

The Relationship Between Mothers' Participation Level in Integrated Health Posts (Posyandu) and the Nutritional Status of Toddlers

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Abstract

Mother's participation in posyandu is one of the efforts to monitor the nutritional status of children under five. However, there are still mothers who do not use health facilities for their toddlers. The purpose of this study was to determine the relationship between the level of participation of mothers in Posyandu and the nutritional status of children under five. The research method with retrospective cohort approach. The population in this study were 422 mothers with a study sample of 215 mothers. Random sampling technique. The Instrument of Nutritional Status of Children Based on Index was used in this study. Univariate and bivariate analysis of Kendall's tau_b is the analysis of the data used. The results of this study showed that the participation of active mothers to posyandu amounted to 172 people (80%) and inactive as many as 23 people (13%). The nutritional status of toddlers in Sindangkasih Village is mostly in the category of nutritional status at risk of nutrition of more than 129 toddlers (60%), good nutrition of 38 toddlers (17.7%), poor nutrition of 38 toddlers (17.7%), malnutrition of 7 toddlers (3%), nutrition of more than 2 toddlers (0.9%), and obesity of 1 toddler (0.5%). There was no relationship between maternal participation rates and the nutritional status of toddlers and $g.s. 0.310 > 0.05$. The conclusion of the study was that there was no relationship between maternal participation and the nutritional status of toddlers with $p = 0.310 > 0.05$. This can be caused by a lack of knowledge and attitudes of mothers towards the nutritional status of toddlers. Community Health Centers can conduct outreach and counseling to cadres and mothers who use health services to detect nutritional problems, including malnutrition, as early as possible.

Keywords: *Mother's Participation, Posyandu, Nutritional Status, Children Under Five Years.*

A. INTRODUCTION

Indonesia is one of the countries facing a triple burden of malnutrition (Kemenkes RI, 2019). The three forms of malnutrition, namely undernutrition, hidden hunger, and overweight, threaten the survival and development of children (UNICEF, 2020). In 2019, 47 million children under the age of 5 experienced wasting. Globally, in 2020, there were 145 million children affected by stunting, 45 million estimated to be underweight, and 38.9 million affected by obesity (WHO, 2021).

In Indonesia, the prevalence of stunting is 31%, wasting is 18%, overweight is 8%, and underweight is 10% (WHO, 2020). According to the Indonesian Nutrition Status Study (SSGI) in 2021, 17% of children under five are underweight, 24.4% are stunted, 7.1% are wasted, and 3.8% are overweight. WHO recommends a good nutritional status with stunting prevalence below 20% and wasting below 5%.

Assessing the nutritional status of toddlers is crucial and can be conducted at integrated health posts (Posyandu). Monitoring the nutritional status of toddlers is essential because they are vulnerable to common nutritional problems. Children aged 1 to 5 years (12-59 months) are in a critical stage of growth and development. During the toddler years, basic growth affects the child's subsequent development (Menteri Kesehatan Republik Indonesia, 2014).

Monitoring the weight of children under five years old is a key program for improving nutrition, focusing on prevention and improving the nutritional status of children. Visiting Posyandu to weigh children every month can ensure that they are growing normally according to their growth curve and detect early growth disturbances (early detection) (Duarsa & Reihana, 2012).

The participation of mothers in bringing their children to Posyandu is crucial for the success of the program (Duarsa & Reihana, 2012). Mothers who do not actively participate in Posyandu cause the growth and development of their children to not be optimally monitored because monitoring the growth and development of toddlers can be done by measuring their nutritional status through routine weighing and height measurement at Posyandu (Sugiyarti et al., 2016). Most of the nutritional status of toddlers from mothers who actively participate in Posyandu have good nutritional status, with 80.6% (weight/age), 61.3% normal (height/age), 67.7% normal (weight/height), and 61.3% normal (BMI/age) ((Asdhany & Kartini, 2012). This study aims to determine the relationship between mothers' participation levels in weighing toddlers at Posyandu and the nutritional status of toddlers.

B. METHOD

This study used a quantitative research design with a retrospective cohort approach. The research was conducted in the working area of UPTD Puskesmas Majalengka Wetan. This study has obtained ethical clearance from the Ethics Committee of the Faculty of Medicine, Padjadjaran University No. 635/UN6.KEP/EC/2022, dated August 1, 2022. The study population consisted of mothers with toddlers who visited Posyandu. There are a total of 10 Posyandu, with 422 toddlers. The sampling technique used simple random sampling with inclusion criteria: residing in the working area of UPTD Puskesmas Majalengka Wetan, mothers having a toddler aged 12-59 months, toddlers having a growth monitoring card (KMS), mothers willing to participate as respondents with consent on the informed consent form. The exclusion criteria for the study are toddlers with a history of low birth weight (BBLR), suffering from chronic diseases, and developmental disorders.

The sample size is determined using the Slovin's formula: $n = \frac{N}{1+Ne^2}$

$$\begin{aligned}\text{Where: } n &= \frac{422}{1+422 \times (0,05)^2} \\ n &= \frac{422}{1+422 \times 0,0025} \\ n &= \frac{422}{2,055} \\ n &= 205\end{aligned}$$

Explanation:

n : Sample size

N : Population size

e : Margin of error (5%).

To anticipate lost to follow-up, 5% is added to the research sample, resulting in a total of 215 toddlers. To ensure that the sample taken can represent each Posyandu in the population, the formula for sample selection is used:

$$n = \frac{\text{Population within the Group}}{\text{Total Population}} \times \text{The Specified Sample Size}$$

The results for each Posyandu are as follows: Pos Yandu Sakura 32 samples; Posyandu Edelweis 29 samples; Posyandu Bougenville 18 samples; Posyandu Melati I 25 samples; Posyandu Melati II 22 samples; Posyandu Melati III 21 samples; Posyandu Melati IV 23 samples; Posyandu Melati V 30 samples; Posyandu Melati VI 10 samples; Posyandu Kalang Bentang 4 samples.

Primary data was obtained through a questionnaire covering respondents' demographic data and maternal participation in Posyandu, while secondary data to observe fluctuations in toddler weight was gathered from the toddler's Growth Monitoring Card (KMS) and the register book at Posyandu. Collection of toddler nutritional status data was determined using the Child Anthropometric Standard calculated and categorized according to the BB/TB indicator threshold in the Child Nutrition Status Index based on the Minister of Health Regulation No. 2 of 2020 concerning Child Anthropometric Standards and presented in Z-scores, which are classified as follows: severe malnutrition if Z-score < -3 SD, malnutrition (-3 to < -2), good nutrition (-2 to +1), at risk of overnutrition (> +1 SD to 2 SD), overnutrition (> +2 to +3), obesity (> +3) (Kemenkes RI, 2020). The maternal participation questionnaire sheet uses a Guttman scale.

After completing the questionnaire and reviewing the KMS book and Posyandu register, maternal participation is categorized as active if the mother's participation in weighing the toddler at Posyandu is consecutively > 8 times in the last year, and inactive if the mother visits Posyandu < 8 times in the last year (Menteri Kesehatan Republik Indonesia, 2019).

After the data was collected, univariate analysis was conducted to describe the mother's age, child's age, child's gender, mother's highest education level, mother's occupation, number of visits by the mother to Posyandu, and the nutritional status of the toddler. This analysis resulted in the frequency distribution and percentage of each variable. To determine the relationship between the mother's participation level in Posyandu and the nutritional status of the toddler, bivariate analysis was conducted using Kendall's tau-b correlation test, and the probability (P-value) with a significance level of α 0.05. The conclusion criteria used were:

1. (H0) accepted if the value of $p < \alpha$ 0.05, indicating a relationship between the mother's participation level in Posyandu and the nutritional status of the toddler.

2. (H1) rejected if the value of $p > \alpha$ 0.05, indicating no relationship between the mother's participation level in Posyandu and the nutritional status of the toddler.

C. RESULTS AND DISCUSSION

1. Characteristic of Respondents

Based on the research findings, the data on respondent characteristics are as follows (Table 1):

Table 1: Characteristics of Research Respondents (n:215)

Characteristics of Respondents	Measurements	Frequency (f)	Percentage (%)
Mother's Age	19-40 Years	199	92,6%
	> 40 Years	16	7,4%
Mother's Education	Primary-Junior High School	126	58,6%
	Senior High School	64	29,8%
	D3/Degree	25	11,6%
Mother's Occupation	Working	13	6%
	Not Working	202	94%
Family Income	< Rp 1.500.000	35	16,3%
	Rp 1.500.000-Rp 2.500.000	99	46%
	Rp 2.500.000-Rp 3.500.000	52	24,2%
	> Rp 3.500.000	29	13,5%
Child's Gender	Male	123	57,2%
	Female	92	42,8%
Child's Age	12-24 Months	73	34%
	25-36 Months	74	34,4%
	37-59 Months	68	31,6%
Distance to Posyandu	Very Close	41	19,1%
	Close	123	57,25
	Moderate	33	15,3%
	Far	18	8,4%

Source: Results of Primary Data Processing (2022)

From the table above, it can be observed that the majority of mothers are aged between 19-40 years old (92.6%), with the highest educational attainment being SD-SMP level (58.6%). Additionally, a larger proportion of mothers are unemployed (94%), and the family income falls mostly within the range of Rp1,500,000-Rp2,500,000 (46%). Male children constitute the majority (57.2%), with the most common age group being 25-36 months (34.4%). The distance traveled by respondents to reach the Posyandu is mostly short (57.25%).

2. Maternal Participation Level in Attending Posyandu

Based on the data collection results, it is known that the level of maternal participation in attending Posyandu is as follows (Table 2)

Table 2 Maternal Participation Level in Attending Posyandu in the Sindangkasih Sub-District, Majalengka District (n:215)

Maternal Participation Level	Frequency (f)	Percentage (%)
Inactive (< 8 times per year)	28	13%
Active ($\geq$ 8 times per year)	187	87%
Total	215	100%

Source: Results of Primary Data Processing (2022)

From the table above, it is known that the active participation level of mothers in Posyandu is 187 individuals (87%).

3. Nutritional Status of Toddlers

Table 3 Nutritional Status of Toddlers at the Posyandu in Sindangkasih Sub-district, Majalengka District (n:215)

No.	Nutritional Status	Frequency	Percentage
1.	Undernutrition	38	17,7%
2.	Poor Nutrition	7	3%
3.	Good Nutrition	38	17,7%
4.	At risk of overnutrition	129	60%
5.	Overnutrition	2	0,9%
6.	Obesity	1	0,5%
Total		215	100%

Source: Results of Primary Data Processing (2022)

Based on Table 4.3, among children aged 12-60 months based on the BMI-for-age or weight-for-height index, 38 children are categorized as malnourished (17.7%), 7 children (3%) are classified as undernourished, 38 children (17.7%) have good nutritional status, more than half of the children are at risk of overnutrition, totaling 129 children (60%), 2 children (0.9%) are overnourished, and 1 child (0.5%) is classified as obese.

4. The Relationship Between Mother's Participation Rate in Posyandu and Child Nutrition Status

Table 4 The Relationship Between Mother's Participation Rate in Posyandu and Child Nutrition Status in Sindangkasih Subdistrict, Majalengka District (n:215)

Mother's Participation	Child Nutrition Status												<i>p value</i>	<i>r</i>
	Under Nutrition		Poor Nutrition		Good Nutrition		At Risk of Overnutrition		Overnutr ition		Obesity			
	F	%	F	%	F	%	F	%	F	%	F	%		
Active	34	15,8	5	2,3	30	14	115	53,5	2	0,9	1	0,5	0,310	0,066
Inactive	4	1,9	2	0,9	8	3,7	14	6,5	0	0	0	0		

Based on bivariate analysis using Kendall's tau_b correlation coefficient, it was obtained ($p = 0.310$; $r = 0.066$), where the value of $p > 0.05$, indicating that there is no relationship between maternal participation in Posyandu and the nutritional status of toddlers in the Sindangkasih urban area, Majalengka District, Majalengka Regency in 2022.

Based on the research results, it is known that mothers with toddlers attending the Posyandu in Sindangkasih, Majalengka, are classified in the early adulthood age group where they have the intellectual capacity for logical thinking and wise decision-making. Although the majority of mothers have education levels at the SD-SMP level, the level of maternal participation in Posyandu is higher among those who are active. This could be related to the mothers' employment status, as most mothers with toddlers attending the Posyandu in Sindangkasih, Majalengka, are not employed, and the majority have a moderate distance to travel to the Posyandu, allowing them time to bring their toddlers for visits. From the research findings, it is evident that mothers with toddlers attending the Posyandu in Sindangkasih, Majalengka, have incomes below Rp 1,500,000, leading to insufficient purchasing power for nutritious foods. This may contribute to some toddlers being classified as malnourished or even severely malnourished. Therefore, it is necessary for healthcare providers to pay attention and provide health services to them.

Basic health services should be accessible to everyone and involve all parties, operating as the first level of healthcare for individuals, families, communities, or societies through a service system (WHO, 1978). Posyandu is a community activity that involves community participation (Andriani et al., 2016). Although the participation of mothers with toddlers is mostly active, the active participation in Posyandu in this study only reached 87%, indicating that the participation rate has not yet reached the government's target estimate of 88.1% (Majalengka Health Office, 2019). Posyandu is a Community-Based Health Effort managed and organized by the community for the community, empowering the community and facilitating the provision of basic health services to accelerate the reduction of maternal and child mortality (Ministry of Health, 2011).

Less active participation in Posyandu means that mothers do not receive information about the nutritional status of their toddlers, lack family support, and encouragement from healthcare workers when their toddlers are sick, resulting in suboptimal monitoring of toddler growth and development (Sugiyarti et al., 2016). From the research findings, it is observed that toddlers weighed at the Posyandu in Sindangkasih, Majalengka, are mostly categorized as at risk of being overweight, and some are still categorized as malnourished, indicating a nutritional problem that needs to be addressed promptly due to the vulnerability to diseases. Nurses can play a role as educators and consultants in the prevention of malnutrition through health education and counseling, collaborating with nutrition experts and other healthcare professionals such as midwives, public health workers, and others.

From the bivariate analysis using Kendall's tau_b, a P-value of 0.31 and correlation coefficient ($r=0.069$) were obtained, indicating that there is no relationship

between maternal participation in Posyandu and the nutritional status of toddlers. The lack of correlation between maternal participation in Posyandu and the nutritional status of toddlers may be due to insufficient maternal knowledge, which could be related to the majority of mothers having only an SD-SMP education level in this study. If mothers have low knowledge of health and nutrition, their toddlers are at risk of having either excessive or insufficient nutritional status. Mothers with good knowledge can make more efforts to improve their toddlers' nutritional status.

Overall, this study contradicts some research indicating a relationship between maternal participation and the nutritional status of toddlers. Nevertheless, this study aligns with the research by Asdhany & Kartini in the Cangkringan Village, Mijen Subdistrict, Semarang City, which found no relationship between maternal participation in Posyandu activities and nutritional status based on weight-for-height or weight-for-length. Another study by Fitri in the Pleret Village, Panjatan, Kulon Progo, also showed no relationship between maternal attendance at Posyandu and the nutritional status of toddlers.

These differences may stem from variations in respondent characteristics and the nutritional status indicators used. This study used weight-for-age or weight-for-length indicators. Maternal participation in Posyandu can be influenced by several factors, one of which is maternal age. Cross-tabulation results showed that almost all respondents visiting Posyandu were in the young adult age group, with only a small portion being older. Mothers with toddlers in the early adulthood age group participated more in Posyandu. However, since the toddler period is crucial for child growth, it is still necessary to provide motivation and explanations to mothers about weighing their toddlers so that growth can be monitored.

Furthermore, regarding maternal education, the majority of respondents had low education levels, ranging from elementary to junior high school. Cross-tabulation results showed no difference between maternal education and participation in Posyandu. This finding is supported by research by Rarastiti, which found no relationship between maternal education and the nutritional status of toddlers. Mothers with higher education are more likely to receive information about good childcare and health care. However, knowledge continues to evolve and advance, so information can easily be obtained from the internet, television, Posyandu, and other sources. This is supported by the research by Alam & Asta, which found that mothers who actively participate in Posyandu activities are generally housewives. Cross-tabulation analysis showed no difference in participation between working and non-working mothers. According to Duarsa, there is no relationship between maternal employment status and participation in Posyandu. Based on research by Pristiani, Junaid, and Paridah, both working and non-working mothers have equal opportunities to participate in Posyandu.

Working mothers who regularly visit Posyandu can be associated with their attitudes and sufficient knowledge, as well as the nature of their work, which allows them to manage their working hours and still participate in Posyandu for weighing their toddlers. Conversely, non-working mothers who are less active in Posyandu may

be due to the distance from their homes to the Posyandu and transportation access. If the Posyandu is not easily accessible and there is no one to accompany them, mothers may participate less in Posyandu.

In this study, almost half of the respondents were mothers with moderate family incomes ranging from Rp 1,500,000 to Rp 2,500,000. Cross-tabulation results showed no difference in monthly family income and maternal participation in Posyandu, but there was a negative direction of the relationship, meaning that the higher a person's monthly income, the lower their participation in Posyandu. Family income refers to the amount of money received by the family for living expenses in one month. A person's income can affect their health status. Those with higher incomes tend to be healthier than those with lower incomes. Active and skilled cadres, who are friendly and provide regular services, will encourage mothers with toddlers to visit Posyandu frequently with their toddlers. According to Nia, mothers with toddlers tend to behave positively when actively guided by cadres, such as obediently bringing their toddlers to Posyandu every month. A good cadre is one who fulfills their duties before, during, and after Posyandu activities, while a less effective cadre does not attend Posyandu events regularly every month. This can happen because being a cadre is not their primary job. Posyandu is a basic health service for mothers and toddlers. Research by Kurnia found that road conditions and distance to Posyandu affect the mothers' participation in Posyandu. This study is supported by other research, which found a relationship between the distance from home to Posyandu and maternal participation. Accessible healthcare facilities can affect the choice of healthcare services. According to other research, the percentage of mothers who are inactive in Posyandu is higher for those who live far away. Contrary to the study by Widiyanto & Zebua, which found no relationship between the distance from mothers' homes and visits to Posyandu with a p-value of 0.931, greater than the error rate of 0.05.

The results of this study indicate a good nutritional status, but the majority of toddlers fall into the category of overnutrition, and there are still other nutritional problems such as malnutrition, undernutrition, overnutrition, and obesity. Several factors contribute to nutritional problems, including direct causes, indirect causes, root causes, and underlying issues. Nutritional intake and diseases are direct causes of nutritional problems, and they are interconnected. Consuming quality nutrients in sufficient quantities can help achieve good nutritional status, but long-term deficiencies in energy and protein can lead to undernutrition in toddlers. Additionally, adequate energy and protein intake may result in poor nutritional status. Children with adequate nutrition but frequent episodes of diarrhea or fever are at risk of malnutrition, while those with insufficient nutrient intake are at risk of contracting diseases.

D. CONCLUSION

This research was conducted to determine the relationship between maternal participation in integrated health posts (Posyandu) and the nutritional status of

toddlers in the Sindangkasih sub-district, within the coverage area of the Majalengka Community Health Center, Majalengka District, Majalengka Regency. In this study, more than half of the mothers participated in the Posyandu actively, while some still had low participation rates. The nutritional status of toddlers in the Sindangkasih sub-district, based on weight-for-height or weight-for-age, indicated a risk of overnutrition. Other factors that could influence maternal participation in Posyandu include income, distance from home to Posyandu, and the role of community health workers (kader). However, this study found no correlation between the level of maternal participation in Posyandu and the nutritional status of toddlers.

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