

THE EFFECT OF MATERNAL KNOWLEDGE ON FISH CONSUMPTION IN UNDER-FIVES: A STUDY ON KABILA COMMUNITY HEALTH CENTER, BONE BOLANGO REGENCY

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Abstract

Poor maternal knowledge of nutrition and health is one of the causes of malnutrition in under-fives. Based on the research problem statement, the present work explores the effect of maternal knowledge on fish consumption in under-fives in the working area of Community Health Center Puskesmas Kabila, Bone Bolango, Regency. The Purpose Of This Study Was To See The Influence Of Maternal Knowledge On Toddler Fish Consumption. The Novelty Of This Study Looked At Whether There Was An Effect Of Maternal Knowledge On Toddler Fish Consumption: A Study Of The Kabila Health Center, Bone Bolango Regency. This study employed quantitative observation analysis that involved 251 under-fives aged 12 to 59 months selected using a quota sampling method. All univariate and bivariate data were analyzed using a chi-squared test. The result showed that most respondents have a poor understanding of the effect of parental or maternal knowledge on dietary patterns (232 respondents, 92.4%). Furthermore, fish consumption is considered moderate, as seen in 221 respondents (88.0%). The chi-squared test revealed that the p-value of maternal knowledge is 0.000. In conclusion, maternal knowledge contributes to fish consumption in under-fives. The new findings of this research are that coastal communities can better know what factors contribute to the level of fish consumption in toddlers. It is expected that the study can provide information for Puskesmas Kabila Bone regarding the condition of people and fish consumption in children living in their working areas.

Keywords: Knowledge, dietary pattern, fish, under-fives.

1. INTRODUCTION

Parents should pay more attention to the nutritional status of under-fives, as malnutrition at an early age is detrimental to the children's adulthood (1)(2). Malnutrition, which negatively impacts physical and mental development, blames some problems, such as poverty, diseases (such as diarrhea), poor nutritional understanding, and poor educational background (Proverawati, 2009).

Poor maternal understanding of nutrition and health is the common cause of malnutrition in under-fives. Women are urged to have an adequate understanding of the nutritional needs of their children. Such understanding culminates in optimum children's growth (Supariasa, 2002).

The primary cause of malnutrition is divided into direct and indirect causes. Immediate grounds encompass insufficient nutrient intake and infection, while indirect causes refer to scarcity of food supplies, parenting style, health services, maternal knowledge and education, and socio-economic status (Supariasa, 2012).

Nutrients refer to any substances, e.g., carbohydrates, protein, fat, vitamin, mineral, and water, that provide nourishment required for body growth. These substances are particularly essential

to the growth and development of children under five (3)(4).

Consuming and providing nutritious food are crucial and should begin from pregnancy until two years after childbirth. Optimum brain cell development occurs in children aged 0 to 2 years; thus, it is highly recommended to provide a healthy diet (5).

Among the examples of highly nutritious food is fish. Fish contains protein and other nutrients that benefit the body (6). Children are encouraged to consume fish as it contains fatty acids, and omega 3, enhancing brain function (6).

Children are passive in getting a healthy diet as they cannot select the food they want to consume. For this reason, an inappropriate diet is detrimental to their brain development (7).

Parents play a crucial role in providing healthy food; therefore, having adequate nutrition knowledge through fulfilling a balanced diet is a must to boost children's growth (Devi, 2012).

According to the preliminary interview, for economic reasons, most parents replace animal protein with vegetable protein (from tofu and tempeh) in their children's meals. The data by Puskesmas Kabila Bone reported that from 2020 to 2021, there were 20 under five children experiencing poor nutrition (8).

Such a finding suggests that maternal knowledge of providing nutritious food is still poor. This concern underpins the urge to investigate the problem through a study entitled "The Effect of Maternal Knowledge on Fish Consumption in Under-fives: A Study on Kabila Community Health Center, Bone Bolango Regency."

2. METHOD

2.1 Site and Time of Research

This research was conducted in the working areas of the community health center Puskesmas Kabila Bone, Bone Bolango Regency, from March to April 2022.

2.2 Research Design

This correlational study applied a quantitative observation analysis to examine an issue from two or more variables (Agustina & Priambodo, 2017). The correlational model was employed to investigate the effect of the maternal knowledge variable (9).

2.3 Population and Sample

The population involved 679 under-five children (aged 12 to 59 months). Of the total samples, 251 children were randomly selected as the research sample.

2.4 Data Collection

The data, consisting of primary and secondary data, were collected from questionnaires. These questionnaires were regarded as written interviews. All questionnaire items have gone through the validity and reliability test before being

distributed to the respondents.

2.5 Data Analysis

The chi-squared test analyzed all data using univariate and bivariate analyses. If the value of $\text{sig } \alpha < 0.05$, the dependent variable significantly contributes independent variable.

3. RESULTS

AND DISCUSSION

3.1 Results

3.1.1 Characteristics of the Respondents

Table 3.1 Respondent Address

Address	Total	
	n	%
Biluango	28	11.2
Bintalahe	20	8.0
Botubarani	28	11.2
Botutonuo	31	12.4
Modelomo	32	12.7
Molotabu	26	10.4
Olele	22	8.8
Oluhuta	30	12.0
Total	251	100.0

Source: Primary data, 2022

According to Table 3.1, most respondents live in Huangobotu (34 respondents, 13.5%), while only a few are based in Bintalahe (20 respondents, 8.0%).

Table 3.2 Respondent Age

Age (year)	Total	
	n	%
23-27	41	16.3
28-32	80	31.9
33-37	99	39.4
38-42	28	11.2
43-46	3	1.2
Total	251	100.0

Source: Primary data, 2022

Table 3.2 shows that most respondents are aged 33 to 37 years (99 respondents, 39.4%). Meanwhile, respondents in the age group of 43 to 46 years had a minor percentage at 1.2% (three respondents).

Table 3.3 Distribution of

Respondents Based on their Formal Education

Recent education	Total	
	n	%
Uneducated	7	2.8
Elementary school	88	35.1
Junior high school	84	33.5
Senior high school	66	26.3
Universities	6	2.4
Total	251	100.0

Source: Primary data, 2022

Table 3.3 shows that most respondents are elementary school graduates (88 respondents, 35.1%). Meanwhile, respondents who graduated from a university had the least percentage at 2.4% (six respondents).

Table 3.4 Respondent Occupation (the head of the household)

Occupation of the head of the household	Total	
	n	%
Unemployment	1	0.4
Labor	16	6.4
Fisherman	207	82.5
Farmer	5	2.0
Private sector worker	22	8.8
Total	251	100.0

Source: Primary data, 2022

Table 3.4 shows that most respondents work as fishermen (207 respondents, 82.5%). Meanwhile, unemployed respondents had the least percentage at 0.4% (one respondent).

Table 3.5 Sex of Under-five Children

Sex	Total	
	n	%
Male	104	41.4
Female	147	58.6
Total	251	100.0

Source: Primary data, 2022

Table 3.5 shows that female children (147 children, 58.6%) dominated the total male children (104 respondents, 41.4%)

Table 3.6 Respondent (Children)

Age		
Age (in months)	Total	
	n	%
22-26	49	19.5
27-31	40	15.9
32-36	54	21.5
37-41	50	19.9
42-46	32	12.7
47-51	16	6.4
52-56	8	3.2
57-59	2	0.8
Total	251	100.0

Source: Primary data, 2022

Table 3.6 shows that most children are aged 32 to 36 months (54 respondents, 21.5%). Meanwhile, respondents aged 57 to 59 months had the lowest percentage at 0.8% (two respondents).

Table 3.7 Weight of Children

Weight (in kg)	Total	
	n	%
11-13	66	26.3
13.5-15.5	151	60.2
16-18	34	13.5
Total	251	100.0

Source: Primary data, 2022

Table 3.7 shows that most children are weighed 13.5 to 15.5 kg (151 respondents, 60.2%). Meanwhile, respondents with a weight ranging from 16 to 18 kg had the least percentage at 13.5% (34 respondents).

Table 3.8. Children Height

Height (in cm)	Total	
	n	%
80-84	1	0.4
85-89	56	22.3
90-94	64	25.5
95-99	93	37.1
100-104	27	10.8
105-109	10	4.0
Total	251	100.0

Source: Primary data, 2022

Table 3.8 shows that most children's height ranges from 95 to 99 cm (93 respondents, 37.1%). Meanwhile, respondents with a height ranging from 80 to 84 cm had the least percentage at 0.4% (one respondent).

Table 3.9. Children's Nutritional Status (Height/Age)

Nutritional Status (Height/Age)	Total	
	n	%
Normal	251	100.0
Total	251	100.0

Source: Primary data, 2022

Table 3.9 shows that all respondents (251 respondents, 100.0%) have normal nutritional status (height/age).

3.1.2 Univariate Analysis

Table 3.10. Maternal Knowledge in the Working Areas of Community Health Center Puskesmas Kabila Bone, Bone Bolango Regency

Maternal knowledge	Total	
	n	%
High	4	1.6
Moderate	15	6.0
Low	232	92.4
Total	251	100.0

Source: Primary data, 2022

Table 3.10 shows that most respondents had low knowledge (232 respondents, 92.4%). Meanwhile, respondents with a high level of knowledge had the least percentage at 1.6% (four respondents).

Table 3.11. Fish Consumption in Under-fives

Fish consumption in under-fives	Total	
	n	%

High	30	12.0
Moderate	221	88.0
Total	251	100.0

Source: Primary data, 2022

Table 3.11 shows that children who moderately consume fish had the highest percentage (221 children, 88.0%), dominating the total children who consume fish frequently or in the high category (30 respondents, 12.0%).

3.1.3 Bivariate Analysis

Table 3.12. The Effect of Maternal Knowledge on Fish Consumption in Under-fives

Parental knowledge	Fish consumption in under-fives						p-Value
	High		Moderate		Sum		
	n	%	n	%	n	%	
High	4	13.3	0	0.0	4	1.6	0.000
Moderate	0	0.0	15	6.8	15	6.0	
Low	26	86.7	206	93.2	232	92.4	
Total	30	100.0	221	100.0	251	100.0	

Source: Primary data, 2022

Table 3.12 shows that respondents categorized in the low-knowledge category had the highest percentage at 92.4% (232 respondents), followed by respondents with moderate and high knowledge categories at 6.0% (15 respondents) and 1.6% (four respondents), respectively. The finding corresponds to the percentage of fish consumption in under-fives. High maternal knowledge (four respondents, 13.3%) leads to high fish consumption (30 respondents), while low maternal knowledge (26 respondents, 86.7%) leads to low fish consumption. None of the participants fell under the moderate

category in terms of maternal knowledge. Interestingly, average fish consumption in under-fives (221 respondents) is also found in respondents with moderate maternal knowledge (15 respondents, 6.8%) and low maternal knowledge (206 respondents, 93.2%). In other words, high fish consumption is more common among respondents with high maternal understanding.

The test results of the effect of maternal knowledge on fish consumption reveal that $p = 0.000 \leq \alpha = 0.05$. Statistically, maternal knowledge contributes to fish consumption in under-fives.

3.2 Discussion

3.2.1 The Effect of Maternal Knowledge in the Working Areas of Puskesmas Kabila Bone, Bone Bolango Regency

The results show that respondents with low maternal knowledge had the highest percentage of 92.4%, dominating those in the moderate category at 6.0% (15 respondents) and the high type at 1.6% (four respondents).

The interview with the children's mothers reports that most mothers are unaware of the importance of nutrition and health; among the notable examples are the significance of fish consumption and a balanced diet. Such results confirm that maternal knowledge plays a significant role in providing food for under-five children (10). Women who do not understand ideal nutrient intake might have poor nutritional status in their children as they are unaware of delivering a perfect diet and its significance for children's development and growth (3).

This notion aligns with Soekanto's (2005) theory that nutrition knowledge is central to ensuring nutrient intake in a household. Women with poor nutrition knowledge cannot process information related to a healthy diet, resulting in malnutrition in children (Yuhansyah, 2019).

This issue seems to blame the poor educational background of the respondents, where most respondents are elementary school graduates (88 respondents, 35.1%) and uneducated (seven respondents, 2.8%).

Issues of poor nutrition knowledge and their correlation with women's educational background have been extensively discussed in some studies (Notoadmojo, 2012; Yuhansyah, 2019), echoing the result in the present work.

3.2.2 Fish consumption in Under-fives in the Working Areas of Puskesmas Kabila Bone, Bone Bolango Regency

Of 251 children, those who moderately consume fish had the highest percentage (221 children, 88.0%), dominating the total children who consume fish frequently or in the Category high category (30 respondents, 12.0%).

Fish availability is central to fish consumption in under-fives regardless of children's diet preference. The results reveal that many households do not include fish in their main meals for the children (especially meals that children favor the most) (11).

Such a condition can also be caused by the children's preference for sweet food over savory food. This finding underlines the reason for the high percentage of low fish consumption. The environment also contributes to fish consumption

problems (Azkia, 2020). Children living in coastal areas tend to consume more fish than those living in hills and urban areas (12).

3.2.3 The Effect of Maternal Knowledge on Fish Consumption in Under-fives in the Working Area of Kabila Community Health Center, Bone Bolango Regency

The research finds that four of 251 women (1.6%) are categorized as high in nutrition knowledge, and their children high in fish consumption. Furthermore, 15 women have moderate nutrition knowledge (6%); their children's fish consumption is also considered reasonable. Interestingly, 26 of 232 children (11.2%) whose mothers have poor nutrition knowledge consume fish frequently. The majority of children, however, have a low percentage of fish consumption (206 respondents, 88.8%).

Based on the chi-squared test results, the *p-value* related to the influence of a mother's knowledge on fish consumption in under-fives is 0.000. Since the $p\text{-value} \leq \alpha$ (0.05), maternal knowledge contributes to fish consumption at the research site.

Most women in the research site are elementary school graduates (35.1%), and only seven of them are uneducated (seven respondents, 2.8%), indicating a high rate of poor educational background at 92.4%

(232 respondents). This is because respondents still do not know about the benefits of fish, thus affecting the fulfillment of food intake (e.g., fish, fruit, and vegetables) in children. Low nutrition knowledge can also lead to the inability to provide a healthy and balanced diet to other family members (3). Average growth is inseparable from the mother's knowledge of the growth and development of children, especially during the golden age of children (0 to 5 years).

This notion is in line with the report seen in Handayani (2014) and Kudrati (2018). The higher the level of maternal knowledge, the greater the percentage of fish consumption by family members (13).

Knowledge is a byproduct of having an in-depth understanding of a particular topic. Some factors determine a person's knowledge, such as educational background, perception, motivation, and experience (Handayani, 2014). Mothers' lack of knowledge and misconceptions about food needs and values can affect the level of food consumption in family members, especially toddlers (14) (15).

This idea is supported by the results seen in Khuril (2015) on preschool-aged children in the Sidoarjo Regency, where there is a significant influence between maternal nutritional knowledge and

consumption of fish, vegetables, and fruit.

4 CONCLUSION

The results show that respondents with low maternal knowledge had the highest percentage of 92.4%, dominating those in the moderate category at 6.0% (15 respondents) and the high type at 1.6% (four respondents). Furthermore, out of 251 children, those who moderately consume fish had the highest percentage (221 children, 88.0%), dominating the total children who consume fish frequently or in the Category high category (30 respondents, 12.0%). Based on the Present test, the *p-value* related to the influence of maternal knowledge on fish consumption in under-fives is 0.000, indicating that the understanding of mothers contributes to fish consumption in under-fives ($p\text{-value} = 0.000 \leq \alpha = 0.05$).

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