often both at the hospital and during outreaches.

Regular follow-ups of the Mothers should be done especially those who have given birth from the hospital regarding the growth and development of these children.

To the mothers

They should practice good nutrition to their children as advised by the health workers

They should seek immediate attention in case of any unwellbeing of the baby

Exclusive breastfeeding should be emphasized and mothers should seek knowledge about the complementary foods to give to a child from the health workers.

Acknowledgement

I humbly express my sincere gratitude to the Almighty God who has brought me thus far. I am indebted to the academic body of the Faculty of Clinical Medicine and Community Health, Medicare Health Professionals College which provided this initiative of the research report. Specially, I acknowledge and extend my heartfelt gratitude to my supervisor Mr. Kasujja Henry for their tireless effort in this project. My special thanks go to my academic friends most especially Nakawooza Carol, Nakimuli Esther, and Asaba Martha.

List of Abbreviations and Acronyms

DHO: District Health Officer
EBF: Exclusive breastfeeding
ENT: Ear Nose and Throat
ICF: International Classification of Functioning
IYCF: Infant and young child feeding
NCDs : Noncommunicable diseases
OPD: Outpatients' department
ORS: Oral Rehydration Solution
SPSS: Statistical Package for Social Sciences
TB : Tuberculosis
UBOS: Uganda Bureau of Statistics
UNICEF: United Nations Children's Fund
WHO: World Health Organization
YRS: Years

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