

Relationship Between Diet Regulation, Parent Education, and Environmental Cleanliness on the Nutritional Status of Toddlers in Cibangkong Village, Pekuncen District, Banyumas Regency

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ABSTRACT

Background: The nutritional status of toddlers is a crucial thing that parents must know. It takes more parental attention to the growth and development of children at the age of toddlers, based on information that malnutrition in this golden age is irreversible. **Objective:** This study aims to determine the relationship between eating patterns, parental education and environmental hygiene with nutritional status figures in the area of Cibangkong Village, Pekuncen District, Banyumas Regency. **Methods:** The method used in this research is cross sectional with a sample of 78 respondents with simple random sampling. **Results:** Bivariate analysis with Chi-Square test found 3 significant factors related to dietary regulation on nutritional status as many as 56 respondents with a p-value of 0.037, education of parents as many as 32 respondents with a p-value of 0.026, and environmental hygiene as many as 65 respondents with p-value of 0.027. **Conclusion:** There was a significant correlation between 3 variables towards nutritional status of children under five years old in Cibangkong village, Pekuncen district, Banyumas regency.

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1. INTRODUCTION

The goal of health development towards Healthy Indonesia 2025 is to increase awareness, willingness, and ability to live a healthy life for everyone through the creation of an Indonesian society, nation and state which is characterized by its population living with behavior and in a healthy environment, having the ability to reach quality health services, fairly and equitably throughout the territory of the Republic of Indonesia (Surjadi & Surja, 2019).

The optimal level of health can be seen from the elements of quality of life and the elements of mortality as well as those that influence them, namely morbidity and nutritional status. Good nutritional status is a primary condition for realizing quality human resources in health development. according to UNICEF (United Nation of Children and Education Federation), nutrition issues in population development are still claimed to be the primary problem in the global population order. Therefore, this issue is one of the crucial points that became the world convention on the MDG's (Milleneum Development Goals). Each country must gradually reduce the number of under-fives with malnutrition or malnutrition to reach 15.5% in 2015 (Sholikhah, Rustiana & Yuniastuti, 2017). Based on Sholikhah (2017) the nutritional status of toddlers is a crucial thing that parents must know. It is necessary for parents to pay more attention to the growth and development of children at the age of toddlers based on information that malnutrition in this golden age is irreversible (cannot be returned), while

malnutrition can affect children's brain development. Malnutrition can also have bad consequences where the worst manifestation can lead to death. Based on child mortality data from the World Health Organization (WHO), it was found that the causes of death were complications of premature birth, pneumonia, birth asphyxia, diarrhea and malaria. It is estimated that approximately 45% of all child deaths are related to malnutrition as a result of which children are more susceptible to disease. Recently, the problem of double load nutrition has started to emerge (Sholikah, Rustiana & Yuniastuti, 2017). This dual problem is a state of overnutrition and a state of undernutrition/poverty. Based on the 2019 SSGBI data, it shows that in Indonesia there are 16.29% of toddlers with malnutrition problems, 27.67% of toddlers with stunting and 7.44% of toddlers with underweight nutritional status. This number decreased when compared to the results of Riskesdas in 2018 (SSGBI, 2019). However, the SDGS targets have not yet been achieved. Central Java Province is ranked second out of 34 provinces of Indonesia, with under-five malnutrition problems in 2017 amounting to 16.9% toddlers, short toddlers by 23.9% and thin toddlers by 9.6% from the number of toddlers in Central Java (Karnoto et al., 2022). The percentage of nutritional status in Banyumas Regency in 2021 is as follows: there are 109 malnutrition problems in Banyumas Regency with details of 76 residual malnutrition toddlers in 2020, 22 malnourished toddlers with new problems, and 11 malnourished toddlers with recurrence status (BPS Jateng, 2021).

Meanwhile, based on data from the Banyumas District Health Office 2020, Cibangkong Village, Pekuncen District has the following nutritional percentages: toddlers with underweight as much as 9.16%, balita dengan stunting sebanyak 19,85%, balita dengan several wasting as much as 0.00%, and toddlers with wasting as much as 2.67%. Based on the results of a preliminary study conducted by distributing questionnaires about diet management and healthy home questionnaires conducted on 10 mothers who have toddlers in Cibangkong village, Pekuncen District, Banyumas Regency received data from 8 mothers who filled out the questionnaire with a high school education, 1 mother with a junior high school education, and 1 mother graduated from a university. For the self-regulation questionnaire some of the mothers who were given the questionnaire they would eat their children to eat anything sweets, chocolates and other snacks. When asked did the mothers schedule their children's mealtimes, they answered no and when asked about what food they usually gave their children, they also answered that they only had limited food. Meanwhile, in the questionnaire about healthy homes, 6 houses were declared healthy with a total value exceeding 1068 and the other 4 houses were declared unhealthy houses with a total value below 1068. Based on the description of the problem above, the researchers are interested in researching the regulation of diet, parental education, and environmental hygiene on the nutritional status of toddlers in Cibangkong Village, Pekuncen District, Banyumas Regency (Banyumas District Health Office (2020).

2. RESEARCH METHOD

This research used quantitative research with Cross Sectional method. This research was conducted in July 2022. The population in this study were toddlers aged 0-59 months and mothers of toddlers in Cibangkong Village, Pekuncen District, Banyumas Regency, Central Java, with a total of 351 toddlers and a sample of 778 toddlers using simple random sampling (Slovin formula). Analysis of the data using the chi-square relationship test, the minimum number of units of analysis was 78 samples of children under five who meet the inclusion criteria, namely mothers who have children aged 0-5 years, are willing to be respondents and have KMS. The data collection used in this study used the type of primary data, namely direct data collection on the mother toddlers aged 0-5 years. While the secondary data obtained through the data includes a general description of the research area, namely posyandu in Cibangkong Village, Pekuncen District, Banyumas Regency.

In this study, the tools used in this study were a questionnaire and an anthropometric index (Z-SCORE). This study collects anthropometric data by measuring height and adjusted for toddler's weight. This research was conducted using a method of measuring height using a microtoise and weighing children's weight using a stepping or digital scale, to determine the nutritional status of toddlers. Calculation using the Z-score formula. To assess the nutritional status of toddlers through anthropometric measurements. Statistical analysis used The dependent variable (the dependent variable) in this study is the nutritional status of children under five. The independent variables (independent variables) are dietary arrangements, parental education, and a healthy home environment for mothers who have children under five. Analysis using chi-square test with 95% confidence level.

3. RESULT AND DISCUSSIONS

Table 1. Respondent Characteristics

Variable	n	%
Age (month)		
Baby (0-12)	30	38,5

Toddler (13-36)	31	39,7
Pre School (37-60)	17	21,8
Gender		
Female	41	52,6
Male	37	47,4

Based on table 1 above, it is known that most of the respondents are female, namely 41 (52,6%) respondents, and have toddler are (42.3%) of respondents.

Table 2. Characteristics of Parents

Variable	Father		Mother	
	n	%	n	%
Age (Years)				
Mean+SD	32,42	5,76	29,36	6,049
Min -Max	23	49	17	48
Education				
Elementary School	18	23,1	4	5,1
Middle School	43	55,1	23	29,5
High School	14	17,9	33	42,3
Undergraduate	3	3,8	18	23,1
Occupation				
Civil employee	4	5,1	3	3,8
Self-employed	41	52,6	16	20,6
Farmer	33	42,3	4	5,1
Unemployed	0	0	55	70,5

Based on table 2. it is known that the characteristics of respondents based on the age of parents in Cibangkong village the average age of the mother is 29 years and the average age of the father is 32 years, the youngest mother's age is 17 years and the maximum age of the mother is 48, for the youngest father's age is 23 years and the maximum age of the father is 49 years. As for the characteristics of the respondents, the parents' education was mostly based on high school with a total of 33 respondents (42.3%) and most of the fathers had junior high school education with a total of 43 respondents (55.1%), while the indicators of respondents based on the mother's occupation were mostly housewives or not working with a total of 55 respondents (70.5%) and most of the fathers working as entrepreneurs with a total of 41 respondents (52.6%).

Table 3. Dietary Settings, Environmental Hygiene and Nutritional Status

Variable	n	%
Dietary Settings		
Good	56	71,8
Not good	22	28,2
Environmental Hygiene		
Healthy	65	83,3

Not Healthy	13	16,7
Nutritional Status		
Malnutrition	10	12,8
Nutritional Risk	8	10,3
Good Nutrition	60	76,9

Based on table 3, it can be concluded that the majority of dietary regulation behavior in Cibangkong Village is good with 56 respondents (71.8%), having a healthy environment with a total number of 65 respondents with a percentage of 83.3% and nutritional status of toddlers with the highest category is stated by good nutritional status with a total of 60 respondents and a percentage of 76.9%.

3.2. Bivariat

Table 4. Relationship of Dietary Arrangements, Parental Education, Environmental Hygiene and Toddler Nutritional Status

Dietary habit	Toddler Nutritional Status				Total	p-value
	n	%	n	%		
Good	47	60,3	3	3,8	56	100
Not Good	13	16,7	5	6,4	22	100

*Description: Significant at p-value <0.05, n=78

From table 4. above, it can be seen that 56 of the respondents have the nutritional status of toddlers in the category of good nutrition with good behavior as many as 47 respondents with a percentage of 60.3%. Meanwhile, out of 22 respondents who had the nutritional status of children under five in the category of undernourished with poor behavior as many as 4 respondents with a percentage of 5.1%. Based on the Chi Square test, p-value = 0.037, which means that there is a significant relationship between eating pattern behavior and nutritional status of toddlers.

Table 5. The Relationship between Mother's Education and Toddler Nutritional Status

Education	Nutritional Status of Toddlers						Total	p-
	Good Nutrition		Nutritional Risk		Malnutrition			
	n	%	n	%	n	%	n	%
SD	2	2,6%	2	2,6%	0	0,0%	4	100
SMP	24	30,8%	3	3,8%	1	1,3%	28	100
SMA	22	28,2%	2	2,6%	8	10,3%	32	100
PT	12	15,4%	1	1,3%	1	1,3%	14	100

*Description: Significant at p-value < 0.05, n=78

Based on the results from table 5 above, it can be seen that of the 4 respondents with elementary education, 2 of them have the nutritional status of toddlers with good nutritional status and 2 other respondents have nutritional status of toddlers with dangerous nutritional status of 2.6% each. Meanwhile, 28 respondents with junior high school education, 24 of them have more nutritional status with a percentage of 30.8%, 3 respondents have nutritional status under five in the category of overweight nutritional status with a percentage of 3.8% and 1 other respondent has a nutritional status of toddlers with the category of undernutrition status with a percentage of 1.3%, meanwhile 32 respondents with high school education, 22 of them have nutritional status of children under five with good nutritional status with a percentage of 28.2%, 2 other respondents with

nutritional status of toddlers with nutritional status more and the percentage is 2.6%, and 8 other respondents have the nutritional status of children under five with poor nutritional status and the percentage is 10.3%. As for the 14 respondents are college graduates, 12 of them have the nutritional status of children under five with an increase in the percentage of 15.4%, 1 respondent with more dangerous nutritional status and 1 other respondent has the nutritional status of toddlers with less nutritional status and respectively. -each has a percentage of 1.3%. Based on the Chi Square test, p-value = 0.026, which means that there is a significant relationship between parental education and the nutritional status of children under five.

Tabel 6. Relationship between Environmental Hygiene and Nutritional Status of Toddlers

Cleanliness	Toddler Nutritional Status						Total	p-
	valueGood Nutrition		Over Nutrition risk		Malnutrition			
	n	%	n	%	n	%		
healthy	52	66,7%	4	5,1%	9	11,5%	65	100
Un healthy	8	10,3%	4	5,1%	1	1,3%	13	100

*Description: Significant at p-value < 0.05, n=78

Table 6 shows that in the environmental variables of 65 respondents 52 of them have good nutritional status with a percentage of 66.7%, 4 of them have an overnutrition risk status with a percentage of 5.1% and 9 other respondents have a poor nutritional status with a percentage of 11.5%. Meanwhile, from a total of 13 respondents, 8 of them have an unhealthy environment with good nutritional status and the percentage is 10.3%, 4 of them have a nutritional risk status with a high percentage of 5.1% and 1 other respondent has a less nutritional status with a percentage of 1.3%. Based on the Chi Square test, p-value = 0.027, which means that there is a significant relationship between environmental hygiene and the nutritional status of toddlers

3.3 The relationship between Characteristics of Respondents, work, education and Age

a. Occupation

The nutritional status of children under five is closely related to economic factors. Meanwhile, the family's economic condition is very dependent on the work of their parents. The results of this study confirm that some mothers do not only act as housewives, but some mothers of toddlers also work. Based on the research that has been done there are several types of work that are owned by mothers, namely civil servants, private / employees, entrepreneurs, traders, farmers and housewives. As for the father's work, there are several types of work including civil servants, private / employees, entrepreneurs, traders and farmers. Results Based on the research, it was found that most of the fathers worked as farmers as many as 33 respondents (42.3%), while for the mother's work the results showed that most of the mothers did not work or as housewives with a percentage yield of 70.5% or as much as 55 respondents from 78 respondents. Overall, the father and mother of respondents have different jobs, this allows the researcher to know that the respondent's father and mother earn money from their work. Parents' work is related to family income, so it can be said that the type of work can also determine a person to fulfill family nutrition. Working mothers have less time to care for their children than mothers who do not work, so it will have a direct effect on reducing the time provided for breastfeeding and caring for children so that it has negative consequences on child nutrition (Labada, et al. 2016).

This is in line with the research conducted by Fauzia, N. R et al., (2019), which showed that there was a significant relationship between maternal employment status and nutritional status. The influence of working mothers on the child-mother relationship, largely depends on the age of the child and when the mother starts working. Working mothers have less time to care for their children than mothers who do not work. The nutritional status of children under five is strongly influenced by the nutritional intake obtained. Providing good nutritional intake for toddlers requires more time for parents, especially mothers to be together with toddlers, if mothers spend 6-7 hours working outside the home it will reduce time together with their children. This condition can affect the provision of nutritional intake to the child (Fauzia, N. R et al., (2019).

b. Education

The results showed that the majority of mothers had high school education with a percentage of 42.3%, on the other hand most of the fathers had junior high school education, which was 55.1%. The level of education is one of the social indicators in society because through education, human behavior can improve and change their social image. A person's level of education will be closely related to knowledge about sources of nutrition and good types of food for the family to enjoy. Educated housewives will choose to choose better food compared to mothers with low education (Meryana. 2014). This is in line with research conducted by Nurmaliza

& Herlina (2019) which showed that there was a relationship between mother's knowledge and education on the nutritional status of toddlers. good that is 73.2%, while mothers who have good knowledge have good nutritional status that is 75.0%. Therefore, mothers who have less knowledge will endanger 4 times having toddlers with less nutritional status compared to mothers who have good knowledge, while mothers with low education will be more at risk of having three toddlers.

c. Age

The results of this study indicate that the majority of the father's age ranges from 33 to 42 years with a percentage of 50%, the mother is mostly between 28 to 38 years with a frequency of 38 with a percentage of 48.75%. While for toddlers, aged 25 to 36 months with a percentage of 39.7%. The female reproductive period is basically divided into 3 periods, namely the young reproductive period (15-19 years), the healthy reproductive period (20-35 years), and the old reproductive period (36-45 years). According to UNICEF (2002) in Labada, Ismanto, & Kundre (2016), delaying the first pregnancy until the age of 20 years will ensure safer pregnancies and births and reduce the risk of low birth weight babies. The results of this analysis are supported by research conducted by Labada, Ismanto & Kundre (2016) which states that the majority of mothers are <35 years old with normal toddler nutritional status 67 respondents (68.4%), while mothers > 35 years with abnormal nutritional status of children under five there were 4 respondents (11.2%).

3.4 The relationship between behavior of Eating Patterns, environment, and Nutritional Status of Toddlers in Cibangkong Village

a) Behavior of Eating Patterns

Based on the results of the research that has been carried out, it is known that the behavior of regulating eating patterns in Cibangkong Village is in the good category of 71.8% and dietary regulation in less category by 28.2%. From the results that have been obtained, it can be said that most of the families in Cibangkong village have implemented eating patterns with good behavior. According to the questionnaire, the average eating pattern behavior that is categorized as always carried out by respondents is mostly about covering food on the dining table by using a serving hood and maintaining cleanliness by washing hands before processing food or raw materials. While in the category that is often done by respondents the most is about boiling vegetables in a closed pot with lots of water for quite a long time. In the category of sometimes doing the most answers to questions I always get impatient when the child has difficulty eating and in the category of never answering the most questions I usually answer cooked food on the table and left insects and other animals infested. According to Rudhiati et al. (2020), eating behavior is a very meaningful behavior that can affect nutritional conditions. quantity and quality of food and beverages consumed will affect consumption to the detriment of human and public health. At this time the child will be selfish and need parental supervision, so that if the parents do not supervise it, the child's eating habits will be disturbed and the food given by the child is rejected. If the child's diet is not achieved properly then the child's growth and development will be hampered. Children will receive food intake from what is provided by their mother or caregivers (Sambo et al 2020).

b) Environment

Based on the results of the research, the researchers found that in the Cibangkong village area of 78 respondents, most of the environmental sanitation was healthy with a frequency of 65 respondents (83.3%). while the unhealthy environmental sanitation was 13 respondents (16.7%). Environmental health is basically an optimal environmental condition or condition so that it has a positive effect on the realization of the environmental health status, including housing, human waste disposal, clean water supply and waste disposal (Notoatmojo, 2011). Poor environmental sanitation allows for various types of diseases, including diarrhea, intestinal worms, and gastrointestinal infections. When a child suffers from a gastrointestinal infection, the absorption of nutrients will be disrupted which causes a lack of nutrients which will make them susceptible to disease and disrupted growth (Carolin et al. 2020).

c) Nutritional Status of Toddlers in Cibangkong Village

The results of the analysis conducted by the researchers found that in the Cibangkong village area, Pekuncen District, there were 76.9% of children under five with nutritional status, 12.8% of under-fives with undernutrition status and 10.3% of children with overnutrition risk. It is important for children entering the age of toddlers, it is very important to monitor growth regularly. Monitoring of physical growth of children is used to determine that the growth that is traversed by children is running normally or not. Children who are healthy and given an adequate bio-psychosocial environment will generally grow optimally (Kusuma, R. M., & Hasanah, R. A. (2018). The physical growth of children under five will be monitored periodically through the toddler posyandu. Posyandu officers who come from the community are usually called cadres. Cadres are community members with diverse educational and occupational backgrounds, so that anthropometric measurements can be carried out by cadres who then The results will be reported to the health center midwife. The anthropometric measurements according to the World Health Organization (WHO) 2005, explained that the terms written were based on weight for age (W/W), body length or height for age (PB/U or TB/U), and weight for length. body or height (BB/TB or BB/TB) (Kusuma, R. M., & Hasanah, R. A. (2018).

Basically a person's nutritional intake is determined based on nutritional consumption and physical practice of using these substances. Nutritional status indicates that the quality and quantity of food meet the body's needs. People who have a below normal weight are at risk of infection, while those who have an above normal weight are at a higher risk of degenerative diseases (Amsi & Muhajirin, 2011).

3.5 The Relationship between Dietary Arrangements, Parental Education and Environmental Hygiene with Toddler Nutritional Status

According to this study, it shows that there is a relationship between Dietary Arrangements, Parental Education and Environmental Hygiene with the Nutritional Status of Toddlers in Cibangkong Village. By looking at the calculation of data from SPSS which shows that the p value for each variable is less than 0.05, which means that there is a statistically significant relationship between dietary regulation, parental education and environmental hygiene with the nutritional status of toddlers. This is in line with research conducted by Yuliarsih, L., Muhaimin, T., & Anwar, S. (2020) which said that most toddlers had good nutrition (70.5%) and some toddlers had a good diet. (61%) with a p-value of 0.017 (p-value <0.05). Diet can provide an overview of nutrition that includes the type, amount and schedule in fulfilling nutrition. The pattern of feeding must be guided by balanced nutrition including adequate nutritional intake according to needs and consuming a variety of foods in order to achieve normal nutritional status.

In table 2 this study has obtained the category of adult mothers with ages between 28-38 reaching 48.7% of all respondents so that they are in the age range that may be greater to have good nutrition. Most of the respondents' education level is in high school with the percentage of mother's education being 42.3% and the percentage of father's education being 55.1%. Children under five from parents who have a highly educated background will have the opportunity to live and grow and easily receive broader insights into nutrition (Wandani, Z.S.A., Sulistyowati, E., & Indria, D.M. (2021).

Dietary settings and parental educational background nutritional status are also influenced by environmental factors, this can be seen based on the SPSS calculation which shows that the p-value is 0.027%. This is in line with the research conducted by Simbolon, R. (2017) which said that from the bivariate analysis between environmental sanitation and the nutritional status of children under five, it was found that 11 people lacked environmental sanitation, 19 people were sufficient and 8 people were good with the results of the Z test analysis. obtained the value of $Z = 0.1444$ ($Z_{score} > a$) and $r = 0.880$. which can be said that environmental sanitation is related to the nutritional status of children under five with a strong positive relationship.

4. CONCLUSION

There was a significant correlation between 3 variables towards nutritional status of children under five years old in Cibangkong village, Pekuncen district, Banyumas regency.

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