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Research Article

Factors associated with relapse of severe acute malnutrition among children aged under five years in Uganda

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Abstract

The study sought to investigate factors associated with relapse of severe acute malnutrition among children aged under five years in Uganda. The study used descriptive – correlation design. Document analysis, interview guides and questionnaires were used as research instruments. It was found out that with regard to the relationship between socio-economic, demographic factors and relapse of severe acute malnutrition of children, sex of guardian/parent, with unadjusted odds COR = 3.28(1.588 – 6.450) and adjusted odds AOR = 3.40(1.23 – 5.68); education level of parents/guardian with unadjusted odds COR = 3.197(0.282 – 1.298) and adjusted odds AOR = 2.73(1.31 – 4.66); number of meals with the unadjusted odds COR = 8.32(1.324 – 13.801) and adjusted odds AOR = 5.26(1.351 – 6.44) were significant predictors of the children relapse with severe acute malnutrition. Thus, the null hypothesis was rejected and the alternative one was accepted with regards to age, sex, solid food, and source of protein. It was recommended that nutrition units be established in all health centre III and follow up programs.

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Introduction

Good health is a right of every human being on earth for a nation to develop, it needs to have healthy people and for them to be healthy, they need to have sufficient food. Severe Acute malnutrition (SAM) occurs because of sudden period of food shortage or illness which hinders one's appetite. It is associated with loss of person's body fat and wasting of their skeletal muscle. The lack of well-balanced nutrients in the child's diet in his/her early period of life is critical for his/her normal brain development, however the insufficiency of nutrients can ruin the mental and motor development, which is something that may be irreparable in a child's life Akparibo, et.al. (2017).

Severe acute malnutrition (SAM) is a threat to children survival since mortality rates in children with severe wasting are nine times higher. A study done in India on "how effect of new WHO discharge criteria for treating SAM on performance of therapeutic feeding programmes" showed that there are 19 million children with severe wasting globally: eight million are children under five years of which India is at the centre of the crisis. The program had high survival of severe acute malnutrition at (> 99%) and relapse/default of (> 15%) rates Aguayo, Badgaiyan, and Signh, (2015).

The Uganda Demographic and Household Survey (UDHS, 2011) also showed that 19 percent of the Ugandan population was malnourished in 2006, and 38 percent of children under 5 years were stunted. This prevalence means was about 2.3 million young children in Uganda today are chronically malnourished. In addition, 16 percent of children under 5 are underweight while 6 percent are wasted.

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The state of population report (2008) by the Population Secretariat notes that at least 38 per cent of all Ugandan children under the age of five are stunted. Another six per cent are wasted, meaning they have low weight for their height while 16 per cent are under weight-meaning that they have low weight for their age. It has been documented that more than 100 children with advanced stages of malnutrition are currently admitted and re-admitted in hospitals. Hospitals receive up to 10 new admissions every day. "When children are malnourished, they need to be treated with a diet which has nutrients such as proteins and energy," (Evelyn, 2010). Despite the fact that Uganda produces much food due to fertile soils and good climate which is favorable to agriculture, children are still suffering from malnutrition and being referred to Nutrition Unit (Matovu, 2016).

From 2010 to date, Nutritional clinics reported high annual admissions of severe acute malnutrition among the children under 5 years who attended the clinics, as compared to the annual national averages reported during the same period (State of Population Report, 2008). In addition, the archives of 2015 revealed 63 and 10 cases of relapse of severe acute malnutrition. It was established, through the records that cases of relapse of severe acute malnutrition had less chance of survival at their second admission. Sadly, there existed some cases of relapse of severe acute malnutrition for the third time. While the researcher was curious why there was relapse of severe acute malnutrition, yet the first admission would be an opportunity to get trained to overcome the predicament. The researcher also found limited data related to relapse of severe acute malnutrition in Uganda, which was the focus of the study is. It is for this reason that this study aimed at investigating factors associated with relapse of severe acute malnutrition among under five years children in Uganda.

Theoretical Framework

This study used the Reasoned Action Theory (Fishbein and Ajzen, 1980) which is based on the assumption that most behaviors of social relevance use two elements: attitudes and norms (or the expectations of others). It was also guided by health Belief model (HBM) (Hochbaum Rosen stock and Kegels, 1950) a psychological model that attempts to explain and predict health behaviors.

Conceptual Framework

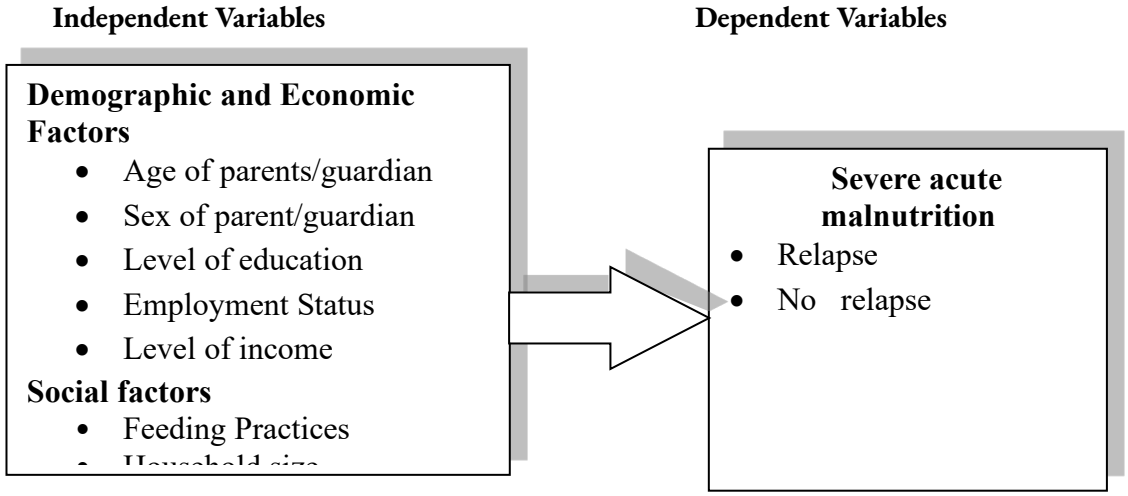

Figure 1. Conceptual Frame work *Sources:* Researcher, 2018

Hypothesis

There is no significant relationship between socio-economic and demographic factors of parents/guardians and relapse of severe acute malnutrition of under 5 years children.

Purpose of the Study

To identify and investigate factors associated with relapse of severe acute malnutrition among under 5 years children in Uganda. Specifically, the objectives include:

- To describe the Socio-economic and demographic factors of parents/guardians of children under five years of relapse of severe acute malnutrition in Uganda.

- To determine the prevalence rate of the relapse of children aged under 5 years with severe acute malnutrition in Uganda.
- To investigate the relationship between socio-economic and demographic factors with relapse of children under 5 years with severe acute malnutrition in Uganda.

Method

This study was based on descriptive and correlational research designs. The population consisted of parent/guardian of less than five years children re-admitted with acute malnutrition estimated to be 150. In addition, 7 nurses who take care of them were also targeted. Moreover, the record on re-admission for a period of four years was used to further the understanding. The sample size was 115 respondents who included health workers and parents/guardian of children below five years of age (0 - 59 months) re-admitted with severe acute malnutrition and seven nurses where purposively selected. The researcher used questionnaire, key informant interview, and documentary review guide to collect data. The instrument was considered valid since the CVI was greater than 0.60. the instrument was considered reliable at coefficient of 0.784. Objectives one and two were analysed using descriptive stastics, namely frequencies and percentages for categorical data. Objectives three was analysed using Chi-square and Logistic regression. The null hypothesis was tested at 0.01 level of significance. For the interview guide, thematic nalysis was used to analyse the data. While the open ended questions were analysed by use of themes expressed in percentages and ranks.

Results

Demographic and Socio-economic Factors of Parents/Guardians

Table 1. Demographic Characteristics of Respondent

Items	Characteristics	Frequency	Percent
Age of the Mother/Guardian	15-30	69	70.4
	31-45	29	29.6
Age of the Child	1 Month to12 Months	79	80.6
	13 Months to 24 Months	15	15.3
	25 Months to 36 Months	4	4.1
Sex of the Child	Male	46	46.9
	Female	52	53.1
Sex of Parent/Guardian	Male	15	15.3
	Female	83	84.7
Education Level of the Parent/Guardian	Not Educated	54	55.1
	Primary	25	25.5
	Secondary	17	17.3
	College	2	2.0
Last Discharge of the Child	Less than 1 Month	15	15.3
	1 - 10 Months	83	84.7
Time spent in the Ward	Less than 14 Days	63	64.3
	15 - 30 Days	13	13.3
	31 - 45 Days	22	22.4
Current Diagnosis for Admission	Cough	31	31.6
	Fever, Excessive Crying	22	22.4
	Vomiting	16	16.3
	Diarrhea	22	22.4
	Pneumonia and weight Loss	7	7.1

Development of Infection by the child prior to the current re–admission	Yes	37	37.8
	No	61	62.2

N = 98 *Sources:* Primary Data

Regarding age of the guardian, Table 1 above shows that those who were in the age bracket of 15-30 dominated the study 69 (70.4%). This might imply that those young parents are not prepared for parenting responsibilities and so they are not able to give enough care for their children together with so many challenges of life.

Results in Table 1 indicate that majority of the children 79(80.6%) were in the age bracket of 1 month to 12 months. These findings mean that majority of the children are affected by severe acute malnutrition at their earlier age. This is in relation literature by Mahgoub (2006) who says that children brought up by single parents suffered from underweight to a significantly higher level than children living with both parents, the prevalence of underweight decreased significantly as family income increased, the higher the level of the mother's education, the lower the level of child underweight observed, and breastfeeding was found to reduce.

In relation to the gender of the child, Table 1 indicates that biggest numbers of children with severe acute malnutrition are female 52 (53.1%). The findings reveal that female children are the most affected by severe acute malnutrition than male children. According to the readmission of severe acute malnutrition report (2016-2017), it was revealed that in 2015 up to date, majority of the children readmitted with severe acute malnutrition, were female.

When it comes to the gender of parent/guardian of the children affected with severe acute malnutrition, the results from table 1 showing that female parents/guardians were the majority 83 (84.7%). This may imply that they were single parents who got pregnant without proper marriage engagement and were abandoned by their partners for financial support. During the interaction with the health workers/nurses it was recorded that majority of the children readmitted with severe acute malnutrition, are admitted with their mothers or female guardians.

The results from table 1 reveal that majority of the respondents have never attained any education 54 (55.1%). Since the majorities are not educated to functional level that is, both uneducated and primary school leavers imply that there was high probability of them not to afford proper nutrition because of the lack of employability level of education. During the interaction with the mother/guardian, majority of the mother/guardian have never gotten chance of going to school due to financial problems.

The findings from table 1 indicate that majority of the children were discharge from 1 – 10 months ago 83 (84.7%). The results of discharge from 1-10 months ago imply that the parents of the child adhered to complete the dose requirement as prescribed by the health workers. During the interaction with the nurses, it was noted that children relapse of severe acute malnutrition because of living in the unfavorable family economic environment that does not favor balanced diet, for example, feeding on black tea and cassava as some stated.

With regard to the time spent in the ward, the findings revealed that majority of the respondents have spent less than 14 days before the first discharge 63 (64.3%). In addition to that, it was recorded during an informal interview with the nurses that time spent in the ward depended on the severity of the malnutrition and how the child's body system responded to the treatment.

The results from table 1 revealed that majority of the were admitted because of having cough 31 (31.6%) and they come to hospital to be treated for cough, however the health workers diagnose severe acute malnutrition, this imply that parents or guardians do not know the symptoms of severe acute malnutrition even when they have been admitted before. During the interaction with the health personnel (nurses), the researcher realized that majority of the children had been admitted for different reasons including anemia, malaria, diarrhea, and dehydration, though many children had more than one of these conditions.

On the question of any infection developed by the child, the findings in table 1 revealed that majority of the children did not develop any infection at the time of the first admission 61 (62.2%). However, during the interaction with the nurses/health workers, one respondent said that about 40 per cent of the children who are admitted here end up dying

because most of them come with many other complications and infections and if interventions are not immediate, they die.

Table 2: Economic Factors of the Respondents

Items	Description	Frequency	Percent
Income Level	Less than Ugx 50,000	66	67.3
	51,000 - Ugx 100,000	16	16.3
	200,000 - Ugx 300,000	16	16.3
Parent/Guardian Occupation	Unemployed	66	67.3
	Businesswoman	8	8.2
	Wash Cloth	15	15.3
	Housewife	3	3.1
	Saloon Attendant	4	4.1
	Builder	2	2.0
Difficulties meeting bills for the feeding of the family	Yes	82	83.7
	No	16	16.3

Sources: Primary Data

With regard to the income level of the parent/guardian, the findings in table 4 revealed that majority of the respondents 66(67.3%) have an income level of less than Ugx 50,000. This shows that many who are victims of severe acute malnutrition are mostly in low income earners.

The results from table 2 show that majority of parent/guardian are not employed 66 (67.3%). This implies that having less income and jobs that are less paid affects the household nutrition and other needs of children.

This finding was supported by the results obtained from document analysis which showed that majority of the parents/guardian are unemployed and those who have jobs are in building activities, trading on the street, salon keeping, farming, market vendors, driving, casual work and many other activities which cannot allow them to earn much income.

With regard to the opinion whether the parents/guardian have difficulties in meeting bills for the feeding of the family, majority of the respondents confirmed that they have difficulties in meeting bills for the feeding of the family 82(83.7%). During the interaction with some mothers/guardian, the researcher was looked at food availability along with economic status.

Social Factors

With regard to the time when the parents/guardians started giving solid food to the child, the results in Table 3 revealed that majority of the respondents started giving solid food to their children after 6 months 45 (45.9%). Majority of children are introduced to solid food at the right time though the food may not be balanced.

With regard to the type of food given to the children in the morning, the results from table 3 revealed that majority of the parent/guardian give maize porridge to their children in the morning 32 (32.7%). This may imply that many parents/guardians may not afford a balanced diet for their children.

With regard to if the parents/guardians have been taught anything about malnutrition before, majority of the respondents confirmed that they have been taught something about malnutrition 60(61.2%). In addition to that, during the interaction with the parents/guardians, it was reported that among those who were taught something about the malnutrition of their children were taught how to keep the child clean and how to prepare clean food for their children. The main food which they were taught to make was the preparation of Kitobero.

Concerning the number of persons of 5 years and above staying with the parent/guardian, the results in Table 3 revealed that majority of the parents/guardian stay with 2 people of 5 years and above 46 (46.9%). This may imply that these families are young families, small in number which are just starting and may be incapacitated by the lack of skills on nutrition.

The results from table 3 indicate that majority of the parent stay with the children at home 92 (93.9%). Through doing home visits in both locations, the researcher learned that two of the mothers whom she interviewed either sent their children to live with, or spend a significant part of the day with, someone in the village.

Regarding to the number of children under 5 years staying with the parent/guardian at home, the results from table 3 indicated that majority of the parent/guardian stay with 2 children under 5 years 55 (56.1%) which may imply that some children were born when others are still breast feeding and then they are forced to be weaned or when they were twins and yet the income capacity is low.

Table 3: Social Factors

Items	Description	Frequency	Percentages
Starting giving solid food	After 6 Months	45	45.9
	After 8 Months	15	15.3
	Don't Remember	38	38.8
Foods given to the child in the morning	Millet Porridge	15	15.3
	Maize Porridge	32	32.7
	Tea with Milk	29	29.6
	None	22	22.4
Knowledge about malnutrition of your child	No	38	38.8
	Yes	60	61.2
How many persons of 5 years and above live permanently in this household	1	34	34.7
	2	46	46.9
	3	12	12.2
	4	6	6.1
Do you live with the child at home	No	6	6.1
	Yes	92	93.9
Number of children below 5 years old (Orphans Included)	1	33	33.7
	2	55	56.1
	3	10	10.2
Number meals do you eat in a day	1	51	52.0
	3	31	31.6
	4	16	16.3
Food runs out of my Home	Most of the Time	29	29.6
	Always	16	16.3
	Sometimes	37	37.8
	Rarely	16	16.3
Borrow money in the household to put food on the table	Always	29	29.6
	Sometimes	53	54.1
	Not at all	16	16.3
Source of protein food can you easily get	Milk	15	15.3
	Eggs	16	16.3
	Beans	16	16.3
	None	51	52.0
Source of foods	Garden	11	11.2
	Market	87	88.8

N = 98 Sources: Primary Data

In regard to if food runs out of the household, the findings in table 3 revealed that majority of the respondents confirmed that sometimes food runs out their home 37 (37.8%) which may imply that they do not have food security and sustainability which affects the growth of the young children. In addition, they may not have choice of appropriate diet.

Regarding the opinion on whether the family borrow money to put food on table, the findings reveal that majority of the respondents sometimes borrow money to put food on table 53 (54.1%) which may imply that starvation is obvious among the families studied. The findings are in line with the qualitative data obtained from the interaction with the parents/guardians who reported that due to the kind of job they do and level of income, they were not able to afford food daily.

Regarding the source of protein food that can be eaten easily at home, majority of the respondents confirmed they do not eat any source of protein food 51 (52.0%) this may imply that they are only fed with carbohydrate and fats which is not a balanced diet for the growing children.

Concerning where respondents get their food, majority of the respondents conformed that they get their food from the market 87 (88.8%) followed by those who get their food from the garden 11 (11.2%). The implication of this is that they may be surviving on snacks which can fit in their budget for the day without taking account of the nutrition value of it.

Prevalence of the Relapse of Severe Acute Malnutrition of Children Aged Less than 5 Years

Table 4: Prevalence of the Relapse of Severe Acute Malnutrition of Children Aged Less than 5 Years

Items	Description	Frequency	Percent
Time spent in OTC Clinic	Less than 1 Month	82	83.7
	1 - 3 Months	16	16.3
Time taken take with the child after discharge to be re-admitted	Less than one month	16	16.3
	1 - 3 Months	75	76.5
	3 - 6 Months	7	7.1
Current weight of the child	1 - 2.9Kg	16	16.3
	2 - 3.9Kg	59	60.2
	4 - 5.9Kg	16	16.3
	6 - 8.9Kg	4	4.1
	9 - 10Kg	3	3.1

N = 98 Sources: Primary Data

About how long the parent/guardian have stayed with the children in OTC, the results from Table 4 reveal that majority have stayed for less than one month in OTC 82 (83.7%). This may imply that the longer one stays at Outpatient Therapeutic Care unit the more serious the disease was and need more care at home.

The findings in Table 4 revealed that majority of the respondents have stay for 1 – 3 months with the children at home before re-admission 75 (76.5%). This may imply that the conditions at home may have been difficult in getting the recommended food and getting it at the right time may have been the caused the relapse of severe acute malnutrition.

Regarding the current weight of the children, the results from Table 6 shows that majority of the children were weighing 2 – 3.9Kg 59 (60.2%). Most of the children had the weight which was less compared to their age. This may mean that majority of the children had malnutrition or had deficiencies in nutrition.

Prevalence of the Relapse of Severe Acute Malnutrition of Children Aged Less than 5 Years

Table 5. Prevalence of the Relapse of Severe Acute Malnutrition of Children Aged Less than 5 Years

Items	Frequency	Percentage
Admission of SAM		
2015	Not Accesses	0
2016	1010	61.80
2017	625	38.20
Relapse of SAM		
2015	63	50.40
2016	40	32
2017	22	17.60

Source: Hospital record books and patient's medical records

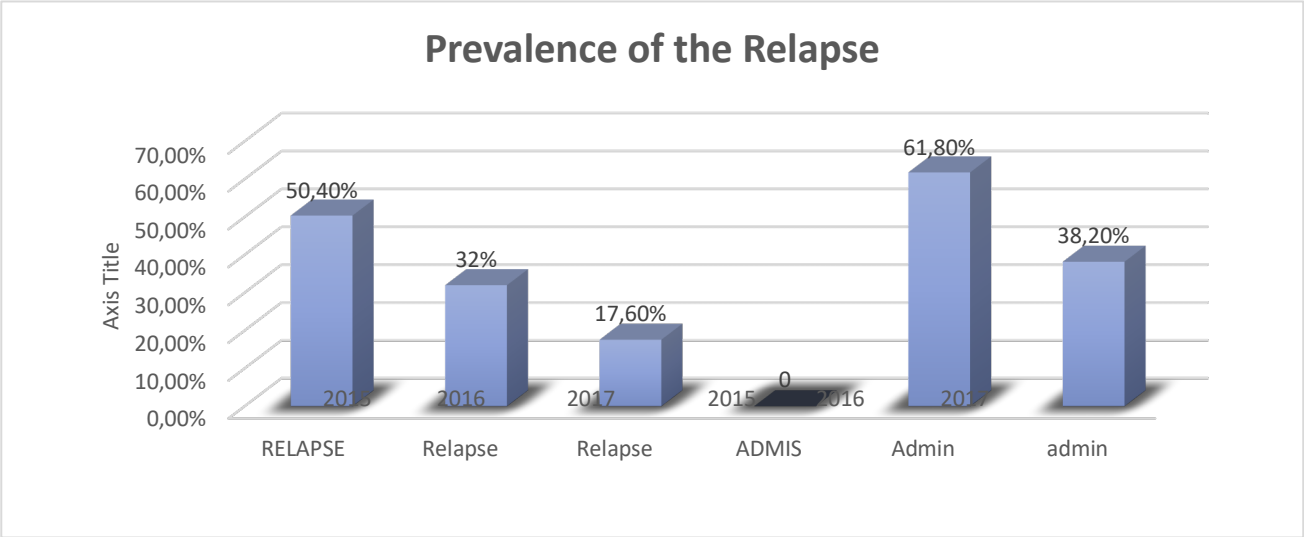

Figure 2: Prevalence of the Relapse of Severe Acute Malnutrition of Children Aged Less Than 5 Years

Results in Table 5 and on the graph show that admissions found in the record book for 2015 were not accessible due to change of the personnel; however, the patient files were accessed revealing 63 (50.4%) patients of severe acute malnutrition relapsed. In the year 2016, 1010 (61.8%) patients of severe acute malnutrition (SAM) were admitted followed by 625 (38.2%) in the middle year 2017. Results show that the number of admissions in 2016 was higher than 2015 and 2017, though, only 7 months were accessed in 2017. The findings in Table 6 also revealed the relapse in 2015 showed 63 (50.4%), while 2016 reveled 40 (32%) and 22 (17.6%) in 2017. Prevalence rate of relapse from the year 2015 to 2017 was reducing, even though only 7 months were accessed in 2017. It possible that by the end of the year 2017 the number may have increased given that in the middle of the year the number is more than half of the previous year.

Relationship between Demographic Factors and Socio-economic Factors and Relapse of Children with Severe Acute Malnutrition

Findings in Table 6 indicate that there is a significant relationship between age of parent/guardian, gender of parent/guardian, education of parent/guardian, giving solid food, types of food given to children, number of meals and source of food and relapse of children with acute malnutrition at ($x^2 = 41.113$, df = 4, p = 0.000), ($x^2 = 20.225$, df = 4, p = 0.000), ($x^2 = 99.091$, df = 12, p = 0.000), $(x^2 = 24.28, \text{df} = 1, p = 0.004)$, $(x^2 = 10.99, \text{df} = 1, p = 0.003)$, $(x^2 = 9.64, \text{df} = 1, p = 0.021)$ and $(x^2 = 10.41, \text{df} = 1, p = 0.043)$ respectively. This implies that there is a relationship between age, gender, education of the parent/guardian, giving solid food, types of food given to children, number of meals and source of food and relapse of children with acute malnutrition in the area of study.

Table 6. Factors Associated with Relapse of Severe Acute Malnutrition of Children Aged 5 Years and Below

Variables	**Relapse**				
	Yes	**No**	X^2	df	P
Age of Mother/Guardian					
15 – 30	39 (56.5%)	30 (43.5%)	41.11	1	0.000
31 – 45	19 (65.5%)	10 (34.5%)			
Sex of Mother/Guardian					
Male	7 (50.0%)	7 (50.0%)	20.23	1	0.000
Female	51 (60.7%)	33 (39.3%)			
Education of Mother Guardian			99.09	3	0.000
Not Educated	33 (61.1%)	21 (38.9%)			
Primary	13 (52.0%)	12 (48.0%)			
Secondary	11 (64.7%)	6 (35.3%)			
Collage	1 (50.0%)	1 (50.0%)			
Giving solid food					
After 6 months	30(66.7)	15(33.3)	24.28	1	0.004
After 8 months	56(52%)	43(98)			
Number of Meals a day					
1-2	16(46.7)	15(53.3)	9.64	1	0.021
3	11(68.8)	5(31.2)			
Source of protein foods					
Animal proteins, eggs, milk	16(46.7)	15(53.3)	10.41	1	0.043
Plant proteins, beans	42(68.8)	25(31.2)			

n = 98 Sources: Primary Data

Table 8. Factors associated with Relapse of Severe Acute Malnutrition of Children Aged 5 years and below

Variables	**Relapse**	**No Relapse**	COR (CI 95%)	AOR (CI 95%)
Age of Mother/Guardian				
15 – 30	39 (56.5%)	30 (43.5%)	2.119 (0.746-13.003)	3.78 (2.01-6.21)
31 – 45	19 (65.5%)	10 (34.5%)	1	1
Sex of Guardian/Mother				
Male	7 (50.0%)	7 (50.0%)	1	1
Female	51 (60.7%)	33 (39.3%)	**3.28 (1.588-6.450)**	**3.40 (1.23 – 5.68)**
Education of Mother Guardian			3.197 (0.282-1.298)	2.73 (1.31 – 4.66)
Not Educated	33 (61.1%)	21 (38.9%)		
Primary	13 (52.0%)	12 (48.0%)		
Post primary	11 (64.7%)	6 (35.3%)		
Giving solid food				
After 6 Months	30(66.7%)	15(33.3%)	**2.40 (1.500-3.282)**	**3.69 (2.32-9.71)**
After 8 Months	7(46.7%	8(53.3%)		

Don't remember	21(55.3%)	17(44.7%)		
Number of Meals				
1-2	16(46.7)	16(53.3)	**8.32 (1.324-13.801)**	**5.26 (1.351-6.441)**
3	11(68.8)	5(31.2)	**1**	**1**
Source of protein food				
Animal proteins: egg, milk	16(46.7)	15(53.3)	**3.32 (1.240-7.401)**	**3.68 (2.12 – 14.67)**
Plant proteins: beans	42(68.8)	25(31.2)	1	1

n = 98 Sources: Primary Data

With regard to the relationship between socio-economic and demographic factors and relapse of children of severe acute malnutrition, findings showed that the age of mother/guardian was a significant predictor of the children relapse with severe acute malnutrition with the unadjusted odds COR = 2.119(0.246 – 13.003) and adjusted odds AOR = 3.78(2.01 – 6.21); sex of guardian was a significant predictor of the children relapse with severe acute malnutrition with the unadjusted odds COR = 3.28(1.588 – 6.450) and adjusted odds AOR = 3.40(1.23 – 5.68); education level of parents/guardian was a significant predictor of the children relapse with severe acute malnutrition with the unadjusted odds COR = 3.197(0.282 – 1.298) and adjusted odds AOR = 2.73(1.31 – 4.66); time of starting giving solid food to children was a significant predictor of the children relapse with severe acute malnutrition had the unadjusted odds COR = 2.40(1.500 – 3.282) and AOR = 3.69(2.32 -9.71); type of food given to the children was a significant predictor of the children relapse with severe acute malnutrition with the unadjusted odds COR = 3.28(0.325 – 2.988) and adjusted odds AOR = 3.50(0.331 – 0.680); number of meals was a significant predictor of the children relapse with severe acute malnutrition with the unadjusted odds COR = 8.32(1.324 – 13.801) and adjusted odds AOR = 5.26(1.351 – 6.441) and source of protein food was a significant predictor of the children relapse with severe acute malnutrition with the unadjusted odds COR = 3.32(1.240 – 7.401) and adjusted odds AOR = 3.68(2.12 – 14.67).

Challenges faced by Parents/Guardians to Maintain the Children Healthy

Table 9. Challenges Faced by Parents/Guardian to Maintain the Children Healthy

Factors	Percentages	Rank
Lack of Income	50	3
Baby having Sickle Cell	43	4
Frequent Sickness	60	2
No one to keep the baby at home	80	1
Too much work, no time to cook for the child	39	6
No monitoring of baby feeding practices	40	5

The results in Table 9 expressed the list of challenges faced by parents/guardian to maintain the children healthy. The findings show that "no one to keep the baby home" was ranked number one (80%) followed by frequent Sickness (60%). The next was lack of income (50%) followed by baby having sickle cell (43%). The next was no monitoring of baby feeding practices (40%) and finally "Too much work, no time to cook for the child" (39%).

Causes of Relapse of Severe Acute Malnutrition

Table 10. Perceived Causes of Relapse of Severe Acute Malnutrition

Factors	Percentages	Rank
Diarrhea with vomiting	82	1
Lack of appetite for long time	50	4
The baby being selective when it comes to eating food	42	5
Lack of proper feeding	70	2
Swelling of the body	68	3
Slow growth	33	6
Poor feeding	20	7

The results in Table 10 demonstrate the perceived causes of relapse of severe acute malnutrition of severe acute malnutrition among children under 5years. The findings show that diarrhea with vomiting were ranked number one (82%); followed by lack of proper feeding (70%). The next was swelling of the body (68%) followed by Lack of appetite for long time (50%). While the next was the baby being selective when it comes to eating food (42%) Then, Slow growth (33%) and lastly poor feeding (20%).

In the interview, the nurses raised a number of common diagnoses at the time of re-admission. For instance, one nurses had this to say:

> *For the past few months, the following were the common diagnosis at the time of re-admission caught, severe diarrhea and vomiting, pneumonia, body weakness.*

Conclusion

The age of mother/guardian was not a significant predictor of the children relapse with severe acute malnutrition; sex of guardian was a significant predictor of the children relapse with severe acute malnutrition; education level of parents/guardian was a significant predictor of the children relapse with severe acute malnutrition; time of starting giving solid food to children was a significant predictor of the children relapse with severe acute malnutrition; type of food given to the children was a significant predictor of the children relapse with severe acute malnutrition; number of meals was a significant predictor of the children relapse with severe acute malnutrition and source of protein food was a significant predictor of the children relapse with severe acute malnutrition.

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