Nutrition Status among Children Under 5 Years in Ibalikoma Village Apac District. A Cross-sectional Study.

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Abstract

Background:
The study was conducted in Ibalikoma Village Apac District to assess the factors influencing the nutritional status of children under 5 years.The objectives of the study were to assess the level of knowledge, practice, and maternal-related factors influencing nutrition status among children under 5 years in Ibalikoma village Apac district.

Methodology:
The study design was a descriptive cross-sectional study where data was collected using self-administered questionnaires given by 100 respondents using random sampling.

Results:
Results showed that the majority 69(69%) knew that a child should be breastfed on demand.
Majority 85(85 %) knew that a child should spend at least 6 months on exclusive breastfeeding before initiating them on other feeds. About care taker's practices, majority 56(56%) of the caregivers had stopped breastfeeding their children.

Conclusion:
The study established that the majority of the respondents had knowledge about exclusive breastfeeding and complementary feeding However most of the mothers did not put all the knowledge into practice due to lack of resources and citing unfavorable environments to apply what they knew. The nature of the work of caretakers, their level of education, and their economic status had a great influence on the applicability of the required nutrition practices.

Recommendations:
There is a need for increased sensitization and awareness campaigns by the government of Uganda through the ministry of health specifically about the practical ways which suit the lifestyle in rural areas that can help improve the nutritional status among children under 5 in rural areas.

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1 Background of the study

Malnutrition refers to deficiency, excess, or imbalance in a person's energy and/or nutrient intake (WHO, 2020). Malnutrition is a worrying health factor worldwide; nearly half of all deaths in children under 5 years are attributed to undernutrition (UNICEF, 2021). Undernutrition puts children at a greater risk of dying from common infections, increases the frequency or severity of such infections, and delays recovery.

Globally 144 million children under 5 years were estimated to be stunted (too short for age) and 38.9 million were overweight or obese. Around 45% of deaths among children under 5 years of age are linked to undernutrition. These mainly occur in middle-income and low-income countries, at the

same time in these countries the rate of childhood overweight and obesity are rising (WHO, 2021).

Africa still experiences a malnutrition burden among children under 5 years. The average prevalence of overweight is 4.7% and the prevalence of stunting is 29.1% (Global nutrition report, 2021). The pooled prevalence of chronic undernutrition among under 5 years in East Africa is 33.3% ranging from 29.1% in Kenya to 53% in Burundi (Getayeneh Antehunegn Tesema, 2021)

In Uganda 29% of children aged 6-59 months are stunted or too short for their age, 4% are wasted or too thin for their height and another 4% are overweight. one in ten(11%) are underweight. (UBOS, 2016). The objectives of the study were to assess the level of knowledge, practice, and maternal-related factors influencing nutrition status among children under 5 years in Ibalikoma village Apac district.

2 Methodology

Study design

The research design was cross-sectional descriptive in nature and this helped to gain more information about characteristics within the particular field of study.

Study area

The study was conducted in Ibalikoma village Apac district

Study population

The study included all parents or guardians living with children under five years.

Sample Size Determination

To determine a sample size needed on finding out factors influencing the nutrition status of children under 5 years in Ibalikoma village Apac district, Kish and Leslie's formula was used.

n = (Z2pq)/(e) 2

Where:

n = The desired sample size

Z = The standard normal deviation usually set at 1.96 which correspond to 95% confidence level **p** = The proportion in the target population estimated to have a particular characteristic and, in this study, p was 79%.

q = 1-p

e = the degree of accuracy desired, usually set at 0.1 level

n = (1.96)2 (0.79) (1-0.79)

(0.08)2

n = (3.8416) (0.79) (0.21)

0.0064

N= 99.5 which was approximately equal to 100

Sampling technique

A simple Random sampling method was used to select the 100 respondents. This sampling method was used because the researcher wanted to give equal opportunity for caregivers of every child under 5 years in Ibalikoma village Apac district to participate in the study.

Sampling procedure

The study participants in Ibalikoma village were selected randomly after identifying the households with children under 5 years of age.

Data collection method

Semi-structured self-administered questionnaires were used to collect the data.

Data collection tools

2.1 Pre-tested semi-structured questionnaire was used

Data collection procedure

Clients who were able to read and write answered printed self-administered questionnaires and the researcher was available to guide where needed. For those who were not able to read and write the Researcher read and translated the information and helped them fill in the information required.

Piloting the study

The semi-structured questionnaires were pretested randomly with the help of some mothers staying in Ibalikoma village who voluntarily answered the questions since they consisted of people of similar characteristics to those who participated in the study. A total of 10 respondents were interviewed to pretest the tools. The purpose of pretesting the tool was to ensure the accuracy of the data collected and minimize errors.

Quality control

The tools especially the questionnaires were pretested among a few Mothers living with children under five years in the neighboring community and errors were corrected before the final collection of Data. The questionnaires were printed in a convenient font size to allow easy reading and answering. The respondents were given enough time to answer the questionnaires to ensure the required data was collected. Every parent or guardian living in Ibalikoma village who consented to participate

was included in the study as per the sample size and each household was recruited once. All the other parents without children below five years were not allowed to participate in the study.

Data Analysis and presentation

Data will be entered into Microsoft Excel version 2010 for the presentation of results in graphs and tables.

Ethical considerations

Approval for the study was sought from Medicare Health Professional College, the Community Development officer Apac Sub County, and the LC1 Ibalikoma village, and informed consent was obtained from all participants. Confidentiality of information, right to withdraw from the study, and privacy was maintained at all levels. The consent form from the respondents was obtained after the purpose and objectives of the study had been identified and well explained to the respondents. The study was intended purely for academic purposes and all the information concerning the respondents was treated with confidentiality. Numbers instead of names were used to identify the respondents.

3 Limitations of the study

Inadequate funds and lack of cooperation among some of the respondents interrupted the smooth flow of the study.

4 Study Findings

5 Social demographic characteristics

Results in Table 1 showed that the majority 58(58%) of the children were 6-24 months, and 42(42%) were 2-5 years. All 100(100%) lived in a rural area. 43(43%) of the children were male while 57(57%) were female.

Knowledge of caregivers influencing nutrition status of children under 5 years.

Results in Table 2 showed that the majority 69(69%) knew that a child should be breastfed on demand. 31(31%) knew that a child should be exclusively breastfed at least 8 times a day. 85(85 %) knew that a child should spend at least 6 months on exclusive breastfeeding before initiating them on other feeds while 15% of them knew that a child could be introduced to other feeds much earlier than 6 months. Concerning the constituents of the child's main meal, a higher proportion of 57(57%) knew that the main meal of a child on complementary feeding should be a mixture of greens/cereals/meat/ eggs/poultry/fish, legumes, and vegetables. 11(11%) knew that it was not all greens/cereals/meat/ eggs/poultry/fish, legumes, and vegetables were supposed to be a constituent of a child's main meal while 32 (32%) of the respondents were not sure of the recommended components of a child's main meal. More than half 76 (76%) knew that Vegetables were suitable for complementary feeding while 24 (24%) did not agree.

Results in figure 1 showed that the majority 40 (40%) knew that complementary feeds are given 2-3 times a day, 35 (35%) knew that a child was supposed to be given supplementary feeds on demand, 15 (15%) knew that complementary feeds should be given 4-5 times a day while 10(10%) knew that complementary feeds are to be given 1-2 times a day.

The majority 87(87%) knew that a child should be breastfed and given supplementary feeds till the end of two years before total cessation of breastfeeding. A lower proportion 13(13%) knew that it was okay to stop breastfeeding a child before age of 2 years.

Practices of caretakers influencing nutrition status of children under 5 years.

Results showed that 21(21%) of respondents introduced their children to complementary feeds before 6 months. 2(9%)of them were because their babies were over crying, 6 (29%) were because of work, 9 (43%) mothers didn't have enough breast milk and 4(19%) said it was due to sickness. Results showed 56(56%) of the caregivers had stopped breastfeeding their children, 6(11%) of them stopped breastfeeding before 6 months, 27(48%) sopped between 6-12 months and 23(41%) stopped between 1-2 years. Out of the 44(44%) of the respondents who were still breastfeeding their children, 23(52%) breastfed more than five times a day whereas 21(48%) breastfed less than five times a day. 9(20%) mothers who were still breastfeeding washed hands with soap and clean water before breastfeeding and 35(80%) mothers did not wash hands with soap and water before breastfeeding.

The majority 79(79%) of the respondents initiated their children on complementary feeds at the age of 6 months whereas 21(21%) of the respondents initiated their children on complementary feeds before 6 months.

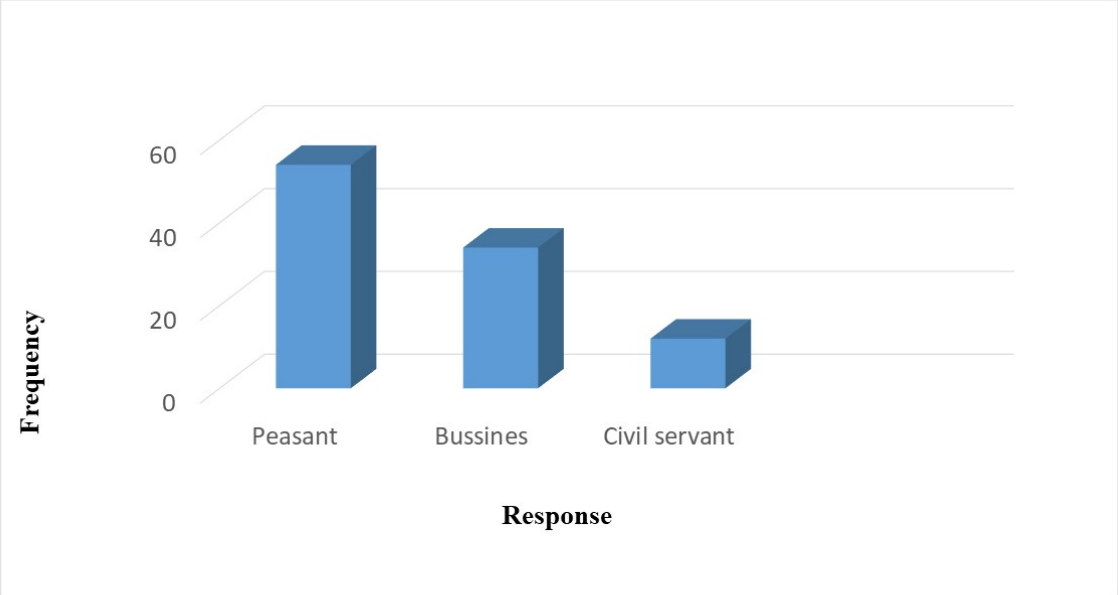

Figure 1. Respondents by Knowledge about the number of times in which complementary feeds should be given (n=100).

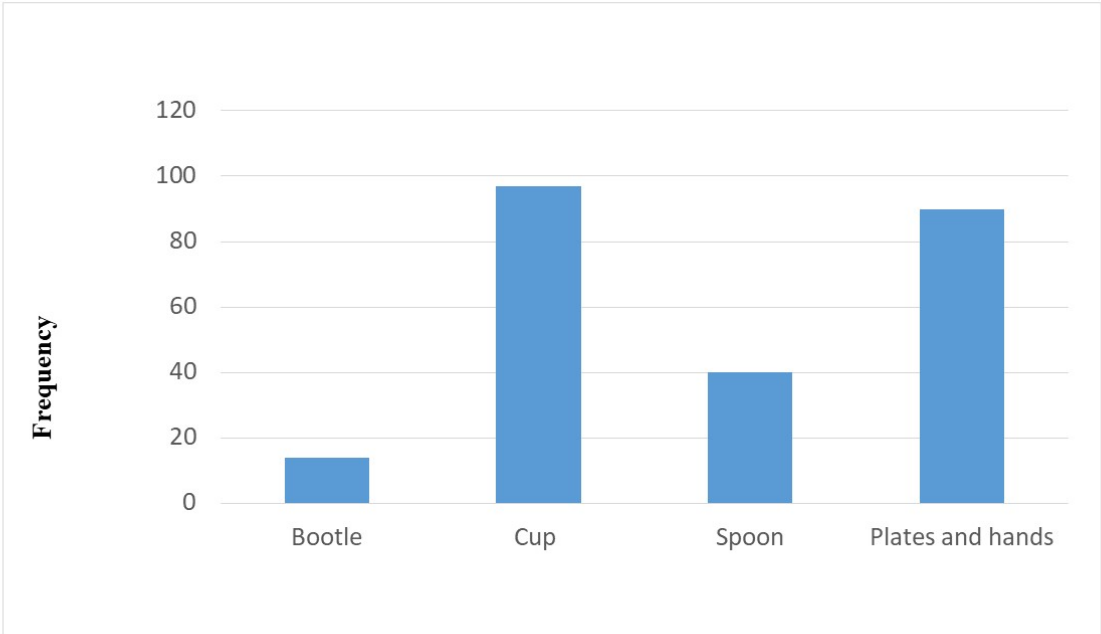

Figure 2. Respondents by the feeding utensils used (n=100)

Table 1. Respondents by their demographic, child and caregiver's characteristics (n=100)

Child Characteristics	Frequency (n=100)	Percentage (%)
Age		
6 months- 24 months	58	58
2-5 years	42	42
Residence		
Village	100	100
Town	0	0
Sex		
Male	43	43
Female	57	57

Table 2. Respondent's Knowledge about exclusive breastfeeding and components of complementary feeds (n=100).

Variables	Frequency	Percentage (%)
Number of times a child should be exclusively breast fed in a day.		
At least 8 times	31	31
On demand	69	69
Time a child should spend being exclusively breastfed		
Less than 6 months	15	15
At least 6 months	85	85
Main meal should be a mixture of greens/cereals/meat/ eggs/poultry/fish, legumes and vegetables		
Yes	57	57
No	11	11
Not sure	32	32
Fruits and vegetables are suitable for complementary feeds		
Yes	76	76
No	24	24

Results show that 14(14%) respondents used bottles, 97(97%) used cups, 40(40%) used spoons while 90(90%) used plates and hands as part of their feeding utensils.

A greater percentage 90(90%) of the respondents did not boil their drinking water as compared to 10(10%) of the respondents who boiled their drinking water.

About marital status: Results in figure 6 show majority 76(76%) were married while 24(24%) were single mothers.

The Majority 54% of the caretakers were peasants, Business women 34% and 12% of the care takers were civil servants.

6 Discussion of Results

7 Discussion:

Knowledge of caregivers of children under 5 years about nutrition

The study objective was to assess the level of knowledge of caregivers of children under 5 years in Ibalikoma village Apac district about nutrition. Data analysis and interpretation revealed the following major findings under the objective;

Results in Table 2 showed that the majority 69(69%) knew that a child should be breastfed on demand, This was probably due to the ongoing campaigns that aimed at improving maternal and child health within the whole district and country at large. Through these campaigns on radios, many mothers including those who had not attained formal education and village dwellers were able to get basic ideas concerning breastfeeding spearheaded

by the Ministry of Health in partnership with several Nongovernmental organizations like UNICEF among others. These results were similar to those of a systemic review that was carried out in East Africa which indicated that almost 96.2% of mothers had ever heard about EBF, 84.4% were aware of EBF, 55.9% of them had practiced exclusive breastfeeding for at least six months that indicated a relationship between knowledge about exclusive breastfeeding and nutritional status of the child. (Jean Prince Claude Dukuzumuremyi, 2020).

Results showed that the majority 85(85 %) knew that a child should spend at least 6 months on exclusive breastfeeding before initiating them on other feeds while. Probably these mothers may have known health education and formal education from their fellow mothers which increased the likelihood that most of them would exclusively breastfeed their children till the age of 6 months and also advise their counterparts effectively boosting the nutrition status of the children under 5 years. 15% of them knew that a child could be introduced to other feeds much earlier than 6 months. These findings contradict those of a study conducted in Ethiopia which revealed that a small portion (40.2%) of the caregivers knew that a complementary diet should be started at the age of 6 months compared to 66.7% in the control probably because of differences in way of life, culture, and demographic characteristics which influence caretakers' knowledge differently. (Solomon Amsalu, 2008).

Results showed that a majority of 57(57%) knew that the main meal of a child on complementary feeding should be a mixture of greens/cereals/meat/ eggs/poultry/fish, legumes, and vegetables and the majority of 76 (76%) knew that Vegetables were suitable for complementary feeding while This was probably because they had embraced antenatal care services which are the main sources of nutritional knowledge before giving birth. This knowledge that the respondents had was a result of health education which accumulates with increased exposure to such sources of health information. This clearly shows that caretakers' knowledge influences nutrition status since they are the ones who decide how they should feed their children depending on how much they know. These findings are similar to those of a study in Kenya which found that the content of nutritional knowledge among the caregivers was mainly on a balanced diet with the majority being (31.2%). (Peter Maina Chege, 2017)

Results in figure 1 showed that the majority 40 (40%) knew that complementary feeds are given 2-3 times a day probably because of society's way of life where most families in the study area take only breakfast, lunch, and supper and tend to induce the same thinking to give supplementary feeds when the rest of the family is also taking their main meal disregarding special changes in timing for a child's meal which was practically possible. These findings are similar to those of a study conducted in eastern and central Uganda that indicated that most caregivers (77%) were knowledgeable about key infants and young child feedings practices such as Breastfeeding complementary feeding and meal frequency. However, culture and economic hardships were major barriers to the applicability of this knowledge (Jacent Kamuntu Asimwe, 2021)

Results in figure 2 showed that the majority 87(87%) knew that a child should be breastfed and given supplementary feeds till the end of two years before total cessation of breastfeeding. This is probably because the same knowledge has been part of Ugandan cultures about breastfeeding children for 2 years making it easier for the majority of the respondents to be convinced about the fact in addition to the routine health education by various health workers in health facilities. This level of awareness positively influences the nutrition status of children under 5 years. These findings correspond to those of a study in El-Minia Governorate in Egypt which revealed that the majority (92.5%) of the mothers knew weaning (Eman S. Mohammed, 2014)

The practice of caretakers of children under 5 years in Ibalikoma village Apac district influencing nutrition status.

The study objective was to establish the practice of caretakers of children under 5 years in Ibalikoma village Apac district influencing nutrition status. Data analysis and interpretation revealed the following major findings under the objective;

Results in Table 3 showed that the majority 56(56%) of the caregivers had stopped breastfeeding their children and the majority 89% of them had stopped breastfeeding after 6 months which is positive influences nutrition and adheres to the Ministry of health recommendations as a major milestone in improving child nutrition. Of the 44(44%) respondents who were still breastfeeding their chil-

dren, the majority 23(23%) of them breastfed more than five times a day while Majority 79% did not introduce their children to supplementary feeds till the age of 6 months. This indicates that the majority adhered to the minimal standards concerning the number of times that a child should be breastfed about the child's age. These findings are similar to the findings of a study conducted in Mogadishu Somalia which revealed that over 45% are breastfed less than 4 times a day. (Abdullahi Abdi Hussein, 2018)

Results showed that the majority 35(35%) of the breastfeeding mothers did not wash hands with soap and water before breastfeeding probably because of the community lifestyle and inadequate access to safe water and hand washing services at their places of work and the study area being a rural setting. This was found to be a barrier to the improvement of child nutrition that greatly exposed their children to childhood illnesses like diarrhea one of the major causes of malnutrition and child mortality in Uganda.

Results in figure 3 showed that the majority 79(79%) of the respondents initiated their children on complementary feeds at the age of 6 months, this was probably because the majority of the respondents were farers and had less time to exclusively breastfeed. This practice compromised the nutrition status of their children. These findings correspond to those of a study in Lamwo District which showed that only 47.0% of the children were introduced to complementary feeding at 6 months. This puts their children's nutrition status on compromise. (Harriet Aber, 2018)

Results in figure 4 showed that the majority 90(90%) used plates and hands as part of their feeding utensils probably because these were affordable and easy to use, unlike bottle feeding. All those various utensils seemed to have equal advantages and similar risks to the children's nutrition status depending on how best the caretakers adhered to the hygiene standards when using either of them. These findings were similar to those of a study in Western Kenya which revealed that only 40% of the participant's parents still use bottles with nipples for feeding (Edwin Gudu, 2020).

Results in figure 5 showed that a greater percentage of 90(90%) of the respondents did not boil their drinking water this was probably because of the strongly held social belief that water collected from boreholes or directly from springs was safe without boiling. The use of unsafe water to either wash or feed children during or after exclusive breastfeeding was not recommended by the health standard and risked the children there to diarrheal diseases. This was a great barrier to child health since it exposed them to various illnesses that would greatly compromise their children's nutrition status. These findings greatly differ from those of a study conducted in Nepal which indicated that breastfeeding practice is excellent among participants, 80.46% of mothers from cases this may have been due to the differences in health knowledge and different sources of water which the two study groups probably used. (Ahmed Hossain, 2020).

Maternal related factors influencing nutrition status among children under 5 years in Ibalikoma village Apac district.

Results in Table 4 showed that the majority 40(40%) were between 30-39 years and were presumed to have stable sources of income and presumed to be more knowledgeable and skilled about child nutrition from experience, unlike their counterparts who reduced the risk of malnutrition in their children this showed some relationship between maternal age and nutrition status of their children though it changed with various other social and economic characteristics. These findings are similar to those of a study in Tamale Metropolis, Ghana on young maternal age as a risk factor for child undernutrition showed that the prevalence of undernutrition was higher in children of adolescent mothers than in children of adult mothers i.e., 59.3% versus 16.7% for stunting, 12.0% versus 4.0% for wasting, 29.3% versus 3.3% for underweight (Anthony Wemakor, 2018).

Regarding the caretaker's education level, the majority 43(43%) reached primary, 34(34%) secondary, and 20(20%) tertiary while only 3(3%) had no formal education. Caretakers who have received have higher chances of feeding their children well since they have the knowledge of proper nutrition and are not easily influenced by unsafe cultural ideologies unlike those who have not attained formal education. Educated caretakers are associated with using safe methods of food preparation, safe fuel sources, and proper hygiene practices improving the nutrition status of their children. These findings are similar to those of a study carried out in sub-Saharan Africa on the type of household cooking fuel on child nutritional status, was found that stunting, children born to single women who

use unclean household cooking fuel (95%) and children born to married women who use unclean cooking fuel (95%) were more likely to be stunted. such practices are common to educated caretakers. (Bright Opoku Ahinkorah, 2021)

Regarding marital status results in figure 6 showed that the majority 76(76%) were married while 24(24%) were single mothers. Married caretakers tend to have more economic support and high decision power concerning their children which increased the likelihood of proper nourishment of their children. These findings are similar to those of a study in Pakistan which showed that Toddlers with married mothers were at 0.86 times risk of stunting (OR: 0.62; 95% CI: 0.768-0.9867) and 0.771 times risk of severely stunted (OR: 0.771; 95% CI: 0.672-0.883) compared to toddlers with divorced mothers. (Agung Dwi Laksono, 2019).

Results in figure 7 showed that the majority 54% of the caretakers were peasants, Bussiness women 34%, and 12% of the caretakers were civil servants. The majority 54% were peasants and did farming for survival and probably did not have adequate Caretakers occupation determines the practices, income, and time that they have to adequately feed their children. Children of civil servants and peasants are more likely to be at risk of being undernourished because the mothers do not get adequate time to attend to the nutrition needs of their children. These findings are similar to those of a study carried out on maternal employment and child nutritional status in Uganda showed that 28%, 4%, and 11% of the children of the working women were stunted, wasted and underweight respectively. Slightly over 4 in every 5 households (81%) were rural households where over half of the women (56%) were engaged in agriculture work. Only 9% were informal (professional and clerical jobs). Over half of the women were self-employed (Olivia Nankinga, 2019).

8 Conclusions

The study established that the majority of the respondents had knowledge about exclusive breastfeeding and complementary feeding However most of the mothers did not put all the knowledge into practice due to lack of resources and citing unfavorable environments to apply what they knew. The nature of the work of caretakers, their level of education, and their economic status had a great influence on the applicability of the required nutrition practices.

Recommendations.

There is a need for increased sensitization and awareness campaigns by the government of Uganda through the ministry of health specifically about the practical ways which suit the lifestyle in rural areas that can help improve the nutritional status among children under 5 in rural areas.

There is a need for caregivers to apply the knowledge they already know concerning health and nutrition to promote the health of children under 5 years

The government of Uganda should strengthen poverty eradication campaigns and programs in rural areas since economic status directly affects the health of citizens.

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Abreviations and Acronyms

BMI : Basal metabolic index
MOH : Ministry of Health
MUAC : Mid upper arm circumference
UBOS : Uganda Bureau of Statistics.
UDHS : Uganda Demographic Health survey
UNICEF : United Nation's International Children's Fund
WHO : World Health Organization

10 Operational Definitions

Exclusive breast feeding : Is the period that begins at birth in which a baby is only fed on breast milk without any other feeds.

Malnutrition : Is a condition in which an individual gets too little or excess amounts of nutrients in the body which may lead to various illnesses

Nutrition : Is the biochemical and physiological process by which a person uses food to support Life.

Weaning : Is the process of gradually introducing an infant to other feeds that will be their adult diet while withdrawing the supply of its mothers Breast milk

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