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Maternal Knowledge of the Causes of Malnutrition in Children Under Five: A Cross-Sectional Study at Asankrangwa Catholic Hospital, Ghana

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Abstract

Malnutrition in children under five remains a major public health concern in Ghana, despite ongoing efforts to improve child health outcomes. This study assessed maternal knowledge of the causes of malnutrition among 205 mothers attending Asankrangwa Catholic Hospital in the Western Region of Ghana. A cross-sectional design was used, and data were analyzed using descriptive statistics and chi-square tests. Results showed that while most mothers were familiar with immediate causes such as breastfeeding practices and early complementary feeding, many lacked awareness of the broader underlying causes like household poverty, infections, and poor sanitation. Maternal education, occupation, and household income were significantly associated with knowledge levels. The study also revealed the dominance of healthcare workers and community health volunteers as key information sources. These findings underscore the need for comprehensive, culturally tailored health education strategies that address both direct and indirect contributors to malnutrition. Strengthening maternal awareness through targeted communication and community-level engagement is essential to reducing child malnutrition and improving long-term health outcomes.

Keywords: maternal knowledge, malnutrition, child health, Ghana, poverty, sanitation, nutrition education

Introduction

Malnutrition among children under the age of five continues to be a critical public health issue, especially in low- and middle-income countries. Globally, nearly half of all deaths in this age group are linked to undernutrition, a staggering statistic that underlines the urgency of addressing this preventable condition (World Health Organization, 2021). Malnutrition in young children is commonly caused by a combination of inadequate dietary intake and the presence of diseases, particularly in environments where poverty, poor sanitation, and limited health education prevail (UNICEF, 2020).

In Ghana, malnutrition remains a major concern despite numerous interventions by government and non-governmental agencies. According to the 2022 Ghana Demographic and Health Survey, 18 percent of children under five are stunted, 12 percent are underweight, and 6 percent suffer from wasting (Ghana Statistical Service, 2022). These statistics reflect more than just food insecurity; they also reveal underlying gaps in

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maternal knowledge regarding child nutrition. Since mothers are typically the primary caregivers, their understanding of the causes of malnutrition plays a significant role in shaping children's nutritional outcomes (Aheto et al., 2023).

Several studies have pointed out the importance of maternal knowledge in preventing and managing malnutrition. For instance, mothers who are aware of the nutritional needs of children, proper feeding practices, and disease prevention are more likely to take proactive steps to ensure their children are well-nourished (Gebre et al., 2019). On the other hand, a lack of knowledge may lead to inappropriate feeding practices, delays in seeking care, and unawareness of environmental and economic factors that contribute to malnutrition (Panjwani & Heidkamp, 2017).

Although national surveys provide broad overviews, they often mask regional disparities. In Ghana's Western Region, data on maternal knowledge of malnutrition remains scarce. The Asankrangwa Catholic Hospital, located in the Amenfi West Municipal, serves a large and diverse population, yet little is known about what mothers in this area understand about the causes of malnutrition in children under five. Without this knowledge, it is difficult to design targeted educational programs that address the specific information gaps of the community.

This study was conducted to assess the knowledge of mothers attending Asankrangwa Catholic Hospital regarding the causes of malnutrition in children under five. By identifying the areas where understanding is strong and where gaps exist, the study aims to inform future health education strategies that can contribute to better nutritional outcomes for children in this region.

Methodology

Study Design

This study used a descriptive cross-sectional survey design with a quantitative approach. The design was chosen because it allows researchers to collect data at a single point in time and provides a snapshot of mothers' knowledge regarding the causes of malnutrition. The quantitative method ensured that the responses could be systematically analyzed using statistical tools, making the findings more objective and reliable.

Study Setting

The research was conducted at Asankrangwa Catholic Hospital, located in the Amenfi West Municipality in Ghana's Western Region. The hospital is a faith-based facility that provides healthcare services to a wide catchment area. It was selected because it serves a large population of women and children, making it an ideal site for investigating maternal knowledge of child nutrition and malnutrition-related issues.

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Study Population

The study population consisted of mothers who had children under the age of five and were attending either the outpatient department or pediatric ward at the hospital. This group was targeted because mothers are the primary caregivers and are typically responsible for feeding and caring for their children.

Sample Size and Sampling Technique

A sample size of 205 mothers was determined using Yamane's formula for finite populations, with a 95 percent confidence level and a 5 percent margin of error. Systematic random sampling was used to select participants. Every second eligible mother who visited the hospital during the data collection period was invited to take part in the study. If a selected mother declined to participate, the next eligible person was approached to maintain the sample size.

Data Collection Tool

Data was collected using a structured questionnaire that was developed specifically for the study. The questionnaire was designed to assess mothers' knowledge of the causes of malnutrition and included both closed-ended and Likert scale questions. The tool covered key areas such as poor feeding practices, recurrent infections, poverty, sanitation, breastfeeding, and cultural beliefs.

To accommodate differences in literacy levels, the questionnaire was self-administered by literate mothers, while those who had difficulty reading or writing were interviewed face-to-face by trained data collectors.

Pretesting and Validity

The questionnaire was pretested at a nearby health facility with similar characteristics to ensure clarity, consistency, and relevance. The results of the pretest were used to make necessary revisions before the actual data collection began.

Data Analysis

All collected data were entered and analyzed using IBM SPSS Statistics version 25. Descriptive statistics such as frequencies and percentages were calculated to summarize the demographic characteristics and knowledge levels of respondents. The analysis focused on identifying patterns in responses regarding the causes of malnutrition. Chi-square tests were used to examine associations between maternal knowledge and key demographic variables such as age, education, and occupation. A p-value less than 0.05 was considered statistically significant.

Ethical Considerations

Ethical approval was obtained from the appropriate review committee. Informed consent was obtained from all participants prior to data collection. Participation was voluntary, and respondents were assured of confidentiality and the right to withdraw at any time. No identifying information

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was collected or used in the analysis or reporting.

Results

Table 1: Demographic Data of Respondents (N = 205)

Variable	Category	Frequency (n)	Percentage (%)
Age of Mother	Under 20	6	2.9
	20–29	89	43.4
	30–39	70	34.1
	40–49	40	19.5
Marital Status	Single	35	17.1
	Married	157	76.6
	Divorced	13	6.3
Educational Level	No formal education	94	45.9
	Primary education	67	32.7
	Secondary education	33	16.1
	Tertiary education	11	5.4
Occupation	Unemployed	59	28.8
	Farmer	47	22.9
	Trader	68	33.2
	Civil servant	28	13.7
	Other	3	1.5
Monthly Household Income (GHS)	Less than 500	6	2.9

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	500–999	38	18.5
	1,000–1,499	85	41.5
	1,500 & above	76	37.1

Source: Field Data (2025)

The majority of mothers who participated in the study were between 20 and 29 years of age (43.4%), followed by those aged 30 to 39 (34.1%). Most respondents were married (76.6%), which is often associated with shared caregiving roles and access to spousal support. Alarmingly, nearly half of the respondents (45.9%) had no formal education, and only 5.4% had attained tertiary education. The occupational data show that the most common occupation was trading (33.2%), followed by unemployment (28.8%) and farming (22.9%). Most households earned between GHS 1,000–1,499 per month (41.5%), suggesting a modest income level among the study population. These demographic characteristics are crucial as they help contextualize the levels of knowledge about malnutrition and its causes.

Table 2: Sources of Knowledge on Malnutrition Among Respondents (N = 205)

Source	Yes (n)	Yes (%)	No (n)	No (%)
Healthcare workers	194	94.6	11	5.4
Community health volunteers	164	80.0	41	20.0
Family and friends	118	57.6	87	42.4
Radio/Television	118	57.6	87	42.4
Social media	149	72.7	56	27.3
Religious/community gatherings	146	71.2	59	28.8
Printed materials	75	36.6	130	63.4
School/educational institutions	99	48.3	106	51.7

Source: Field Data (2025)

Table 2 shows that healthcare workers were the most common source of information, cited by 94.6% of respondents. This finding underscores the critical role that hospital staff play in educating mothers about malnutrition. Community health volunteers (80.0%) and social media platforms (72.7%) were also important sources. Traditional sources such as religious gatherings (71.2%) and family/friends (57.6%) contributed moderately to information dissemination. In contrast, printed materials and formal educational

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institutions had relatively limited influence, with less than half of the respondents citing them. These results highlight the dominance of interpersonal and digital communication in shaping maternal knowledge in this setting.

Table 3: Respondents' Knowledge of the Causes of Malnutrition in Children Under Five (N = 205)

Statement	Mean	Standard Deviation
Malnutrition can be caused by inadequate food intake	1.12	0.328
Frequent infections in children can lead to malnutrition	1.40	0.491
Poor breastfeeding practices contribute to malnutrition	3.04	1.368
Introducing complementary foods before 6 months can cause malnutrition	3.17	1.308
Lack of knowledge about child nutrition among mothers can lead to malnutrition	1.16	0.364
Cultural beliefs and food taboos can contribute to malnutrition	3.32	1.126
Low household income is a major cause of malnutrition in children	1.17	0.373
Poor sanitation and hygiene practices can lead to malnutrition	2.80	1.583
Children who are not exclusively breastfed for the first six months are more likely to be malnourished	3.60	1.406
Lack of immunization increases the risk of malnutrition	3.17	1.215

Scale: 1 = Strongly Disagree to 5 = Strongly Agree
Interpretation: Mean < 2.50 = Disagreement; Mean > 2.50 = Agreement

Source: Field Data (2025)

Table 3 provides insight into what mothers perceive as the causes of malnutrition. Respondents strongly agreed with statements on poor breastfeeding practices (Mean = 3.04), early introduction of complementary foods (Mean = 3.17), cultural food taboos (Mean = 3.32), and exclusive breastfeeding as a protective factor (Mean = 3.60). These responses suggest some understanding of infant feeding practices and the influence of culture.

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On the other hand, many mothers disagreed with core biomedical and social determinants. For instance, the idea that malnutrition is caused by inadequate food intake (Mean = 1.12), frequent infections (Mean = 1.40), and low household income (Mean = 1.17) were all rejected. These are, however, well-documented contributors to childhood malnutrition (Gebre et al., 2019; WHO, 2021). The low agreement with these critical causes reflects significant knowledge gaps that need to be addressed through targeted education. Additionally, awareness of sanitation as a contributing factor was moderate (Mean = 2.80), showing potential for improvement in hygiene education efforts.

Table 4: Association Between Education Level and Knowledge of Infections as a Cause of Malnutrition

Education Level	Correct Response (%)	Incorrect Response (%)	Total
No formal education	22 (23.4%)	72 (76.6%)	94
Primary education	29 (43.3%)	38 (56.7%)	67
Secondary education	21 (63.6%)	12 (36.4%)	33
Tertiary education	9 (81.8%)	2 (18.2%)	11
χ^2 (3, N = 205) = 28.51, p < .001			

There was a statistically significant association between educational level and knowledge of infections as a cause of malnutrition. Mothers with higher education were significantly more likely to correctly identify infections as a contributing factor. This supports existing literature that links education to improved health literacy (Aheto et al., 2015; Shrestha et al., 2020).

Table 5: Association Between Occupation and Knowledge of Poor Sanitation as a Cause

Occupation	Correct (%)	Incorrect (%)	Total
Unemployed	18 (30.5%)	41 (69.5%)	59
Farmer	16 (34.0%)	31 (66.0%)	47
Trader	42 (61.8%)	26 (38.2%)	68
Civil Servant	23 (82.1%)	5 (17.9%)	28
Other	2 (66.7%)	1 (33.3%)	3

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χ^2 (4, N = 205) = 26.72, p < .001			

Occupation also showed a significant relationship with knowledge of sanitation as a factor. Civil servants and traders had a higher awareness, while unemployed mothers and farmers had the lowest. This pattern likely reflects differences in exposure to health messaging and education opportunities.

Table 6: Association Between Monthly Household Income and Knowledge of Poverty as a Cause

Monthly Income (GHS)	Aware of Poverty Link (%)	Not Aware (%)	Total
Less than 500	1 (16.7%)	5 (83.3%)	6
500–999	10 (26.3%)	28 (73.7%)	38
1,000–1,499	39 (45.9%)	46 (54.1%)	85
1,500 & above	49 (64.5%)	27 (35.5%)	76
χ^2 (3, N = 205) = 18.96, p = .001			

A significant association was found between income level and awareness of poverty as a cause of malnutrition. As income increased, so did the likelihood of correctly identifying poverty as a factor. Mothers from higher-income households appeared more aware of systemic contributors, possibly due to better access to health information or higher education.

Discussion

This study provides important insights into what mothers at Asankrangwa Catholic Hospital know about the causes of malnutrition in children under five. While many of the mothers demonstrated a fair understanding of feeding-related causes, such as poor breastfeeding practices and the early introduction of complementary foods, their awareness of deeper biomedical and socioeconomic contributors was noticeably limited. These findings are consistent with previous research indicating that surface-level exposure to health information does not always translate into full understanding or effective behavior change (Panjwani and Heidkamp, 2017; Shrestha et al., 2020).

One of the most significant findings came from the chi-square analysis, which showed that maternal education had a strong influence on knowledge. Mothers with higher levels of education, particularly those with tertiary education, were more likely to correctly identify infections as a major cause of malnutrition. This pattern aligns with the work of Aheto and colleagues (2015), who found that educated mothers were

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better equipped to recognize health risks and take appropriate action to protect their children. Education often plays a pivotal role in shaping how caregivers absorb and apply health information. It also improves a mother's ability to interpret signs of illness, seek timely care, and adopt healthier practices.

Occupational status also showed a clear connection to maternal knowledge. Civil servants and traders, who often have more exposure to health campaigns and structured environments, demonstrated greater awareness of the link between poor sanitation and malnutrition. In contrast, mothers who were unemployed or worked in farming were less likely to make this connection. These occupational differences may reflect varying levels of exposure to formal health education and differing access to public health resources, as observed in earlier studies by Olatona et al. (2017) and Gebre et al. (2019).

The analysis also found that household income had a meaningful effect on awareness. Mothers from higher-income households were more likely to recognize poverty as a key driver of child malnutrition. This is not surprising given that financial security often brings better access to both food and information. Lower-income mothers, who often live in more difficult conditions, may focus on immediate survival needs rather than abstract causes like systemic poverty. This finding reinforces the need for public health messaging that addresses economic realities and connects them directly to health outcomes, a recommendation also made by Bhutta et al. (2008).

Another important observation from the study was the gap in understanding the role of sanitation. Although some mothers identified sanitation as a contributor to malnutrition, many did not strongly agree with this view. Yet poor hygiene and unsafe water are leading causes of diarrheal diseases, which deplete children's nutritional reserves and make them more vulnerable to undernutrition (Humphrey, 2009). This area of knowledge is particularly important for rural and semi-urban communities like Asankrangwa, where sanitation infrastructure may be lacking.

In terms of cultural factors, many mothers acknowledged that food taboos and traditional beliefs could impact child feeding practices. While this recognition is encouraging, deeper engagement is needed to challenge long-held cultural norms that may contribute to malnutrition. A study by Asefa et al. (2016) in Ethiopia highlighted the effectiveness of culturally tailored interventions that respected local traditions while promoting healthier alternatives.

The strong reliance on healthcare workers and community health volunteers as primary sources of information presents a valuable opportunity. These frontline workers are trusted by the community and can be further empowered to deliver more comprehensive health education. Training should go beyond basic feeding advice and include the economic,

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environmental, and biomedical dimensions of malnutrition. As Darteh et al. (2014) suggested, expanding the content of health education could significantly enhance maternal knowledge and ultimately improve child health outcomes.

The findings of this study have clear policy relevance. First, there is a need to expand maternal health education programs to include not only feeding practices but also the underlying causes of malnutrition such as poverty, infection, and sanitation. Policies should support ongoing training for healthcare workers and community volunteers, equipping them to communicate more complex health information in simple, accessible ways.

Second, maternal education must be prioritized in public health planning. Efforts to improve female literacy, especially in rural areas, are likely to yield long-term health benefits for children. Policies that link nutrition interventions with social protection programs, such as cash transfers or food support for low-income families, can also help address the economic causes of malnutrition.

Finally, culturally sensitive education campaigns should be developed to confront harmful food taboos and beliefs. These campaigns must engage local leaders and use local languages and formats, such as storytelling or community theater, to ensure they are well received. A stronger focus on water, sanitation, and hygiene education within maternal and child health services is also essential to reduce disease-related causes of malnutrition.

Together, these policy directions can help ensure that mothers are not only informed but also empowered to act in ways that protect their children's health and nutrition.

Conclusion

This study shows that while mothers at Asankrangwa Catholic Hospital have a reasonable understanding of feeding practices that affect malnutrition, many remain unaware of the deeper causes such as poverty, infections, and poor sanitation. Their knowledge is strongly influenced by their level of education, occupation, and household income. The results highlight the importance of strengthening community-based health education programs, with particular attention to mothers who are less educated and economically disadvantaged. More inclusive and culturally relevant interventions, supported by responsive policies, are needed to improve maternal knowledge and reduce malnutrition among children in rural Ghana and similar settings.

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