



Floating Living Habits that Trigger the Risk of Stunting in Children, Case Study in Kahayan River Palangka Raya City

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ABSTRACT

The complexity of stunting risk factors is influenced by environmental factor. This research aims to analyze floating living habits that trigger the risk of stunting in children. The design of this study is a case control study. The instruments are microtois and questionnaire. The habits that trigger the risk of stunting are : habit of giving food to babies immediately after giving birth, colostrum feeding, eating fruits and vegetables, bathing and defecating in the river, exposed to infectious diseases, using water sources from river, disposing of household waste on the river, and gathering with neighbors. It can be concluded that the floating living habits could increase risk of stunting.

INTRODUCTION

Stunting has received more international attention due to a growing understanding of its importance as a serious public health issue (Mohamed et al., 2022). Stunting is irreversible when it is not treated at over 2 years old. Stunting is a permanent condition that affects children and their communities (Pun et al., 2021). Several studies indicate that the consequences of stunting become almost irreversible after children reach two years of age (Karlsson et al., 2023). The first 1000 days of life are a critical period of growth and development of children (Mulaw et al., 2020). Some studies suggest that the ability to catch up with linear growth delays can occur, but not as often as it used to be. A research in Tsimane found that 80% of stunted children who were sampled remained in stunted conditions at the age of 11. Another study says that only some children can catch up with their growth beyond the age of 5 (Richard et al., 2021).

In addition, stunting is an interesting topic because of its wide and detrimental distribution, such as decreased cognitive capacity, low economic productivity, and high risk of degenerative diseases. Stunting can reduce cognitive ability and academic achievement. Other studies show that children have decreased mental function, difficulty remembering visually, and low problem-solving skills (Beckmann et al., 2021; Wijekumar et al., 2023). This low cognitive ability continues into adulthood so that it has an impact on mental development (Raiten & Bremer, 2020; Wake et al., 2023). In addition, stunting also has an impact on economic problems. A person who experiences stunting until adulthood usually has low education, as a result of which work productivity is limited, thus reducing his income (Akseer et al., 2022). In low- and middle-income countries, stunting conditions have proven to be economically detrimental to billions of dollars per year. (Akseer et al., 2022). The long-term impact of stunting is an increased risk of degenerative diseases such as diabetes and cardiovascular disorders. Strong suspicion due to metabolic syndrome disorder (Rachmawati et al., 2022).

The global prevalence of stunting currently stands at 22.3% and shows a tendency to rise due to the influence of multiple risk factors (Adhi et al., 2024; Amoako Johnson, 2022; Headey & Ruel, 2023; Kishino et al., 2024; Lu et al., 2020; Vonaesch et al., 2021). The prevalence of stunting in Central Kalimantan Province still fluctuates due to geographical factors such as rivers, swamps, and forests. Evaluation studies on reducing the impact of stunting showed insignificant results. The decrease in stunting prevalence is only 0.5 percent per year, indicating that stunting remains a major issue. (Beatty et al., 2024).

The prevalence of stunting is influenced by a complex interplay of socioeconomic, demographic, and environmental factors that vary spatially. Interventions that refer to spatial variation are essential as an effective stunting reduction effort. Research in Rwanda significantly proves that low birth weight, diarrheal diseases, low maternal education, floor conditions, water sources, and income index are risk factors for stunting. (Uwiringiyimana et al., 2022). In Indonesia, regions like Central Kalimantan have higher stunting risks due to poverty and low birth weight, whereas D.K.I Jakarta has the lowest risk (Aswi et al., 2024).

The Dayak community makes the Kahayan Watershed Floating House area in Palangka Raya City a place to live a life with a variety of unique daily activities. The Dayak people and the Banjar tribe use the river as a vital source of life, a means of transportation and carry out household activities such as bathing, washing, drinking water, as well as a fun place to fish. In addition, due to the habit of defecating and throwing garbage in the river causes a risk to sanitation problem (Hamidah et al., 2021).

The dominant activities of people who live in floating houses are bathing, washing, cooking, eating, drinking, and defecate (Muzainah & Adawiyah, 2021). The Kahayan watershed area forms a collection of cultural practices, daily places, housing, cultural practices, and economic activities of indigenous peoples with daily localities and also as a place for the economic turnover of the community (Hamidah et al., 2021) (Muzainah & Adawiyah, 2021). This study is very important to reveal specific risk factors in accordance with the characteristics of the Kahayan Watershed Floating Houses Area in Palangka Raya City related to the incidence of stunting in the area. This study aims to analyze the habits of living in a lanting house that can be a trigger for stunting risk in children.

THEORETICAL REVIEW

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METHODOLOGY

The design of this study is a case study. The population in this study is all people living in the Kahayan watershed (watershed) of Palangka Raya City. The sample was selected with inclusion criteria totaling 80 households with children under five. Forty (40) respondents were selected households with children under five who lived on land (as a control), while 40 respondents were selected households with children under five who lived in floating houses (as a cases). The instruments in this study are in the form of a height measuring instrument (microtois) with an accuracy of 0.1 cm, and a questionnaire. The data were analyzed bivariate using the SPSS. program.

RESEARCH RESULTS

These Floating houses can be distinguished based on their function, foundation structure and material construction. The Lanting House functions as a house, a place of business for fish carambas, and a place of trading business, as well as a boat mooring. Data on floating houses along the Kahayan river as many as 342 lanting. The people who live in the Floating houses along the Kahayan river are people who have lived there for generations. Based on the results of the study, 98% of the community lives in a permanent lanting house. All community activities from waking up to going back to sleep are carried out in the lanting house which is always moving due to the incoming waves. a unique life and still must be lived by them. Daily life activities are carried out on lanting such as cooking, washing, drinking, eating, bathing, defecating and disposing of garbage.

Based on the results of bivariate analysis using Crosstab analysis and the Haenszel Common Odds Ratio Estimate Mantel test, several people who live in floating houses are risk factors for stunting cases. Significant results with the highest to lowest Odds Ratio are presented in Table 1.

Table 1. Analysis of Bivariate Risk Factor of Stunting

Variabel	Case	Control	<i>P value</i>	OR
Colostrum feeding habits				
Yes	57.5%	82.5%	0.017*	0.287
No	42.5%	17.5%		
Feeding habits to babies shortly after giving birth				
Yes	85.0%	40.0%	0.000*	8.500
No	15.0%	60.0%		
Toddler bathing habits				
River	80.0%	42.5%	0.001*	5.412
Bathroom	20.0%	57.5%		
Habits of eating vegetables				
Like	20.0%	60.0%	0.000*	0.167

Dislike	80.0%	40.0%		
Habits of eating fruits				
Like	57.5%	80.0%	0.033*	0.338
Dislike	42.5%	20.0%		
The habit of gathering with neighbors				
Yes	5.0%	25.0%	0.023*	0.158
No	95.0%	75.0%		
Habits of using water sources				
Tap water	15.0%	40.0%	0.015*	0.265
River	85.0%	60.0%		
Habit of defecating				
River	92.5%	72.5%	0.027*	4.678
Public Toilet	7.5%	27.5%		
Habits of disposing of household waste				
On the land	10.0%	40.0%	0.004*	0.167
On the river	90.0%	60.0%		
Habits of being exposed to infectious diseases				
Yes	75.0%	42.5%	0.004*	4.059
No	25.0%	57.5%		

DISCUSSION

Based on Table 1, it is known that the habit of giving food to babies immediately after giving birth increases the risk of stunting by 8.5 times than control. The habit of people who provide food/liquids other than breast milk has a negative impact on the baby's linear growth. For example, giving fluids other than breast milk in the first 3 days after giving birth is associated with a low z-score of body weight and an increased risk of low weight (Muhimbula et al., 2019). The introduction of complementary foods before the age of six months increases the risk of morbidity and mortality, especially for people living in poor sanitation and hygiene environments, contributing to growth faltering and stunting (Deksiso & Mekasha, 2021). Other studies show that toddlers who do not receive exclusively breastfeeding have a higher risk than toddlers who receive exclusive breastfeeding (Permatasari et al., 2024; Safaah et al., 2022; Sari et al., 2021). Colostrum feeding habits contribute to increase risk of stunting 0.3 times than control. A study in Sigi Regency proved a significant relationship between colostrum administration and the low prevalence of stunting in young couples (Nur et al., 2021). Additionally, another study highlighted that colostrum's role in shaping the gut microbiota could be critical for healthy growth, potentially preventing growth failure (van den Elsen et al., 2024). Habits of eating fruits and vegetables also contribute to increase risk of stunting 0.3 and 0.2 times than control. Children with low dietary diversity are associated with stunting, including low consumption of fruits and vegetables. Children with an unbalanced diet have a higher risk of stunting. (Khamis et al., 2019). Imbalance

in the composition of the food consumed causes malnutrition in children, including fruits and vegetables (Shu et al., 2024). Proper balanced nutrition consumption, including fruit and vegetable consumption can increase immunity and reduce the risk of stunting (Khamis et al., 2019).

The habit of bathing in the river increases the risk of stunting 5.4 times than control. Toddlers (6-23 yo) who are cared for by mothers with poor hygiene practices are at higher risk of stunting (Novianti et al., 2023). Good personal hygiene practices include bathing and hand washing habits when handling children under five with the potential to reduce the risk of stunting (Novianti et al., 2023; Pradana et al., 2023). Likewise, the ease of access to clean water for bathing and the feasibility of sanitation facilities are related to stunting prevention (Mudadu Silva et al., 2023; Pradana et al., 2023). The use of clean water, maintaining environmental sanitation and improving personal hygiene practices are closely related to the reduction of stunting rates. On the other hand, if the practice of water management, sanitation and hygiene has an impact on the height of the child and his growth (Waller et al., 2020). Bathing in polluted water can increase children's exposure to parasites and infections, which are linked to poor growth outcomes.

Habits of defecating on the river can increase of ris stunting 4.7 times than control. Households that live on the banks of rivers and have children under five tend to be at risk of stunting due to the use of river water as a water source. This is due to poor sanitation practices and the possibility of river water pollution due to defecation in the river (Restila et al., 2023). The habit of bathing and defecating in polluted river water is closely related to waterborne diseases such as diarrhea, which has been proven to be a risk factor for stunting (Torres-Slimming et al., 2023). The practice of open defecation continues to be carried out in some communities citing the lack of proper sanitation facilities, despite being aware of hygienic toilets (Indrayadi et al., 2023).

Habits of being exposed to infectious diseases increase risk factor of stunting 4.1 times than control. Many studies have proven the relationship between infectious diseases and the incidence of stunting in children. What is meant by infectious diseases such as diarrhea, acute respiratory infections, and fever (Safitri et al., 2021). Poor environmental sanitation conditions and difficult access to clean water are closely related to the risk of developing infectious diseases that ultimately have the potential for stunting (Budiastutik et al., 2024; Fadrijah et al., 2021; Lestari, 2023; Shofifah et al., 2022).

Habits of using water sources from river increase risk of stunting 0.3 times than control. The use of river water as the only source of household water is related to stunting (Aleru et al., 2023). The presence of heavy metals such as arsenic and cadmium as pollutants is significantly associated with stunting (Oginawati et al., 2023). Water management, sanitation and hygiene cannot be separated and are the main thing. Ease of access to clean water and sanitation facilities reduce stunting incidence to the maximum (Das et al., 2022; Rah et al., 2020).

Habits of disposing of household waste on the river contribute to trigger risk of stunting 0.2 times than control. A study identified that poor household

waste management is a risk factor for stunting. in the Java region, the increase in stunting rates is influenced by poor household waste management practices (Rah et al., 2020).

The habit of gathering with neighbors contribute to trigger risk of stunting 0.2 times than control. Social gathering activities and healthy lifestyle practices have a major role in preventing stunting. Therefore, it is recommended to form a neighborhood group that cares about stunting. Meanwhile, social gatherings that aim to discuss nutritious food can prevent and reduce stunting (Arlinda et al., 2022; Rah et al., 2020). The formation of a sense of togetherness with neighbors due to social interaction is very meaningful to improve the quality of life and health (Park & Kim, 2022). Effective interventions sometimes arise from social interactions that prioritize the value of values and contextual factors put forward by stakeholders at the local level. This activity can reveal the relationship between community behavior and stunting (Moreno et al., 2023). In community-based health interventions, it is known that positive interactions with neighbors strongly support the creation of overall health (Brednikova, 2021).

CONCLUSIONS AND RECOMMENDATIONS

The habits carried out by people living in floating houses in Kahayan watershed area could be a trigger risk factors of stunting. The factors that contribute to increase risk of stunting are : Habit of giving food to babies immediately after giving birth; Colostrum feeding habits; Habits of eating fruits and vegetables; Habit of bathing in the river; Habits of defecating on the river; Habits of being exposed to infectious diseases; Habits of using water sources from river; Habits of disposing of household waste on the river; and The habit of gathering with neighbors. Community empowerment through behavior change communication can be the right choice as a prevention effort. This research contributes as a basis for considering behavior change communication programs for people living in floating houses in the Kahayan Watershed Area, Palangka Raya City. This research is limited to quantitative results only. It prone to several biases including selection bias, data collector bias, less able to determine the causal relationship. So, it is necessary to make efforts to minimize bias and add qualitative methods or using mixed methods in conducting research.

FURTHER STUDY

In order to explore the extent to which the habit of floating living triggers the risk of stunting in children, the author plans further research in the field in the form of interviews and surveys with the title "Ecology-based Stunting Prevention Strategy in the Lanting House Area of the Kahayan Watershed, Palangka Raya City"

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