



Assessment of Mothers' Awareness and Practice in the Prevention of Malnutrition among under-five years Children in Tadnum Bogoro Local Government Area of Bauchi state

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Abstract

The study was conducted in Tadnum Community, Bogoro Local Government Area, Bauchi State, to assess mothers' awareness and practices in the prevention of malnutrition among under-five children. The main objective was to evaluate mothers' awareness regarding malnutrition prevention. A descriptive survey design was used, involving 108 mothers selected through the snowball sampling technique. Data were collected using structured questionnaires and analyzed using SPSS version 29.0. Results were presented through frequency tables, percentages, means, pie charts, and standard deviations. Findings revealed that mothers had good awareness of malnutrition, as most agreed that proper nutrition during pregnancy supports fetal growth, with a mean score of 2.8. However, their preventive practices were found to be low. About 57% of mothers did not practice exclusive breastfeeding, while 54% failed to maintain a balanced diet during pregnancy. Factors hindering effective malnutrition prevention included food inaccessibility (57%) and cultural beliefs. The study recommends empowering health workers to strengthen nutrition education and support mothers in adopting good feeding practices. Promoting exclusive breastfeeding for the first six months of life and encouraging the introduction of nutritious complementary foods thereafter are essential strategies to reduce malnutrition among under-five children in the study area.

Keywords: Malnutrition, mothers' awareness, prevention practices, under-five children, Bauchi State.

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Introduction

The world health organization (WHO, 2021), defines malnutrition as the cellular imbalance between the supply of nutrient and the body demand for them to ensure growth maintenance and specific function. Malnutrition is a potentially fatal body depletion disorders, defines malnutrition as resulting from dietary inadequacy of protein or calories or both. It is considered a range of pathological arising from a lack of coincident lack of varying proportion of nutrients (Christian, 2010). Worldwide malnutrition is a public health concern. Globally 462 million adults were malnourished (Dukhi, 2020). Globally among under-five in 2020, 149 million were stunted, 45 million were wasted, it was estimated that globally around 45% of deaths in under-five children are corresponding to malnutrition (WHO, 2021). About 230 million under-five children in developing countries are experiencing chronic malnutrition and it was indicated that about 54% of under-five deaths in developing countries are associated with malnutrition (Hwot & Amien, 2020). Poor knowledge of primary care givers is among the factors contributing to malnutrition as a study conducted in India revealed that mothers need appropriate awareness which should affect their attitudes and practices in prevention of malnutrition (Tharanitharan & Sathiadas, 2020).

In sub-Saharan Africa the proportion of children with stunting rose from 50.3 million to 58.8 million children from 2015 to 2018 (Obasohan et al., 2020). Now it is indicated that about 45% of all child death in Africa are linked to malnutrition and this justify that Sub-Saharan African children are 14 times more likely to die in their first five years than those children in developed countries (WHO: Regional Office for Africa, 2021). In 2013 the government of Rwanda launched a continuous campaign for improving families nutritional conditions mainly focusing on pregnant and breastfeeding mothers, and children in their first 1000 days and this program includes community based activities such as cooking demonstrations, Model kitchen, feeding demonstrations which targets pregnant and breastfeeding mothers and under 2 years old children and this was targeting to enhance the development of appropriate mothers awareness, and practices for better feeding (Hakizimana et al., 2023). Approximately 149 million children below age five are thought to have weight lower for their age, resulting in stunted growth. There were 45 million wasted persons or people who were too small for their height, while 38.9 million were overweight or obese. Similarly, 45 per cent of mortality in children under the age of five is linked to malnutrition. The poorest and middle-income countries are the worst hit (WHO, 2019). According to the Global Nutritional Report (2021), Overweight and stunted development are prevalent in Africa at 5.3 per cent and 30.7 per cent, respectively. Waste, on the other hand, affects 6.0 per cent of the African population. Nigeria has the world's second-largest burden of stunted children, with 32 per cent of children under-5 suffering from stunted growth across the country. Only two out of every ten children in Nigeria are now receiving treatment for malnutrition, although an estimated two million children are malnourished (United Nations International Children Emergency Fund [UNICEF], 2021). Malnutrition is characterized as an excessive or imbalanced absence of energy and nutrients in the diet. Under nutrition, over nutrition, and vitamin deficiency are some of the symptoms. (Franco et al., 2023) affirmed that children who are malnourished are more likely to have the following health problem delayed physical and mental development, inability to realize full physical and mental potential and so on, Mild malnutrition weakens every part of the immune system, and it is a key risk factor for the onset of active Tuberculosis. Nevertheless, Malnutrition symptoms include skin rashes, hair loss, weakened immune system, high risk of infections, digestive problems, night blindness, poor wound healing and so on

(Barker et al., 2018). According (Dipasquale et al., 2020), acute malnutrition occurs from insufficient protein or calorie ingestion. Children with primary acute malnutrition are prominent in low- and middle-income countries. It is caused by a scarcity of food as a result of economic, political, and environmental factors. Secondary acute malnutrition develops as a result of abnormal nutrient loss, increased energy expenditure, or decreased food intake, and is most frequent in the context of chronic illnesses such as cystic fibrosis, chronic renal failure, chronic liver problems, and so on (Noel et al., 2024).

Research has shown that malnutrition has a direct bearing and effect on individual health, emotional stability and general wellbeing. World health organization estimated that about 181.9 million (32%) children in developing countries are malnourished. In addition, an estimated 149.6 million younger than 5 years are malnourished when measured in terms of weight for age in south central Asia and Eastern Africa, about half of the children have growth retardations due to malnutrition. This figure is 5 times the incidence in the western world. (WHO, 2019). In Nigeria, there is urgent need to address the various persistent social determinants of malnutrition such as poverty, illiteracy, unemployment, inequalities. 13.70% of the over 140 million Nigerians currently live below poverty line of 1 dollar per day. The first goal of millennium development goals is eradication of extreme poverty and hunger, but recent African development bank report revealed that the number of African that will be living below the poverty line is instead projected to increase by 2025 (Turner et al., 2014). Healthy citizens build a healthy nation. Children as future country's focal persons once they are neglected the future nation can become a nation of unhealthy people. Malnutrition in under-five children has a long-lasting effect on the mental and physical health of the children. It was revealed that mothers need appropriate awareness which should affect their practices in prevention of malnutrition (Hegde et al., 2024).

Children below the age of five in Nigeria confront a variety of significant issues, including endemic malnutrition. According to WHO (2019), the greatest severe threat to global public health is hunger and malnutrition. Malnutrition has been connected to many deaths among children under the age of five in most poor countries, including Nigeria. Malnutrition is responsible for 45 percent of all fatalities in children under the age of five, either directly or indirectly. At the same time, childhood obesity and overweight are on the rise in these same countries. Malnutrition has significant and long-term developmental, economic, social, and medical effects for people, families, communities, and governments across the world. As a result, reducing malnutrition in children under the age of five remains a major concern in disadvantaged countries across the world in which mother's awareness and practice about the prevention of malnutrition is regarded to reduce malnutrition (UNICEF, 2021). Furthermore, acute malnutrition claimed the lives of 124 children between the ages of 9 months and 9 years, resulting in the hospitalization of 21,265 additional children (Da Silva Portela Pinto et al., 2023). It's worth noting that malnutrition rates among Nigerian children under the age of five differ dramatically across rural and urban locations (Salisu et al., 2024).

Methodology

Research Design

The research design that was used in this study is descriptive survey research design, this design was used to describe characteristics of population or phenomenon. A descriptive research design can use a wide variety of research methods to investigate one or more variables.

Setting

The study was conducted in Tadnum Bogoro, Bauchi State. Tadnum is a community under Bogoro local government area, most people in that community are not literate they didn't go to school and also the predominant occupation is Farming, There are two major religion in the area that are

Islam and Christianity, it is a ward of itself in Bogoro LGA with four units Tadnum shares boundaries with Zakkam to the east, Gobbiya to the north, kunwur to the south and Gamu to the west.

Target Population

The target population that was used in this study were mothers of under-five year's children in Tadnum Bogoro, Bauchi state. Which the population was unknown.

Sample Size

The sample size that was used in this study was calculated using croncha formula (1963).

Calculation:

Given that $n = z^2 \times p \times (q) / d^2$

Where n = sample size required

Z = z score corresponding to the desired of confidence (e.g. for 95% confidence level, z score is approximately 96%).

P = estimated proportion of the population with the characteristics of interest= 9.6% from a study conducted by Sabina et al (2021).

q = 1- p

d = desired margin of error (precision) = 0.05

Therefore

$n = 1.96^2 \times 0.96 \times 0.733 / 0.05^2$

$n = 3.8416 \times 0.096 \times 0.733 / 0.0025$

n = 108

Sampling Technique

Snowball sampling technique will be used in this study. Snowball sampling technique is a type of non-probability sampling technique. This type of technique is used when it is difficult to obtain a sample due to logistical constraints or when the population of instrument is hard to access.

Instrument for Data Collection

The instrument used for data collection was structured questionnaire, which constitutes different sections (A B C and D). Section A consists of demographic data, section B consists of Assessment of mother's awareness's in the prevention of malnutrition, section C consists of mother's practices in the Prevention of malnutrition. Section D consists of the factors that hinders mother's practices in the Prevention of malnutrition. The instrument was considered appropriate by the researcher to help illicit necessary answer to the research questions.

Validity of the Instrument

The research instrument was checked by my supervisor and the research committee on the basis of face and content validity. The purpose was to assess whether the question raised on the instrument were able to adequately measure what it is supposed to be measured. (Lam et al., 2018).

Reliability of the Instrument

The reliability of the instrument was ensured using test-retest method. Pilot study was conducted using 10% of the sample size in Gidgid hamman Bogoro, Bauchi state. And the questionnaire was re-administered after two weeks interval the result was correlated and the reliability was calculated using Cronbach alpha formula. The co-efficient is 0.8 which is said to be reliable.

Method of Data Collection

The questionnaire was distributed by the researcher alongside the research assistant to the mothers of under five years old in Yelwan Tadnum in their homes, market places and health facility. Those who found it difficult to read and understand English language were assisted with the translation of the questions by the research assistants. The questionnaire were collected after two days.

Method of Data Analysis

The data collected was analyzed using statistical package for social sciences (SPSS) version 29.0 and presented using statistical techniques, mean, frequency distribution table, percentages and pie chart.

Ethical Consideration

An introductory Letter was collected from the chairman research committee, Aliko Dangote College of Nursing Sciences and presented to the head of Tadnum Bogoro. Bauchi state. Permission was granted by the community head of Tadnum Bogoro Bauchi. Ethical clearance was issued and collected from the respondents, with attention paid particularly to the safety and confidentiality of the respondents. There was no forcing of participants to answer the questionnaire items or compelling anybody while filling the questionnaire forms and also no harm or disrespect were done to any of the respondents. All information that was obtained was handled with maximum confidentiality, integrity, anonymity was used only for educational purpose.

Results

This section shows the data of mothers of under five children residing in Tadnum based on their age, marital status, educational status, occupation and their tribe.

Table 1: Presentation of result using tables and figures

Variable	Frequency	Percentage
Age		
15-20	18	17%
21-25	33	31%
26-30	30	28%
31-35	13	12%
Marital status		
Married	67	62%
Single	4	3.7%
Divorce	12	11.1%
Widow	11	10.2%
Educational status		
Primary	30	27.7%
Secondary	48	44.4%
Tertiary	26	24.1%
Occupation		
Farmer	27	25%
Housewife	42	38.8%
Civil servant	4	3.7%

Business	21	19.4%
Tribe		
Hausa	23	21.3%
Fulani	30	27.7%
Jarawa	41	37.7%

Table 1 shows the demographic characteristics of the respondents. It indicates that 18 (17%) of the respondents are within the age group of 15– 20 years while 33 (31 %) were within the age group of 21-25 years, 30 (27.7%) were within the age group of 26--30 and 13(12%) were within the age group of 31-35. The majority were 33(31%) while the minority were 13(12%). The table indicated that 67(62%) of the respondents were married, 4(3.7%) were single, 11(10.2%) are widows while 12(11%) were divorced. Furthermore, majority 48 (44.4%) had Secondary level of education, 30(28%) had primary level of education, 26(24%) had tertiary level of education. The table also shows that majority of the respondents 42 (39%) were housewives 27(25%) were farmers and 21(19%) are business women while the minority 4(3.7) were civil servants. The table also revealed that majority of the respondents 41(38%) were Jarawa and 30(27.7%) were Fulani while 23(21.3%) were Hausa by tribe.

Table 2: Mothers Awareness in Prevention of Malnutrition among Under-Five Children

SA	A	D	SD	Mean	Remark
50	24	19	1	2.8	Positive
13	35	40	6	2.2	Negative
26	39	23	6	2.5	Positive
34	24	27	9	2.5	Positive
16	35	31	12	2.2	Negative
16	16	42	12	2.0	Negative
33	31	26	4	2.6	Positive
29	37	19	9	2.5	Positive

Table 2 indicate the awareness of mothers in the Prevention of malnutrition among under-five children. The table show that majority of the respondents had good awareness towards the Prevention of malnutrition among under-five children. The table further presents to us mothers awareness status toward the prevention of malnutrition in all 8 measures used for examination where mothers presented a high awareness towards prevention of malnutrition. The table show that majority of the respondents had good awareness towards malnutrition prevention as majority agreed with appropriate nutrition during pregnancy is good for fetal growth is an important part with a mean score of 2.8, access to health care facilities , immunization of children , nutritious food and exclusive breastfeeding and counselling should be readily available to all under five mothers as accepted alongside with treatment of early disease that can negatively affect the nutritional profile of the child with a mean score of 2.6 and 2.5 respectively .Furthermore most of the respondents disagreed with routine antenatal for intrauterine growth retardation and also above 2 years continuity of breastfeeding with complementary feeding with a mean of 2.0 and 2.2.

Table 3. Mothers Practices in the Prevention of Malnutrition

Variable	Frequency (94)	Percentage
1 Do you take a balanced diet and on a daily basis while you are pregnant	54	50%
a)yes	40	37%
b)No		
2. Do you attend all recommended 4 routine antenatal care visits while you are pregnant?	42	38%
a)yes	52	48%
b)No		
3. Do you have your baby immunized with all vaccines recommended by the routine vaccination schedule?		
a) yes	41	38%
b)No	53	49%
4. Do you exclusively breastfeed your baby for the first 6 month and give him/ her complementary food from 6months to 2 years?		
a)Yes	45	42%
b)No	50	46%
5. Do you routinely monitor your baby's growth parameters with help of a skilled provider?		
a)Yes	32	30%
b) No	62	57%
6. Do you take your baby to a health facility in case of any disease mainly contagious disease such as malaria and/or diarrhea?		
a)Yes	61	57%
b)No	33	31%
7. Do you often feed your child enough food every time he /she needs it?		
a)Yes	56	53%
b) No	36	33%
8. Is your birth spacing between the month of one child and conception of another at least not below 2years?		
a)yes	40	37%
b)No	54	51%

The table above revealed the practices of mothers towards the Prevention of malnutrition, the table above shown that majority of the Mothers have a low level practice 62(57%), while 50(46%) do not practice exclusive breastfeeding while 54(50%) mothers have not practiced birth spacing and it also shows that 53(49%) mothers have not practiced recommended vaccination schedule for their children, while majority 62(57%) of mothers did not monitor their children growth parameters with a skilled provider while the mothers practice balanced diet during pregnancy (54%) . This contradicts with our expectations because we expected that a mother with higher level of awareness should have a higher level of practice toward the prevention of malnutrition and this lead us to suspect that there can be some limiting factors to appropriate.

Table 4. Factors That Hinders Mothers Practices in Prevention of Malnutrition among Under-Five Children

Variable	Frequency (94)	Percentage
1. Do you often face challenges in affording nutritious food for your child?	61	57%
a).Yes	33	31%
b. No		
2. Do you find it difficult to access health care facilities for nutritional counseling and support?		
a)Yes	58	54%
b) No	36	33%
3. Do you have any cultural beliefs or practices that restrict the type of food you can feed your child?		
a) Yes	43	40%
b) No	51	47%
4. Do you have adequate support from your family in providing nutritious food for your child?	52	48%
a) yes	42	39%
b) No		
5. Are you aware of the strategies to overcome barriers to providing optimal nutrition for your child?	31	29%
a) Yes	63	58%
b) No		

The table above represents the respondent of mothers on the factors that hinders. The above clearly indicates to us that the availability of adequate balanced diet to children is highly related to food accessibility as 61 (57%) of mothers can't afford an adequate balanced diet for their children while 58(54%) find it difficult to access health care facilities for nutritional counselling and support which hinders mothers awareness and practices in the Prevention of malnutrition while 43(40%) have cultural beliefs and practices that restrict certain foods and 63 (58%) are not aware of the strategies to overcome barriers to providing optimal nutrition for children.

Discussion

Findings obtained from the analyzed data in chapter 4 on the awareness of mothers in the Prevention of malnutrition in Tadnum Community, Bogoro Local Government Area of Bauchi State, Table 2 shows that majority of the respondents had good awareness towards malnutrition prevention among under-five children as majority agreed that Appropriate nutrition is necessary for fetal growth is an important part with a mean score of 2.8, access to health care facilities , immunization of children , nutritious food and exclusive breastfeeding and counselling should be readily available to all under five mothers as accepted alongside with treatment of early disease that can negatively affect the nutritional profile of the child with a mean score of 2.6 and 2.5 respectively. Further more most of the respondents disagreed with routine antenatal for intrauterine growth retardation and also above 2 years continuity of breastfeeding with complementary feeding with a mean of 2. 0 and 2.2. Table 3 revealed practices of mothers in the prevention of malnutrition among under-five children of

The table indicated that majority of the respondents had low practices towards prevention of malnutrition as the majority of the respondents have low practices 62(57%), while 50(46%) do not practice exclusive breastfeeding while 54(50%) mothers have not practiced birth spacing and it also shows that 53(49%) mothers have not practiced recommended vaccination schedule for their children, while majority 62(57%) of mothers did not monitor their children growth parameters with a skilled provider while the mothers practice balanced diet during pregnancy (54%). Mother's practices in prevention of malnutrition has been proven to have a strong association with their awareness, knowledge, educational status and socio-economic class, As a study conducted on mothers of pre-school children of Trivandrum district of India indicated that only 19.1% of mothers had good awareness and 34.8 % of mothers had poor awareness. Only 24.3% of mothers reported to have good practice while 36.6 % of mothers reported to have poor practice (Prasetyo et al., 2023). This study is also in correspondence with a study conducted on care givers of under-two years children in Ventaquemada of Colombia which indicated that even if most caregivers have good knowledge and attitudes of infant nutrition, the knowledge is not applied and this was due to community beliefs, values, and individual and collective emotions (Rodríguez Wilchez et al., 2019). Early initiation of complementary feeding is of great value in prevention of malnutrition in under- two year's old children. Table 4 in chapter 4 revealed the factors that hinders mothers practices in the Prevention of malnutrition among under-five children clearly indicates to us that the availability of adequate balanced diet to children is highly related to food accessibility as 61 (57%) of mothers can't afford an adequate balanced diet for their children while 58(54%) find it difficult to access health care facilities for nutritional counselling and support which hinders mothers awareness and practices in the Prevention of malnutrition while 43(40%) have cultural beliefs and practices that restrict certain foods and 63 (58%) are not aware of the strategies to overcome barriers to providing optimal nutrition for children Breastfeeding practices and continued breastfeeding (Haddad et al., 2015).

Conclusion

Based on this findings, this study proved that mothers have good awareness of malnutrition as majority agreed with appropriate nutrition during pregnancy is good for fetal growth with a mean of 2.8 But even though mothers have a higher level of awareness, the practice is low as among all 8 variables assessed, they present a low level of practice of malnutrition prevention among mothers of under five years old children which a finding of 57% do not practice exclusive breastfeeding and 54% pf mothers do not practice appropriate balanced diet during pregnancy .in this study findings about factors that hinders mothers practices of malnutrition prevention indicates that 57% of mothers can't afford to get balanced diet for their children due to food accessibility problems and cultural beliefs was indicated as factors that hinders mothers practices in the Prevention of malnutrition, accessibility of hospital facilities and counselling about proper nutrition was also indicated in this study as a factor that hinders mothers practices in the Prevention of malnutrition among under five children in Tadnum community.

Conflicts of Interest

No conflict of interest

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