The Differences of Nutritional Status of Children Living in Riverbank and in Mainland of Pedamaran I District of Ogan Komering Ilir Regency

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Abstract. In the district of Pedamaran were still found toddlers with stunted growth. This study aimed to find out the differences in the nutritional status of children under five living in the River Bank called Daerah Aliran Sungai in the Mainland Areas of Pedamaran Village I, Pedamaran District, Ogan Komering Ilir Regency. A cross-sectional study was conducted on 63 toddlers with a simple random sampling technique. The study result showed that the percentage of toddlers with a history of diarrhea disease living in river bank was (51.5%), and that of acute respiratory infection (ARI) was (43.3%). While the proportion of children under five having a history of helminthiasis differs between those living in river bank and the mainland was (p = 0.009 <0.05). The number of toddlers who had a history of helminthiasis was higher in river bank (42.4%) than those living on the mainland (10.0%). The number of children under five was 84.1 percent having good nutritional status, 3.2% less dietary status, and 12.7% poor dietary status. There was a difference in the nutritional quality of children under five living in river bank and in mainland areas in which the results of the chi-square test showed the p-value was 0.001.

1. Introduction

There has been an increasing number of children with short prevalence (29.6%) and overweight (4.6%) about their nutrition since 2017, but less nutrition seemed to be decreased (9.5%). According to the Research and Development Agency of Ministry of Health RI 2018[1], Basic Health Research (Riskesdas 2018) showed that the status of malnutrition of toddlers ages 0-23 months in Indonesia was 3.8%, while the percentage of malnutrition was 14.0%. For toddlers aged 0 - 59 months, the rate of malnutrition was 3.9%, and less nutrition was 13.8%. The percentage of underweight / less nutrition (poor nutrition + malnutrition) of the toddler group (17.8%) was higher than the under three years olds group (14.8%).

The toddlers’ nutritional status in South Sumatra Province based on Riskesdas 2018, the percentage of malnutrition was 4.9%, and that of less nutrition was 12.3%. The 5 (five) highest prevalence of underweight is Lahat Regency (18.2%), followed by Ogan Ilir Regency (17.7%), North Musi Rawas (17.1%), Banyuasin (16.5%), and Ogan Komering Ilir (15.4%) [1].

The prevalence (poor nutrition and malnutrition) among children under five in South Sumatra Province was 17.2% lower than that of the national figure. Although it does not exceed national statistics, it must be a concern for the Ogan Komering Ilir (OKI) District Health Office dealing with nutrition problems in toddlers. However, if seen from the underweight prevalent, the Ogan Komering Ilir Regency figure was higher than the provincial and national Statistics.
In Pedamaran Subdistrict, there are riverbanks and mainland areas, wherein these areas are often found toddlers who experience poor growth patterns (below the red line). Based on the research conducted in the Tondano River Basin, it was found that the presence of E. coli bacteria in the Tondano river might cause diarrhea. If the child has diarrhea, it is very easy to experience nutritional disorders [2].

Based on the description above, it is important to research the nutritional status of children under five in Pedamaran I Village, Pedamaran District, Ogan Komering Ilir Regency. This study aimed to determine the differences in the children's nutritional status under five living in the river bank with the Mainland Areas of Pedamaran I Village, Pedamaran District, Ogan Komering Ilir Regency. The benefits of this research are to get input for the government and related agencies in managing nutrition problems and improving nutrition services as an effort to overcome nutrition problems.

2. Methodology

This type of research was quantitative analytic with a cross-sectional design. This research population is all children under five years old living in Pedamaran I Village, Pedamaran District, Ogan Komering Ilir Regency. The sample in this study was toddlers aged 0-59 months. The respondents in this study were mothers with toddlers. The number of samples of 63 respondents was taken using simple random sampling [3].

Data collection consisted of primary data and secondary data. The primary data included the data on maternal characteristics, including age, education, knowledge, and household members. The data of toddlers' data covered name, age, and gender obtained using interviews (questionnaire), bodyweight data were obtained through measurement, and weighing using a tool scale (unscale). The analysis was done descriptively and analytically using chi-square.

3. Results and Discussion

The boundary of Pedamaran I Village is bordered by Tulung Selapan Subdistrict (North), Pedamaran Timur Subdistrict (South), Pelimbangan Village (East), and Tulung Selapan Subdistrict and Pangkalan Lampam (West). Pedamaran I Village Kec. Pedamaran, OKI Regency consists of 3 hamlets, namely Hamlet I, located in a riverbank and tidal area. Hamlet II and Hamlet III are the mainlands. Based on the sample data, it was found that 52.4% of the respondents live in river banks and tidal area, and the other 47.6% of respondents live on the mainland.

Figure 1 shows the nutritional status of 63 toddlers in Pedamaran I Village in which 84.1 percent of toddlers have good nutritional status but there are still toddlers with poor nutritional status (3.2%) and less nutritional status (12.7%). This result is lower than national statistics [1] and provincial statistics.
Disease history is a condition/everything that has been experienced by a toddler affected by the disease. The disease that he has experienced includes diarrhea, ARI, and Worming. Based on figure 2, the history of illness that is often experienced by children is diarrhea (41.2%), ARI (28.1%), and worm disease (26.9%). The characteristics of mothers and toddlers by region of residence can be seen in the table below:

| No. | Characteristics of Mothers | Riverbank Area | Mainland Area | P-value | Result |
|-----|-----------------------------|----------------|---------------|---------|--------|
| 1.  | Age                         |                |               |         |        |
| a.  | 18 – 24 years               | 4              | 3             |         | No difference |
| b.  | 25 – 29 years               | 7              | 7             |         |         |
| c.  | 30 – 40 years               | 20             | 19            | 0.948   |         |
| d.  | > 40 year                   | 2              | 1             |         |         |
| 2.  | Educational Background      |                |               |         |        |
| a.  | Drop out (SD)               | 2              | 2             |         | No difference |
| b.  | Primary School (SD)         | 11             | 5             |         |         |
| c.  | Junior High School          | 8              | 4             | 0.227   |         |
| d.  | Senior High School          | 12             | 18            |         |         |
| e.  | Post Graduate               | 0              | 1             |         |         |
| 3.  | Knowledge                   |                |               |         |        |
| a.  | Good                        | 20             | 18            | 0.961   | No difference |
| b.  | Poor                        | 13             | 12            |         |         |
| 4.  | Number of Family            |                |               |         |        |
| a.  | <= 4                        | 8              | 12            | 0.180   | No difference |
| b.  | > 4                         | 25             | 18            |         |         |
| 5.  | Toilet Availability         |                |               |         |        |
| a.  | Available                   | 4              | 24            | 0.000   | Difference |
| b.  | Not Available               | 29             | 6             |         |         |

Table 1 shows that most mothers aged 30-40 years, 60.6% lived in the riverbank, and 63.3% in the mainland. The level of education of mothers is very diverse, especially those living in riverbanks, most
of the latest educationn of mothers is a high school (36.4%), while most mothers who live in mainland areas graduated from high school (60.0%). There is no difference in nutritional knowledge between mothers living in riverbank and those on the mainland in which their nutrition knowledge is already good (60%). Households with latrines living on the mainland are 80.0% compared to living in river banks 12.1%.

**Table 2.** Frequency distribution of characteristics of toddlers living in Riverbank and mainland, 2019

| No. | Characteristics of Toddlers | River Bank Area | Mainland Area | P-value | Result        |
|-----|------------------------------|-----------------|---------------|---------|---------------|
| 1.  | Age                          |                 |               |         |               |
|     | a. 0 - 6 months              | 4               | 3             |         |               |
|     | b. 7 - 11 months             | 7               | 7             |         |               |
|     | c. 12 – 24 months            | 20              | 19            | 0.948   | No difference|
|     | d. 25 – 60 months            | 2               | 1             |         |               |
| 2.  | Sex                          |                 |               |         |               |
|     | a. Male                      | 15              | 17            | 0.374   | No difference|
|     | b. Female                    | 18              | 13            |         |               |

Source: processed from sample data

Table 2 shows that most toddlers aged 12-24 months are 60.6% living in the riverbank and 63.3% in mainland areas. The number of children under five in the riverbank is mostly female (54.5%), while those living in the mainland are mostly male by 56.7%.

Table 3 shows that toddlers who have a history of diarrheal disease are more common in toddlers living in riverbanks (51.5%) than toddlers living in the mainland (30.0%). This can happen when a toddler bathing or defecating in a river allows bacteria to enter his body, leading to diarrhea. The analysis result stated no difference in toddlers having a history of diarrhea between those who live in riverbanks and the mainland with p (0.140)> 0.05. In contrast, the toddlers with a history of ARI were higher in toddlers living in the mainland (43.3%) than toddlers living in riverbanks (33.3%). Statistical test results obtained p (0.578)> 0.05, meaning that no difference in toddlers who have a history of ARI between living in the riverbank and mainland areas. While the proportion of children under five who have a history of helminthiasis differ between those living in riverbanks and mainland areas (p = 0.009 <0.05). The number of toddlers who have a history of helminthiasis was higher in riverbanks than in the mainland. The data show that 54% (34 households) do not have family toilets, and 88% live on riverbanks. Because latrine ownership is still low, defecation is still carried out in the river. Thus daily activities such as bathing, washing clothes were still carried out in the river [4].

**Table 3.** Distribution of disease history of toddlers based on areal status

| No. | Variable       | River Bank Area | Mainland Area | P-value | Result  |
|-----|----------------|-----------------|---------------|---------|---------|
| 1.  | Diarrhea History |                 |               |         |         |
|     | a. Yes          | 17              | 9             | 0,140   | No Difference |
|     | b. No           | 16              | 21            |         |         |
| 2.  | ARI History     |                 |               |         |         |
|     | a. Yes          | 11              | 13            | 0,578   | No Difference |
|     | b. No           | 22              | 17            |         |         |
| 3.  | Helminthiasis History |          |               |         |         |
|     | a. Yes          | 14              | 3             | 0,009   | Difference |
|     | b. No           | 19              | 27            |         |         |

Source: processed from sample data

The lack of latrines provision will accelerate the spread of diseases transmitted through feces, including typhus, dysentery, cholera, and helminthiasis. The research result [5] states that the latrines availability has a significant relationship with helminthiasis. The study results showed no difference in
children's nutritional status under five between males and females, where the p-value (0.772) > 0.05. Children under five with good nutritional status in male was 81.2% lower than female 87.1%. This can be seen in table 4. The results of this study were not different from [6], which stated that the nutritional status of toddlers in the good category occurred in females (88%) compared to males (84%). This is because males' activity is much more than that of females, so it needs more energy and reduces fat accumulation in the body.

| Variable | Toddler’s Nutritional status | n   | P-value | Result    |
|----------|------------------------------|-----|---------|-----------|
|          | Poor                         | 6   | 26      | 63        | 0.772 No Different |
|          | Good                         | 18,8% | 81,2%   |
| Sex      | Male                         | 4   | 27      |           |
|          | 12,9%                        | 87,1% |

Source: processed from sample data

Tabel 5. Distribution of toddlers’ nutritional status based on region

| No. | Variable                        | Riverbank Area | Mainland Area | P-value | Result  |
|-----|---------------------------------|----------------|---------------|---------|---------|
| 1.  | Toddler’s Nutritional status    | N %            | n %           | 0.001   | Different |
| a.  | Poor                            | 10 30,3%       | 0 0,0%        |         |         |
| b.  | Good                            | 23 69,7%       | 30 100,0%     |         |         |

Source: processed from sample data

The study results showed that there are differences in the nutritional status of children under five who live in the riverbank with the mainland, where the results of statistical tests show the value of p = 0.001. Children under five who live in riverbanks have a nutritional status of 30.3% less. None of the children under five with nutritional status live in the mainland (See Table 5). This result is not much different from the research [7] in the working area of the Singkil Community Health Center, Aceh Province, which states that under-fives' nutritional status in riverbanks is 20.0% higher than that of toddlers living in the transas area of 13.0 %. The high nutritional status of children under five who live in riverbanks occurs due to a history of illness experienced in toddlers such as diarrhea and ARI. This was revealed by [8] that infectious diseases (ARI and diarrhea) are very closely related to the nutritional status of children under five. Toddler underweight nutritional status occurs in toddlers who suffer from diarrhea as much as 92% and in toddlers who suffer from ARI as much as 72.1%. Statistical test results also show a relationship between nutritional status with toddlers’ who has a history of disease and ARI.

However, different from the above research, this study stated that there was no relationship between children's nutritional status under five with a history of diarrhea (p-value = 0.794) and ARI (p-value = 0.826) suffered by the toddler. Likewise, the history of helminthiasis showed no relationship with the children's nutritional status under five (p-value = 0.438). This result is no different from research Risa et al. [9] and Kamila et al. [10].

Malnutrition in toddlers can occur if toddlers often experience fever and cough that can affect appetite so that food is not enough to meet their needs. This research can be assumed that toddlers’ mothers should pay more attention to get adequate food for their toddlers.

Tabel 6. Distribution of disease history of toddlers based on nutritional status

| No. | Variable | Nutritional Status | P-value | Result    |
|-----|----------|--------------------|---------|-----------|
|     |          | Poor %             | Good %  |           |
| 1.  | Diarrhea History |                  |         |           |
| a.  | Yes      | 5 19,2%           | 21 80,8%| 0,794 No Difference |
| b.  | No       | 5 13,5%           | 32 86,5%|           |
2. ARI History
   a. Yes 3 12,5 21 87,5
   b. No 7 17,9 32 82,1
3. Helminthiasis History
   a. Yes 4 23,5 13 76,5
   b. No 6 13,0 40 87,0

Source: processed from sample data

4. Conclusion
   The study results concluded that the lack of nutritional status in toddlers mostly occurred in river banks. Likewise, with the history of helminthiasis in toddlers, it is more common to occur in children who live in river banks, but there is no relationship between the nutritional status of toddlers with helminthiasis disease history.

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