Factors Associated With Nutritional Status in Toddler

Heni Marliany¹, Aap Apipudin², Ary Syahrul Ramdani³
¹,²,³STIKes Muhammadiyah Ciamis, Ciamis, Indonesia

Article Information
Revised: July 2022
Available online: September 2022

Keywords
Diet, infectious diseases, knowledge, nutritional status, toddlers

Correspondence
E-mail: marlianyheni@yahoo.com

ABSTRACT
The World Health Organization (WHO) estimates that 54% of child deaths in the world are caused by malnutrition. Nutrition is one of the important factors in determining the quality of human resources in which it has a close relationship with health and intelligence. Based on data information from the Ciamis Health Center, there are 53 cases of children under five who have nutritional problems in Benteng Village. Objective: to determine the relationship between parental knowledge, children's diet, infectious diseases and nutritional status in children under five in Benteng Village, Ciamis District, Ciamis Regency. Methods: this study uses quantitative analytical methods with a cross-sectional research design. The population in this study were 307 children under five in Benteng Village. Sampling in this study using purposive sampling as many as 33 respondents. Results: the results of the study based on the Chi-Square test, the significance of p between parents' knowledge and nutritional status was 0.573. Chi-Square test, the significance of p between children's diet and nutritional status is 0.147. Chi-Square test, the significance of p between infectious diseases and nutritional status is 0.111. Conclusion: there is no relationship between parental knowledge, children's diet, infectious diseases and nutritional status of children under five in Benteng Village, Ciamis District, Ciamis Regency.
INTRODUCTION

Nutrition is one of the important factors in determining the quality of human resources, which has a close relationship with human health and intelligence. Good nutritional status in children under five needs to get more attention, because it can hamper physical growth, mental and thinking abilities (Alpin, 2017). Toddlers who do not get adequate nutritional intake will be susceptible to disease, causing appetite disorders, reduced nutritional intake and causing malnutrition (Apriliana & Rakhma, 2017).

Toddlers are a very valuable period in the process of human growth and development. During the toddler period, nutritional status is a priority because the incidence of malnutrition will affect the quality of child growth and development (Prehana Wati, 2018).

The problem of undernutrition is influenced by several factors, including parental education, parental knowledge, parental employment, family income, child diet, number of family members, child gender, socioeconomics and infectious diseases (Wardani, 2017). Malnutrition has a serious impact on future generations. Children suffering from undernutrition will experience impaired physical growth and mental development. Growth disorders are the inability to reach a certain height in accordance with the general. Children will have a lower IQ due to impaired mental development and intelligence. Each malnourished child has a risk of losing 10-13 IQ points (Ucu, 2017).

One of the factors that can affect the nutritional status of children under five is the level of knowledge about nutrition. Poor parental nutrition knowledge can be one of the determinants of nutritional status of children under five, because it determines the attitude and behavior of mothers in choosing foods that will be consumed by children under five as well as eating patterns related to the amount, type and frequency that will affect food intake in toddlers (Nindyna Puspasari & Merryana Andriani, 2017).

Children's diet affects a person's nutritional status. Good and optimal nutritional status occurs when the body obtains enough nutrients that are used efficiently, allowing physical growth, brain development, work ability and general health at the highest possible level (Hakim, 2016). Infectious diseases can affect the nutritional status of children under five. Infectious disease is one of the diseases that often occurs in children under five years of age, where one of the causes of infectious diseases is poor nutritional status. Good nutritional adequacy in children will increase the child's resistance to disease, children who experience malnutrition will be susceptible to infectious diseases. The low immune system of toddlers results in children being susceptible to various diseases (Putri et al., 2015).

The World Health Organization (WHO) estimates that 54% of deaths of children under five in the world are caused by malnutrition (R Yudi Rachman Saleh, 2017). Data in 2018 showed that 4 million toddlers in Indonesia were malnourished, 700 thousand of whom were malnourished (Milah & Zalqiah, 2019). Based on the 2016 PSG in West Java Province, the rate of malnutrition in children based on BB/U was 2.4% and undernutrition was 12.1%. Ciamis Regency is among the ten districts
with the highest malnutrition rate in West Java (R Yudi Rachman Saleh, 2017).

Based on data from the Ciamis Regency Health Office in 2020 from 37 Puskesmas spread across Ciamis Regency there were 74,272 toddlers, as many as 1,001 (1.3%) toddlers were malnourished, 5,617 (7.6%) toddlers were malnourished, 54,136 (73%) were well-nourished and 4,573 (6.2%) toddlers were overnourished. Compared to last year, the number of malnourished toddlers has increased, last year it was known that there were 378 malnourished toddlers, while currently reaching 1,001 toddlers (Ciamis District Health Office, 2020).

Based on data information from the Ciamis Health Center, from 7 villages or sub-districts spread across the Ciamis Health Center working area, there are 2,692 toddlers, 33 (1.2%) toddlers are malnourished, 158 (5.9%) toddlers are malnourished, 2,198 (81.6%) are well-nourished and 303 (11.2%) are overnourished. Benteng Village is one of the villages that has the highest incidence of malnutrition and undernutrition in toddlers compared to other villages or villages (Puskesmas Ciamis, 2021).

Previous research conducted by (Ardi et al., 2020) with the title "Analysis of Factors Associated with Nutritional Status in Toddlers at Pustu Buraen, Sonraen Health Center Work Area, Kupang Regency" the results showed that there were several factors associated with nutritional status in children under five, including diet, socio-culture, infectious diseases and health services.

METHOD
The research method used in this study is quantitative analytic method with cross sectional research design. The population in this study were all parents who had children under five in the Benteng village, Ciamis District, Ciamis Regency. The population in this study was 307 children under five in Benteng Village according to data from UPTD Puskesmas Ciamis. The sampling technique used purposive sampling and obtained a sample of 33 respondents. This research was conducted at the Posyandu Pereng Neighborhood, Benteng Village on March 7-8, 2022.

The implementation of the study begins with a time contract (Informed Consent) until an agreement is obtained through the signing of an agreement letter. After that the researcher weighed the toddler's weight and gave a questionnaire to the parents of the toddler. The researcher checked the questionnaire sheet that had been collected, then checked its completeness if there were statements that had not been filled in. Researchers processed the data and analyzed.

The instruments used in this study were weighing toddlers and questionnaire sheets.

Data analysis in this study used Univariate and Bivariate. Univariate analysis was conducted to obtain a description of the characteristics of respondents and the frequency distribution of all observed variables. So that the variation of each variable can be known while the bivariate analysis is presented to see the relationship between each dependent variable and the independent variable. Data processing uses the Chi-
Square statistical test with a confidence level of 95% ($\alpha = 0.05$), so that if $p$ values $\leq 0.05$, it shows that there is a relationship between the independent variable and the dependent variable, while if $p > 0.05$, it shows that there is no relationship between the independent variable and the dependent variable.

RESULTS AND DISCUSSION

Based on the results conducted at the Pereng Environmental Health Post in Benteng Village on 33 respondents, the following research results were obtained

1. Characteristics of Respondents

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency (F)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parents’ Last Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary</td>
<td>3</td>
<td>9.1</td>
</tr>
<tr>
<td>SLTP</td>
<td>20</td>
<td>60.6</td>
</tr>
<tr>
<td>Senior High School</td>
<td>8</td>
<td>24.2</td>
</tr>
<tr>
<td>Undergraduate</td>
<td>2</td>
<td>6.1</td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
<td>100</td>
</tr>
<tr>
<td>Job</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Housewife</td>
<td>32</td>
<td>97</td>
</tr>
<tr>
<td>Work</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
<td>100</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>12</td>
<td>36.4</td>
</tr>
<tr>
<td>Female</td>
<td>21</td>
<td>63.6</td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
<td>100</td>
</tr>
<tr>
<td>Nutrition Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malnutrition</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Undernutrition</td>
<td>7</td>
<td>21.2</td>
</tr>
<tr>
<td>Good Nutrition</td>
<td>24</td>
<td>72.7</td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
<td>100</td>
</tr>
</tbody>
</table>

2. Parents’ Knowledge

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency (F)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Simply</td>
<td>2</td>
<td>6.1</td>
</tr>
<tr>
<td>Good</td>
<td>31</td>
<td>93.9</td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
<td>100</td>
</tr>
</tbody>
</table>

3. Children’s Diet

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency (F)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Right</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Correct</td>
<td>32</td>
<td>97</td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
<td>100</td>
</tr>
</tbody>
</table>

4. Infectious Disease

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency (F)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infectious Disease</td>
<td>9</td>
<td>27.3</td>
</tr>
<tr>
<td>No Infectious Disease</td>
<td>24</td>
<td>72.7</td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
<td>100</td>
</tr>
</tbody>
</table>

5. Nutritional Status

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency (F)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malnutrition</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Undernutrition</td>
<td>7</td>
<td>21.2</td>
</tr>
<tr>
<td>Good Nutrition</td>
<td>24</td>
<td>72.7</td>
</tr>
<tr>
<td>Over Nutrition</td>
<td>2</td>
<td>6.1</td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
<td>100</td>
</tr>
</tbody>
</table>
6. Relationship between Parents' Knowledge and Nutritional Status of Toddlers in Benteng Village, Ciamis Subdistrict, Ciamis Regency

Table 1.6 Frequency Distribution of the Relationship between Parents' Knowledge and Nutritional Status of Toddler

<table>
<thead>
<tr>
<th>Parental Knowledge</th>
<th>Malnutrition</th>
<th>Undernutrition</th>
<th>Good Nutrition</th>
<th>Over Nutrition</th>
<th>Total</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>%</td>
<td>F</td>
<td>%</td>
<td>F</td>
<td>%</td>
</tr>
<tr>
<td>Less</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Simply</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>50</td>
<td>1</td>
<td>50</td>
</tr>
<tr>
<td>Good</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>19.4</td>
<td>23</td>
<td>74.2</td>
</tr>
<tr>
<td>Total</td>
<td>0</td>
<td>0</td>
<td>7</td>
<td>21.2</td>
<td>24</td>
<td>72.7</td>
</tr>
</tbody>
</table>

7. Relationship between children's diet and nutritional status of children under five in Benteng Village, Ciamis District, Ciamis Regency.

Table 1.7 Frequency Distribution of the Relationship between Children's Diet and Nutritional Status in Toddlers

<table>
<thead>
<tr>
<th>Children's Diet</th>
<th>Malnutrition</th>
<th>Undernutrition</th>
<th>Good Nutrition</th>
<th>Over Nutrition</th>
<th>Total</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>%</td>
<td>F</td>
<td>%</td>
<td>F</td>
<td>%</td>
</tr>
<tr>
<td>Not right correct</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>0</td>
<td>0</td>
<td>7</td>
<td>21.2</td>
<td>24</td>
<td>72.7</td>
</tr>
</tbody>
</table>

8. The relationship between infectious diseases and nutritional status in children under five in Benteng Village, Ciamis District, Ciamis Regency.

Table 1.8 Frequency Distribution of the Relationship between Infectious Diseases and Nutritional Status in Toddlers

<table>
<thead>
<tr>
<th>Infection disease</th>
<th>Malnutrition</th>
<th>Undernutrition</th>
<th>Good Nutrition</th>
<th>Over Nutrition</th>
<th>Total</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>%</td>
<td>F</td>
<td>%</td>
<td>F</td>
<td>%</td>
</tr>
<tr>
<td>Infectious disease</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>44.4</td>
<td>5</td>
<td>55.6</td>
</tr>
<tr>
<td>Total</td>
<td>0</td>
<td>0</td>
<td>7</td>
<td>21.2</td>
<td>24</td>
<td>72.7</td>
</tr>
</tbody>
</table>

1. Overview of nutritional status of children under five in Benteng Village, Ciamis District, Ciamis Regency

Nutritional status is a picture of health as a reflection of the use of food consumption consumed by a person and its use by the body. This research conducted antopometric measurements to assess the nutritional status of toddlers using the indicator of body weight according to age (BB/U) (Indonesian Ministry of Health, 2020).

The overview of the results of the analysis shows that of the 33 respondents showed that the most nutrition of toddlers is good nutrition as many as 24 people.

Jurkes – Vol. 9, No. 2 (2022) ISSN:2089-3906 EISSN: 2656-5838
(72.7%), but still found malnutrition as many as 7 people (21.2%) and more nutrition as many as 2 people (6.1%)

This shows that there is an incidence of malnutrition in children under five as many as 7 people (21.2%). This condition is caused by several things, including the economic status of the family. The economic ability of the family greatly influences buying or providing processed food. The family actually knows how to compile a balanced menu, but due to limited funds, compiling a balanced menu is less fulfilling. And other factors that can affect the incidence of malnutrition are infectious diseases, infectious diseases in children will disrupt metabolism which makes hormonal imbalances and disrupts immune function. So children affected by recurrent and chronic infections will experience nutritional status and immunity disorders, both in absolute and relative terms. Gender can also affect the nutritional status of toddlers, toddlers in this research who have malnutrition are as many as 7 toddlers, with 6 female toddlers and 1 male toddler.

This is in line with research in Wardani (2017) that malnutrition is more prevalent in girls than boys. Boys' nutritional needs are different from girls and are usually higher because boys have higher physical activity. Boys usually get a higher priority in terms of food compared to girls (Wardani, 2017).

2. The relationship between parents' knowledge and nutritional status of children under five in Benteng Village, Ciamis District, Ciamis Regency.

Based on the results of the frequency distribution calculation, it shows that parents who have sufficient knowledge and have toddlers with poor nutritional status are 1 person (50%), parents who have sufficient knowledge and have toddlers with good nutritional status are 1 person (50%), parents who have good knowledge and have toddlers with poor nutritional status are 6 people (19.4%), parents who have good knowledge and have toddlers with good nutritional status are 23 people (74.2%), and parents who have good knowledge and have toddlers with more nutritional status are 2 people (6.5%).

Based on the results of the Chi-Square statistical test, the significant value of p-value = 0.573 > α = 0.05. So it can be concluded that there is no relationship between parental knowledge and nutritional status in children under five in Benteng Village, Ciamis District, Ciamis Regency.

The level of nutrition knowledge of parents is very necessary for parents, especially mothers who have children under five or for caregivers of children under five. Based on the above research, it can be assumed that the level of knowledge of parents in Benteng Village mostly has a good level of knowledge, but there are some children under five who have poor nutritional status. This is likely to occur because there are other factors that can affect the nutritional status of children under five, such as family income, less family income will lead to a poor family economy so that the needs and nutritional adequacy of children will be less or not well met. Another factor that can affect toddlers with poor nutritional status in parents who have good knowledge is because the toddler has an infectious disease, because there are 3 toddlers with a category of poor
nutritional status and good parental knowledge.

The results of this study differ from research conducted by Nurmaliza and Sara Herlina (2019) in a study entitled the relationship of knowledge and education to the nutritional status of toddlers. Based on univariate analysis, the majority of the nutritional status of toddlers is good, while based on bivariate analysis using the chi-square test shows that there is a relationship between knowledge and education on the nutritional status of toddlers (Nurmaliza & Herlina, 2019).

Knowledge of balanced nutrition behavior is everything that mothers know about the behavior of regulating the composition or composition of daily food which contains nutrients in the type and amount that are in accordance with the needs required by the toddler's body and shows quantity and quality based on a balanced nutrition cone (Fajriani et al., 2020).

Nutritional knowledge of oral nutrition has an impact on the nutritional status of the baby and the baby's ability to choose nutritious meals for the baby and his/her family. Knowledge about the nutrition that must be consumed by algae to remain healthy is a factor that determines the health of a person (Nurmaliza & Herlina, 2019).

3. The relationship between children's eating patterns and the nutritional status of toddlers in Benteng Village, Ciamis District, Ciamis Regency

Based on the results of the calculation of the frequency distribution, it shows that 1 person (100%) has an inappropriate eating pattern and has a poor nutritional status, 6 toddlers have the right eating pattern and have a less nutritional status (18.8%), 6 children (18.8%) 24 people (75%) had the right diet and had good nutritional status, 2 toddlers had the right diet and had more nutritional status (6.1%). Based on the results of the Chi-Square statistical test, it shows a significant p-value = 0.147 > α = 0.05. So it can be concluded that there is no relationship between children's diet and nutritional status in toddlers in Benteng Village, Ciamis District, Ciamis Regency.

An appropriate feeding pattern is a feeding pattern that is appropriate to the type of food, amount of food and the child's eating schedule. Based on the research above, it can be assumed that the eating patterns of children under five in Benteng Village mostly have appropriate eating patterns, however there are some children under five who have poor nutritional status. This may occur because there are other factors that can influence the nutritional status of children under five, such as infectious diseases. Infectious diseases in children will disrupt metabolism which creates hormonal imbalances and interferes with immune function. So children who are exposed to recurrent and chronic infections will experience impaired nutritional status and immunity, both absolutely and relatively.

Another factor that can influence nutritional status is possibly due to inappropriate parenting patterns from parents. Parents must spend a lot of time caring for and guiding children, especially toddlers, because good parenting must be applied from an early age.
The results of this research are in line with research conducted by Stefani Oktavia Sitompu (2020) in research entitled the relationship between children's eating patterns and the nutritional status of BOPKRI Gondokusuman Kindergarten students in Yogyakarta. It was found that there was no significant relationship between children's eating patterns and the nutritional status of BOPKRI Gondokusuman Kindergarten students in Yogyakarta. (Sitompu et al., 2020).

Parents' diet is a way for parents to use available food as a reaction to the economic and socio-cultural pressures they experience. A balanced diet that is in accordance with needs accompanied by selecting the right food ingredients will produce the best nutritional status. Food intake that exceeds the body's needs will cause excess nutrients. Conversely, food intake that is less than needed will cause the body to become thin and susceptible to disease (Hasibuan & Siagian, 2020).

4. The relationship between infectious diseases and nutritional status in children under five in Benteng Village, Ciamis District, Ciamis Regency

Based on the results of the calculation of the frequency distribution, it shows that there are 4 toddlers who have infectious diseases and have poor nutritional status (44.4%), 5 toddlers who have infectious diseases and have good nutritional status (55.6%), toddlers who are not 3 people (12.5%) had infectious diseases and had poor nutritional status, 19 children (79.2%) did not have infectious diseases and had good nutritional status, 19 toddlers did not have infectious diseases and had more nutritional status as many as 2 people (8.3%).

Based on the results of the Chi-Square statistical test, it shows a significant p-value = 0.111 > α = 0.05. So it can be concluded that there is no relationship between infectious diseases and nutritional status in children under five in Benteng Village, Ciamis District, Ciamis Regency.

Infectious diseases seen from this study are mild and severe infectious diseases. In this study, the most common types of infectious diseases were mild infectious diseases such as coughs, colds, diarrhea and fever. Based on the research above, it can be assumed that in Benteng Subdistrict there were 5 children who had experienced infectious diseases in the last 7 days or at the time of the research, but had good nutritional status. This probably happens because when a toddler experiences an infectious disease, the child's parents provide good food and nutritional intake, so that the nutritional status of the toddler is well maintained. And there are 3 children under five who do not experience infectious diseases but have poor nutritional status, this is likely due to genetic factors inherited from their parents because the genetics obtained from fertilized eggs can determine the quantity and quality of growth of children under five.

The results of this study are different from the research conducted by Sri Nengsidan and Risma (2017) in a study entitled the relationship between infectious diseases and the nutritional status of toddlers in the work area of the Anreapi Health Center, Polewali Mandar Regency, it is known that there is a relationship
between infectious diseases and the
nutritional status of toddlers in the work
area. Anreapi Health Center (Nengsi &

Infectious diseases can negatively
affect the immune system of children under
five, because infectious diseases can reduce
appetite so that food consumption
decreases. The nutritional needs of toddlers
during illness increase, therefore when
children experience infectious diseases, the
nutritional needs of children must still be
fulfilled (Nengsi & Risma, 2017).

CONCLUSIONS AND
RECOMMENDATIONS

Based on the results of data
collection, processing and analysis
identifying "Factors Associated with
Nutritional Status in Toddler Children in
Benteng Village, Ciamis District, Ciamis
Regency", researchers can provide the
following conclusions:

1. The nutritional status of children under
five in Benteng Village, Ciamis
District, Ciamis Regency with the
criteria for malnutrition is 0 people
(0%), the number of nutritional status
for children under five with the criteria
for malnutrition is 7 people (21.2%),
the number of nutritional status in
There were 24 children under five with
good nutrition criteria (72.7%) and the
number of children under five with
over-nutrition criteria was 2 people
(6.1%).
2. There is no relationship between
parental knowledge and the nutritional
status of children under five in Benteng
Village, Ciamis District, Ciamis
Regency.
3. There is no relationship between
children's eating patterns and the
nutritional status of children under five
in Benteng Village, Ciamis District,
Ciamis Regency.
4. There is no relationship between
infectious diseases and nutritional
status in children under five in Benteng
Village, Ciamis District, Ciamis
Regency.

Suggestion

1. For the Ciamis Muhammadiyah
STIKes Institution
The results of this study indicate that
there are still children under five in
Benteng Village who are
undernourished. It is hoped that
STIKes Muhammadiyah Ciamis can
work together with posyandu in
Benteng Village to increase
community service activities,
especially regarding the problem of
nutritional status in toddlers.
2. For Respondents
It is expected that parents, especially
mothers who have toddlers with
nutritional problems, will increase their
intake of adequate nutrition and
nutrition or improve the quality of food
so that children's growth can develop
optimally and prevent malnutrition and
malnutrition.
3. For Other Researchers
The results of this research can be used
as basic data for further research, and it
is hoped that research development
will be carried out to recognize
variables that are not yet in this
research, such as parental education,
parental occupation, family income,
number of family members, child
gender and socio-economic status.
because in theory this variable is related to the nutritional status of children under five.

BIBLIOGRAPHY


