



## Relationship Between Mother's Knowledge Level In Utilizing The Maternal and Child Health Book With The Nutritional Status Of Toddlers

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**Abstract.** The Maternal and Child Health (MCH) book is an initiative by the Indonesian Ministry of Health aimed at addressing child nutrition problems. However, at the Karang Mulia Health Center UPTD, the distribution and utilization of the MCH book among mothers of toddlers have not met the national target. The area has reported 164 cases of undernutrition and 74 cases of overnutrition in children under five. This study aims to determine the relationship between the level of maternal knowledge in utilizing the MCH book and the nutritional status of toddlers aged 12-59 months in the working area of the Karang Mulia Health Center UPTD. This correlational analytic research used a cross-sectional approach. The study population included 640 toddlers, with 90 selected samples of mothers who had the MCH book. Purposive sampling was employed, and data were analyzed using the Statistical Program for Social Science (SPSS) version 16.0, applying the chi-square test. The study found no significant relationship between maternal knowledge in using the MCH book and the nutritional status of toddlers. The p-values for the BB/A, PB/A or TB/A, and BB/PB or BB/TB indices were 0.345, 0.851, and 0.282, respectively, all greater than 0.05. There is no significant relationship between maternal knowledge of the MCH book and the nutritional status of toddlers aged 12-59 months in the Karang Mulia Health Center UPTD.

**Keywords:** Maternal Knowledge, Maternal and Child Health Book, Toddler Nutritional Status.

### 1. INTRODUCTION

Nutritional status is an important factor in the development of health status. Nutritional status is a condition that arises due to the balance between the nutrients you get from food and the nutritional needs of the body. The main factor is the condition that affects nutrition due to improper food processing, the second thing is food that does not meet the body's needs due to confusion in the use of nutrients (Ministry of Health of the Republic of Indonesia, 2017).

World Health Organization (WHO) in 2018 reported that in 2018 the prevalence of growth and development disorders in toddlers was 28.7%, and Indonesia is the third country with the highest number in the Southeast Asia Region (SEAR) (WHO, 2018). Riskesdas data (2019), the prevalence of malnutrition nationally is fluctuating because in 2012 the prevalence of malnutrition was 18.4% and decreased in 2015 to 17.9%, but in 2018 the prevalence of malnutrition increased again to 19.6% consisting of 13.9% malnutrition and 5.7% severe malnutrition (Riskesdas, 2019).

Educational efforts of the Ministry of Health of the Republic of Indonesia (Kemenkes RI) to overcome child nutrition problems supported by the Ministry of Health in collaboration

with the Japan International Cooperation Agency (JICA) In 1993, began compiling the Maternal and Child Health (KIA) guidelines, which are still under regular assessment and review according to the wishes or interests of mothers and children and in line with the progress of the times, which contain information about pregnancy, childbirth, postpartum and babies such as vaccinations, unhealthy babies, care for disabled children, and efforts to protect against sexual harassment. The use of the Maternal and Child Health (KIA) book can be implemented effectively if officers and cadres say that mothers understand the main ideas of this book (Ministry of Health of the Republic of Indonesia, 2016).

According to Riskesdas in 2013, the number of pregnant women in Indonesia who had a KIA book reached 40.4% and in 2018 there was a slight increase to 42.5% (Ministry of Health of the Republic of Indonesia, 2019).

Based on the results of previous research conducted by Zebua, S in 2019, it was found that there was no relationship between knowledge of the use of KIA books and the nutritional status of toddlers using the BB/A index ( $p=0.776$ ) and TB/A ( $p=0.478$ ), while the BB/TB index ( $p=0.029$ ) there was a relationship between knowledge of the use of KIA books and nutritional status. In addition, according to research conducted by Hasyim DI, & Sulistyarningsih, A in 2019 stated that there was a relationship between utilization of information about toddlers aged 12-59 months in the KIA book with completeness of recording nutritional status in the KIA book. Statistically, this produces an OR value = 16,466 (5,540 - 38,941), which means that mothers who do not utilize information from the KIA book are 16 times more at risk of having incomplete toddler nutritional records than mothers who utilize information about toddlers aged 12-59 months in the KIA book.

Based on data from the Nabire Regency Health Service in 2022 from 32 Health Centers, the prevalence coverage of D/S was 25.7%. According to the 2022 Community Nutrition Directorate's Action Plan, the target coverage of toddlers whose weight is measured (D/S) is 75% (Ministry of Health, 2020). Based on this national target, the coverage of D/S in Nabire Regency is still relatively low.

In 2022, as many as 640 toddlers have Maternal and Child Health (KIA) books in Nabire, especially in the Working Area of the Karang Mulia Health Center UPTD, including 294 male toddlers and 346 female toddlers (Karang Mulia Health Center UPTD, 2023). Based on data from the Nabire Regency Office in 2022, the target population in the nutrition and KIA program is 1153 toddlers (Nabire Regency Health Office, 2023). The prevalence of toddler coverage who have Maternal and Child Health (KIA) books in 2022 is still below the target, which is 55.5%. According to the Action Plan for Activities of the Directorate of Community

Nutrition in 2022, the target achievement for toddlers having KIA books is 75% (Ministry of Health, 2020).

Based on data from the Central Statistics Agency (BPS), in Papua Province from 2016 to 2017 there was an increase, but in 2018 there was a decrease. In 2016 the prevalence of malnutrition in toddlers was 3.18% and undernutrition 11.95%, in 2017 the prevalence of malnutrition and undernutrition increased to 6.8 and 12.8%, but decreased in 2018, namely 5.1% malnutrition and undernutrition 11.4% (BPS, 2022).

The prevalence of malnutrition in Nabire Regency in 2022 from 32 Health Centers was 3.8% and 8.2% of toddlers were malnourished (Nabire Regency Health Office, 2023). Meanwhile, in the Working Area of the Karang Mulia Health Center UPTD in 2022 according to the weight indicator according to height, there were 164 cases of malnutrition and 74 toddlers were overweight (Karang Mulia Health Center UPTD, 2023).

Based on the background description above, this researcher is interested in conducting a study, namely "The Relationship between the Level of Mother's Knowledge in the Utilization of Maternal and Child Health Books with the Nutritional Status of Toddlers Aged 12-59 Months in the Working Area of the Karang Mulia Health Center UPTD". This research was conducted at the Karang Mulia Health Center UPTD, Nabire District, Nabire Regency. The reason the researcher chose this research location was to determine the relationship between the level of mother's knowledge in the utilization of maternal and child health books with the nutritional status of toddlers aged 12-59 months at the Karang Mulia Health Center UPTD and the location has never been studied at this research center.

## **2. LITERATURE REVIEW**

Research on the relationship between maternal knowledge of the MCH book and the nutritional status of toddlers presents mixed findings. Some studies suggest that mothers with a higher level of knowledge and regular use of the MCH book are more likely to have children with optimal nutritional status. These mothers tend to follow growth monitoring charts, adhere to nutritional advice, and seek medical intervention when necessary, leading to better outcomes in child nutrition. However, other studies have found no significant correlation between maternal knowledge of the MCH book and children's nutritional status, indicating that other factors such as socio-economic status, access to healthcare, and cultural practices may also play significant roles. In summary, while maternal knowledge of the MCH book is a crucial factor in improving child nutrition, its impact may vary depending on the broader context in which it

is used. Enhancing maternal education and addressing other determinants of child health are essential steps towards ensuring better nutritional outcomes for toddlers.

### **3. METHODS**

This type of research is correlational analytic with a cross sectional approach. is a study that only uses an approach method or data collection to study the correlation between risk factors at one time only (Ariani, 2014). The study was conducted from May 22 to July 8, 2023 in the Working Area of UPTD Karang Mulia Health Center. The population in this study was 640 toddlers who had maternal and child health books at UPTD Karang Mulia Health Center. The sample of this study was 90 respondents who met the inclusion criteria and exclusion criteria with a sampling technique using purposive sampling, namely the process of identifying and taking samples that have been decided by researchers for certain purposes (Sugiyono, 2015).

The research instruments used are digital or foot scales, microtoise, maternal knowledge, and interviews using questionnaire. The research results are processed through the process of editing, scoring, coding, processing, cleaning.

The analysis in this study is divided into univariate and bivariate analysis. Univariate analysis is carried out on each research result variable using a frequency distribution table to produce the distribution and percentage of each research variable, while this bivariate analysis is used to find the relationship between the Independent variable and the dependent variable through statistical tests. Data analysis used the computer program Statistical Program for Social Science (SPSS) version 16.0 and used the chi-square test.

### **4. RESULTS**

The study was conducted from May 22 to July 8, 2023 in the working area of the UPTD Karang Mulia Health Center located in Karang Mulia Village, Nabire District, Nabire Regency, Central Papua Province with a sample of 90 respondents. The results were obtained by distributing questionnaires directly to mothers of toddlers aged 12-59 months who came during the implementation of the integrated health post, then collected, processed and presented in the form of tables.

#### **Univariate Analysis**

This analysis is used to see the frequency distribution of each variable studied, both the variables *dependent*.

**Table 1. Frequency Distribution of Characteristics of Respondent Mothers of Toddlers Age 12-59 Months in the Working Area of the Karang Mulia Health Center UPTD**

Characteristics	Frequency (n)	Percentage (%)
<b>Toddler Gender</b>		
Man	52	57.8
Woman	38	42.2
Amount	90	100.0
<b>Mother Age Group</b>		%
18 - 24 years	16	17.8
25 - 31 years	44	48.9
32 - 39 years	30	33.3
Amount	90	100.0
<b>Toddler Age Group</b>		
12 - 27 months	68	75.6
28 - 43 months	18	20.0
44 - 59 months	4	4.4
Amount	90	100.0
<b>Mother's Last Education</b>		
SD	4	4.4
JUNIOR HIGH SCHOOL	7	7.8
High School/Vocational School	45	50.0
D3/S1/S2	34	37.8
Amount	90	100.0
<b>Mother's Job</b>		
Not working	69	76.7
Work	21	23.3
Amount	90	100.0
<b>Characteristics</b>	<b>Frequency (n)</b>	<b>Percentage (%)</b>
<b>Mother's Income</b>		
No Income	59	65.6
≤ Rp. 1,500,000	13	14.4
> Rp. 1,500,000	18	20.0
Amount	90	100.0
<b>Child Height</b>		

Characteristics	Frequency (n)	Percentage (%)
66 - < 85cm	62	68.9
85 - < 100cm	21	23.3
100 -> 118cm	7	7.8
Amount	90	100.0
<b>Child Weight</b>		
6 - < 12kg	64	71.1
12 -> 20kg	26	28.9
Amount	90	100.0

Based on table 1. It can be seen that from 90 respondents of toddlers aged 12-59 months, it is known based on the characteristics of male gender, there are 52 people with a percentage of 57.8%, while female gender is 38 people with a percentage of 42.2%. The highest characteristics of the mother's age category are in the 25-31 year age group as many as 44 people or a percentage of 48.9%, while the lowest is the 18-24 year age group as many as 16 people or a percentage of 17.8%. The highest characteristics of the toddler age group in the 12-27 month age group are 68 people with a percentage of 75.6%, while the lowest percentage is in the 44-59 month age group of toddlers is 4 people with a percentage of 4.4%.

The characteristics of the mother's last education are mostly high school/vocational school education of 45 people with a percentage of 50% and the smallest is elementary school education of 4 people with a percentage of 4.4%. Characteristics of mother's work, more are unemployed around 69 people with a percentage of 76.7%, compared to mothers who work around 21 people with a percentage of 23.3%. Characteristics of mother's income stated that mothers who do not have income at the highest level are 59 people or a percentage of 65.6%, compared to the lowest level who have income  $\leq$  Rp. 1,500,000 which is 13 people with a percentage of 14.4%. Characteristics of children's height that the proportion with a height of 66-<85cm is the highest as many as 62 people with a percentage of 68.9%, while a height of 100->118cm as many as 7 people with a percentage of 7.8% is the lowest. Characteristics of children's weight with the highest percentage with a weight of 6-<12kg totaling 64 people with a percentage reaching 71.1%, while children with a weight of 12->20kg totaling 26 people with a percentage reaching 28.9%.

**Table 2. Frequency Distribution of Respondent Characteristics Based on Level Mother's Knowledge in Utilizing Maternal and Child Health Books In the Working Area of the Karang Mulia Health Center UPTD**

<b>Level of Knowledge</b>	<b>Frequency (n)</b>	<b>Percentage (%)</b>
Lack of Knowledge	27	30.0
Sufficient Knowledge	30	33.3
Good Knowledge	33	36.7
Amount	90	100.0

Based on table 2, it shows that from the total of 90 respondents, the results obtained were the level of knowledge regarding the use of maternal and child health books, with the largest number of respondents with a good level of knowledge of 33 people or a percentage of 36.7%, while the lowest number of respondents with a poor level of knowledge was 27 people or a percentage of 30%.

**Table 3. Frequency Distribution of Respondent Characteristics Based on Status Nutrition of Toddlers Aged 12-59 Months in the Working Area of UPTD Karang Mulia Health Center**

<b>Characteristics</b>	<b>Frequency (n)</b>	<b>Percentage (%)</b>
<b>BB/U Category</b>		
Severely Underweight	4	4.4
Underweight	10	11.1
Normal Body Weight	65	72.2
Risk of Overweight	11	12.2
Amount	90	100.0
<b>CategoryPB/U or TB/U</b>		
Short	18	20.0
Normal	72	80.0
Amount	90	100.0
<b>BB/PB or BB/TB category</b>		
Malnutrition	3	3.3
Malnutrition	4	4.4
Good Nutrition	71	78.9
At Risk of Overnutrition	11	12.2
More Nutrition	1	1.1
Amount	90	100.0

Based on table 3. the results of the frequency distribution of nutritional status of toddlers based on the BB/U index of 90 toddlers, it is known that almost all toddlers are classified as normal weight, which is 65 people with a percentage of 72.2%, but there are still some nutritional status problems, one of which is the very low weight category of 4 people with a percentage of 4.4%. Based on the PB/U or TB/U index, it shows that 72 people or most of the 80% of toddlers have normal nutritional status, while 18 people with a percentage of 20% have short nutritional status. Based on the BB/PB or BB/TB index against nutritional status with the highest score is good nutritional status totaling 71 people with a percentage of 78.9%, while the lowest with overweight status is 1 person with a percentage of 1.1%.

### Bivariate Analysis

Bivariate analysis aims to determine the relationship between each dependent variable and independent variable. Proving whether there is a correlation between the dependent variable, namely the level of maternal knowledge in the use of maternal and child health books, while the independent variable is the nutritional status of toddlers.

**Table 4. Relationship between Mother's Knowledge Level and Utilization of Maternal and Child Health Book Based on BB/U Index**

Level of Knowledge	BB/U Category								P (Value)
	Severely Underweight		Underweight		Normal Body Weight		Risk of Overweight		
	f	%	f	%	f	%	f	%	
Lack of Knowledge	2	7.4	4	14.8	17	63	4	14.8	0.345
Sufficient Knowledge	0	0	1	3.3	24	80	5	16.7	
Good Knowledge	2	6.1	5	15.2	24	72.7	2	6.1	
Amount	4	4.4	10	11.1	65	72.7	11	12.2	

Based on table 4. shows that from the results of the analysis that has been done, the p-value  $(0.345) > 0.05$  is obtained, which means there is no relationship between the level of mother's knowledge in utilizing maternal and child health books with the BB/U index. This is in accordance with previous research conducted by Sosiabel Zebua in 2019 entitled "The Relationship between Knowledge, Attitudes and Practices of Using Maternal and Child Health Books (KIA) by Mothers with Toddler Nutritional Status at Four Posyandu in Sekip Village". Based on the BB/U index, it was found that there was no relationship between mother's



knowledge and the use of KIA books, the results obtained were  $p (0.776) > 0.05$ , namely there was no relationship. Because according to observations during the study, most respondents knew about child growth and development through the BB/TB index, compared to the BB/U index and the PB/U or TB/U index. This shows that mother's knowledge is influenced by regional conditions and the state of health services available in their environment.

**Table 5. Relationship between Mother's Knowledge Level and Utilization of Maternal and Child Health Book Based on Index PB/U Or TB/U**

Level of Knowledge	Category PB/U Or TB/U				P (Value)
	Short		Normal		
	f	%	f	%	
Lack of Knowledge	6	22.2	21	77.8	0.851
Sufficient Knowledge	5	16.7	25	83.3	
Good Knowledge	7	21.2	26	78.8	
Amount	18	20	72	80	

Based on table 5. states that from the results of the analysis that has been carried out, the p-value  $(0.851) > 0.05$  is obtained, which means that there is no relationship between the level of knowledge of mothers in the use of maternal and child health books with the PB/U or TB/U index. This is also in line with previous research conducted by Sosiabel Zebua in 2019 entitled "The Relationship between Knowledge, Attitudes and Practices of Using Maternal and Child Health Books (KIA) by Mothers with the Nutritional Status of Toddlers at Four Posyandu in Sekip Village". Based on the PB/U or TB/U index, the results of  $p (0.478) > 0.05$  are obtained, which means there is no relationship. Because according to observations during the study, most respondents know about child growth and development through the BB/TB index, compared to the BB/U index and the PB/U or TB/U index. This shows that maternal knowledge is influenced by regional conditions and the state of health services available in their environment.

**Table 6. Relationship between Mother's Knowledge Level and Utilization of**

### Maternal and Child Health Book Based on Index BB/PB Or BB/TB

Level of Knowledge	BB/PB Or BB/TB Category										P (Value)
	Malnutriti on		Malnutriti on		Good Nutrition		At Risk of Overnutrition		More Nutritio n		
	f	%	f	%	f	%	f	%	f	%	
Lack of Knowledge	0	0	2	7.4	20	74.1	5	18.5	0	0	0.282
Sufficient Knowledge	0	0	1	3.3	25	83.3	4	13.3	0	0	
Good Knowledge	3	9.1	1	3	26	78.8	2	6.1	1	3	
Amount	3	3.3	4	4.4	71	78.9	11	12.2	1	1.1	

Based on table 6, it can be seen that from the results of the analysis that has been done, the p-value  $(0.282) > 0.05$  is obtained, which means there is no relationship between the level of mother's knowledge in utilizing maternal and child health books with the BB/PB or BB/TB index. This study is supported by the results of research conducted by Farida Adiningrum, Hadyana Sukandar, Merry Wijaya in 2016 "The Relationship Between Mother's Knowledge About KIA Books and the Nutritional Status of Toddlers in Soreang District, Bandung Regency". Based on the results of the study to determine the relationship between mother's knowledge about KIA books and the nutritional status of toddlers based on the BB/TB index with  $p (0.633) > 0.05$ , which means there is no relationship. Because according to the researcher, the questionnaire given to the respondents had been validated in advance, but the questionnaire used was made by the researcher himself. In addition, another factor that is considered irrelevant to the study is the number of respondents whose questionnaire data is incomplete, making it difficult for researchers to analyze. Then the researcher argues that other factors that influence children's nutritional status are not involved in the research variables.

## 5. CONCLUSION

Based on the results of the research that has been conducted, it can be concluded that there is no relationship between the level of maternal knowledge in utilizing maternal and child health books with the nutritional status of toddlers aged 12-59 months in the Working Area of the Karang Mulia Health Center UPTD, a conclusion was obtained with a p-value  $> 0.05$ .

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