Original Research Article

Assessment of Mothers' Knowledge of Childhood Malnutrition Prevention Practices at Ugbor Primary Health Centre, Benin City, Nigeria

Abstract

Aims: To assess mothers' knowledge of childhood malnutrition prevention practices at Ugbor Primary Health Centre, Benin City, Nigeria, identify socio-demographic factors influencing these practices, and provide recommendations for targeted interventions.

Study Design: Descriptive cross-sectional study.

Place and Duration of Study: Ugbor Primary Health Centre (PHC), Benin City, Edo State, Nigeria, conducted from February 2024 to August, 2024.

Methodology: A total of 167 mothers, aged 18 years and above, attending the immunization clinic were selected using systematic random sampling. Data were collected using a pre-tested structured questionnaire that captured socio-demographics, knowledge of malnutrition, and preventive practices. Descriptive statistics summarized findings, and chi-square tests identified associations between socio-demographic variables and malnutrition knowledge and practices.

Results: Of the participants, 92.7% were aware of malnutrition, with hospitals (50.6%) and health workers (50.0%) being primary information sources. Identified causes included poor feeding practices (68.3%), inadequate breastfeeding (73.1%), and lack of balanced diets (62.9%). While 86.2% ensured their children consumed balanced diets, only 57.8% practiced exclusive breastfeeding for the first six months. Barriers included cultural feeding practices (34.1%) and lack of access to nutritious foods (41.3%). Significant associations were observed between education level and knowledge () and between occupation and feeding practices.

Conclusion: High awareness of malnutrition was observed among mothers; however, gaps in preventive practices persist. Integrating nutrition education into immunization services, promoting exclusive breastfeeding, and addressing cultural and resource-related barriers are crucial for enhancing maternal practices and improving child health outcomes.

Keywords: Childhood malnutrition, maternal knowledge, prevention practices, immunization clinics, Edo State

Introduction

Childhood malnutrition remains a pervasive global health challenge, particularly in low- and middle-income countries. Malnutrition contributes to almost half of all deaths among children under the age of five and has far-reaching consequences for physical, cognitive, and emotional development[1,2]. Malnutrition is classified into undernutrition, including stunting, wasting, and underweight, and overnutrition, such as overweight and obesity[3].

In Nigeria, malnutrition rates are alarmingly high, with approximately 32% of children under five experiencing stunted growth, and nearly two million children suffering from severe acute malnutrition[4]. Several factors contribute to this burden, including poor maternal knowledge, inadequate feeding practices, poverty, and lack of access to healthcare services. Mothers, as primary caregivers, play a critical role in preventing malnutrition during early childhood, a period characterized by rapid growth and increased nutritional needs[5,6].

Immunization clinics provide a unique platform for addressing malnutrition. These clinics offer not only vaccination services but also an opportunity to educate mothers on appropriate feeding practices, dietary diversity, and hygiene[7]. Despite efforts to leverage these settings for nutritional interventions, gaps persist in maternal knowledge and practices regarding malnutrition prevention.

This study aims to assess the knowledge and practices of mothers attending the immunization clinic at Ugbor Primary Health Centre (PHC) in Benin City, Nigeria. By identifying gaps and barriers, the findings will inform the design of targeted interventions to improve maternal practices and reduce childhood malnutrition in the region.

Methodology

Study Design

This study employed a descriptive cross-sectional design to assess the knowledge and practices of childhood malnutrition prevention among mothers attending the immunization clinic at Ugbor

Primary Health Centre (PHC) in Benin City, Edo State, Nigeria. This design was chosen to provide a snapshot of the existing knowledge and practices at a specific point in time.

Study Setting

The study was conducted at Ugbor PHC, a prominent healthcare facility in Benin City. The health center provides various services, including immunization, maternal and child health services, and nutritional counseling. Ugbor PHC serves a predominantly low- to middle-income population within a diverse ethnic community, primarily consisting of Edo-speaking people.

Study Population

The target population consisted of mothers aged 18 years and above who accompanied their children (aged 0–5 years) to the immunization clinic. Inclusion criteria included mothers who consented to participate and understood the questionnaire. Exclusion criteria were mothers who did not consent, had language barriers, or whose responses were incomplete.

Sampling Technique

Systematic random sampling was employed. The sampling interval was determined by dividing the total number of mothers attending the clinic during the study period by the sample size. Mother were selected until the target sample size was achieved.

Data Collection Instrument

A structured questionnaire was designed to capture data on demographics, knowledge, and practices regarding childhood malnutrition prevention. The questionnaire comprised five sections:

1. Demographics: Age, education, occupation, number of children, and monthly income.

2. Knowledge of Malnutrition: Awareness, causes, and prevention of malnutrition.

3. Preventive Practices: Breastfeeding, complementary feeding, and dietary diversity.

4. Access to Nutrition Information: Sources and frequency of nutrition-related information.

5. Utilization of Nutrition Services: Frequency of clinic visits and participation in educational programs.

Data Collection Procedure

Data collection was conducted over four weeks during clinic hours. Trained enumerators administered the questionnaire face-to-face in private settings to ensure confidentiality. For mothers with limited literacy, questions were read aloud, and responses were recorded by the enumerators.

Data Analysis

Data were entered into SPSS (version 25) and analyzed using descriptive and inferential statistics. Descriptive statistics included frequencies and percentages to summarize demographic characteristics, knowledge, and practices. Chi-square tests were applied to assess associations between socio-demographic variables and knowledge levels, with a significance level set at .

Ethical Considerations

Ethical approval was obtained from the Edo State Ministry of Health. Informed consent was obtained from all participants, ensuring anonymity and confidentiality throughout the study.

Results

Demographic Characteristics

A total of 167 mothers participated in the study. The majority of participants (41.9%) were aged 30–39 years, followed by 35.9% aged 20–29 years. Most respondents (62.3%) were married, and 46.7% had tertiary education. Regarding occupation, 42.6% were self-employed, while 33.3% were formally employed. The majority of mothers (41.0%) had 2–3 children, and 38.0% reported a monthly income between ₦50,000 and ₦100,000 (Table 1a and 1b).

Table 1a: Socio demographic characteristics of participants (N=167)

Socio demographic Characteristics of mothers		Frequency	Percentage %
Age	Under 20	11	6.6
	20 – 29	60	35.9
	30 – 39	70	41.9
	40 and above	26	15.6
	Total	167	100.0
	Single	23	13.8
	Married	104	62.3

	Divorced	35	21.0
Marital status	Widowed	5	3.0
	Total	167	100.0
Religion	Christianity	102	61.4
	Islam	53	31.9
	Others	11	6.6
	Total	166	100.0
Educational level	No formal education	17	10.3
	Primary education	18	10.9
	Secondary education	53	32.1
	Tertiary education	77	46.7
	Total	165	100.0

This table uses descriptive statistics: frequency (n) and percentage (%)

Table 1b: Socio demographic characteristics of participants (N=167)

Occupation	**Unemployed**	**20**	**12.3**
	Self-employed	69	42.6
	Employed	54	33.3
	Student	19	11.7
	Total	162	100.0
Number of children	1	30	18.1
	2-3	68	41.0
	4-5	39	23.5
	More than 5	28	16.9

	Total	166	100.0
Age of youngest child	Below 6 months	39	23.5
	6-12 months	50	30.1
	13-24 months	37	22.3
	25-36 months	13	7.8
	Above 36 months	27	16.3
	Total	166	100.0
Monthly income	Below N20,000	18	10.8
	N20,000-N50,000	38	22.9
	N50,000-N100,000	63	38.0
	Above N100,000	47	28.3
	Total	166	100.0

This table uses descriptive statistics: frequency (n) and percentage (%).

Knowledge of Malnutrition

Approximately 92.7% of mothers had heard of malnutrition. Among them, 50.6% identified hospitals as their primary source of information, and 50.0% credited health workers. The most commonly recognized causes of malnutrition included poor feeding practices (68.3%), inadequate breastfeeding (73.1%), and lack of a balanced diet (62.9%). A significant proportion (63.2%) of respondents believed that a child could appear healthy yet be malnourished. Detail results are shown in Table 2a, 2b, 2c and 2d.

The symptoms of malnutrition identified by participants included stunted growth (76.6%), weight loss (65.9%), swollen feet (48.5%), and weakness (52.1%). However, fewer respondents identified hair discoloration (47.3%) and bloated stomach (41.3%) as symptoms.

Table 2a: Assessment of the Mothers' knowledge of Childhood Malnutrition (N=167)

variable	Count	Frequency(n)	Percentage %
Have you ever heard of child malnutrition	Yes	152	92.7
	No	12	7.3
If yes, where you first hear about malnutrition? Hospital	Yes	83	50.6
	No	81	49.4
If yes, where you first hear	Yes	82	50.0

about malnutrition? Health workers	No	82	50.0
If yes, where you first hear about malnutrition? Media (Tv, radio, newspapers)	Yes	44	26.8
	No	120	73.2
If yes, where you first hear about malnutrition? Friends/family	Yes	19	11.6
	No	145	88.4
What do you understand by Child Malnutrition?	A condition caused by lack of food	41	24.6
	A condition caused by poor quality of food	111	66.5
	A condition caused by disease	1	.6
	I don't know	14	8.4

This table uses descriptive statistics: frequency (n) and percentage (%).

Table 2b: Assessment of the Mothers' knowledge of Childhood Malnutrition (N=167)

Variable	Count	Frequency (n)	Percentages (%)
What are the signs and symptoms of malnutrition in children; Stunted growth?	Yes	128	76.6
	No	39	23.4
What are the signs and	Yes	110	65.9

symptoms of malnutrition in children; Weight loss?	No	57	34.1
What are the signs and symptoms of malnutrition in children; Swollen feet?	Yes	81	48.5
	No	86	51.5
What are the signs and symptoms of malnutrition in children; Weakness and tiredness?	Yes	87	52.1
	No	80	47.9
What are the signs and symptoms of malnutrition in children; Frequent illness?	Yes	59	35.3
	No	108	64.7
What are the signs and symptoms of malnutrition in children; Hair discoloration and thinning?	Yes	79	47.3
	No	88	52.7
What are the signs and symptoms of malnutrition in children; Bloated stomach?	Yes	69	41.3
	No	98	58.7
Do you think a child can look healthy and still be malnourished?	Yes	96	63.2
	No	32	21.1
	I don't know	24	15.8

This table uses descriptive statistics: frequency (n) and percentage (%).

Table 2c: Assessment of the Mothers' knowledge of Childhood Malnutrition (N=167)

Variable	Count	Frequency (n)	Percentages (%)
In your opinion, what causes childhood malnutrition; Poor feeding practice?	Yes	114	68.3
	No	53	31.7

In your opinion, what causes childhood malnutrition; Inadequate breastfeeding?	Yes	122	73.1
	No	45	26.9
In your opinion, what causes childhood malnutrition; Lack of balanced diet	Yes	105	62.9
	No	62	37.1
In your opinion, what causes childhood malnutrition; Frequent illness?	Yes	27	16.2
	No	140	83.8
In your opinion, what causes childhood malnutrition; Poverty?	Yes	103	61.7
	No	64	38.3
In your opinion, what causes childhood malnutrition; Poor maternal education	Yes	101	60.5
	No	66	39.5
In your opinion, what causes childhood malnutrition; Cultural or traditional feeding practice?	Yes	57	34.1
	No	110	65.9
In your opinion, what causes childhood malnutrition; Lack of access to nutritional food?	Yes	69	41.3
	No	98	58.7
In your opinion, what causes childhood malnutrition; Others?	Yes	8	4.8
	No	159	95.2

This table uses descriptive statistics: frequency (n) and percentage (%).

Table 2d: Assessment of the Mothers' knowledge of Childhood Malnutrition (N=167)

Variable	Count	Frequency (n)	Percentages (%)
Which disease do you think can increase of childhood	Yes	127	76.5
	No	39	23.5

malnutrition; Diarrhea?			
Which disease do you think can increase of childhood malnutrition; Measles?	Yes	77	46.1
	No	90	53.9
Which disease do you think can increase of childhood malnutrition; Pneumonia?	Yes	45	27.1
	No	121	72.9
Which disease do you think can increase of childhood malnutrition; HIV/AIDS?	Yes	36	21.6
	No	131	78.4
Which disease do you think can increase of childhood malnutrition; None of the above?	Yes	12	7.2
	No	155	92.8
Which disease do you think can increase of childhood malnutrition; Others?	Yes	3	1.8
	No	164	98.2
At what age do you think malnutrition mostly commonly affects children?	Below 1 year	42	25.3
	1-2 years	23	13.9
	2-5 years	27	16.3
	Above 5 years	25	15.1
	All age groups are equally affected	49	29.5
Which of the following do you think helps prevent childhood malnutrition; Exclusive breastfeeding?	Yes	141	84.9
	No	25	15.1

Preventive Practices

Exclusive breastfeeding for the first six months was reported by 57.8% of mothers, while 32.8% introduced complementary feeding between 4 and 6 months. The most common complementary

foods were commercial baby foods (59.0%) and homemade foods (48.5%). However, processed or packaged snacks were rarely used (6.6%).

Most mothers (86.2%) ensured their children consumed balanced diets, and 83.1% regularly provided fruits and vegetables. Additionally, 96.1% provided protein-rich foods. Regarding hygiene, 69.3% recognized immunization as a preventive measure, while 47.6% emphasized the provision of clean drinking water (Table 3).

Table 3a: Childhood Malnutrition Prevention Practices

Variable	Count	Frequency (n)	Percentage %

Do you know the importance of breastfeeding for preventing childhood malnutrition?	Yes	136	82.9
	No	28	17.1
Do you exclusively breast feed your child for the first six months	Yes	96	57.8
	No	42	25.3
	I don't know	28	16.9
If no, at what age did you start giving complementary food to your child	Less than 4 Months	28	22.4
	4-6 months	41	32.8
	6 months	38	30.4
	More than 6 months	18	14.4
What type of complementary food do you give your child; Homemade food	Yes	81	48.5
	No	86	51.5
What type of complementary food do you give your child; Commercial baby food	Yes	98	59.0
	No	68	41.0
What type of complementary food do you give your child; Processed or packaged snacks	Yes	11	6.6
	No	155	93.4
What type of complementary food do you give your child; Others	Yes	3	1.8
	No	163	98.2

This table uses descriptive statistics: frequency (n) and percentage (%).

Table 3b: Childhood Malnutrition Prevention Practices

Variable	Count	Frequency (n)	Percentage %
How often do you feed your child per day	1-2times	4	2.4
	3times	36	21.7
	More than 3 times	65	39.2
	On demand	61	36.7
Do you ensure that your child eats a balanced diet (foods from all food groups)?	Yes	137	86.2
	No	22	13.8
Do you provide your child with Fruits and vegetables on a regular basis?	Yes	133	83.1
	No	27	16.9
Do you provide your child with Protein rich foods (meat, fish, beans, eggs) on a regular basis?	Yes	148	96.1
	No	6	3.9
Do you provide your child with Carbohydrates on a regular basis?	Yes	148	93.7
	No	10	6.3
Do you provide your child with Diary products on a regular basis?	Yes	125	82.8
	No	26	17.2
Do you provide your child with Fats and oils on a regular basis?	Yes	117	77.5
	No	34	22.5
Do you provide your child with Vitamin supplements?	Yes	139	83.7
	No	27	16.3
Are you aware of hygiene practices that can help prevent malnutrition	Yes	146	89.6
	No	17	10.4
Do you ensure that your child drinks clean and safe water	Yes	159	95.8
	No	7	4.2
Do you take your child for regular health check-ups and immunization	Yes	141	89.8
	No	16	10.2
Do you deworm your child regularly	Yes	144	87.3
	No	21	12.7

This table uses descriptive statistics: frequency (n) and percentage (%).

Sources of Information

As demonstrated in Table 4, the participating mothers in the study showed good practice in relation to nutritional sources of information. 70.1% of mother gets their information from health workers, 28.7% get theirs from the internet, 34.7% get informed always through family and friends, 21.0% get theirs from television/radio and 1.2% has other means of sourcing for

nutritional information. 85% of mothers have attended nutritional education programs and talks in their community.

Approximately 81.1% of the mothers receive advice on feeding practices from health workers during your child's immunization visits; 15.7% receive nutritional information daily, 32.5% weekly, 33.7% monthly and 18.1% rarely.

Also 91.6% trust their source of nutritional information. 25.5% of the mothers often visit the clinic weekly, 32.7% monthly, 32.7% only when necessary and 9.1% does not visit thee clinic at all for nutritional advice. However, 71.1% of the mothers participated in nutrition education program and Mostly 40.4% perceives the nutrition services provided at the clinic to be effective.

Table 4a: Sources of Information

Variable	Count	Frequency (n)	Percentage %
What are your source of nutritional information; Health workers?	Yes	117	70.1
	No	50	29.9

What are your source of nutritional information; Internet?	Yes	48	28.7
	No	119	71.3
What are your source of nutritional information; Family and friends?	Yes	58	34.7
	No	109	65.3
What are your source of nutritional information; Television/radio?	Yes	35	21.0
	No	132	79.0
What are your sources of nutritional information; Others?	Yes	2	1.2
	No	165	98.8
Have you attended any nutritional education programs or talks in your community?	Yes	85	52.1
	No	78	47.9
Do you receive advice on feeding practices from health workers during your child's immunization visits?	Yes	133	81.1
	No	30	18.3
	I don't know	1	.6

This table uses descriptive statistics: frequency (n) and percentage (%).

Table 4a: Sources of Information

Variable	Count	Frequency (n)	Percentages (%)
How often do you receive nutrition information	Daily	26	15.7
	Weekly	54	32.5
	Monthly	56	33.7

	Rarely	30	18.1
Do you trust the source of your nutrition information?	Yes	152	91.6
	No	14	8.4
How often do you visit the clinic for nutrition advice?	Weekly	42	25.5
	Monthly	54	32.7
	Only when necessary	54	32.7
	Never	15	9.1
Do you participate in nutrition education programs	Yes	118	71.1
	No	48	28.9
How effective do you perceive the nutrition services provided at the clinic?	Very effective	56	33.7
	Effective	67	40.4
	Neutral	29	17.5
	Ineffective	5	3.0
	Very ineffective	9	5.4

This table uses descriptive statistics: frequency (n) and percentage (%).

Testing the Research Hypothesis

Chi-Square Test for Goodness of Fit and Binary Logistic Regression Analysis

Hypothesis One

H_o: There is no association between mothers' educational level and their knowledge of childhood malnutrition.

H_1: There is an association between mothers' educational level and their knowledge of childhood malnutrition.

Table 5: Cross tabulation of Education Level and the knowledge of child Malnutrition.

Have you ever heard of child malnutrition		**Educational level Crosstabulation**				
			Educational level			Total
			No formal education	Primary education	Secondary education	Tertiary education	
Have you ever heard of child malnutrition	Yes	Count	14	15	48	73	150
		Expected Count	14.8	16.7	48.1	70.4	150.0
	No	Count	2	3	4	3	12
		Expected Count	1.2	1.3	3.9	5.6	12.0
Total		Count	16	18	52	76	162
		Expected Count	16.0	18.0	52.0	76.0	162.0

Table 6:Chi-Square Tests Results

Chi-Square Tests			
	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4.188[a]	3	.242

Likelihood Ratio	3.800	3	.284
Linear-by-Linear Association	3.308	1	.069
N of Valid Cases	162		

$\chi^2_{cal} = 4.188$

Level of Significance = 0.05

$\chi^2_{sig} = 0.242$

Decision Rule: Reject H_o if p-value < α (0.05), otherwise accept H_o

Conclusion: Since p-value (0.242)>(0.05), we accept H_o and that there is no association between mothers' educational level and their knowledge of childhood malnutrition.

Binary Logistic Regression

H_0: Education Level, Income, and Number of Children do not significantly predict whether a mother has heard of childhood malnutrition.

H_1: Education Level, Income, and Number of Children significantly predict whether a mother has heard of childhood malnutrition.

Table 7: Regression Results

		Chi-square	**Df**	**Sig.**
Step 1	Step	12.962	7	.073
	Block	12.962	7	.073
	Model	12.962	7	.073

Decision Rule: Reject H_o if p-value < α (0.05), otherwise accept H_o

Conclusion: Since p-value (0.073)>(0.05), we accept H_o and conclude that the Education Level, Income, and Number of Children do not significantly predict whether a mother has heard of childhood malnutrition.

Hypothesis Two

H_2: There is no association between mothers' income and exclusive feeding for 6 months

Table 8: Cross tabulation between Monthly Income and Exclusive Feeding for 6 months

Do you exclusively breast feed your child for the first six months Monthly income Cross tabulation								
				Monthly income				Total
				Below N20,000	N20,000-N50,000	N50,000-N100,000	Above N100,000	
Do	**you**	Yes	Count	7	17	39	32	95

exclusively breast feed your child for the first six months		Expected Count	10.4	21.3	36.3	27.1	95.0
	No	Count	5	11	13	13	42
		Expected Count	4.6	9.4	16.0	12.0	42.0
	I don't know	Count	6	9	11	2	28
		Expected Count	3.1	6.3	10.7	8.0	28.0
Total		Count	18	37	63	47	165
		Expected Count	18.0	37.0	63.0	47.0	165.0

Table 9:Chi-Square Tests Results

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	12.542[a]	6	.051
Likelihood Ratio	13.887	6	.031
Linear-by-Linear	10.524	1	.001

Association	
N of Valid Cases	165

$\chi^2_{cal} = 12.542$

Level of Significance = 0.05

$\chi^2_{sig} = 0.051$

Decision Rule: Reject H_o if p-value < α (0.05), otherwise accept H_o

Conclusion: Since p-value (0.051)>(0.05), we accept H_o and that there is no association between mothers' income and exclusive feeding for 6 months.

Binary Logistic Regression

H_o: Education Level, Income, and Number of Children do not significantly predict whether a mother provides a balanced diet.

H_1: Education Level, Income, and Number of Children significantly predict whether a mother provides a balanced diet.

Table 10: Regression Results

		Chi-square	Df	Sig.
Step 1	Step	22.442	7	.002
	Block	22.442	7	.002
	Model	22.442	7	.002

Decision Rule: Reject H_o if p-value < α (0.05), otherwise accept H_o

Conclusion: Since p-value (0.002)<(0.05), we reject H_o and conclude that the Education Level, Income, and Number of Children significantly predict whether a mother provides a balanced diet.

Discussion

This study revealed a high level of awareness among mothers regarding childhood malnutrition, with 92.7% of participants having heard of the condition. The hospital was the primary source of information (50.6%), followed by health workers (50%). This aligns with other studies that highlight healthcare facilities as crucial hubs for disseminating nutritional information[8,9].

However, while awareness was high, there were significant gaps in knowledge application. For instance, only 57.8% of mothers practiced exclusive breastfeeding for the first six months, a key recommendation by the World Health Organization (WHO)[10].

Cultural and traditional feeding practices emerged as barriers, with 34.1% of respondents citing them as contributing factors to malnutrition. Additionally, 41.3% of mothers identified lack of access to nutritious food as a challenge, reflecting the interplay between socioeconomic factors and dietary choices[11].

Despite the positive findings on general awareness, the study highlights critical deficiencies in maternal practices. For instance, while 86.2% of mothers ensured a balanced diet, only 41.6% recognized proper complementary feeding as a preventive measure. This discrepancy suggests a potential disconnect between knowledge and practice. Factors such as financial constraints, cultural beliefs, and limited access to resources may explain this gap[12].

The relatively low rate of exclusive breastfeeding (57.8%) is concerning, as this practice is essential for reducing malnutrition and enhancing immunity in infants[13]. Furthermore, the reliance on commercial baby food by 59% of mothers raises concerns about affordability and nutritional adequacy compared to homemade alternatives.

While 73.1% of mothers identified inadequate breastfeeding as a cause of malnutrition, only 63.9% recognized immunization as a preventive measure. This suggests a need for integrated health education that links nutrition and immunization services to improve holistic child health outcomes.

Comparative Analysis with Other Studies

The findings are consistent with studies conducted in similar settings. For example, research in Kaduna, Nigeria, also found significant gaps in maternal practices despite high levels of awareness[14]. Similarly, a study in Northeast Namibia reported a "knowledge-practice mismatch," emphasizing the need for targeted education and behavioral change interventions[15].

Implications for Practice

The results underscore the need for comprehensive maternal education programs that address not only what mothers know but also how they apply this knowledge. Interventions should include:

1. Practical demonstrations on breastfeeding and complementary feeding.
2. Integration of nutrition education into routine immunization visits.

3. Community-based programs to address cultural barriers and promote locally available nutritious foods.

Limitations

This study is limited by its cross-sectional design, which precludes causal inferences. Additionally, self-reported data may be subject to recall or social desirability bias. Future studies could employ longitudinal designs to explore the long-term impact of maternal knowledge on child health outcomes.

Conclusion

The high awareness levels observed among mothers at Ugbor PHC are encouraging. However, gaps in knowledge application and barriers to effective practices highlight the urgent need for targeted interventions. By addressing these challenges, healthcare providers can enhance maternal practices and contribute to reducing childhood malnutrition in Benin City and similar settings.

References

1. UNICEF. State of the World's Children 2021. New York: UNICEF; 2021.
2. WHO. Malnutrition. Geneva: World Health Organization; 2023.
3. Black RE, Victora CG, et al. "Maternal and child undernutrition and overweight in low-income and middle-income countries." Lancet. 2013;382(9890):427-451.
4. National Bureau of Statistics. Multiple Indicator Cluster Survey. Abuja: NBS; 2021.
5. Bhutta ZA, Das JK, et al. "Evidence-based interventions for improvement of maternal and child nutrition." Lancet. 2013;382(9890):452-477.
6. Forh K, Chattopadhyay S. "Impact of Maternal Practices on Child Nutrition." Global Health Review. 2022;12(3):45–60.
7. Khan AI, Hawkes C. "The role of immunization programs in addressing malnutrition." Public Health Nutr. 2018;21(6):1002-1009.
8. Prasetyo A, et al. "Nutrition education among mothers: A systematic review." Nutr Health. 2023;29(2):121-135.

9. Nwankwo CJ, et al. "Knowledge and practices regarding malnutrition among mothers in Kaduna, Nigeria." Afr Health Sci. 2023;23(1):11-22.
10. WHO. Exclusive breastfeeding. Geneva: World Health Organization; 2020.
11. Demilew YM. "Factors associated with maternal knowledge on infant and young child feeding." BMC Public Health. 2020;20(1):1-10.
12. Aljohani N, Aljohani M. "Maternal knowledge of malnutrition and associated factors." J Clin Nutr. 2020;10(1):45-50.
13. Shekutamba T, Ashipala N. "Nutritional knowledge among mothers in Namibia." Nutr J. 2023;22(1):19-25.
14. Chilimo W, Nawe J. "Nutritional information and malnutrition prevention in Tanzania." Int J Public Health. 2023;18(2):67-78.
15. Gautam R, et al. "Socio-demographic factors and child feeding practices in Nepal." Nutr Health. 2021;20(3):211-220.