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Dietary diversity, water and sanitation practices and nutritional status of children aged 6-59 months in Kitui County, Kenya

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Abstract
Background: Malnutrition is a health concern worldwide since the number of undernourished people is still high. In Kenya, the current food supply situation and outlook is a cause of concern. Majority of Kenyan children aged 6-59 months especially those living in the arid and semi-arid lands are undernourished because of household food insecurity. In Kitui County, one of the arid parts of the lower eastern Kenya, stunting levels were at forty six percent in 2014, almost double the national rate. To improve the nutritional status of the children, the dietary practices and water and sanitation situation need to be established.
Objective: The objective of this study was to assess the dietary practices and nutritional status of children 6-59 months as well as water and sanitation situation in Kitui County.
Methods: A cross sectional analytical study was conducted among 262 children from 167 households randomly selected in Mwingi Central Sub-County of the arid Kitui County. The respondents were primary caregivers of the study children. Data from structured questionnaire was analyzed using SPSS software, Version 21. To establish children's nutritional status, WHO, 2006 growth standards were used to analyze children's anthropometric data. Multiple linear regression was used to establish the relationship between variables. Significance level was set at $p<0.05$.
Results: The mean Dietary Diversity Score (DDS) for the children aged 6-23 months was 2.8 which was less than the recommended Minimum Dietary Diversity of ≥4 food groups per day for both breast fed and non-breastfed children. Grains, roots or tubers; was the most consumed food group. Almost all the households used unsafe water and covered a distance of more than 500 metres to the water source. Majority of the households disposed the human waste and child excreta hygienically. The levels of wasting, stunting and underweight was 12.2%, 27.9% and15.8% respectively. The boys were more affected in both underweight and stunting. About 16% of both boys and girls were wasted.
Conclusion: Arid and harsh climatic conditions limit dietary diversity and strain water availability compromising sanitation hence negatively affecting nutritional status.

Keywords: dietary diversity, water, sanitation practices, nutritional, children, Kitui

1. Introduction

Nutritional status is the one's physical condition as determined by the diet [12]. It is assessed by different methods which include anthropometry, biochemical, clinical and dietary intake and physical activity assessment. Body composition is also used to measure fat mass (FM) and fat free mass (FFM). In children, dietary practices and anthropometry are used a proxy indicators for assessing the entire population health status and one of the major predictors of child survival [4]. Since nutritional status is the current status of the body, it is determined by complex interaction between internal and external environmental factors. The nutritional status of a child can be altered by either over or under nutrition.

According to [19], children's nutritional status is mainly assessed using anthropometry, the physical body measurements which are weight, height against age. These measurements are then used to compute the nutritional indicators; underweight (weight-for-age), stunting (height or length)-for-age) and wasting (weight-for- height) expressed in Z scores. In children, stunting implies retarded growth and is considered a form of chronic malnutrition, caused by prolonged household food insecurity. Wasting is referred to as acute under nutrition, usually as a consequence of insufficient dietary intake and/or a high incidence of infections/diseases. Underweight on the other hand combines both stunting and wasting but does not differentiate these forms of undernutrition. Arid climate environment constrain households' ability to obtain and consume diversified diets. Lack of water constrain food production and at household level, contribute to poor sanitary practices exposing children to infections.

In Kenya, undernutrition continue to be a public health issue particularly for children aged under five years from resource poor setting and arid and semi-arid lands (ASAL). Such children have a significantly higher risk of mortality and morbidity than well-nourished children. In the ASAL where household food insecurity and natural disaster have affected the population, rates of acute malnutrition range between 15-20% of children aged under five years, and sometimes substantially higher [14]. This study was conducted in Kitui County, one of the ASAL Counties of the lower eastern part of Kenya.

In the Kenya, about 25% of the children under five of age were stunted, 4% wasted and 11% underweight [10] an

improvement of the nutritional status reported in 2008-09 [11] which reported 35%, 7% and 16% in stunting, wasting and underweight respectively. The national rates differ significantly with some region specific data. At County level, Kitui County, the study county, reported the highest levels of stunting in 2014, at forty six percent, almost double the national figure. Wasting and underweight levels were 3.4% and 19.7% respectively.

According to [7], food security comprises of four important components which include availability, accessibility, utilization and stability. Availability measures own production and is affected by asset and land ownership and climatic conditions, while access measure actual food presence and affordability. Stability measures resilience and the ability to withstand shocks. Income affects both accessibility and stability. These three affect utilization. Utilization is the way in which the body makes use of the ingested food so as to have a healthy body [5]. Therefore, sufficient energy and nutrient intake by individuals is the result of good feeding practices, food preparation, dietary diversity and intra-household distribution of food [7]. Dietary diversity measures the number of individual food items or food groups consumed over a given period of time. Dietary diversity scores are used to assess changes in diet before and after an intervention or after a disaster such as crop failure [6]. The mean dietary diversity score allows comparison of sub-populations. Individual Dietary Diversity Score (IDDS) is often used as a proxy measure of the nutritional quality of an individual's diet. It is used as a measure of the nutritional quality of children's diets. To better reflect a quality diet, the number of different food groups consumed is calculated, rather than the number of different foods consumed. Consumption of different food groups implies that the diet offers diversity in both macro and micro nutrients [3].

According to [16], nutritional status is not only affected by food security and adequate care of mothers and children but also by good health environment such as sanitation. This rests on the availability of safe water and proper sanitation including appropriate disposal of human waste. According to [17], access to safe water and adequate sanitation services has proven to be one of the most efficient ways of improving human health. From reviewed literature, there is evidence that consumption of diversified diets and access to adequate and safe water and proper sanitation are important determinants of nutritional status of children. The objective of this study was to establish the dietary diversity and nutritional status of children 6-59 months well as water and sanitation situation in Mwingi Central Sub-County, one of the arid sub counties of Kitui County. Study limitation: dietary diversity data is likely to be influenced by seasonal changes. Data was collected in the months of October and therefore food scarcity in the study area.

2. Materials and Methods

A cross-sectional analytical design was used to establish the dietary diversity, the household water and sanitation situation as well as the nutritional status of children aged 6-59 months in the arid Mwingi Central Sub-County, one of the arid sub-counties of Kitui County. The sub county is characterized by a hot and dry climate most part of the year. Due to the harsh climate, coupled with unreliable rainfall, Mwingi Central Sub-County has for a long time been faced with household food insecurity which lead to poor nutritional status of children especially those aged less than five years. The target population was households with children aged 6-59 months whose households have lived in the sub-county for at least 4 months prior to data collection to the study. The respondents were the primary caregivers of the study children and therefore the sample comprised of caregiver-child pairs. A sample size of 262 children drawn from was randomly sampled 167 households was used. A researcher administered questionnaire with a section on dietary diversity, water and sanitation section and anthropometry was used to collect the data. The questionnaire comprised of a section dietary diversity to collect information using the 24 hour recall of the index child.

The child's age was confirmed from the child's Ministry of Health mother-child booklet used to monitor growth. In the households where the birth certificate was available, it was presented for confirmation. Anthropometric measurements of weight and height (and length for children aged 6-24 months) were done. Weight was measured using a calibrated Salter scale in Kilograms (kg) to the nearest 0.1kg. The Salter scale was hung from a tree. The weighing pant was hanged on the lower hook of the scale and ensured that the pointer on the scale pointed to zero. The child dressed only in under pant was placed in the weighing pant and left to hang freely. The scale reading was then taken and measurement recorded. To ensure accuracy, the weight was taken twice and recorded in the anthropometry sheet then the average calculated. Height/Length of the index child was measured in centimeters (cm) to the nearest 0.1cm. Length of children less than 24 months was taken using the infant length board. The length board was placed on a flat surface. The mother was instructed to remove the child shoes and any hat. The child was laid on its back on the length board. The researcher assistant ensured that the top of the child's head was against the end of the length board. The measurer pressed gently with one hand on the child's knee to straighten them. At the same time, the measurer quickly moved the movable foot piece with his or her other hand so that the child's feet are pressed flat against it. The reading was taken and recorded in the anthropometry sheet. The height of children aged between 24-59 months was taken using the height board which was placed on a flat ground against a wall or a tree. The barefoot child without anything on his or her head was asked to stand on the platform at the base of the height board with heels together and knees straight. The measurer ensured that the heels, thighs, truck and buttocks were touching the back of the board and the child's eyes looking straight ahead. The measurer gently and firmly sliced the movable headpiece down until it touches the crown of the child's head. The reading was taken and recorded in the anthropometry table. Two length and height measurements were taken and recorded and the average calculated.

Data from the questionnaire was checked, coded, cleaned and analyzed using the SPSS software Version 21. Dietary diversity data from the 24 hour recall was analyzed by creating a Dietary Diversity Score (DDS). For children aged 6-23 months, a set of 7 food groups which include

(1) grains, roots and tubers, (2) legumes and nuts (3) dairy

products (milk, yoghourt, cheese) (4) flesh foods (meat, fish, poultry and liver/organ meats) (5) eggs (6) vitamin A-rich fruits and vegetables and (7) other fruits and vegetables was used to establish dietary diversity, with 1 being the minimum score and 7 as the maximum score, [19]. If a food item from any of those food groups was consumed, a score of "1" was given and if no food item was consumed a score of "0" was given. The acceptable minimum dietary diversity was a consumption of 4 or more food groups out of the 7 food groups.

Anthropometric data was analyzed using ENA for SMART computer package. Z-scores were used to determine the nutritional status of the children using [18] reference growth charts. A child with a Z-score of < -3 SD for Height-for-age, Weight-for-Height and Weight-for-Age was considered severely stunted, wasted, underweight respectively. A child with a Z Score of -3 SD to < -2 SD for Height-for-Age, Weight-for- Height and Weight-for-Age was considered moderately wasted, underweight and stunted respectively while a child with a Z- Score of > -2 SD for all the indices was considered normal. Descriptive statistics on dietary diversity, nutritional status and water and sanitation was described using frequencies, percentages, range, means and standard deviation. The P-value of <0.05 was used as the criterion for statistical significance.

3. Results

3.1 Demographic and Socioeconomic characteristics of children's caregivers

Table 1: Demographic and Socioeconomic characteristics of children's caregivers

Characteristics	N=167	%
Marital Status		
Married	134	80.2
Single	26	15.6
Divorced	2	1.2
Widowed	5	3.0
Age Group		
20-29	92	55.1
30-39	48	28.7
40-49	18	10.8
50-59	6	3.6
60-69	2	1.2
70 and above	1	0.5
Education Level		
College	1	0.6
Secondary	15	9.0
Primary	141	84.4
No formal Education	10	6.0

The mean age of the mothers was 30.7±9.26 with the minimum age being 20 years and the maximum age 70 years. Majority of the mothers (80.2%) of the mothers were married. The highest education level attained by the mothers was college education with the least percentage while majority (84.4%) attained primary education level.

3.2 Dietary Diversity

The dietary diversity of children aged 6-23 months was classified according to World Health Organization (WHO, 2010) guidelines, where a reference cut-off point of 7 food groups was used. This is presented in Figure 1.

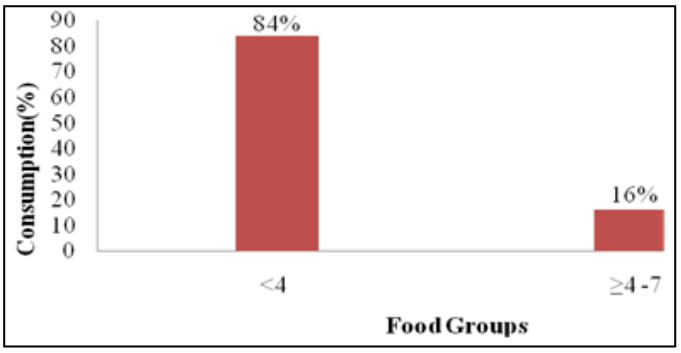

Fig 1: Dietary Diversity Score for the Index Child aged 6-23 months

Over three quarters of the study children aged 6-23 months (84%) consumed less than the recommended 4 or more food groups in a day (Figure 1). Only about 16% of the children received the Minimum Dietary Diversity of 4 or more food groups in a day. Consumption of specific food groups is described in Table 2.

Table 2: Food Groups Consumed by the index child aged 6-23 Months

Food Group	Frequency (n)	%
Grains, roots or tubers	70	100
Legumes and nuts	34	48.7
Dairy products*	24	34.3
Flesh foods	0	0
Eggs	0	0
Vitamin A-rich fruits and vegetables	14	20
Other vegetables	56	80

*Only milk was consumed. Yoghurt and cheese were not consumed.

The mean Dietary Diversity Score (DDS) for the children aged 6-23 months was 2.8 which was less than the recommended Minimum Dietary Diversity of ≥4 food groups per day for both breast fed and non-breastfed children (Table 2). The highly consumed food groups were grains, roots or tubers and other fruits and vegetables. The lowest consumed food groups by the index child was vitamin A rich fruits and vegetable. Milk was the only dairy product consumed. Yoghurt and cheese were unavailable and not consumed. Eggs and flesh foods were not consumed by any child in the last 24 hours before the study. Dietary diversity for older children 24-59 months were not quite different from that of younger children aged 6-23 months. Table 3 describes dietary diversity of children aged 24-59 months.

Table 3: Food Groups consumed by the Index Child aged 24-59 Months

Food Group	Frequency (n)	%
Grains, roots or tubers	192	100
Legumes and nuts	77	40.1
Dairy products*[a]Milk and milk products	74	38.5
Flesh foods	40.3	2.1
Eggs	0	0
Other vitamin A rich fruits and vegetables	24	12.5
Other fruits and vegetables	184	95.8

*Milk was the only dairy product consumed Milk was consumed in tea

All the children aged 24-59 months consumed grains, roots and tubers. Other fruits and vegetables, was among the highly consumed food groups. The poorly consumed food groups were vitamin A rich fruits and vegetables and flesh foods. None of the children consumed an egg in the last 24 hours prior to the study.

3.3 Water, Sanitation and Hygiene (WASH) Situation in the Households

The sources of water used by the households are presented in Figure 2.

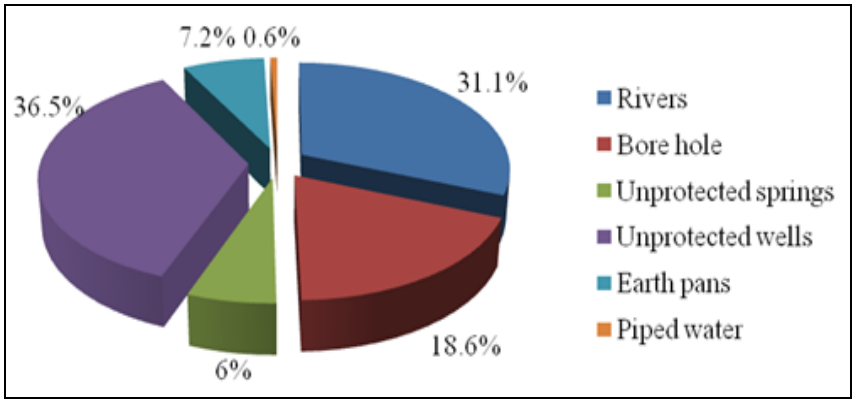

Fig 2: Sources of Household Water

Nearly all the households (99.6%) of the households get water from unsafe water sources which include rivers, bore holes, unprotected springs, unprotected wells and earth pans (Figure 2). The water and sanitation characteristic was assessed as per the SPHERE Standards (2011).

Table 4: Water, Sanitation and Hygiene (WASH) Characteristics

WASH Characteristic	Frequency N=167	%
Distance to water source*		
≤500 metres)	15	8.9
>500-2000 metres)	126	75.5
>2000 metres)	26	15.6
Queuing time at water source**		
≤ 30minutes	81	48.5
>30 minutes	86	51.5
Methods of waste disposal		
Traditional pit latrine	141	84.4
Bucket	2	1.2
Ventilated improved pit latrine	1	0.6
Bush	23	13.8
Disposal of child's stool		
Disposed off hygienically (take it in pit latrine)	150	89.8
Not disposed off (scattered in the compound)	17	10.2
Method of garbage disposal		
Bury	2	1.2
Burn	28	16.8
Throw in the garden	89	53.3
Open field	3	1.8
Compost pit	45	26.9

*Acceptable SPHERE standard is ≤500 metres
**Acceptable SPHERE standard is 0-30 minutes

Majority (91.1%) of the households covered a distance of >500metres to the nearest water source. (Table 4). More than half of the households spend unacceptable time (more than 30 minutes) queuing at the nearest water source, an indication of water problem in the study area.

Majority (86.2%) of the households had a toilet facility (Table 4) and almost all used the facility for human waste and child excreta disposal About10.2% of households reported leaving children's excreta scattered in the compound, a major health hazard. About 53.3% of the total households disposed their garbage by throwing it in the garden, 26.9% used the compost pit and 16.8% burn the garbage to ensure that it does not spread in the compound (Table 4). Some of the rarely used methods reported by the households are burying and throwing in the open field.

3.4 Nutritional Status of Children aged 6-59 Months)

Table 5: Distribution of study children based on Stunting by Sex

Height-for-age Z-scores (HAZ)	All N=262	Boys N=130	Girls N=132
Total stunting	(73) 27.9%	(39) 30.0%	(34) 25.8%
(<-2 z-score)	CI(9.2 – 59.6)	CI(22.8 – 38.4)	CI(19.1-33.8)
Moderate stunting	41) 15.6%	25) 19.2%	(16) 12.1%
(<-2 z-score and >=-3 z-score)	CI(0.6 – 85.0)	CI(13.4 – 26)	CI(7.6 – 18.8)
Severe stunting	(32) 12.2%	(14) 10.8%	(18) 13.6%
(<-3 z-score)	CI(2.5 – 43.2)	CI(6.5 - 17.3)	CI(8.8 – 20.5)
Normal(≥-2 z-scores)	(189) 72.1%	(91)70%	(98)74.2%

The prevalence of stunting was 27.9%. The boys were more affected in both total and moderate stunting.

Table 6: Distribution of study children based on acute Malnutrition by Sex

Weight-for-height Z-scores (WHZ)	All N=262 (n) %	Boys N=130 (n) %	Girls N=132 (n) %
Global acute malnutrition(GAM)	(32) 12.2%	(16) 12.3%	(16)12.1%
(<-2 z-score and /or oedema)	CI(11.1- 13.4)	CI(7.7- 19.1)	CI(7.6- 18.8)
Moderate Acute malnutrition(MAM)	(17) 6.5%	(8) 6.2%	(9) 6.8%
(<-2 z-score and >=-3 z-score, oedema absent	CI(3.3 - 12.2)	CI(3.2- 11.7)	CI(3.6- 12.5)
Severe Acute malnutrition(SAM)	(15) 5.7%	(8) 6.2%	(7) 5.3%
(<-3 z-Score and / oedema absent)	CI(2.2 - 14.2)	CI(3.2 - 11.7)	CI(2.6-10.5)
Normal (≥2 z-scores)	(230) 87.8%	(114) 43.5%	(116) 45.3%

The prevalence of GAM was 12.2% with the boys being more malnourished in both Moderate and Severe acute malnutrition.

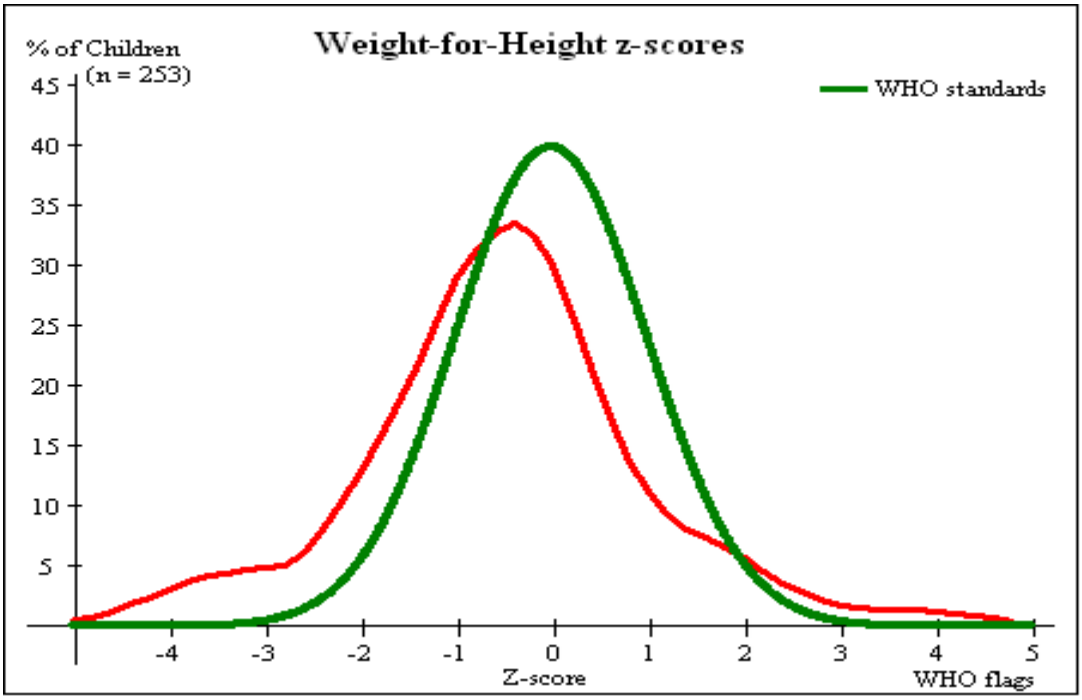

Fig 3: Global Acute Malnutrition (GAM) for Children aged 6-59 Months

The GAM graph (red) shows that distribution is skewed to the left, an indication of poor nutritional status of the study children in comparison to the reference population (WHO, 2006).

Table 7: Distribution of study children based on underweight by Sex

Weight-for-Age Z-score (WAZ)	All n=260 (n) %	Boys n=130 (n) %	Girls n=130 (n) %
Total underweight	(41) 15.8%	(25) 19.2%	(16) 12.3%
(< -2 z-score)	CI(0.7– 83.7)	CI(13.4- 26.8)	CI(7.7- 19.1)
Moderate underweight	(32)12.3%	(22)16.9%	(10)7.7%
(<-2 z-score and ≥-3 z-score)	CI(0.1- 97.0)	CI(11.4- 24.3)	CI (4.2 - 13.)
Severe underweight	(9) 3.5 %	(3) 2.3 %	(6) 4.6%
(<-3 z-score)	CI(0.0- 74.3)	CI(0.8 - 6.6)	CI(2.1 - 9.7)
Normal(≥2 z-score)	(219) 84.2%	(105) 40.4%	(114) 43.8%

About 15.8% of the children were underweight with boys being more affected in moderate underweight while the girls were severely underweight.

3.5 Relationship between Caregivers Socio-economic status and child's nutritional status

Different predictors were used to determine the relationship between social-economic determinants and the children nutritional status which is based on underweight, stunting and wasting (Table 8).

Table 8: Nutritional Status in Relation to Socio-economic Determinants

Model		Sum of Squares	Df	Mean Square	F	p-value
Underweight						
	Regression	9.97	12	.83	0.89	0.55
	Residual	213.16	229	.93		
	Total	223.12	241			
Stunting						
	Regression	13.12	12	1.09	0.57	0.87
	Residual	441.08	229	1.93		
	Total	454.21	241			
Wasting						
	Regression	28.29	12	2.36	1.17	0.31
	Residual	462.18	229	2.02		
	Total	490.47	241			

The relationship between socio-economic determinants and nutritional status based on underweight, shows that the significance of F statistics was 0.55. This implies that there was no significant correlation between socio-economic determinants and nutritional status based on underweight ($F(12,229) = 0.89$, $p=0.55$, $\alpha=0.05$). The results on the relationship between socio-economic determinants and stunting demonstrate that the significance of F statistics was 0.87. This implies that there was no significant relationship between socio-economic determinants and nutritional status based on stunting ($F(12,229) =0.57$, $P=0.87$, $\alpha=0.05$). Based on wasting, the results shows that there was no significant relationship between socio-economic factors and nutritional status based on wasting ($F(12,229) =1.16$, $P=0.31$, $\alpha=0.05$).

4. Discussion

Dietary Diversity, Water and Sanitation and Nutritional Status

Individual Dietary Diversity Score (IDDS) is often used as a proxy measure of the nutritional quality of an individual's diet. According to [19], 7 food groups were used to determine the quality of diet taken by the index child aged 6-23 months. The present study reported a low mean Dietary Diversity Score (DDS) of less than the Minimum Dietary Diversity (MDD) of four food groups per day for children aged 6-23 months. These findings concurred with a study in Kitui County by [13] which reported a low mean dietary diversity score of 2.4 for children aged 6-23 months. Another study [2], reported an average DDS of 3.76 for children aged 6-23 months. This is an indication of low dietary diversity in Kitui County which needs to be addressed so as to improve the nutritional status of the under-fives thus having a healthy population. Consumption of all the 7 food groups by the children was a challenge. Animal products which include milk and milk products were the poorly consumed while eggs and flesh foods were not consumed by the children. These findings concurred with a study in Eastern region, Kenya, by [8], which reported that flesh foods and egg were poorly consumed. A study in Kitui County [13], also reported that consumption of animal source foods was low, barely 4.6% of the children consumed eggs while consumption of dairy products and flesh foods was at 32.1 and 13.0% respectively. The household members may have used the animal products as a source of income rather than for food. This may be due to lack of knowledge on the importance of animal products to human body and their nutrient values. Therefore, livestock ownership does not guarantee adequate intake of animal protein.

As per the [15], everyone has the right to water and sanitation which should be sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic

uses and accessible sanitation facilities. The assessment of water supply involves the type of water source, the distance to the water source and queuing time at the water source which should meet the acceptable standards. A study in Kitui County by [9], reported that a three quarter of the residents relied on unimproved sources. These findings agreed with the present study which reported that nearly all the households used unimproved water sources which did not meet the acceptable standards. These findings were also in line with another study in Mwingi District by [1] which showed that majority (91.2%) of the households used unimproved water sources covering long distances looking for water. This shows that accessibility of water is still a challenge in Kitui County because none of the water characteristics met the designated SPHERE Standards. It is important to also note that the situation is different during the rainy season because many households harvest water from roofs and dig household water pans and wells. Sanitation situation was not a challenge as compared to previous studies. A study by [1] which reported that sanitation in Mwingi Central Sub-County was a problem because more than half of the study population reported open field defecation while about 50% of households reported leaving children's excreta in the open, a major health hazard.

The nutritional status of the children in this study was poor. The prevalence of global Acute Malnutrition (GAM), stunting and underweight was high compared to previous studies. A study by [11], reported a wasting, stunting and underweight rate of 7%, 37% and 16% respectively. These rates were lower than the present study findings. This can be supported by a study by [10] which reported rates of wasting, stunting and underweight of 3.4%, 26% and 11% respectively. Although the result of the present study was below the 15% WHO bench mark, there was an increase in the GAM rate from a previous survey by [1], which reported a rate 10.2% showing a deterioration of nutrition status of the population. Taking into consideration however the 2011 survey was done in April, a different season from October when the present study was done when the dry season is longer and mostly the food harvested from the short rains is insufficient for most of the households to last them till the next harvest season. The boys were more affected than girls as per the present study in both stunting and underweight. This concurred with a study by [11] and [10] which reported that boys were more affected in both categories. At County level, Kitui and West Pokot registered the highest prevalence (46%) in stunting. This shows that Kitui County has a problem of stunting among the children. A previous study in Mwingi District by [1] reported a higher stunting rate of 35.1% of the population compared to the present study. This shows an improvement of the nutritional status of the children in the same county. More boys were stunted than the girls. From the previous studies in Kitui County, there is a clear indication that stunting is a problem in the area and needs to be addressed. Another study in Kwale District by [2], reported a prevalence of stunting of 51.3% which was too high compared to the present study. This shows that the level of stunting is still a Kenyan health problem which needs an intervention in the first 2 years of age so as to reduce the levels of stunting in the country. The boys who register the highest prevalence in most of the studies should be given the first priority so as to change the trend. The poor nutritional status can be explained by inaccessibility of domestic water where the mothers spend most of their time looking for water instead of looking for diversified food thus improving the child nutritional status.

5. Conclusion

There was low dietary diversity and poor consumption of flesh foods which include meat, milk, chicken and vitamin A rich food for children aged 6-59 months for both breastfeeding and non-breastfeeding children aged 6-23 months. Accessibility of water and sanitation facilities was a challenge in Kitui County in terms of water sources, distances and queuing time which did not meet the acceptable Standards as per The SPHERE standards. Some households lack toilet facilities predisposing one to the risk of malnutrition by increasing the risk of waterborne diseases. High prevalence of malnutrition was reported in the area among the children aged 6-59 months. The Government and other policy makers should ensure that the health workers should continue to encourage the mothers to practice the Infant and Young Child Feeding practices (IYCF) so as to ensure adequate and diversified food intake of the children aged 6-59 months and accessibility of clean water and at reasonable distances so that the long hours spent to look for water can be utilized for looking for diversified food so as to improve the nutritional status of the children.

6. Acknowledgement

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