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Relationship between frequency of posyandu visits and nutritional status of toddlers in bug-bug village

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ABSTRACT

In Indonesia, under-five nutrition problems, such as malnutrition and stunting, remain a major challenge, despite the implementation of various intervention programs, such as posyandu. Based on data from Indonesia's Potential Village (PODES) in 2021, about 90% of villages in Indonesia already have posyandu, there are 40% of toddlers visit posyandu every month, 32% of toddlers visit irregularly, and 28% of toddlers never visit posyandu. The purpose of this study was to identify the relationship between the frequency of maternal visits to posyandu and the nutritional status of toddlers. This study used quantitative methods with descriptive analysis and a cross-sectional approach. The sample of this study was 126 toddlers aged 1-3 years who were selected based on inclusion and exclusion criteria. The statistical test used was chi-square. The results revealed that most of the respondents, namely 81 people (66.9%), who regularly visited the posyandu had normal nutritional status. The statistical test results showed a p value of 0.01 which means there is a relationship between the frequency of visits to the posyandu with the nutritional status of toddlers in Bug-bug Village in 2023.

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1. Introduction

Toddlers are individuals or a group of individuals in the population who are in a certain age range, namely between 0-59 months, while children under five are children aged 12-59 months (Githinji & Ngala, 2023). During this period, physical and cognitive growth and development takes place very rapidly. However, malnutrition can hinder children's growth and development potential and affect their health and quality of life in adulthood (Haris et al., 2024). If children are malnourished, their physical and emotional development will be inhibited, the maturation process of brain cells will slow down, which in turn can reduce the level of intelligence of children and their immune system will be weakened (Mukodri et al., 2024).

In Indonesia, under-five nutrition problems such as malnutrition and stunting are still a serious challenge, despite various intervention programs. According to data from the 2018 Riskesdas, the prevalence of stunting reached 30.8%, while the prevalence of undernutrition reached 17.7%. This condition shows the need for more intensive efforts to improve the nutritional status of children under five in various regions(Pitoyo et al., 2022).

Toddlers aged 1-3 years are a very vulnerable age group to nutritional problems due to their high nutritional needs to support optimal physical growth and brain development. One of the efforts made by

the government to monitor and improve the nutritional status of toddlers as well as maternal and child health at the village level is Posyandu (Permatasari & Chadirin, 2022).

Posyandu is a community health center whose main objective is to provide basic health services for pregnant women, nursing mothers, and children under five(Anastasia et al., 2023). The program offers a range of services, including growth monitoring for children under five, nutrition education, immunization, and handling other public health issues (Hafifah & Abidin, 2020). According to Indonesia's 2021 data on village potential (PODES), about 90% of villages across Indonesia have posyandu. The report shows that 40% of under-fives are brought to the posyandu every month, 32% of under-fives are brought irregularly, and 28% of under-fives are never brought to the posyandu (Paramashanti, 2023).

According to (Sari, 2022) stunting can be avoided through various ways, including providing exclusive breastfeeding, providing nutritious food according to body needs, developing a healthy lifestyle, exercising / physical activity, routinely balancing energy expenditure and child nutritional intake, and monitoring child growth and development regularly. Research conducted by (Lumongga et al., 2020) has indicated a correlation between the frequency of visits to posyandu and the nutritional status of children under five years of age. This opinion is also reinforced by a study conducted by (Prasticha et al., 2023) which revealed a very significant correlation between the level of maternal visits to the posyandu and the nutritional status of children under five, where toddlers with a high frequency of visits will have a good level of nutritional status. Research (Kadir & Ahmad, 2021) This study found that utilization of posyandu has a significant relationship with the incidence of stunting in toddlers. Malnutrition and stunting have a strong relationship, as a lack of nutritional intake can lead to stunting, while a lack of early detection can exacerbate ongoing malnutrition problems. Toddlers who do not routinely use posyandu have a 1.5 times higher risk of experiencing growth failure than those who routinely utilize posyandu (Nurcahyani et al., 2024).

Bug-Bug Village is a border village of West Lombok Regency with Mataram city, so Bug-Bug has a strategic function including in the service of stunting cases. Bug-Bug village is located in a district area that has a higher stunting rate than the provincial stunting rate. The village has a population of 554 children under five (Fahmida et al., 2020). Of these, 126 children aged 1-3 years were stunted and 18 toddlers were stunted, reflecting a prevalence rate of 6.69%. One of the factors contributing to this high stunting rate is low community participation in visiting Posyandu. Based on a preliminary study conducted at the Posyandu in Bug-bug village, Lingsar sub-district on July 31, 2024, it was found that out of 10 parents who brought their toddlers to the posyandu, 4 parents routinely visited the posyandu and their children's weight increased, while 6 parents did not regularly come and their children's weight remained or even decreased. This non-routine visit is caused by various factors such as busyness at home, taking children to school, forgetting the posyandu schedule, and difficulty persuading children to come to the posyandu. This study aims to identify the relationship between the frequency of maternal visits to the posyandu and the nutritional status of toddlers in bug-bug village.

2. Methods

This research is a quantitative study using descriptive analytic method through observational study and cross-sectional design (Nwabuko, 2024). The main objective of this study was to see the relationship between the frequency of maternal visits to the posyandu and the nutritional status of toddlers. The population in this study was the visit of mothers who had toddlers in Bug-Bug Village which amounted to 554 respondents and the sample in this study was 126 people. The sampling technique in this study was purposive sampling with the following criteria: Inclusion criteria are willing to be respondents, have children aged 1-3 years, physically and mentally healthy. While the exclusion criteria are toddlers come not with biological mothers, toddlers with complicating diseases such as diarrhea, TB and respiratory diseases and toddlers with infectious diseases. Data collection methods were carried out using several methods, namely by using questionnaires and registration books for weighing records of toddlers and KMS (Card Towards Health) records used to measure the nutritional status of toddlers, including weight and height. Furthermore, the data collected will be analyzed univariately and bivariately Univariate analysis to describe the number of maternal visits to Posyandu, and the nutritional status of children under five(Ripan

et al., 2021). Bivariate analysis to determine the relationship between the number of Posyandu visits with the nutritional status of toddlers using the chi-square test.

3. Results and Discussion

Tabel 1. Distribusi dan persentase Kunjungan Posyandu

No	Posyandu visits	n	%
	Regular	121	96.0
	Irregular	5	4.0
	Total	126	100.0

Based on Table 1, of the 126 respondents, the majority, 121 people (96.0%), actively visited the posyandu, while 5 people (4.0%) did not actively attend the posyandu. This shows that the posyandu program in Bug-Bug village has attracted a high level of participation from the community. The high number of visits is influenced by various factors, such as parental awareness, easy access to the posyandu, and support from health workers.

Activeness refers to the effort to perform an activity that arises as a result of stimulus and response, which can be observed either directly or indirectly. These stimuli and responses are related to health conditions, food, the health care system, and the environment. There are two types of responses, namely active and passive. Passive responses can only be felt by the individual himself, while active responses can be seen by others (Fay, 2024). Research (Arbie et al., 2024) conducted by states that mothers' activeness in visiting posyandu is very useful for monitoring children's weight and knowing their nutritional status through monthly weighing, so that health problems can be detected early and intervention actions can be taken immediately. Research by (Paramashanti, 2023) also found that the mother's activeness in visiting posyandu affects the nutritional status of children aged 6-23 months, with a p value of 0.02.

Factors that encourage mothers to visit posyandu for toddlers include the distance of the posyandu location and the role of health workers. Based on the results of this study, the analysis shows that ease of access to the location of activities and the time of implementation of activities can be a factor that supports one's participation. The closer the house is to the location of the posyandu, the more people will utilize the posyandu. Research (Ariani, 2020) also found a significant relationship between distance and visits to posyandu (p-value=0.0001).

In addition, the role of cadres who assist health workers is a driving force for mothers to visit posyandu, such as for weighing toddlers, checking growth and development, and as a source of information for mothers. The role of skilled and active cadres will get a positive response from mothers of toddlers, so that these mothers are more motivated to visit the posyandu (Sugiarti et al., 2021). Health workers at posyandu need to show attractive and sympathetic behavior so that mothers are interested in receiving health services. The intense activity of health workers at the posyandu can encourage mothers to routinely check their children's health and get health information. With active guidance from cadres, mothers of toddlers tend to have positive behavior, namely routine visits to posyandu every month. Research by (Faza et al., 2022) also showed a significant relationship between the role of cadres and visits to posyandu (p-value=0.043) with OR=0.296. A total of 24 mothers (57.10%) who assess the role of cadres are good and actively visit the posyandu, while 18 mothers (42.90%) who assess the role of cadres are good but not actively visiting the posyandu.

This is supported by research conducted by Handayani et al. (2012) in Diagama et al. (2019), which examined the relationship between the quality of posyandu health services and the frequency of visits by mothers under five to the posyandu. The study found a p-value of 0.00, which indicates a significant relationship between the quality of health services at the posyandu and the frequency of visits by mothers under five to the posyandu.

Table 2. Frequency distribution of nutritional status of toddlers in Bug-Bug Village

No	Nutritional Status of Toddlers	n	%
	Normal	82	65.1
	Undernourished	16	12.7
	Risk of Overnutrition	13	10.3
	Obesity	15	11.9
	Total	126	100.0

Based on Table 2, out of 126 respondents, the majority, 82 people (65.1%), had under-fives with normal nutritional status, while a small proportion, 16 people (12.7%), had under-fives with nutritional status. Another 13 people (17.6%) had toddlers with nutritional status at risk, and 15 people (11.9%) had toddlers who were obese.

Nutritional status reflects a child's state of health, which is determined by the body's physical demand for energy and other nutrients obtained from food. The physical impact of nutritional status is measured through anthropometric methods. Nutritional status is the result of the balance between the food consumed (nutrient input) and the body's need for these nutrients (nutrient output) (Savarino et al., 2021).

Nutritional status is said to be balanced or good if the amount of nutrient intake matches the body's needs. Conversely, unbalanced nutritional status can be in the form of undernutrition, which occurs if the intake of nutrients is less than needed, or overnutrition, if the intake of nutrients exceeds the body's needs. Nutritional disorders can occur in both undernutrition and overnutrition.

The results of this study show that most respondents have good nutritional status. This is due to toddlers who regularly attend posyandu, so that their weight can be monitored properly, and their nutritional status is well controlled (Soetjiatie et al., 2022). Based on the researcher's analysis, this finding is consistent with existing theory, where parents who regularly visit posyandu have children under five with normal nutritional status because they get education about nutrition during consultation sessions at each posyandu activity. This makes families understand the types of food that need to be given to meet the nutritional needs of toddlers (Isaacs et al., 2022).

Undernutrition in children is often caused by inconsistent visits to the posyandu. Mothers who do not regularly visit the posyandu do not monitor their children's weight properly, which results in the discovery of children with malnutrition status. This can be prevented if mothers regularly visit the posyandu, because at the posyandu the mother will get counseling on maternal and child health from health workers at the Puskesmas, which can increase the mother's understanding of nutritional status, as well as the growth and development of her child. The absence of mothers at the posyandu can also result in mothers not obtaining information related to child growth and development stimulation, not getting additional food (PMT), and children not getting vitamin A and not monitoring their growth and development every month (PH et al., 2022).

Table 3. Relationship between Frequency of Visits to Posyandu and Nutritional Status of Toddlers in Bug-Bug Village

Posyandu visits	Nutritional Status of Toddlers								R	P Value
	Normal		Undernourished		More Nutrition		Obesity			
	n	%	n	%	n	%	N	%		
Irregular	1	20,0	0	0,0	1	20,0	3	60,0	-0,245	0,006
Regular	81	66,9	16	13,2	12	9,9	12	9,9		
Total	82	65,1	16	12,7	13	10,3	15	11,9		

Based on Table 3, of the 82 toddlers who actively attended posyandu, most, namely 81 toddlers (66.9%), had normal nutritional status, while only a small proportion were undernourished (16 toddlers or 13.2%), overweight (12 toddlers or 9.9%), and obese (12 toddlers or 9.9%). There were 1 toddler (20.0%) who did

not regularly visit the posyandu. The chi-square statistical test yielded a value of ρ = 0.006 which, when rounded, becomes 0.01 indicating a significant association between the frequency of visits to the posyandu and the nutritional status of under-fives in Bug-Bug Village in 2023.

The results of this study showed that of the 81 toddlers aged 1-3 years who actively attended posyandu, the majority (81 toddlers or 66.9%) had normal nutritional status. This is in line with the theory of (Nain, 2023), which states that active participation of mothers in bringing children to posyandu is very important to ensure children's nutritional adequacy. Mothers play a major role in maintaining health and meeting the nutritional needs of toddlers, so it is important for them to have knowledge about this.

This study also supports the findings of (Prasticha et al., 2023) which showed a relationship between the frequency of posyandu visits and the nutritional status of toddlers aged 24-59 months in Parang Village, Tiron Health Center, Kediri District. Both variables had a very strong and positive relationship. In their study, most toddlers visited regularly (75.3%), and most also had good nutritional status (72.2%).

(Permatadewi et al., 2023) research also showed similar results, where the Spearman test showed a p=0.000 value, indicating a very strong relationship between the frequency of visits to the posyandu and the nutritional status of toddlers at Posyandu Asri RW 4. The conclusion is that the more often toddlers visit the posyandu, the better the development of their nutritional status.

The results of the study of 81 toddlers who actively attended posyandu, there were still a small portion of 16 (13.2%) toddlers who were malnourished. This is due to other factors that affect the nutritional status of toddlers, one of which is infection. According to Soekirman's theory (2012), infectious diseases and the nutritional state of children are interconnected. Infections can reduce a child's appetite, which causes a decrease in food consumption, so that the intake of nutrients into the child's body is reduced. In addition, infections can also cause vomiting, which results in nutrient loss. Infections that cause diarrhea in children can reduce fluid and nutrients in the body. Sometimes, parents also restrict their child's food during their illness, which can significantly reduce nutrient intake. If this goes on for a long time, it can lead to malnutrition or malnutrition.

Currently, it is important to increase maternal participation in efforts to overcome the problem of undernutrition or malnutrition in children, one of which is by regularly visiting posyandu and weighing toddlers every month (Maulidiyyah et al., 2020). Regular maternal visits to the posyandu are very useful for monitoring children's weight and knowing their nutritional status through monthly weighing. This is an important step to detect children's health problems early, so that the necessary interventions can be carried out immediately if undernutrition or malnutrition is found. If the mother does not regularly visit the posyandu, the child's nutritional status will be difficult to monitor properly.

The results showed that out of 81 toddlers who actively attended posyandu, there were 12 toddlers (9.9%) who experienced nutritional status at risk. Another factor that affects the nutritional status of children under five is food availability and consumption, where excessive food intake can contribute to nutritional problems. (Boulet et al., 2021) theory also explains that food consumption assessment, both within the scope of households and individuals, is a way to observe consumption patterns that reflect the nutritional state of the population, which is influenced by regional, socioeconomic, and socio-cultural factors. Food consumption is often used to assess nutrition levels, as food shortages in many parts of the world cause serious nutrition problems. Persistent food shortages in a family will result in undernutrition of children, which can lead to malnutrition-related health problems.

The results showed that out of 82 toddlers aged 1-3 years there were 1 (20.0%) toddlers who were not actively visiting the posyandu. This is because there are other factors that affect the nutritional status of toddlers, one of which is knowledge. This is in accordance with (Boulet et al., 2021) that knowledge about nutrition is the ability to choose foods that are sources of nutrients and intelligence in processing foodstuffs. Good nutritional status is important for the health of everyone, including pregnant women, nursing mothers and their children. Nutritional knowledge plays a very important role in the use and selection of food ingredients properly so as to achieve a balanced nutritional state.

According to the researcher's assumption, the nutritional status of toddlers is strongly related to the frequency of visits to the posyandu. This is because by participating in posyandu activities, the weight

and nutritional problems of toddlers are quickly resolved. By following the posyandu, the mother of a toddler knows the weight and height of the toddler so that the nutritional status of the toddler is known quickly. By attending posyandu, the mother of toddlers will get a solution in overcoming the nutritional status of toddlers who are less or more, because cadres and posyandu officers will provide education or intervention to overcome nutritional problems in toddlers(Attiq et al., 2021).

4. Conclusion

The frequency of regular visits to the posyandu in Bug-Bug Village in 2023 was recorded as 81 toddlers (66.9%), while the irregular ones were 1 toddler (20.0%). The results showed a p-value of 0.006, which if rounded to 0.01, indicates a relationship between the frequency of visits to the posyandu with the nutritional status of toddlers in Bug-Bug Village in 2023.

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