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Association between Children's Nutritional Knowledge and Nutritional Status among Residents of Muara Bungo Market Area

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ABSTRACT

Background: Nutritional problems in children are complex, both in terms of quantity and quality. Irregular eating habits, plus a lack of nutritional knowledge can affect a child's nutritional status. This study aimed to examine the association between children's nutritional knowledge and nutritional status, and the role of education in forming healthy eating habits. **Methods:** This was quantitative research with a cross-sectional study design. A total of 30 samples were collected from children aged 5-14 years in the Muara Bungo market area, using a total sampling technique. The research variables were knowledge and nutritional status of children. Data were analyzed using SPSS version 23. **Results:** 53.30% of children with poor nutritional knowledge had good nutritional status and 46.70% had poor nutritional status. 40.00% of children with good nutritional knowledge had good nutritional status and 60.00% had poor nutritional status. Bivariate analysis showed no statistically significant association between children's nutritional knowledge and nutritional status (p = 0.715). **Conclusion:** Nutritional education, healthy eating patterns, and regular monitoring of children's nutritional status at Posyandu and cross-sectoral collaboration are fundamental to improving children's nutritional status.

Keywords: nutritional status, nutritional knowledge, diet

INTRODUCTION

Nutritional intake, in terms of quantity and quality, is needed for children's optimal growth and development. Jukes (2007) reported that the prevalence of stunting in school children is around 48-56%, while the prevalence of undernutrition is around 34-62%. The results of Basic Health Research show that nationally the prevalence of being thin is 13.30% in men and 10.90% in women. Meanwhile, the prevalence of being overweight is higher in men (9.50%) than in women 6.40% (Pramono et al., 2018).

The nutritional needs of preschool-age children are essential for their growth and development. The relationship between knowledge and children's nutritional status is based on the understanding that adequate and balanced nutrition is essential for children's growth and development. However, several factors can affect a child's nutritional status and parents' knowledge of nutrition is one of the key factors that can affect this situation (Sidiq et al., 2021).

School age (ages 5 to 14) is an important period for rapid growth and development. At this stage, the child's physical activity such as playing, exercising, or helping the parent increases. However, the fulfillment of nutritional needs is often not optimal because children's eating behavior is influenced by various environmental factors (Pramono et al., 2018).

An unhealthy diet in school children can result in serious nutritional problems, such as obesity, stunting, and malnutrition. The prevalence of stunted and malnourished children in school children is still high. In Jambi Province, according to data from the Indonesian Central Bureau of Statistics (BPS), it was noted that around 19.60% of children under five in the region are underweight (below normal weight) and about 17.30% of toddlers suffer from wasting (thin and very thin). According to the data of the Indonesian Nutrition Status Survey (SSGI) 2022 released by the Ministry of Health, cases of malnutrition and undernutrition are still a serious concern in all Jambi regions, including Bungo Regency (Ministry of Health of the Republic of Indonesia, 2022).

Overview and attention to health and nutrition in school children is a very important issue. Nutritional problems in school children are often associated with consumption patterns, eating habits, and behavior both at home and at school. Eating behaviors such as the consumption of snack foods, junk foods, or street foods from a nutritional value contain a lot of fat, especially fried snack foods often occur. In addition, snack foods also do not satiate. Perhaps this is something that can be associated with the occurrence of obesity in schoolchildren (Pramono et al., 2018; Ekholuenetale, 2020).

Balanced nutrition is the arrangement of daily food that contains nutrients in types and amounts that are suitable for the body's needs, by paying attention to the principles of food diversity or variety, physical activity, hygiene, and ideal body weight (BB) of food (Ministry of Health, 2013). The application of balanced nutrition in the family is needed to fulfill nutrition in the family, especially for children under five (Juliana et al., 2022). Malnutrition can happen if the consumption of food nutrition in toddlers is not balanced with the needs of the body. Malnutrition, which includes overnutrition and undernutrition, has become a problem in Indonesia (Mkhize & Sibanda, 2020).

One of the studies stated that nutritional status in children needs attention because at this time children are experiencing the process of increasing height and weight. The study also stated that fulfillment of optimal nutrition in children is paramount to support a good growth and development process, although it was reported in this study that there is no significant relationship between children's nutritional knowledge and children's nutritional status (Zuhriyah et al., 2016).

According to Ertiana and Zain's research (2023), there is a relationship between the level of education and knowledge and nutritional status in children because nutritional knowledge is crucial considering that understanding nutrition can affect children's growth and development. In another study, it was also stated that there is an influence between nutritional knowledge and nutritional status in children (p-value = 0.018, OR = 0.130).

From the data and research described earlier, this study addresses several problems: (1) what is the association between children's level of knowledge and nutritional status? (2) what are the factors that affect children's knowledge of nutrition? (3) Are the nutrition education programs that have been carried out able to increase children's knowledge about nutrition? Therefore, the purpose of this study is to explore the influence of children's knowledge about nutrition on nutritional status and identify steps that can be taken to improve nutritional status in the region.

The urgency of this research is that there are still cases of child malnutrition in Jambi Province, especially Muara Bungo, Bungo Regency, based on BPS and SSGI data. For that reason, this problem has become one of the government’s main concerns.

RESEARCH METHOD

Research Design

This type of research is quantitative using a cross-sectional design. This design allows researchers to identify the association between nutritional knowledge and the nutritional status of children at a certain time (Sugiyono, 2019). Researchers can perform direct measurements of risk factors and effects without intervention. The temporal relationship (time relationship) between risk factors and effects is not always be depicted in collected words (Ghozali, 2011).

Population

The study population is children among residents of the Muara Bungo Market area aged 5-14 years old who had been allowed by their parents to participate in this study.

Sample

The sample of this study is the children among the residents of the Muara Bungo Market area who meet the criteria for selecting research samples. The total number of samples in this study was 30 children. The sampling technique was total sampling. The research location was the Al-Jumhuriah Mosque which is located in the Muara Bungo Market area in Bungo Regency, Jambi Province, Indonesia.

Data Collection

The data was collected from the questionnaires given to children who were research samples. Interviews were conducted directly by researchers at the research site using standardized tools and following health protocols. The data collection methods used in this study are as follows:

Primary data: The primary data collected in this study by conducting interviews with questionnaires to obtain information are: a. Respondents' characteristic data consisted of registration serial number, full name, religion, gender, and age. b. Data on children's nutritional knowledge was measured using questionnaires.

Secondary data: Secondary data was obtained from the Jambi Provincial Health Office, the Bungo Regency Health Office, and data from the Muara Bungo Market area. The data collected includes regional profiles and other supporting data.

Data collection tools: The instruments or tools used in data collection were observational sheets and questionnaires which are also in the form of respondent data and records of health measurement results using standardized medical devices under health protocols.

Research Mechanism

Preparation Stage

The preparation stage was in the form of a preliminary survey to find out the characteristics of the respondents, the location of the research, and the collection of data needed in the research.

Implementation Stage

The research was carried out in the Muara Bungo Market area. The activities carried out were:

a. Measurement of children's knowledge
b. Counseling after measuring children's knowledge. Counseling was carried out both in groups and or individually for ±20 minutes.

After the data was collected from the pretest and posttest, it was prepared for editing, coding, transferring, and tabulating. Data analysis, univariate and bivariate, was done with SPSS. The data is presented in tables and synthesized narratively.

RESULTS

Respondent Characteristics (Sex)

In this research, there were 14 female (46.70%) and 16 male (53.30%) respondents.

Table 1. Respondent Characteristics Based on Sex

Sex	Number (N = 30)	Percentage (%)
Male	16	53.30
Female	14	46.70
Total	30	100.00%

Table 1 shows that most of the respondent were male (53.30%) from the total of 30 respondent.

Respondent Characteristics (Age)

From the data, it can be seen that the lowest age of respondents is 6 years old, the maximum age of respondents is 9 years, and the average age of respondents is 9 years.

Table 2. Respondent Characteristics Based on Age

Respondents	Lowest age	Oldest age	Average
30	7 years	13 years	9 years

Table 2 shows that the younger respondent was 7 years old and older respondent 13 years. The average age among 30 respondents were 9 years old.

Children's Knowledge and Children's Nutritional Status

Table 3. The level of the children's knowledge and their nutritional status

Knowledge	Children's nutritional status				Total
	Good	Percentage (%)	Poor	Percentage (%)	
Poor	8	53.30	7	46.70	15
Good	6	40.00	9	60.00	15
Total	**14**	**100.00%**	**16**	**100.00%**	**30**

Table 3 shows that children have good knowledge of the nutrition of the food they consume. However, some children (60.00%) do not have good nutritional status although their nutritional knowledge is good.

Association between Children's Knowledge and Nutritional Status

Table 4. Bivariate Analysis Results of Children's Knowledge and Nutritional Status Variables

	Chi-Square Test	
Knowledge	Exact Sig. (2-sided)	Exact Sig. (1-sided)
	0.715	0.358

Table 4 shows that bivariate analysis above, it is known that there is no statistically significant association between knowledge and the nutritional status of children in the Muara Bungo Market area (p = 0.715).

DISCUSSION

Children's Nutritional Knowledge

The level of education and nutritional knowledge have an important role in the quality of children's nutrition. Nutritional education is a way to change the knowledge and attitude of school children on nutrition. Children's nutritional status can be used as a measuring tool to determine the adequacy of children's diets (Nurjanah & Nurhayati, 2022).

Research conducted by Kassie et al. (2020) showed that maternal knowledge was a protective factor for children's nutritional status (OR= 0.905). This shows that mothers with basic knowledge have a risk for their children to experience malnutrition by 0.905 times compared to mothers who have secondary and tertiary education. In children's growth, the role of a father also affects the nutritional status of children (OR= 0.916). The role of a father in a child's life can help in the growth and development of emotional and intellectual intelligence in children (Li et al., 2020). Knowledge itself is influenced by many factors, one of which is the level of education and age (Christiari et al., 2013).

Based on the research that has been conducted, it is stated that there is no statistically significant association between nutritional knowledge and nutritional status. These results indicate that high nutritional knowledge is not always directly proportional to good nutritional status. Other factors such as eating habits, access to nutritious foods, economic factors, and lifestyle may have a greater influence on an individual's nutritional status.

The results of this research are in line with the research carried out by Permanisuci and Soeyono (2021) which states that there is no statistically significant relationship between nutritional knowledge and children's nutritional status (p-value > 0.05).

Meanwhile, according to research conducted by Lestari Puji, there is a relationship between nutritional knowledge and energy intake (nutritional status). This is due to children's good nutritional knowledge, hence good attitude and behavior, which can eventually affect their food intake (Lestari, 2020).

This is also in line with the research by Laksono et al. (2022) which explained that mothers with primary education and less education are 1.587 times more likely to experience stunting in children under two years of age than mothers with a college education (95% CI 1,576–1,598). According to the research by Chen et al. (2020), there is a relationship between children's health and maternal academic qualifications.

School-age children tend to have varying appetites. When there is a growth spurt, usually children's appetite and food intake increase. In addition to the growth spurt, there is also a declining growth stage, a stage where there is a decrease in the appetite and food intake. Children who are in the stage of decreased appetite are characterized by reduced food intake (Pramono et al., 2018).

Children's Nutritional Status

Babies or children who are in poor health are very vulnerable because, in this period of life, nutrients are needed for growth. Children's nutrition problems result from an imbalance between nutrient intake and output (nutritional imbalance) i.e. intake that exceeds the output or vice versa, in addition to the wrong choice of foods to eat (Asmin et al., 2021; Mulyaningsih et al., 2021).

In other studies, it was shown that there is a relationship between children's nutritional knowledge and nutritional status. This is due to the influence of children's nutritional knowledge on the choice of food to be consumed. Whether or not the food is selected and consumed based on the nutritional content will affect a person's nutritional status. Children's nutritional status depends on food intake, this is because the food consumed will affect the nutrients obtained by the body (Aulia, 2021).

Another factor that affects the nutritional status of children is equipping parents with adequate nutritional knowledge. Related to this, the level of a person's nutritional knowledge affects the selection of nutritional content available in food. Lack of understanding of the contribution of nutrition and different types of food can affect nutrition, intelligence, and productivity issues (Asmin et al., 2021).

The results of this study showed that the nutritional knowledge possessed by the respondents does not have a statistically significant association with their nutritional status. This suggests that although a person has a good understanding of nutritional concepts and principles, other factors such as food consumption habits, physical activity patterns, economic conditions, and social environment may play a greater role in determining nutritional status. This emphasizes that nutritional education alone is not sufficient to improve the nutritional status of the community. A more holistic approach is needed, such as developing good eating habits, as well as increasing awareness of the importance of a healthy lifestyle in practice.

The results of this study are in line with a study by Silvia which reported no statistically significant relationship between children's nutritional knowledge and nutritional status (p = 0.884). Good knowledge has a good impact on the nutritional status of children. If the child's nutritional knowledge is high, then the choice of food is also good. Nevertheless, some children are well-educated but their nutritional status is not good. This can happen due to other factors such as the environment (Ningrum, 2024).

Socioeconomic status (SES) such as parental education, parental employment, and family income are strong predictors of child development outcomes. This variation in resources estimates a large academic gap among children from different socio-economic backgrounds. It persists over the years of schooling, perpetuating the educational gap between generations (Davis-Kean et al., 2021).

In addition to socio-economic factors, other aspects are also influential, in particular, the importance of children's nutritional status. Nutritional status has a very important role because it has a direct impact on the growth, development, and health of children. There are several main points regarding the importance of children's nutritional status, namely optimal growth which focuses on adequate nutrition to support optimal physical growth and development, health and body functions that play an important role in supporting the immune system, resistance to

diseases that focus on nutritional intake that can help the body fight diseases and accelerate recovery when children fall ill and finally, cognitive academic abilities that contribute on academic skills and cognitive development of children. Children with good nutritional status tend to be more focused and have higher learning potential.

Awareness of the importance of children's nutritional status underscores the need for special attention in ensuring that children get adequate balanced nutrition. Nutritional education, and support from families, schools, and communities, are urgently needed to create an environment that supports children's health and optimal growth.

CONCLUSION

Based on the results of the study, knowledge does not have a statistically significant relationship (p=0.715) with children's nutritional status. We recommend health office and community health centers (Puskesmas) in Bungo Regency to improve nutrition education for children, parents, and the community through intervention programs such as counseling or training, routine monitoring of children's nutritional status at community-based health post (Posyandu) and cross-sectoral collaboration. Future studies should expand the scope of areas and other variables that affect the nutritional status of children.

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CONFLICTS OF INTEREST STATEMENT

There is no conflict of interest in this study.

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