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Among under two years Children in Kashenyi Parish-Bushenyi District

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ABSTRACT

Malnutrition is a condition characterized by a deficiency, excess, or imbalance in a person's intake of energy and/or nutrients, necessary for ensuring growth and maintaining specific bodily functions. It encompasses both over-nutrition (as seen in obesity) and under-nutrition, which includes wasting, stunting, underweight conditions, and micronutrient deficiencies. Child malnutrition served as a crucial indicator for monitoring progress toward achieving the Millennium Development Goals (MDG). A descriptive cross-sectional study was conducted among children in Kashenyi Parish, involving a total of 100 participants. In this study, it was found that the prevalence of malnutrition among children aged two years and below in Kashenyi Parish, Bushenyi District, was 20%. Several factors were identified as statistically significant contributors to malnutrition in children under the age of two, including the child's age, gender, birth order, mother's age, mother's occupation, parents' religion, mother's education level, mother's marital status, breastfeeding practices, occurrences of infections, and immunization status. The researchers recommend implementing educational programs for mothers focused on improving their knowledge and practices related to infant nutrition. Such initiatives can play a vital role in controlling malnutrition, particularly among vulnerable infants. It is crucial that these efforts are carried out under robust monitoring and evaluation mechanisms to ensure their effectiveness.

Keywords: Malnutrition, Breastfeeding practices, Immunization, Under-nutrition, MD

INTRODUCTION

Malnutrition, a deficiency, excess, or imbalance in a person's intake of energy and nutrients to ensure growth and maintain specific functions [1, 2], covers both over-nutrition (obesity) and under-nutrition (wasting, stunting, underweight, and micronutrient deficiency [3]. Child malnutrition was an important indicator for monitoring progress towards the achievement of the Millennium Development Goals [4]. However, nutrition indicators for young children and their mothers have not improved much over the past years, with some indicators showing a worsening trend. In 1995, 45% of children under 2 years old in Uganda were short for their age (stunted). Ten years later, the prevalence of stunted under-5s, especially those under two years of age, had fallen to only 39% [5]. Thus, stunting is the most prevalent form of malnutrition at 38.5% in Nakaseke and Nakasongola, followed by wasting (16.5%) and underweight (13.5%) respectively $\lceil 6 \rceil$. It, therefore, remains a significant cause of mortality and is a development issue in the region. In Tanzania, studies have shown high levels of malnutrition among children under five [7]. Children become malnourished if they suffer from diseases that cause undernutrition or if they are unable to eat sufficient nutritious food [8]. Worldwide, malnutrition is one of the most important public health problems in developing countries, especially Sub-Saharan Africa [9]. Among children, appropriate nutrition affects brain development [4, 10]. A diet in excess or lacking essential nutrients is likely to have adverse mental effects [11]. Although the country has made tremendous progress in economic growth and poverty reduction over the past 20 years, its progress in reducing malnutrition remains very slow [3]. Stunting indicates chronic malnutrition; the stunting prevalence rate of 39% means that about 2.3 million young children in Uganda today are chronically malnourished. As noted, the meager improvements in ensuring the nutritional well-being of

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Ugandan children stand in stark contrast to the large gains in economic growth and poverty reduction over this period [12]. Malnutrition also encompasses two broad groups of conditions: overnutrition (obesity) and undernutrition (wasting/stunting and undernutrition) [13]. These two causes often occur together and result from multiple underlying factors, including inadequate access to food and health services [14]. Other basic causes include poverty, illiteracy, and social norms [15]. However, the nature and magnitude of such factors vary from one place to another $\lceil 15 \rceil$. Research indicates that malnutrition has devastating effects on human performance, health, and survival. A recent global analysis demonstrated that child malnutrition is the leading cause of the global burden of disease [16]. Malnutrition also affects the economic situation of Uganda. A COHA study [2] revealed that Uganda loses 5% of its GDP due to malnutrition. One out of six children in developing countries shows signs of being underweight, totaling 100 million children in the developing world [15, 17] Despite the operational framework for nutrition, child survival strategies developed since 2009, Uganda Vision 2040, and a National Development Plan (2010-2015) that focus on the nutritional well-being of children, as well as several other initiatives aiming at reducing malnutrition in children under two years, including the Food and Nutrition Policy 2003 and the implementation of the global Millennium Development Goals, the Uganda Demographic and Health Surveys of 2001, 2011, and 2016 show that nutrition indicators have not improved significantly, and some have even worsened [18]. Similarly, in 2016, the UDHS report showed that 29% of children under two years are considered to be short for their age or stunted, and 9% are severely stunted. Globally, stunting among children under five years of age has fallen from 32.6% in 2000 to 22.2% in 2017 [19]. There has been a slight decrease in underweight women since 2000, from 11.6% to 9.7% in 2016 [19] Yet, while there has been progress, it has been slow and patchy. Intestinal infection especially diarrhea, pneumonia, measles, HIV, and malaria also contribute to undernutrition in children [20-22]. Maternal malnutrition during pregnancy has many adverse consequences for child survival and long-term well-being. It can lead to anemia and other deleterious health outcome in children [23-25]. In Africa, malnutrition is worsened by the presence of diarrhea, and the mortality rate has increased from 4.3 in the late 19th century to currently 7 times higher than that in Europe [26]. Sub-Saharan Africa alone accounts for over 90% of mortality in children under two years, and Uganda is among the 15 nations with the highest number of diarrheal-related child mortality, due to the lack of safe drinking water, sanitation, hygiene, and poor nutrition [27]. The prevalence is even higher (48%) among 6-11 months [21]. A report by the International Food Policy and Research Institute indicated that developing countries have the largest proportions of malnourished children. According to this report, over one-third of the children in developing countries are malnourished (Smith and Haddad 2000a). Significant steps are being made to address malnutrition. Despite the availability of favorable natural resource capacity and a variety of nutritional supplements in the country, malnutrition has remained an important health and welfare problem, especially among children under two years [28]. Despite the availability of a variety of food supplements and knowledge of good and proper nutrition for mothers of children under two years, there is no correlation to an improvement in nutritional status. Thus, malnutrition remains a public health concern for the young generation of Uganda. Therefore, this research study is intended to determine the factors influencing malnutrition among children under two years in Kashenyi Parish, Nyabubare Subcounty, Bushenyi District, Western Uganda.

Methodology

Study Design

A descriptive cross sectional study was used to ascertain the factors influencing malnutrition among <2 Years children in Kashenyi Parish-Bushenyi district. This study was quantitative in nature whereby objective measurements, statistical, mathematical or numerical analysis of data collected through questionnaires will be done.

Area of Study

The study was carried out in selected villages of Kashenyi Parish, an area lying 06kms from Kampala International University, Western Campus, approximately 330 kilometres (214 miles) by road southwest of Kampala, Uganda's capital and approximately 70 kilometres (40 miles) by road west of Mbarara, the largest city in the sub-region.Kashenyi Parish comprises of 6 villages which include Kashenyi, Ihoza, Kyandago, Lutoto, Ryashana and Ntaza with a total population of around 2,400 and around 500 Households (UBOS,2017).

Study population

All under-two years in selected villages of Kashenyi and able to participate and as well suits the inclusion criteria of the study.

Sample size

This was determined using the formula according to Brown, [29] N = 4p (1-p)

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 e^2

Where n = sample size e = allowable error and in this case 10% (0.1) was taken 4 = is a constant derived from the formula P = prevalence of malnutrition in Uganda which is estimated at 43.5% (0.435) Therefore; N = 4 x0. 201(1-0.221) $(0.08)^2$ N = (4 x 0.201) x 0.779)

0.0064 N =100

Sampling techniques

Participants were enrolled consecutively based on the inclusion and exclusion criteria.

Study inclusion criteria

One child under two years of age in each household in selected villages of Kashenyi whose parents/Guardians/care takers were willing to participate and consent to the study were included. If there were more than one (1) child below 2 years in a household, the child was recorded to ascertain prevalence.

Study exclusion criteria

Severely ill despite being malnourished, those away from around the catchment area and those in selected villages of Kashenyi but whose parents/Guardians/care takers werenot willing and not consent to participate in the study were excluded.

Data collection and management

Data was collected using a pretested questionnaire. Anthropometric measurements were obtained using a weighing scale for weight and tape measure for height/length and MUAC Tape for mid-upper arm circumference. Two assistants where trained and used to help in the administration and explanation of questionnaires to the respondent(s) in order to aid and ease the process of data collection.

Data collection instrument

A questionnaire was used for both quantitative and qualitative data collections. Self-administered questionnaire was used to conduct the study. As a main data collection tool, the questionnaires where both closed and open ended questions. MUAC tapes (6), tape measure (6), and a Weighing scale was used to obtain the essential measurements.

Measurement of MUAC

- i.Mid Upper Arm Circumference was taken on the less active arm (commonly left arm of the client). To locate the correct point for measurement, the elbow of was flexed to 90° as well the entire arm at about 60-90° from the trunk.
- ii. The tip of the shoulder (acromion) and elbow (olecranon) on the left flexed was located.
- iii. The mid-point between the tip of the shoulder and the elbow was determined.
- iv. The MUAC tape was placed around the middle of the left upper arm (the arm hanging down the side of the body and relaxed).
- v. Reading of the measurement from the window of the MUAC tape without tightening or loosening it was done.
- vi. Recording the MUAC to the nearest 0.1 cm and the colour code (Green, Yellow, and Red) was done.

Pre-test for the data collection instrument

To ensure quality control, the researcher fielded testing of the study instruments in Kizinda. Ten (approximately 10% of the study sample) questionnaires were given to respondents within Kizinda Parish Bushenyi District for a pre-test to verify the validity of the data in the questionnaire. The respondents were properly informed about the subjects and no force, monetary or gift(s) of any kind were employed to influence the participants to respond to questions as per researcher's interest. This determined the extent to which the questions in the questionnaire addressed the variables of interest.

Data Analysis Plan

Both qualitative and quantitative data were collected. This was analyzed by Statistical Package for social scientists (SPSS) version 20 to obtain frequencies and percentages and regression analysis for the p-values and risk estimates of the significance and association of the determinant to the prevailing distribution of malnutrition among under

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two in Kashenyi parish. Typing was done using appropriate computer packages such as Microsoft Office Word for the results that enabled formatting, and drawing of charts and tables. The findings were presented as frequencies, percentages and cross tabulation on graphs and charts. Percentages for the prevalence and additional p-values and odds ratios with their confidence interval were used for the maternal and child factors.

Data Presentation Methods

Data was presented in form of tables and graphs. Descriptive statistics were used where percentages for each response were calculated to give the lesson learnt and conclusion from the response.

Data Quality Control

The quality of data was enhanced through ensuring completeness of the questionnaires based on results from a pilot study. The questionnaire was checked for completeness with every participant. Standard instruments such as age specifics MUAC tapes and weighing scale with zero adjustment were employed.

Ethical Consideration

A letter of approval was obtained from the KIUWC Research and Ethics Committee as well as an introduction letter from the research unit, Faculty of Clinical Medicine and Dentistry presented to the authorities of the study area. Upon being given permission to proceed with data collection by the L.C 2 of Kashenyi parish, we sought for an informed consent from the Participants before they took part in the study. This involved a thorough explanation of the likely risks if any; and the respective benefits of this study such as acquiring knowledge about the measurements and the child's nutritional status (BMI), MUAC as well as a representative data/result for the entire population for interventional purposes. Confidentiality and privacy was strictly observed.

RESULTS

Socio-demographic characteristics of children under two years in Kashenyi Parish -Bushenyi District

Research findings in table 1 below indicate that majority of the children 55 (55%) were below 6 months while the least 14 (14%) were between 12 and 24 months of age. Most children, 62(62%) were females while 38 (38%) were males. Most children, 43 (43%) were first born children while the least, 12 (12%) were third born children. Most children had birth weight below 2.5 kg while the least, 19 (19%) weighed more than 4kg at birth. Most children 62(62%) belonged to birth interval of 2 years while the least 1(1%) had birth interval of less than 6 months.

Variabl	e	Frequency (n = 100	Percentage	(%)
Age of the chil	d			
< 6 month	s	5 5	5	5
6 months -12 month	n s	3 1	3	1
12-24 month	s	1 4	1	4
G e n d e	r			
M a l	e	3 8	3	8
Femal	e	6 2	6	2
Birth orde	r			
First bor	n	4 3	4	3
Second bor	n	1 9	1	9
Third bor	n	1 2	1	2
Fourth bor	n	2 6	2	6

Table 1 shows socio-demographic characteristics of children under two years in Kashenyi Parish -Bushenyi District

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Birth weight	
< 2 . 5 k g	4 6 4 6
2.5 Kg - 4 Kg	3 5 3 5
> 4 K g	1 9 1 9
Birth interval	
After 2 years	6 2 6 2
After 1 year	3 3 3 3
After 6 months	4 4
Before 6 months	1 1

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Socio-demographic characteristics of mothers of children under two years in Kashenyi Parish -Bushenyi District

Most mothers 50 (50.0%) were aged between 30 and 40 years while the least 7 (7.0%) were below 18 years of age. On occupation, most mothers 25 (25.0%) were business women while the least 14 (14.0%) were students. Most mothers, 38 (38%) had attained secondary level of education while the least 29 (29%) attained post-secondary level. Most mothers 41 (41%) were catholic by religion while the least 4(4%) were Pentecostal. Majority of the mothers, 73 (73%) were married while the least 6 (6%) were widowed. Most mothers 70(70%) were of Banyankore tribe Page | 35 while the least 2 (2%) were Baganda. Most mothers 60(60%) had 1 - 3 number of children while the least 1(1%)had more than 10 children. Most mother40(40%) were breastfeeding for more than 10 months while the least 4(4%) were breastfeeding between 2 to 4 months.

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Table 2: shows Socio-demographic characteristics of mothers of children under two years in Kashenyi Parish -Bushenyi District

V	ariab l	e	Frequency	(n = 1 0 0)	Р	ercentage	(%)
A	g	е					
<	18 year	S		7	7		0
1	8-29 year	S	2	6	2	6.	0
3	0-40 year	S	5	0	5	0.	0
<	40 year	S	1	7	1	7.	0
Μ	other's occupatio	n					
S	tu de n	t	1	4	1	4.	0
В	usiness woma	n	2	5	2	5.	0
Ρ	e a s a n t		2	2	2	2.	0
Н	ouse wif	e	1	5	1	5.	0
С	ivil servan	t	2	4	2	4.	0
Ρ	arents' religio	n					
С	atholic		4	1	4	1.	0
Ρ	rotestan	t	2	9	2	9.	0
Μ	us lim		1	1	1	1.	0
S	D	A	1	5	1	5.	0
Ρ	entecosta	I	4		4		0

Education level

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Primary level	3	4	3	4		0
Secondary level	3	8	3	8	•	0
Post-secondary level	2	9	2	9		0
Marital status						Page 36
Single	2	1	2	1		0
Married	7	3	7	3		0
Widow	6		6			0
Tribe						
Munyankole	7	0	7	0		0
Mu kiga	1	1	1	1		0
Mutooro	1	2	1	2		0
Mukonjo	5		5			0
Baganda	2		2			0
Number of children						
1 – 3	6	0	6			0
4 _ 6	3	3	3			3
7 – 9	6		6			
> 1 0	1		1			
Period of breast feeding						
2 — 4months	4		4			
5 — 7months	2	6	2			6
8 – 10 months	3	0	3			0
> 1 0 m o n t h s	4	0	4			0

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Prevalence of malnutrition among children under two years in Kashenyi Parish -Bushenyi District The Prevalence of malnutrition among children under two years in Kashenyi Parish -Bushenyi District was 20%. 13 children (13%) had Mid Upper Arm Circumference of 11.5cm-12.5cm, 7% were Less than 11.5cm. 80% of the children had BMI from 18-25 while 20% of the children had BMI less than 18.

Table 3: shows the Prevalence of malnutrition among children under two years in Kashenyi Parish -Bushenyi District

Bus	henyi	i Di	stri	ct														Page
V	а		r	i	а	b	1		e	s	F	requenc	;у ((n = 100)	Р	ercen	tage	(%)
N	u t	r	i	t i	o n	s	t	a t	t u	s								
Μ	а	1	n	0	u ı	· i	s	h	e	d	2			0	2	0		0
N		0		r		m		a		1	8			0	8	0		0
M i	d U	Jp	pe	r Aı	m C	lircı	ımf	fer	e n	сe								
L	e s	s		t h	n a n	1	1	. 5	c c	m			7		7			0
1	1.		5	c m	-	1 2		5	с	m	1			3	1	3		0
М	ore	t	h a	n 1	2.5	c m	(N	o r	m a	1)	8			0	8	0		0
B	o d	у		Μ	a s	s	I	n o	ł e	x								
L e	ss t	t h	a n	18	(U n	d e r n	o u	ris	h e	d)	2			0	2	0		0
1	8 -	-	2	5 (Ν	o r	m	a	1)	8			0	8	0		0
А	b		0		V	e		2		5			0		0			0

Factors contributing to malnutrition among children under two years in Kashenyi Parish -Bushenyi District.

Socio-demographic factors associated with malnutrition among children under two years in Kashenyi Parish -Bushenyi District

According to findings in table 4 below, age of a child, gender and birth order were found to be statistically significantly associated with malnutrition in children under two years in the model at 5% level. Children aged between 12-24 months (OR=5.74: 95%CI, 1.13 -24.85: P=0.003) and children below 6 months (OR=2.96: 95%CI, 10.96-11.28: P=0.058) were 5.7 times and 3 times more likely to be malnourished compared children between 6 months -12 months respectively. Male children were 3 times more likely to become malnourished compared to girls (OR=3.39: 95%CI, 1.4-21.05: P=0.032). Fourth born and above children were 6.9 times more associated with malnutrition compared to first born children (OR=6.9: 95%CI, 0.95-28.22: P=0.002). Birth weight was found not statistically significantly be associated with malnutrition in children in this study. to

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Table 4: shows socio-demographic factors associated with malnutritio	n among children under two years in
Kashenyi Parish -Bushenyi District	

Independent variables	Malnourished (n=20)	Normal (n = 80)	OR (95% CI)	P-Values
Age of the child				
< 6 months	12 (21.8%)	43 (78.2%)	2.96 (0.96-11.28)	Page 38
6 months -12 months	2 (6 . 4 %)	29(93.6%)	R e f	
12-24 months	$6 (\ 4 \ 2 \ . \ 9 \ \% \)$	8 (57.1%)	5.74(1.13-24.85)	0.003
Gender				_
M a l e	1 2 (3 1 . 6 %)	$2 \ 6 \ (\ 6 \ 8 \ . \ 3 \ \% \)$	3.39(1.4-21.05)	0.032
Female	8 (1 2 . 9 %)	54 (87.1%)	R e f	
Birth order				
First born	3 (7 %)	4 0 (9 3 %)	R e f	
Second born	2 (1 0 . 5 %)	$1 \ 7 \ (\ 8 \ 9 \ . \ 5 \ \% \)$	1.51(0.38-48.11)	0.235
Third born	3 (2 5 . 0 %)	9 (7 5 . 0 %)	3.57(0.483-68.49)	0.066
Fourth born and above	1 2 (4 6 . 2 %)	1 4 (5 3 . 8 %)	6.97(0.95-28.22)	0.002
Birth weight				
< 2.5 kg	1 0 (2 1 . 7 %)	$1 \ 8 \ (\ 7 \ 8 \ . \ 3 \ \% \)$	1.48(0.44-6.42)	0.646
2.5 Kg -4 Kg	6 (1 7 . 1 %)	50(82.9%)	R e f	
> 4 K g	4 (2 1 %)	$1 \ 2 \ (\ 7 \ 9 \ . \ 0 \ \% \)$	1.04(0.67-14.65)	0.9145

Mothers' socio-demographic factors associated with malnutrition among children under two years in Kashenyi Parish -Bushenyi District

In this study, mother's age, mother's occupation, parents' religion mother's education level and mother's marital status were found to be statistically significantly associated with malnutrition in children under two years in the model at 5% level. Children whose mothers were below 18 years of age were 6.7 times more likely to become malnourished compared to those whose mothers were between 30-40 years (OR=6.75: 95%CI, 1.09-41.61: P=0.040). Children of peasants were 4.8 times more likely to become malnourished compared to children born to catholic parents (OR=11.33: 95%CI, 2.23-68.12: P=0.014). Children whose mothers attained primary level of education were 10 times more likely to become malnourished compared to children secondary level of education (OR=10.07: 95%CI, 1.30-94.07: P=0.032). Children of single mothers were 17 times more likely to become malnourished compared to children whose mothers were 17 times more likely to become malnourished compared to children secondary level of education (OR=10.07: 95%CI, 1.30-94.07: P=0.032). Children of single mothers were 17 times more likely to become malnourished compared to children whose mothers were 17 times more likely to become malnourished compared to children whose mothers were married (OR=16.98: 95%CI, 5.05-71.22: P=0.000). Also, children of widowed mothers were 3.3 times more likely to become malnourished compared to children whose mothers were married.

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Table 5: shows mothers' socio-demographic factors associated with malnutrition among children under two years in Kashenyi Parish -Bushenyi District

Independent variables	Malnourished (n=20)	Normal (n=80)	OR (95% CI)	P-Values
A g e				
< 18 years	3(42.9%)	4(57.1%)	6.75(1.09-41.61)	0.040
18-29 years	4(15.4.2%)	22(84.6%)	2.14(0.51-8.87)	0. 2 Page 39
30-40 years	$1 \ 0 \ (\ 2 \ 0 \ . \ 0 \ \% \)$	40(80.0%)	r e f	
< 40 years	3(17.6%)	1 4 (8 2 . 3 %)	3.60(0.51-25.00)	0.195
Mother's occupation				
Student	3(21.4%)	$1 \ 1 \ (\ 7 \ 8 \ . \ 6 \ \% \)$	1.60(0.49-23.36)	$0 \ . \ 2 \ 1 \ 2$
Business woman	4 (16.0%)	21(84.0%)	1.40(0.260-11.15)	0.578
Peasant	8 (36.4%)	14(63.6%)	4.83(1.06-31.83)	0.042
House wife	2(13.3%)	13(86.7%)	1.32(0.24-15.26)	0.536
Civil servant	3 (12.5%)	21 (87.5%)	r e f	
Parents' religion				
Catholic	4 (9 . 8 %)	37(90.2%)	r e f	
Protestant	7 (24.1%)	22(75.9%)	2.59(0.84-15.28)	0.081
Muslim	6(54.5%)	5 (45.4%)	11.33(2.23-68.12)	0.014
S D A	2(13.3%)	13(86.7%)	0.72(0.07 - 7.49)	0.788
Pentecostal	1 (25.0%)	3 (75.0%)	3.11(0.32-52.69)	0.26
Education level			· · · ·	
Primary level	13(38.2%)	21(61.8%)	10.07(1.30-94.07)	0.032
Secondary level	2(5.3%)	36(94.7%)	r e f	
Post-secondary level	5 (17.1%)	23(82.1.3%)	3.11(0.132-38.26)	0.575
Marital status				
Single	12(57.1%)	9 (4 2 . 9 %)	16.98(5.05-71.22)	0.000
Married	6 (8 . 2 %)	67(91.8%)	r e f	
W i d o w	2(33.3%)	4 (6 6 . 7 %)	3.31(0.38-48.11)	0.235

Other factors associated with malnutrition among children under two years in Kashenyi Parish -Bushenyi District

Children who had suffered an infection were 6 times more likely to become malnourished compared to children who didn't suffer from an infection (OR=6.39: 95%CI, 2.3-18.05: P=0.001). Unimmunized children were 4 times more likely to become malnourished compared to children who were fully immunized (OR=4.03: 95%CI, 1.25-17.11: P=0.023).

Table 6:	shows	other	factors	associated	with	malnutrition	among	children	under	two	years	in	Kashenyi
Parish -I	Busheny	i Dist	rict										

Independent variables	Malnourished (n=20)	Normal (n=80)	OR (95% CI)	P-Values
Child suffered infection of recent				
Y e s	1 5 (4 0 . 5 %)	22(59.5%)	6.39(2.3-18.05)	0.001
N o	5(7.9%)	58(92.1%)	R e f	
Immunization status				
Fully immunized	7 (1 2 . 7 %)	48(87.3%)	R e f	
Partially immunized	7 (2 2 . 6 %)	24(77.4%)	1.71(0.49-6.38)	$0 \ . \ 3 \ 2 \ 2$
Not immunized	6 (4 2 . 8 %)	8 (57.2%)	4.03(1.25-17.11)	0.023

DISCUSSION

Prevalence of malnutrition among children under two years in Kashenyi Parish -Bushenyi District

The Prevalence of malnutrition among children under two years in Kashenyi Parish -Bushenyi District was 20 children (20%) of which 13 children had Mid Upper Arm Circumference of 11.5cm-12.5cm and 7 had MUAC less than 11.5cm. All the 20 children were undernourished. This prevalence is lower than that reported by UDHS [18]

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which reported that in Uganda, 33% of children were stunted. This prevalence also corresponds to a UNICEF report [19] which showed lower levels of stunting in Guinea 20%, Togo 22%, and Ghana 13% and Chad 18%. Factors contributing to malnutrition among children under two years in Kashenyi Parish -Bushenyi District.

Socio-demographic factors associated with malnutrition among children under two years in Kashenyi Parish -Bushenyi District

Children between 12-24 months were 5.7 times more likely to be malnourished compared to younger children Page | 40 between 6 months and -12 months. This is attributed to the fact that parents give less attention to older children than they give birth to a new child who needs much attention and care. The findings are plausible considering that many of the younger children are still being breastfed and chronic malnutrition sets in only after weaning. Similar findings have been reported in different countries for instance in Kwara state of Nigeria [30]. Male children were 3 times more likely to become malnourished compared to girls. This is probably due to increased attention paid to female children unlike the male children. Another explanation could be that the boys are rare at home. They tend to be active, running around in the neighborhood as compared to the female children who probably eat whatever small feeds that their mothers got since they are always with them at home. This study corresponds with a study by Olwedo et al., [31] on the factors associated with malnutrition in internally displaced persons' camps of Northern Uganda who indicated that a male child was nearly two times more likely to suffer from acute malnutrition compared to a female child. Fourth born and above children were 6.9 times more associated with malnutrition compared to first born children. This could be due to the fact that intra-household allocation of food and resources decreases with an increasing number of births in the household and as a result, births of higher order might suffer from various health hazards as well as malnutrition. Similar findings were indicated in the study done in Bangladesh using the Demographic and health surveys about the association between the order of birth and chronic malnutrition of children, results indicated that 38.1% children were stunted and 8.2% children were fifth or higher order birth. Third order, fourth order, and fifth or higher order children are 24%, 30%, and 72%, respectively, were more likely to be stunted after adjusting for all other variables $\lceil 32 \rceil$.

Mothers' socio-demographic factors associated with malnutrition among children under two years in Kashenyi Parish -Bushenyi District

Children whose mothers were below 18 years of age were 6.7 times more likely to become malnourished compared to those whose mothers were between 30-40 years. This is attributed to the fact that younger mothers tend to have less knowledge of child nutrition as they are inexperienced. Similarly, it was found in Bangladesh that children whose mothers were less than 18 years at the time of birth were 1.22 times more likely to be stunted, wasted and underweight compared to children whose mothers were 18 years and above at birth [33, 34]. In the Ugandan settings identified some common risk factors for protein energy malnutrition, that is severely malnourished infants mostly from young mothers, had low weight at birth with less access to breast feeding that is essential for the infants' protein intake. Thirty-four percent (34%) of children received supplementary food by three months and some mothers stopped breast feeding earlier [35]. Children of peasants were 4.8 times more likely to become malnourished compared to children of civil servants. This is attributed to the fact that such mothers are not financially well off thus fail to provide complementary feeds including protein foods. Another study in Uganda revealed that children from mothers who were labourers or farmers and housewives had a greater prevalence of stunting, underweight and wasting than those from mothers who worked in office or were housewives [16, 36]. This is because such mothers rarely get time to take care of their children. They also leave their children at home with other siblings who may neglect feeding them following the right frequency and this sometimes worsens the problem of malnutrition $\lceil 3 \rceil$. Children whose mothers attained primary level of education were 10 times more likely to become malnourished compared to children whose mothers attained secondary level of education. This could be attributed to the fact that most women with low education spend more time in gardens and feed their children on less nutritious foods. Education also determines her income and this helps mothers to access proper nutrition for the child as well as health services. Several studies have found out that a mother's education is associated with good nutrition practices, particularly under-two children nutrition [37]. Median levels of malnutrition across all countries range from 36 per cent for children whose mothers had some primary education to 16 per cent for children of mothers with secondary or higher education [38]. Children of single mothers were 17 times more likely to become malnourished compared to children whose mothers were married. Also, children of widowed mothers were 3.3 times more likely to become malnourished compared to children whose mothers were married. This is attributed to the fact that unmarried mothers face financial difficulties thus limiting their capacity to provide nutritious food to their children. Similarly, in Ethiopia it was found out that the

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risk of under-two child malnutrition is higher among unmarried rural and divorced/separated women compared to married ones [38]. Contrary to the above, a study in Zambia revealed that mothers who are married were more likely to have undernourished children unlike those who were unmarried perhaps because of the cost of maintaining families hence sometimes these families fail to produce nutritious supplements to the under-two children [39].

Other factors associated with malnutrition among children under two years in Kashenyi Parish -Bushenyi Page | 41 District

Children who had suffered an infection were 6 times more likely to become malnourished compared to children who didn't suffer from an infection. Infections among children reduce appetite, increase energy and nutrient utilization (e.g. to fight infection) and limit the ability to absorb or retain nutrients [40, 41]. The immunity of the child weakens and diseases like diarrheal can be fatal. Every year about 0.35 million children die of malnutrition and in the developing countries about 0.2 million children under two years of age suffer from dwarfism [19]. Unimmunized children were 4 times more likely to become malnourished compared to children who were fully immunized. This is because immunization or vaccination is known to significantly increase immunity among children from many childhood killer diseases such as measles, respiratory tract infections, whopping cough, poliomyelitis, and cholera among others, [18], childhood vaccination may protect children's nutritional status and lead to improved child growth in developing countries where most child killer diseases are preventable with vaccination. Similarly, in Ghana study found out that a significantly higher prevalence of malnutrition children amongst partially immunized and non-immunized children (81.3% and 88.2%) in comparison to fully immunized children (62.1%). This implies that partially and non-immunized children were at higher risk of malnutrition.

CONCLUSION

In this study, the proportion of malnutrition among children under two years in Kashenyi Parish was 20%. Age of a child, gender, birth order, mother's age, mother's occupation, parents' religion mother's education level, mother's marital status, breastfeeding, infections, and immunization were found to be statistically significantly associated with malnutrition in children under two years.

RECOMMENDATIONS

There is need for feeding education to mothers which would help to improve nutrition habits among the needy infants manly to control malnutrition. This should be done under good monitoring and evaluation. Healthy eating is essential for children, mental growth, and lifelong health and well-being. When children are not receiving proper nutrition they are unable to grow well hence becoming stunted. The researcher recommends that more research on malnutrition and associated factors in adults be conducted as most studies are on malnutrition among children.

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