

Causes of Suboptimal Eating Habits in Children Ages 0-5 Hospitalized at Hoima Regional Referral Hospital's Pediatric Ward

Kaduku Rasuri

Faculty of Clinical Medicine and Dentistry Kampala International University-Western Campus Uganda.

ABSTRACT

Healthy feeding habits significantly impact the well-being of individuals within communities by providing essential nutrients for growth and development. This study aimed to examine the various factors influencing inadequate feeding patterns among children under five years old admitted to Hoima Regional Referral Hospital's pediatric ward. Employing both quantitative and qualitative methods, the study highlighted key findings from interviews with respondents. Notably, a significant portion of parents (42.7%) of hospitalized children fell within the 16-30 age group. The focus on this age bracket stemmed from the critical phase of weaning children from breastfeeding, potentially impacting their immune systems—a concern highlighted by the World Health Organization (WHO) in 2008 regarding the hospitalization of under-five children due to malaria and compromised immune statuses after weaning. The study emphasized the profound impact of illness on feeding patterns, with approximately 47.2% of children experiencing frequent sickness and 47.5% undergoing changes in treatment during their hospital stay. Financial constraints were also a prevalent issue, with nearly 40% of mothers lacking funds at some point, directly affecting their ability to maintain adequate feeding practices and potentially leading to malnutrition in children under five. Overall, the study identified illness as a primary driver of poor feeding habits among hospitalized children, often resulting in loss of appetite and vomiting. Concurrently, poverty emerged as another significant contributor to inadequate feeding practices in this demographic, highlighting the multifaceted nature of challenges affecting the nutritional well-being of under-five children in the hospital setting.

Keywords: Good feeding, Poor feeding patterns, Pediatric ward, Children under five, Mothers.

INTRODUCTION

In Africa, many children have adversely been affected either following natural calamities that interfere with food production and security, cultural beliefs that affect the nutritional content of food taken by vulnerable groups, ill health from tropical diseases and non-accessible or affordable health services, or poverty that majority of the people live on less than \$1. Efforts have been made to implement nutritional programs to foresee feeding patterns, especially among under-five and pregnant mothers [1, 2, 3]. In most African countries, IMCI has been embraced as a strategy for early identification and prompt management to both the well and

sick children who attend hospital services and occasional survey and community interventions. In some hospitals, malnourished children are given a high-protein diet or fortified foods [4]. However, in some facilities nutritional assessment is not a priority. In Uganda, as much as all acknowledge that sick children need to eat frequent nutritious meals, the majority of those admitted are malnourished, accounting for a 40% mortality rate [5]. There is also limited supervision as the majority of the hospitals in Uganda do not provide food to their in-patients, but have an open patient kitchen that the caretakers can cook for

www.idosr.org

the patients, a few private hospitals provide food, while others have hospital cafeterias where patients have the option to purchase from or both.

Feeding patterns have greatly worsened the disease conditions of children admitted to hospitals due to several factors such as poverty, ignorance and cultural beliefs. Admission of children in most cases comes as an emergency and parents may not be fully prepared with an extra budget. The mothers who are often caretakers depend on their husbands as the breadwinners who in most cases do not value nutrition as a priority. They will be more comfortable paying hospital bills than giving money to the mother for feeding the child to the recommended pattern. [6] illustrate that there has been little attention in several health settings towards meeting their recommended number of meals especially when children

Study Design

The study employed a cross-sectional study design. A cross-sectional study involves measuring different variables in the population of interest at a single point in time. [8] noted that cross-sectional studies aim at providing a systematic description that is as factual and as accurate as possible. It is relatively inexpensive and does not involve manipulating variables. The study also adopted quantitative and qualitative approaches [9]. The quantitative approach involved the collection and analysis of numerical data whereas the qualitative approach used narrative from the respondents on the problem under investigation.

Area of Study

The study was carried out at Hoima Regional Referral Hospital located in Hoima district western Uganda. The town lies approximately 198km (123 mi), by road, northwest of Mulago National Referral Hospital, in Kampala the capital city of Uganda. The coordinates of Hoima Regional Referral Hospital are 01°25'41.0"N, 31°21'16.0"E (Latitude: 1,4280 51; Longitude: 31.354451). Hoima Regional Referral Hospital provides preventive, promotive, curative and rehabilitative

Kaduku

are admitted who in most cases are already undernourished but end up focusing on the medical problem. [7] report that the prevalence rates of acute malnutrition in infants and children with mixed diagnoses admitted to hospital ranges from 6.1 to 40.9% worldwide. Uganda is among the developing countries suffering high levels of micro and macro-nutrient deficiencies, particularly among young children, adolescents, and pregnant/lactating women. Undernutrition is endemic in many parts of the country especially rural areas and poses a serious threat to the well-being of many. It is responsible for about 40% of all deaths occurring among children below the age of five in Uganda. However, this study will assess factors associated with poor feeding patterns among children aged 0-5 years admitted to Hoima Regional Referral Hospital, pediatric ward.

METHODOLOGY

services as inpatient and outpatient. Nutrition monitoring is of great concern as these patients require a diverse variety of foods to suit each individual. It is the policy of the hospital that every individual provides food for him/herself.

Study Population

The target population involved parents of children of age bracket (0-5) years admitted to the pediatric ward of Hoima Regional Referral Hospital.

Inclusion criteria

All children in the age bracket (0-5) years admitted to the pediatric ward of Hoima Regional Referral Hospital whose parents consented to the study were included.

Exclusion criteria

All children in the age bracket (0-5) years admitted to the pediatric ward of Hoima Regional Referral Hospital whose parents didn't consent to the study were excluded from the study.

Sample selection

Simple random sampling was used to select groups of children that were representative of the study population.

Sample size determination

Fishers et al [10] formula was used to arrive at the sample size.

$$N = \frac{Z^2PQ}{D^2}$$

Where:

N = sample size of the target population

Z = standard normal deviation set at 1.96 when the confidence interval will be 95%

P = Proportion of the targeted population that will be estimated to have a particular problem or characteristic estimated at 50% which will be 0.5

D = Accepted error rated at 0.09

Q = 1-p = 1-0.5=0.5

$N = (1.96) * 0.5 * 0.5 = 111.4 (110)$

The sample size will be approximately 110. Since children cannot give the information needed, 50 caretakers were interviewed and 50 healthcare providers were given a questionnaire to fill giving a total of 100 participants

Data Collection Instrument and Storage

A questionnaire containing structured questions was used in collecting data. The questionnaires were researcher administered. Pens, papers, a ruler and a set were used for recording the necessary information. The data was stored on a computer.

Data Analysis

The data was entered into a computer and Microsoft Offices Excel 2007 was used for computing addition and percentages accessed relevant articles available on the internet, as well as articles available in hard copy which address the subject of factors associated with poor feeding patterns among children aged 0-5 years in order to develop a structured questionnaire for the interviews. The structured questionnaire was approved by

my academic supervisor. Pre-testing of the questionnaire was done under the supervision of the researcher and the research assistants. Training of the research assistants in data collection using the questionnaires was done. Other assistance was sought from statisticians.

Data Quality Control

The Study results were presented on pie charts, bar graphs and tables which represented the statistical data collected from the respondents. Descriptive statistics was used where percentages for each response were calculated to give the lesson learnt and conclusion from the response. This was the outline of what the majority of the respondents felt as compared to the minority [11].

Ethical Considerations

The researcher obtained an introductory letter from Kampala International University. The letter was presented to the relevant authority of Hoima Regional Referral Hospital. The rights of individuals and institutions were respected. The purposes and objectives of the study were clearly explained as well and privacy and confidentiality during and after the study were maintained. Numbers were used instead of patient names to foster confidentiality [12]. The researcher first asked for consent of all the parents of the children prior to the interviews and the parents were assured of confidentiality of their responses and that information would not be used for anything else other than that of the study.

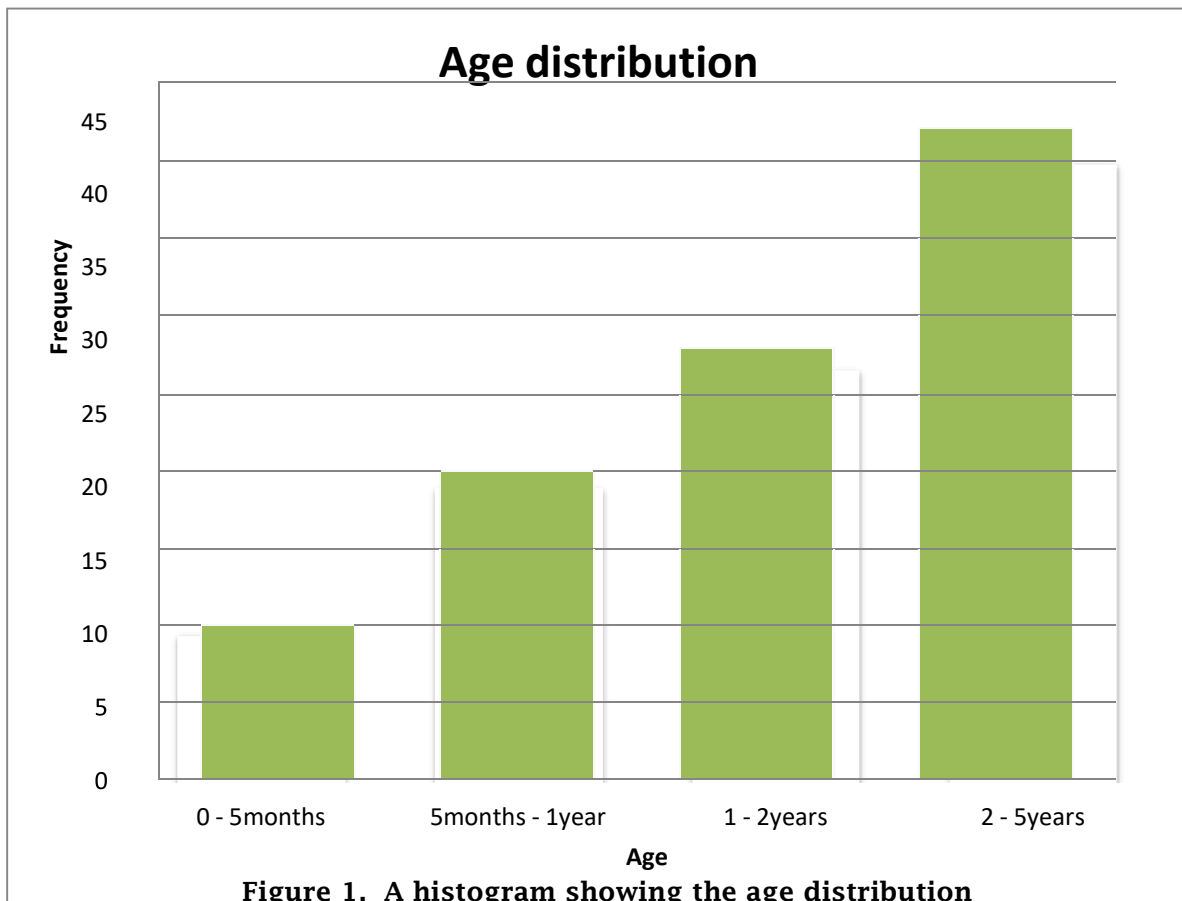
RESULTS

Table 1: Showing age distribution

Age group	Frequency	Percentage (%)
0 - 5 months	10	10
5 months - 1 year	20	20
1 - 2 years	28	28
2 - 5 years	42	42
Total	100	100

Table 1 shows that of all respondents in the age group of 0 - 5 months 10 (10%), 20 (20%) were in the age group of 5 months - 1 year, 28 (28%) were in the age group of 1 - 2 years and 42 (42%) were in the age group

of 2 - 5 years. This indicated that the majority of the respondents were within the age bracket of 2 - 5 years and this could be due to reduced body immunity following weaning.



Source: Primary data

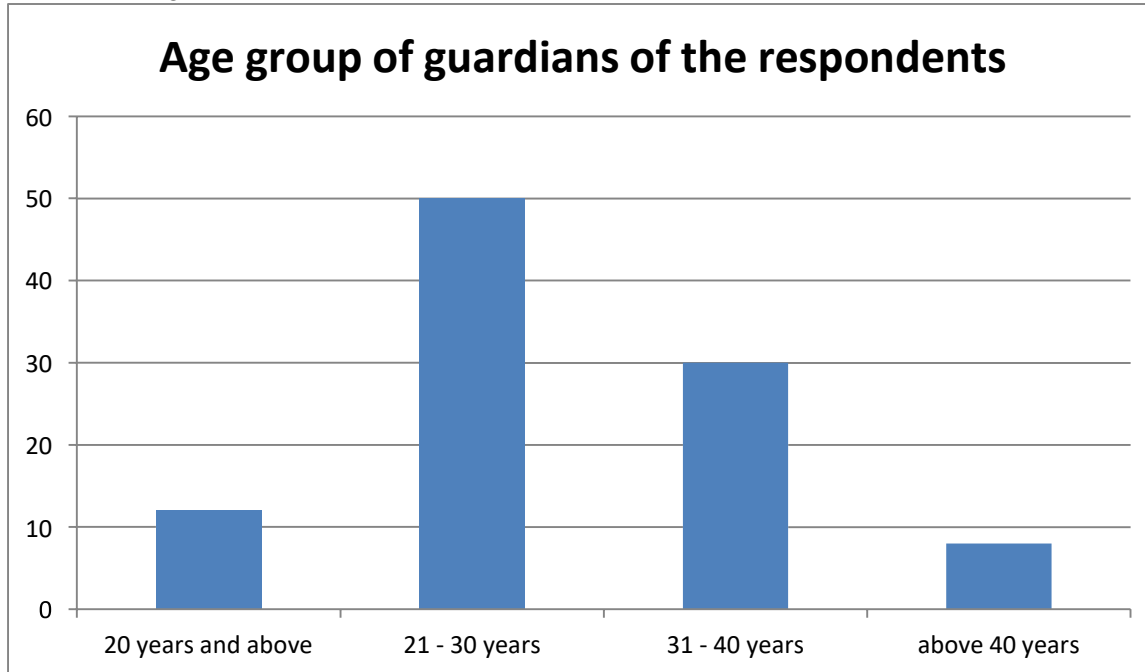
A histogram shows that of all respondents in the age group of 0 - 5 months 10 (10%), 20 (20%) were in the age group of 5 months - 1 year, 28 (28%) were in the age group of 1 - 2years and 42 (42%) were in the age

group of 2 - 5years. This indicated that the majority of the respondents were within the age bracket of 2 - 5 years and this could be due to reduced body immunity following weaning.

The age group of guardians of the respondent

Table 2: Showing the age group of guardians of the respondents

Age group	Frequency	Percentage (%)
20 years and below	12	12
21- 30 years	50	50
31 - 40 years-	30	30
Above 40 years	8	8
	100	100



Primary source

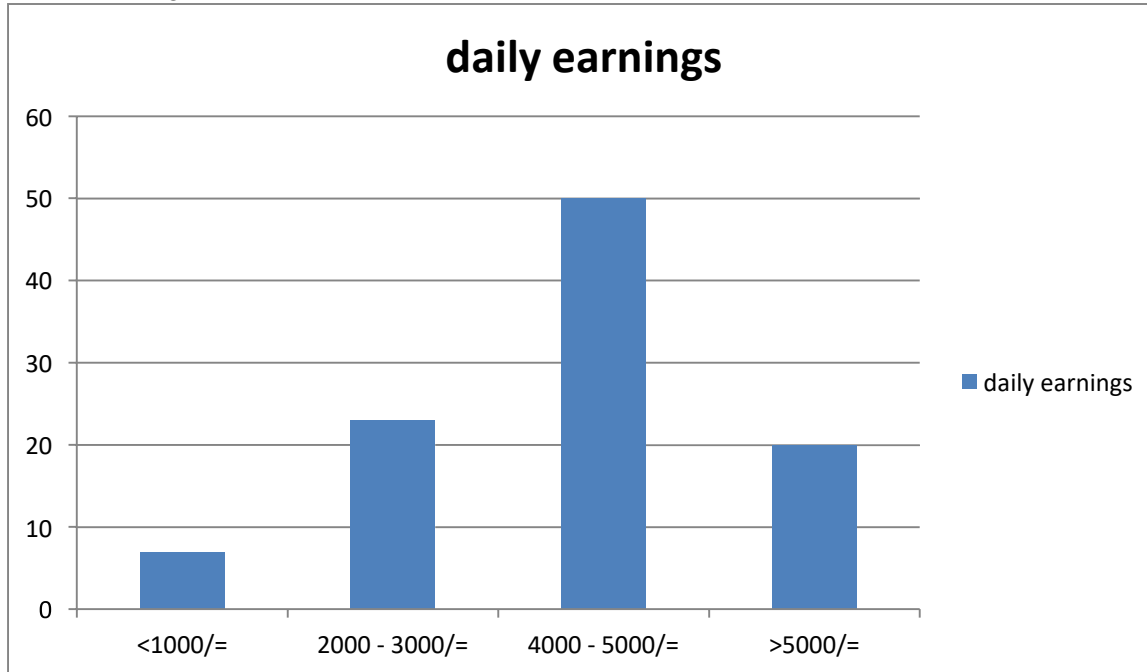
Table 2 shows that of all respondents below 20 years were (12) 12%, (50) 50% were between 21 -30. years, (30) 30% were between 31-40 years and (8) 8% were 41 years and above. This indicated that the majority were middle-

aged who had the factors associated with poor feeding patterns among children aged 0-5 years and more so it is the age group that has most children aged 0-5 years.

Average daily earnings of the guardians of the respondents.

Table 3: Showing the average daily earnings of the guardians of the respondents.

Response	Frequency	Percentage (%)
<1000/=	7	7
2000 - 3000/=	23	23
4000 - 5000/=	50	50
>50000/=	20	20
Total	100	100



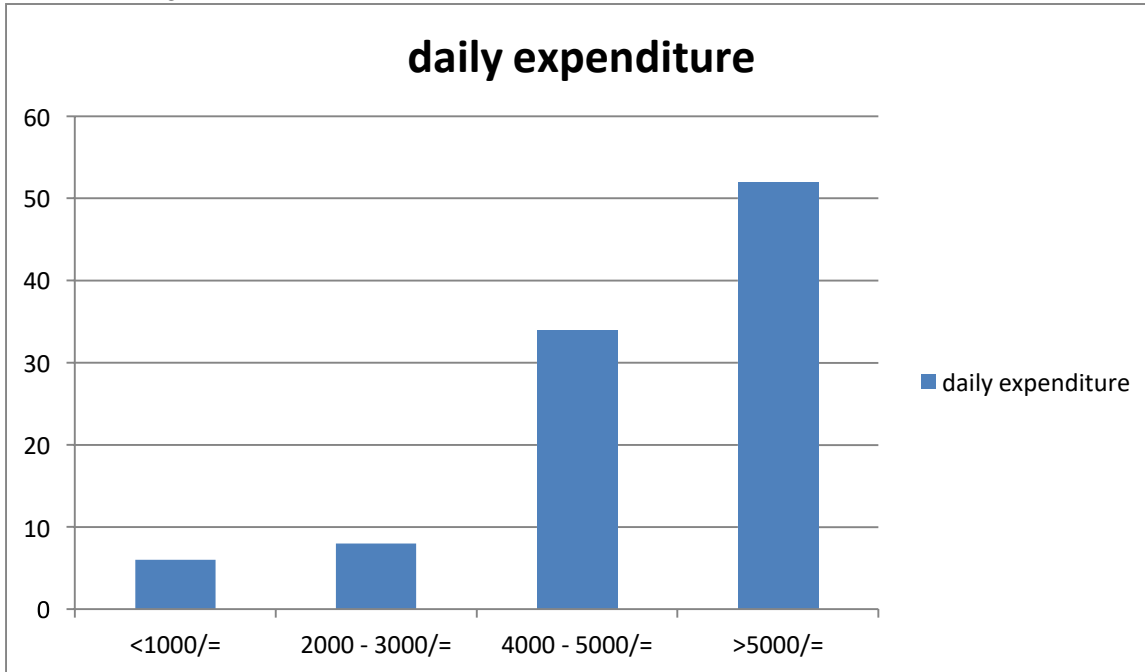
Primary source

Table 3 showed that (7)7% are earning <1000shs, (23) 23% were earning 2000-3000shs, (50) 50% were earning 4000-5000shs and (20)

20% were earning >5000shs. This implied that the highest percentage were earning between 4000-5000.

Average daily expenditure of the caretakers of the respondents
Table 4: Showing how much caretakers of the respondents spend in a day

Response	Frequency	Percentage (%)
<1000/=	6	6
2000 - 3000/=	8	8
4000 - 5000/=	34	34
>5000/=	52	52
Total	100	100



Source. Primary source

Table 4 shows that (6,)6% were spending <1000shs, (8), 8% were spending 2000-3000shs, (52), the highest percentage of 52% were spending >5000shs and (34), 34%

were spending 4000-5000shs. This implied that the highest percentages were spending more than 5000/= per day.

Figure 5 reveals that 60, (60%) of the respondents were males and 40 (40%) were females.

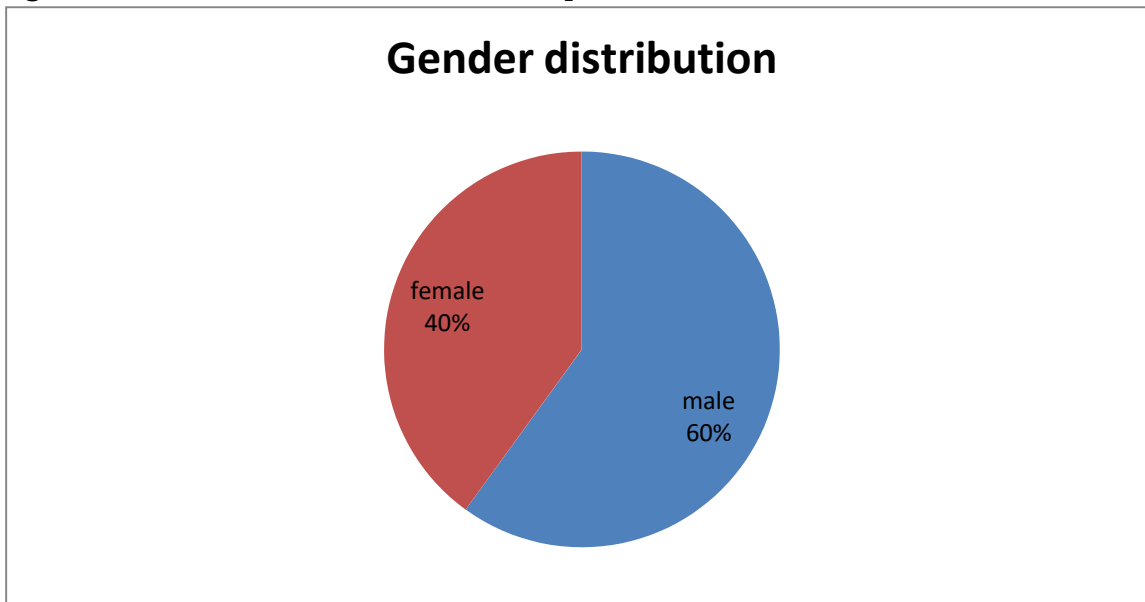


Figure 6: showing religion distribution

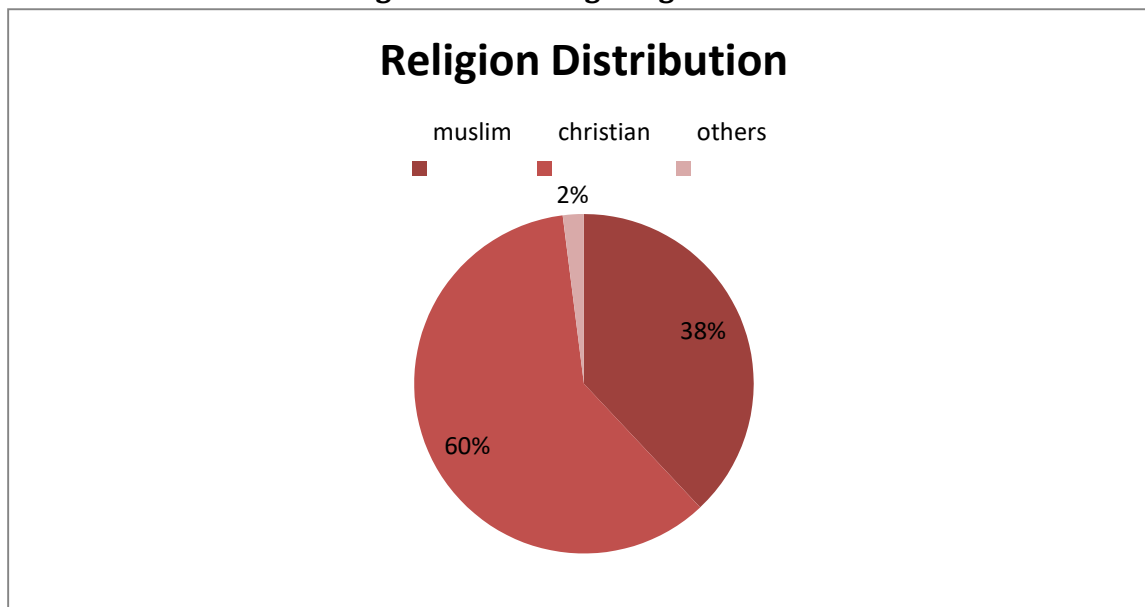


Figure 6 reveals that 60 (60%) were Christians, 38 (38%) were muslims and 2 (2%) in other traditional religions. This implied that 60 were Christians who were

the majority of those interviewed in relation to the factors associated with poor feeding patterns in children aged 0 - 5 years.

Table 5: showing the frequency of tribes

Tribe	Frequency	Percentage
Banyoro	47	47
Banyankole	24	24
Baganda	12	12
Basoga	11	11
Bakiga	4	4
Ateso	2	2
Total	100	100

Source. Primary source

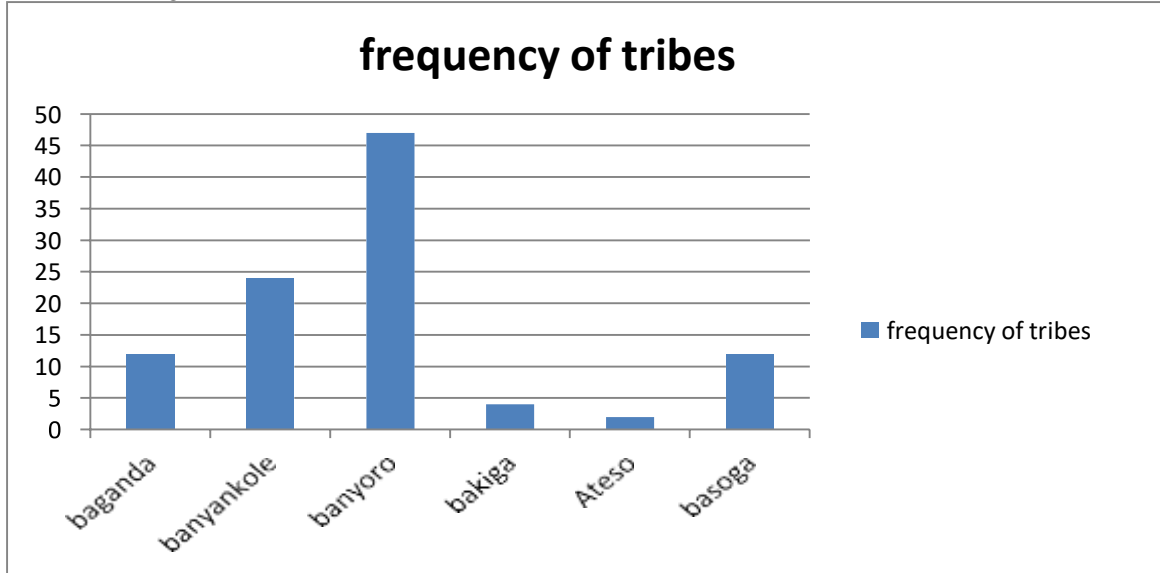


Figure 7: showing the frequency of tribes

The majority of participants were Banyoro (47), 47%, (24) 24% were Banyankole, and (12), 12% were baganda, (11), 11% were

basoga, (4,) 4% were bakiga and the minority were the Ateso (2), 2%.

Findings on where the child was delivered

Table 6: shows where the child was delivered from

Place of delivery/facility	Frequency	Percentage (%)
Hospital/ health facility	70	70
Traditional birth attendant	12	12
Home	18	18
Total	100	100

Source primary source

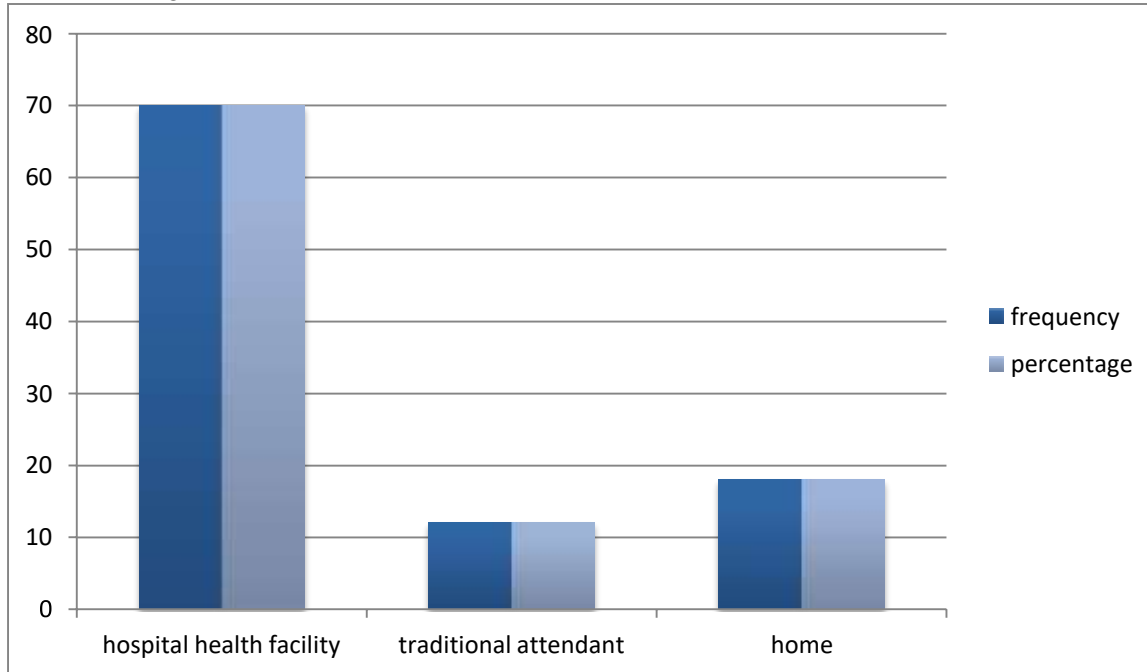


Figure 8; showing the percentage of the respondents delivered from hospital

From table 6, the highest percentage of 70% of the respondents delivered from hospital/health facilities, (12), and 12% delivered from home and (18), 18% these delivered from traditional birth

attendants. This implied most of respondents who were approached at least tried to deliver from the hospital/ health facility.

Findings on whether the child’s weight and height were measured on current admission

Table 7: Showing whether the child’s weight and height were measured on current admission

Response	Frequency	Percentage (%)
YES	80	80
NO	20	20
Total	100	100

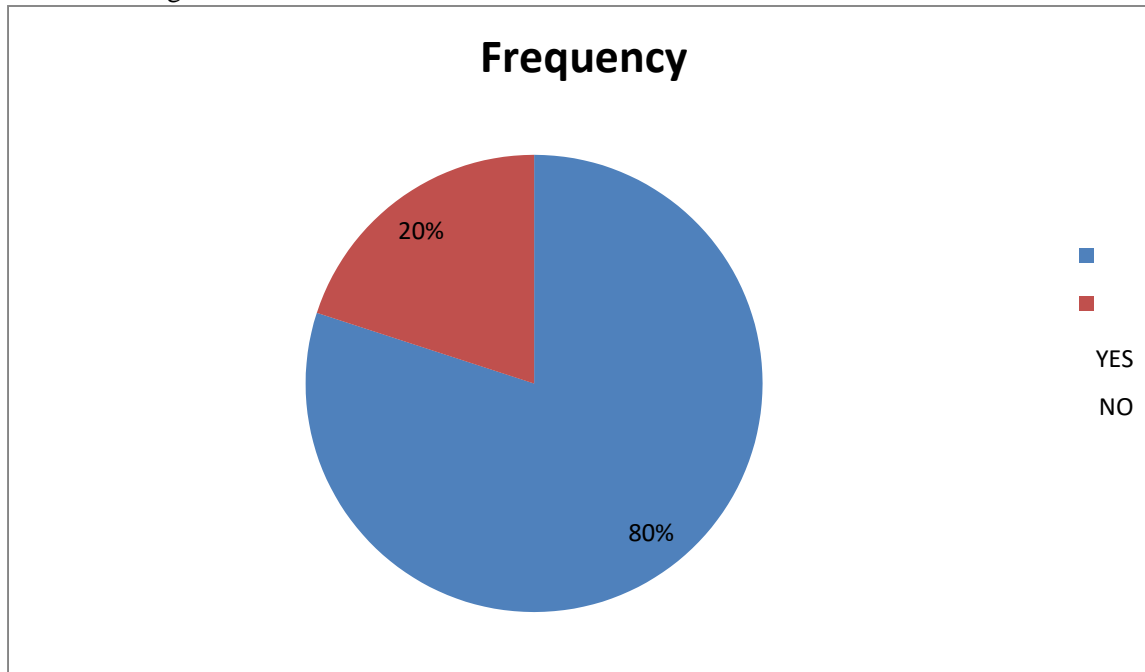


Figure 9: showing frequency distribution

From table 7 above shows that 80% of the respondents said Yes and 20% responded No when asked whether the child's weight

and height were measured on current admission.

Findings on whether the child falls sick frequently
Table 8: Showing whether the child falls sick frequently

Response	Frequency	Percentage (%)
YES	42	42
NO	58	58
Total	100	100

Table 8, above shows that 42 % of the respondents said Yes and 58% responded No when asked whether the child falls sick frequently. This implied that the children

delivered from the hospital fell sick less frequently than those delivered from home.

Findings on whether the child's appetite changed since the initiation of treatment

Table 9: Showing whether the child's appetite changed since the initiation of treatment

Response	Frequency	Percentage (%)
YES	56	56
NO	44	44
Total	100	100

Table 9 above shows that 56% of the respondents said yes and 44% said No

when asked whether the child's appetite changed since the initiation of treatment.

Finding whether the respondents receive health education on nutrition while on the ward

Table 10: Showing whether the respondents receive health education on nutrition while on the ward

Response	Frequency	Percentage (%)
Yes	59	59
No	41	41
Total	100	100

From Table 10, 59% of the respondents responded with Yes and 41% of the respondents responded with No when asked whether they receive health education on nutrition while on the ward. This was in agreement with (Payne-James, 2002) who recommended Health education to caretakers so that they understand what

is essential in the diet of the sick child and also advised on the need for the formation of associations by the caretakers, and dietitians to work together with the doctors, nurses and other health professional that do close monitoring of feeding patterns of the sick children.

Findings on whether the respondents initiated breastfeeding to their children immediately after delivery.

Table 11: Showing whether the respondents initiated breastfeeding to their children immediately after delivery

Response	Frequency	Percentage
Immediately after delivery	45	45
Within 1 hour	31	31
2 - 3 hours	20	20
Over 1 day	4	4
Total	100	100

From table 11, 45% of the respondents agreed that they initiated breastfeeding immediately after delivery, 31% said they initiated breastfeeding within 1 hour, 20% initiated breastfeeding for their child after 2-3 hours and 4% initiated breastfeeding after more than a day. This implied that

those mothers with higher levels of education were more likely to practice exclusive breastfeeding than those with middle levels of education, and mothers who were employed breastfed longer than the unemployed mothers.

Findings on how long the child breastfed
Table 12: Showing how long the child breastfed

Response	Frequency	Percentage (%)
Not breastfed	6	6
6 months	29	29
One year	38	38
Two years	27	27
Total	100	100

From Table 12, 29% of the respondents breastfed their children for 6 months, 38%

breastfed for one year, 27% breastfed for two years and 6% did not breastfeed.

Findings on when the respondents started introducing extra food /drinks including water to their children.

Table 13: Showing when the respondents started introducing extra foods/drinks including water to their children

Response	Frequency	Percentage(%)
Less than one month	5	5
1 - 2 months	19	19
3 - 5 months	27	27
More than 6 months	49	49
	100	100

From the table 13% of the respondents started introducing extra foods/drinks including water to their children in less than 1 month, 19% started introducing extra foods/drinks including water to their children in 1 to 2 months, 27% started

introducing extra foods/drinks including water to their child between 3 to 5 months and the highest percentage of 48% started introducing extra foods/drinks including water to their children in 6 months.

Findings on how many times the children feed in a day
Table 14: Showing how many times the child feeds in a day

Response	Frequency	Percentage (%)
Once	15	15
Twice	16	16
Thrice	14	14
four times	35	35
More than 4 times	20	20
Total	100	100

From table 14% of the respondents fed their children once in the day, 16% fed twice a day, 14% fed thrice, 35% fed four

times in a day and 20% of the respondents fed their children more than four times in a day.

Findings on whether the respondents had ever heard about good feeding patterns of a child.

Table 15: Showing whether the respondents had ever heard about good feeding patterns of a child.

Response	Frequency	Percentage
No	70	70
Yes	30	30
Total	100	100

From the table 20 above, 70% of the respondents had heard about good feeding patterns of a child while 30% had

not heard about the good feeding patterns of a child.

Findings on where the respondents heard about good feeding patterns of a child**Table 16: Showing where the respondents heard about good feeding patterns of a child**

Response	Frequency	Percentage (%)
Health centre	27	27
Posters	18	18
Radio or TV	23	23
Family friends	21	21
Friends	11	11
Total	100	100

From table 16 above, 23% of them heard from Radio/ TV, 27% of them got to know from a health centre, 18% of them got to

know from posters for advertising, 11% of them heard from friends and 21% heard from family members.

DISCUSSION

The majority of the guardians of the participants were between 21 to 30 years (50) 50% closely followed by those between 31 to 40 years (30) 30% and (12) 12% were below 20 years and those 41 years and above were (8) 8%. This indicated that middle-aged parents knew the factors associated with poor feeding patterns among children aged 0-5 years. Among all the respondents that were interviewed, it was found that the greatest number of children who were hospitalized was of the age group 2-5 years and this accounted for 42% of the total respondents. This was attributed to the weaning effect as this is the age bracket where children are weaned from breastfeeding and this could have affected their immune system. This finding is in line with a WHO study done in [13] which established that children in this age group (2-5 years) were hospitalized due to malaria and was associated with lowered immune status due to weaning. Common knowledge has it that boys fall sick more often than girls which means hospital admissions would be dominated by boys, in my study, the male-to-female ratio was 3:2 which disagrees with the findings by [14] which stated that children who were hospitalized were in the ratio 2:1 for boys and girls respectively. Nutrition can be assessed by weight measurement and according to the road chart; it monitors a child from birth up to 5 years of age. In my findings, therefore, it was encouraging to note that 80% of the children had their weights taken on admission and all their weights were in line with their corresponding ages. The reason why the 80% had their weights

measured was for the purposes of drug administration and growth monitoring [15-23]. In my study, it was found that children were eating about 3-4 times a day and this cuts across all age groups and this is in line with [16, 17] While at home it was found that most of the children were fed 3-4 times in a day which included major meals and snacks which helped to keep them healthy. Very few had less than 2 meals in a day [24-30]. This signified that the majority of the respondents were aware of the feeding methods of the children. It was noted that sickness was the greatest physical factor that contributed to poor feeding patterns as 56% of the children had no appetite for food some could vomit on seeing food and others were disinterested in feeding [30-35]. This is in line with [18, 19].

Among the infants aged 0-4 months most of them had exclusive breastfeeding so their nutritional status and feeding pattern were good because breastfeeding was cheap, affordable and readily available among all the respondents but the challenge was to feed the mothers so that they have enough milk for the children. Looking at the economic status of the persons taking care of the children, It was noted that (7), 7% of the participants were earning <1000shs, (23), 23% were earning 2000-3000shs, (50), the highest percentage of 50% were earning 4000-5000shs and (20), 20% were earning >5000shs. This affected the feeding patterns of children under 5 years since the majority of their parents could not afford supplementary feeds when they stopped exclusive breastfeeding at 6

Child's Information

The findings observed that the highest percentage of 70(70%) of the children were delivered from hospital/ health facilities, 18(18%) were delivered from home and 12(12%) of the babies were delivered with the help of traditional birth attendants. The majority of the children delivered from the health facilities/hospital, their parents reported having received nutritional education on exclusive breastfeeding, mixed feeding and complementary feeding of the infants before being discharged, unlike the parents who delivered from home and with the help of traditional birth attendants. The findings also observed that 80% of the parents said that the weight and height of their children were measured on current admission, unlike 20%. This implied that the majority of the parents knew the current nutritional status of their children whether they are malnourished or not. We observed that only 42% of the parents reported that their children fell sick frequently and 58% reported that their children rarely fell sick. The findings noted that 56% of the parents said that their children changed appetite when initiated on treatment, unlike 44% who didn't notice any appetite change when the children were initiated on treatment. Unfortunately, most parents were financially unable to find alternative food sources for their children when they changed appetite as they were still admitted. This significantly contributed to poor feeding patterns among children under 5 years admitted to the pediatric ward in Hoima Regional Referral Hospital.

Finding the factors associated with poor feeding patterns.

The findings observed that 45% of the mothers agreed that they initiated breastfeeding for their children immediately after delivery, 31% initiated breastfeeding within 1 hour of delivery, 20% initiated breastfeeding for their children within 2-3 hours of delivery and 4% initiated breastfeeding for their children after more than one day. Most of the mothers who didn't initiate their newborn babies immediately on breast milk were those who delivered from home

Findings

and with the help of traditional birth attendants and didn't know the importance of breast milk to the newborn. It was revealed from the findings that 59% of the parents said yes and 41% of them said no when asked whether they receive health education on nutrition while on the ward. This was in agreement with [13] who recommended Health education to caretakers so that they understand what is essential in the diet of the sick child and also advised on the need for the formation of associations by the caretakers, and dietitians to work together with the doctors, nurses and other health professional that do close monitoring of feeding patterns of the sick children. The findings found that 30.8% of the parents breastfed their children exclusively (for 6 months only), 30.8% of them breastfed for one year, 30.8% breastfed for two years and 7.4% of the mothers didn't breastfeed their children. It was further revealed that 5% of the parents started introducing extra foods/drinks including water to their children in less than a month, so the mothers practised mixed feeding of their babies instead of exclusively breastfeeding them, and 19% started introducing extra foods/drinks including water to their children in 1 to 2 months of life, 27% of them started introducing extra foods/drinks including water to their children between 3 to 5 months and the highest percentage of 49% started introducing extra foods/drinks including water to their child in 6 months. Generally, it was noted that most mothers never exclusively breastfed their children for 6 months but instead preferred mixed feeding giving the infant breast milk and other soft foods. Unfortunately, this was a very poor feeding pattern among the children under 5 years admitted to the pediatric ward. It was further revealed that 15% of the respondents responded said they fed their children once a day, 16% fed them twice a day, 14% fed them thrice, 35% said their babies fed four times a day and 20% of the parents fed their children more than four times in a day. The poor feeding patterns noted among the other parents were majorly due to financial constraints. It was also revealed that 23% of the parents

heard from the radio/TV about the poor feeding patterns common among children under 5 years of age, whereas the majority, 27% got to know from the health centre, 18% of them saw the adverts on the posters about good and poor infant feeding patterns. 21% of them got to know from family members and 11% of them were told by their friends. We noted that the majority of the mothers lacked knowledge on the good nutritional practices for children under 5 years and these contributed greatly to the poor feeding patterns among children under 5 years of age.

Recommendations

Based on this study, it's recommended that there are many nutritional support strategies in different health facilities which include; Health education to the caretakers to understand what is essential in the diet of the sick child and formation of associations by the caretakers and dietitians to work together with the doctors, nurses and other health

Kaduku professional that do close monitoring of feeding patterns for the sick children. Existence of nutritional programs to enable close monitoring of feeding requirements of children under 5 years of age. Ensure the availability of nutritional assessment tools to enhance early identification and intervention among high-risk children especially those under 5 years of age. It is also recommended that nutrition supervision by nurses and other medical personnel that will enable nutrition education and early identification of children at risk to be assisted in food intake patterns. The research proved that patients admitted to the pediatric ward of Hoima Regional Referral Hospital were no exception to the above factors. With these, all the above strategies and recommendations need to be put in place to improve both medical and nursing care for the children admitted to the pediatric ward.

REFERENCES

1. Kumbakulu, P. K., Ndeezi, G., Egesa, W. I., Nakalema, G., Odoch, S., Kambele, R. L., & Nduwimana, M. (2022). Prevalence, feeding practices, and factors associated with undernutrition among HIV-exposed uninfected children aged 6 to 18 months in Bushenyi district, western Uganda: A cross-sectional study. *Research Square*, Pp 1-22, DOI: <https://doi.org/10.21203/rs.3.rs-2079841/v1>.
2. Solomon, I. P., Oyebadejo, S. A., Udoh, U. H., & Uyanga, V. A. (2014). Effect of feeding dumpsite forage calapo (*Calopogonium mucunoides*) on the histology of the kidney and liver of rabbits (*Oryctolagus cuniculus*). *Journal of agriculture and environmental sciences*, 3(3), 91-104.
3. Ogomaka, I. A., & Obeagu, E. I. (2019). Methods of Breast Feeding as Determinants of Malaria Infections among Babies in IMO State, Nigeria. *breast*, 2(01), 17-24.
4. Ministry of Health (MoH) (2005) Health and mortality survey among internally displaced persons in Gulu, Kitgum and Pader districts. MoH/WHO Study Report, Northern Uganda.
5. Uganda Bureau of Statistics (UBOS) (2007). Uganda National Household Survey (UNHS) 2005/2006: Report on the agricultural module (35p). Kampala: Uganda Bureau of Statistics.
6. Hankard, R. G., Haymond, M. W., & Darmaun, D. (1997). Role of glutamine as a glucose precursor in fasting humans. *Diabetes*, 46:1535-1541.
7. Joosten, F., Y. Dijkxhoorn, Y. Sertse and R. Ruben, 2015. How does the Fruit and Vegetable Sector contribute to Food and Nutrition Security? Wageningen, LEI Wageningen UR (University & Research centre), LEI Nota 2015-076. 58 pp.; 4 fig.; 7 tab.; 52 ref.
8. Amin, M. E. (2005) Social Science Research: Conception Methodology and Analysis. Makerere University Printeryafd, Kampala.
9. Ugwu, C. N., & Eze, V. H. U. (2023). Qualitative Research. *IDOSR Journal of Computer and Applied Sciences*, 8(1):20-35. <https://www.idosr.org/wp->

- content/uploads/2023/01/IDOSR-JCAS-8120-35-2023.docx.pdf
10. Fisher, S. (1990). The Evolution of Psychological Concept about the Body. In: Cash, T.F. and Pruzinstky, T., Eds., *Body Images: Development, Deviance, and Change*, Guilford Press, New York.
 11. Val Hyginus Udoka Eze, Chidinma Esther Eze, Asiati Mbabazi, Ugwu Chinyere N, Ugwu Okechukwu Paul-Chima, Ogenyi, Fabian Chukwudi, Ugwu Jovita Nnenna, Alum Esther Ugo and Obeagu Emmanuel I. (2023). Qualities and Characteristics of a Good Scientific Research Writing; Step-by-Step Approaches. *IAA Journal of Applied Sciences* 9(2):71-76. <https://www.iaajournals.org/wp-content/uploads/2023/08/IAA-JAS-9271-76-2023.docx.pdf>
 12. Ugwu Chinyere Nneoma, Eze Val Hyginus Udoka, Ugwu Jovita Nnenna, Ogenyi Fabian Chukwudi and Ugwu Okechukwu Paul-Chima (2023). Ethical Publication Issues in the Collection and Analysis of Research Data. *NEWPORT INTERNATIONAL JOURNAL OF SCIENTIFIC AND EXPERIMENTAL SCIENCES (NIJSES)* 3(2): 132-140. <https://nijournals.org/wp-content/uploads/2023/07/NIJSES-32-132-140-2023.pdf>
 13. World Health Organization (WHO) (2008) *The Global Burden of Disease: 2004 Update*. Geneva, 16.
 14. Mhurchu, C., Eyles, H., Schilling, C., Yang, Q., Kaye-Blake, W., Genç, M., & Blakely, T. (2013). Food prices and consumer demand: differences across income levels and ethnic groups. *PLoS One*, 8(10):e75934. doi: 10.1371/journal.pone.0075934. PMID: 24098408; PMCID: PMC3788811.
 15. Ministry of Health (MoH) (2012) *VHT Strategy and Operational Guidelines* (March 2010). Retrieved on 18th Feb 2012 at 12:20 p.m.
 16. Weichselbaum, E. & Buttriss, J. (2011). Nutrition, health and schoolchildren. *Nutrition Bulletin*. 36. 295 - 355. 10.1111/j.1467-3010.2011.01910.x.
 17. Bourne, L. T., Hendricks, M. K., Marais, D., & Eley, B. (2007). Addressing malnutrition in young children in South Africa. Setting the national context for paediatric food-based dietary guidelines. *Matern Child Nutr.*, 3(4):230-8. doi: 10.1111/j.1740-8709.2007.00108.x. PMID: 17824851; PMCID: PMC6860700.
 18. Marteletti, O. et al. (2005). Malnutrition screening in hospitalized children: influence of the hospital unit on its management. *Archives de pediatrie: organe officiel de la Societe francaise de pediatrie*. 12 (8): 1226 - 1231.
 19. Koen, M., Blaauw, R., & Wentzel-Viljoen, E. (2016). Food and nutrition labelling: the past, present and the way forward, *South African Journal of Clinical Nutrition*, 29:1, 13-21, DOI: 10.1080/16070658.2016.1215876
 20. Daberkow, S. G., Payne, J., & Schepers, J. (2008). Comparing Continuous Corn and Corn-Soybean Cropping Systems. *Western Economics Forum*, Western Agricultural Economics Association, vol. 7(1), 1-13.
 21. Enechi, D. C., Ugwu, K. K., Ugwu, O. P. C., & Omeh, Y. S. (2013). Evaluation of the antinutrient levels of Ceiba pentandra leaves. *IJRRPAS*, 3, 394-400.
 22. Afiukwa, C. A., Oko, A. O., Afiukwa, J. N., Ugwu, O. P. C., Ali, F. U., & Ossai, E. C. (2013). Proximate and mineral element compositions of five edible wild grown mushroom species in Abakaliki, southeast Nigeria. *Research Journal of Pharmaceutical, Biological and Chemical Sciences*, 4(2), 1056-1064.
 23. Asogwa, F. C., Okechukwu, P. U., Esther, U. A., Chinedu, O. E., & Nzubechukwu, E. (2015). Hygienic and sanitary assessment of street food vendors in selected towns of Enugu North District of Nigeria. *American-Eurasian Journal of Scientific Research*, 10(1), 22-26.
 24. Orji, O. U., Ibiam, U. A., Aja, P. M., Ugwu, P., Uraku, A. J., Aloke, C., ... & Nwali, B. U. (2016). Evaluation of the phytochemical and nutritional profiles of *Cnidioscolus aconitifolius* leaf collected in Abakaliki South East Nigeria. *World Journal of Medical Sciences*, 13(3), 213-217.

25. Offor, C. E., Ugwu, P. C., Okechukwu, P. M., & Igwenyi, I. O. (2015). Proximate and phytochemical analyses of Terminalia catappa leaves. *European Journal of Applied Sciences*, 7(1), 09-11.
26. Nwali, B. U., Egesimba, G. I., Ugwu, P. C. O., & Ogbanshi, M. E. (2015). Assessment of the nutritional value of wild and farmed Clarias gariepinus. *International Journal of Current Microbiology and Applied Sciences*, 4(1), 179-182.
27. Afiukwa, C. A., Ogah, O., Ugwu, O. P. C., Oguguo, J. O., Ali, F. U., & Ossai, E. C. (2013). Nutritional and antinutritional characterization of two wild yam species from Abakaliki, Southeast Nigeria. *Research Journal of Pharmaceutical, Biological and Chemical Sciences*, 4(2), 840-848.
28. Offor, C. E., Okechukwu, P. U., & Esther, U. A. (2015). Determination of ascorbic acid contents of fruits and vegetables. *Int. J. Pharm. Med. Sci*, 5, 1-3.
29. Igwenyi, I. O., Isiguzo, O. E., Aja, P. M., Ugwu Okechukwu, P. C., Ezeani, N. N., & Uraku, A. J. (2015). Proximate composition, mineral content and phytochemical analysis of the African oil bean (*Pentaclethra macrophylla*) seed. *American-Eurasian J Agric Environ Sci*, 15, 1873-1875.
30. Enechi, O. C., Peter, C. D., Ugwu, O. P. C., Udeh, S. M. C., & Omeh, Y. S. (2013). Evaluation of the nutritional potential of Ceiba pentandra leaves. *Mintage Journal of Pharmaceutical & Medical Sciences*, 2(3), 25-27.
31. Offor, C. E. P. M., Aja, P. C., Ugwu, O., & Agbafo, K. N. (2015). The effects of ethanol leaf-extract of Gmelina arborea on total protein and albumin concentrations in albino rats. *Glob. J. Environ. Res*, 9(1), 1-4.
32. Offor, C. E., Agidi, J. U., Egwu, C. O., Ezeani, N., & Okechukwu, P. U. (2015). Vitamin and mineral contents of Gongronema latifolium leaves. *World Journal of Medical Sciences*, 12(2), 189-191.
33. Afiukwa, C. A., Ugwu, O. P. C., Okoli, S. O., Idenyi, J. N., & Ossai, E. C. (2013). Contents of some vitamins in five edible mushroom varieties consumed in Abakaliki Metropolis, Nigeria. *Res. J. Pharm. Biol. Chem. Sci*, 4, 805-812.
34. Igwenyi, I. O., Nchi, P. O., Okechukwu, U. P., Igwenyi, I. P., Obasi, D. C., Edwin, N., ... & Ze, A. C. (2017). Nutritional potential of Azadirachta indica seeds. *Indo American Journal of Pharmaceutical Sciences*, 4(2), 477-482.
35. Offor, C., Chukwu, B., Igwenyi, I., Ugwu, O. P., & Aja, P. (2015). Effect of Ethanol Leaf-Extract of Annona muricata on Serum Total Protein and Albumin Concentrations in Albino Rats. *Academic Journal of Oral and Dental Medicine*, 2(1), 5-7.

CITE AS: Kaduku Rasuri (2023).Causes of Suboptimal Eating Habits in Children Ages 0-5 Hospitalized at Hoima Regional Referral Hospital's Pediatric Ward. IDOSR JOURNAL OF SCIENCE AND TECHNOLOGY 9(3):1-19. <https://doi.org/10.59298/IDOSRJST/01.1.13111>