

THE ROLE OF ENVIRONMENT AND NUTRITION ON THE PREVALENCE OF STUNTING IN PAHLAWAN VILLAGE BATUBARA REGENCY

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Article Info

Article history:

Received :

Accepted :

Published :

Available online

<http://aspublisher.co.id/index.php/perspektif>

E-ISSN: 3063-3494

How to cite:

Harahap et al., (2024). "The Role of Environment And Nutrition On The Prevalence of Stunting In Pahlawan Village Batubara Regency" *Perspektif: Journal of Social and Library Science*, vol. 2, no. 3, pp. 91-99, 2024. doi: 10.14710/perspek.2024.xxxxx [Online].



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ABSTRACT

Stunting remains a significant health issue in Desa Pahlawan, Kecamatan Tanjung Tiram, driven by environmental, sanitation, and nutritional factors. This study explores the relationship between these factors and the prevalence of stunting, while examining the potential of local resources, such as marine fish, for improving nutrition. A qualitative approach, using in-depth interviews and field observations, revealed that poor access to clean water, low sanitation quality, and limited use of local food resources significantly contribute to stunting. Additionally, inadequate dietary practices and a lack of awareness about balanced nutrition exacerbate the issue. Though intervention programs such as community education and collaboration with local health posts have been implemented, further coordinated efforts are necessary for long-term change. This research provides insights into the causes of stunting in Desa Pahlawan and offers locally-based recommendations for more effective interventions.

Keywords: Stunting, environment, sanitation, nutrition, Desa Pahlawan, local resources

1. INTRODUCTION

Stunting is still one of the main health problems in Indonesia. The incidence of short toddlers, if reviewed from the World Health Organization (WHO, 2017) book for the standard Prevalence of stunting is less than 20%, it can be said that the region does not experience problems with toddler nutrition. Meanwhile, in Indonesia itself it is still more than 20%, which means that the Indonesian government must pay more attention to this to reduce the problem of stunting in

its country. especially in rural areas such as Pahlawan Village, Tanjung Tiram District. Based on local data, the stunting rate in Pahlawan Village shows a fairly high number, indicating that chronic nutritional problems still require special attention. Stunting is not only a nutritional problem, but is also influenced by various environmental, sanitation, and socio-economic factors. Several children in Pahlawan Village have shown symptoms of stunting, which are characterized by a body that is shorter than the average for their age and delayed cognitive development (Bappenas, 2020). This condition is concerning because children who experience stunting tend to have a lower quality of life and impaired learning ability and productivity in the future. This condition greatly affects the development of the younger generation in Pahlawan Village, who should be the successors in village development and economic welfare.

One of the factors contributing to stunting in Pahlawan Village is the problem of sanitation. There are still many houses in this village that have difficulty in getting access to clean water. The absence of adequate access to clean water not only affects environmental cleanliness, but also has a direct impact on public health, especially children. Lack of clean water causes a high risk of infection from diseases associated with poor sanitation, such as diarrhea and parasitic infections, which reduce the ability of children's bodies to absorb essential nutrients (Cameron & Williams, 2019)

In addition, the environmental conditions in several hamlets in Pahlawan Village are quite concerning. Many hamlets are dirty, with lots of garbage submerged in water, which can be a breeding ground for mosquitoes and a source of disease. This adds to the burden on public health, especially children, whose immune systems are still developing. An unhealthy environment like this triggers infectious diseases that can worsen children's nutritional status, especially in areas most affected by poor sanitation conditions.

In addition to sanitation and environmental issues, consumption patterns and community knowledge about the importance of balanced nutrition also play an important role in the stunting phenomenon (Dewey, 2011). Although Pahlawan Village is located close to the sea, the potential of marine resources such as fish that are rich in protein and other important nutrients does not seem to have been optimally utilized to support improving children's nutrition. Sea fish are a food source rich in protein and omega-3 fatty acids, which play an important role in children's growth and development. However, the lack of knowledge about the importance of nutritious food and the economic difficulties experienced by most families in this village make the consumption of nutritious food, especially fish, still limited. This study is very important to understand more deeply how environmental and nutritional factors affect the prevalence of stunting in Pahlawan Village. In addition, this study also aims to explore the potential for utilizing local resources, such as seafood, as a long-term solution to addressing nutritional problems in this village. This is in line with a multi-sector approach to

handling stunting that not only focuses on direct nutritional interventions, but also improving sanitation, nutrition education, and increasing access to local resources.

So far, there has been no research that has discussed the problem of stunting in Pahlawan Village in depth. This study is the first in the village, which comprehensively combines environmental, nutritional, and local resource potential aspects in its analysis. Although many studies on stunting have been conducted in various regions in Indonesia, Pahlawan Village has a unique condition with abundant but underutilized marine potential, as well as serious environmental problems. Therefore, this study is expected to make a significant contribution in identifying locally-based solutions that can be implemented sustainably.

In addition to being an academic effort, this study is also closely related to community service carried out by KKN (Real Work Lecture) students of the State Islamic University of North Sumatra Group 77 As part of the service program, by implementing a work program in the form of a stunting prevention seminar aimed at increasing awareness of the Pahlawan Village community regarding the importance of nutrition and environmental cleanliness. The experience from this service program is one of the bases for developing this research further.

Thus, this study will not only produce a deeper understanding of the causes of stunting in Pahlawan Village, but also contribute to real actions in the field through the service program that has been and will be implemented. The synergy between research and community service is expected to create more effective interventions in dealing with stunting, not only in the Hero Village but also in other areas facing similar problems.

2. RESEARCH METHOD

This study uses a qualitative approach to deeply understand the role of environment and nutrition on the prevalence of stunting in Pahlawan Village, Tanjung Tiram District. A qualitative approach was chosen because it is appropriate to explore community perceptions, experiences, and understanding of factors that contribute to stunting. The data collected focuses on in-depth narratives and descriptions from respondents, which allows for more complex and comprehensive insights.

This study was conducted in Pahlawan Village, Tanjung Tiram District. This location is where Uinsu KKN 77 students carry out community service. stunting as the main program is very appropriate to be studied in this place because there are various environmental and nutritional problems that are relevant to the research.

In addition to interviews, researchers also conducted direct observations of environmental conditions in the village, such as environmental cleanliness, sanitation, and utilization of natural resources. This observation was carried out

to support data from interviews and provide a real picture of environmental factors that influence stunting in Pahlawan Village.

3. RESULT AND DISCUSSION

Stunting and Its Impact on Child Growth

Stunting is a chronic nutritional problem that occurs due to a lack of nutritional intake over a long period of time, especially during the first 1000 days of life, starting from pregnancy until the child is two years old. This condition is characterized by a child's height that is shorter than the standard for their age and delayed cognitive development. Stunting has serious long-term impacts on a child's quality of life, including their learning ability, risk of disease, and economic productivity in adulthood.

This study is in line with the results of Linda Risyati's study (2020) which shows that stunting is closely related to malnutrition of protein, vitamins, and minerals, as well as environmental factors that do not support children's health. Children who are stunted tend to be more susceptible to infectious diseases and have lower immunity. In Pahlawan Village, Tanjung Tiram District, stunting is a major issue that affects the quality of life of the community due to the high prevalence of this case among toddlers. Stunting not only affects a child's physical growth, but also affects their brain development and intelligence, which ultimately impacts their academic abilities and productivity in the future.

Pahlawan Village is a village located in Tanjung Tiram District, Batubara Regency, North Sumatra Province. The village is located in a coastal area, close to the sea, so most of its residents work as fishermen or are involved in the marine sector. Despite having abundant marine resource potential, the village still faces various challenges in terms of infrastructure, health, and community welfare. One of the main problems in Pahlawan Village is access to clean water and adequate sanitation. Most residents still have difficulty getting clean water, and poor sanitation has an impact on public health, especially children. The environmental conditions in several hamlets are also poorly maintained, with lots of garbage and inadequate drainage, which causes waterlogging and increases the risk of disease. Nevertheless, the people of Pahlawan Village are known as a friendly community with strong solidarity. Posyandu and community groups are active in implementing health and welfare programs, including efforts to prevent stunting. The village is also a strategic place to develop because it is close to waters rich in natural resources, such as sea fish, which have the potential to improve nutrition and community welfare.

Factors Related to Stunting

Chronic malnutrition that causes stunting is often associated with the inability of families to access and provide a balanced nutritious diet. In Pahlawan Village,

food factors are a major challenge because many families rely on low incomes, which causes limitations in meeting children's daily nutritional needs. The food consumed is often insufficient to meet the protein, vitamin, and mineral needs needed for optimal growth.

In addition, environmental factors such as poor sanitation, limited access to clean water, and unhealthy housing conditions also exacerbate the problem of stunting in this village. An unclean environment increases the risk of children being exposed to infectious diseases such as diarrhea, which interferes with the absorption of nutrients in the body. Children who are often sick are more likely to experience malnutrition and ultimately suffer from stunting. In this context, interventions on food and environmental factors are key to reducing the prevalence of stunting in Pahlawan Village.

In addition to external factors such as food and the environment, biological factors also play an important role in determining the risk of stunting in children. Maternal health before and during pregnancy affects fetal development and the nutritional status of the baby at birth. Mothers who experience malnutrition during pregnancy are at greater risk of giving birth to babies with low birth weight (LBW), which is a major risk factor for stunting. The quality of breast milk given to babies also greatly determines the nutritional status of children during the first six months of their lives. This biological factor is one of the main focuses in maternal and child health interventions, especially in providing education to pregnant and breastfeeding mothers about the importance of fulfilling nutrition during pregnancy and breastfeeding.

Access to clean water is one of the crucial problems in Pahlawan Village that contributes to the high stunting rate. Based on an interview with Rijal, a local resident, most people in this village have to buy clean water from one house which is then distributed to other houses. For some houses that have access to PDAM water, the water quality is often not suitable for consumption because it is cloudy or brownish in color. This poor water quality has a direct impact on children's health, increasing the risk of infectious diseases such as diarrhea. This disease can inhibit the absorption of nutrients in a child's body, thereby worsening stunting. Therefore, improving access to clean water in this village is a priority to reduce the environmental impact on public health.

Stunting Prevention Efforts: Strategic Steps from Students and the Community
One of the important initiatives in handling stunting in the Hero Village is through the involvement of Community Service (KKN) students from Group 77. As part of their main work program, the KKN students held a seminar on stunting prevention which was attended by mothers from five integrated health posts in the village. This seminar aims to increase public awareness and knowledge, especially mothers, regarding the importance of balanced nutrition and environmental cleanliness in preventing stunting. This activity is expected to have a long-term impact on stunting prevention efforts through community education and

utilization of local resource potential. This activity also emphasizes the importance of the active role of families in ensuring the fulfillment of children's nutrition from an early age. The seminar is expected to be one of the long-term strategies in reducing the prevalence of stunting in the village.

Batubara Regency has shown positive progress in reducing the prevalence of stunting from year to year. Data shows that in 2021, the prevalence of stunting in this district was at 30.9%. This figure dropped significantly to 21.7% in 2022 and 17.7% in 2023. Data for 2024 is still being collected, but this consistent downward trend reflects the success of intervention programs carried out by the government and local communities. This decline is also influenced by increased public awareness of the importance of good nutrition and sanitation, as well as more effective health interventions.

The Batubara Regency Government has carried out various coordinated intervention efforts to monitor and address stunting. One important step taken is to gather health workers from all sub-districts to measure the development of children who are indicated as stunting. This measurement aims to ensure that children who need special attention can be monitored regularly and given appropriate interventions. These interventions include providing nutritious supplementary food, monitoring children's health status, and providing counseling to families about the importance of fulfilling balanced nutrition and maintaining environmental cleanliness.

At the local level, the posyandu in Pahlawan Village plays an important role in providing basic health services for mothers and children. Posyandu collaborates with health workers from the sub-district to implement various programs, including providing a nutritious food menu specially designed for pregnant women and toddlers. This program is designed to ensure that pregnant women and children receive sufficient nutritional intake, thereby preventing stunting. In addition, posyandu activities also include educating the community about the importance of maintaining a clean environment and healthy living behaviors to prevent diseases that can affect children's health. Education about good parenting is also an important part of preventing stunting. Based on an interview with Monica, a health worker from the Tanjung Tiram Health Center, good parenting plays a major role in ensuring that children grow up healthy. Education for prospective couples and pregnant women is very important so that they understand the importance of fulfilling nutrition and how to create a clean environment for their children. This includes providing exclusive breastfeeding for the first six months, providing nutritious complementary foods, and maintaining cleanliness around the child's residence.

4. CONCLUSION

This study shows that stunting in Pahlawan Village, Tanjung Tiram District, is not only caused by poor nutrition, but is also influenced by unfavorable environmental conditions, such as limited access to clean water and poor sanitation. These factors inhibit children's growth and increase the risk of contracting infectious diseases, which ultimately worsens their nutritional status. In addition, although Pahlawan Village has abundant natural resource potential, such as sea fish that are rich in protein, its utilization for improving nutrition is still limited due to the low level of community knowledge about the importance of a balanced diet.

Efforts to prevent stunting through intervention programs, including community education and increasing access to nutritious food, are urgently needed. One of the interventions that has been carried out is a stunting prevention seminar by KKN students, which has had a positive impact on increasing public awareness of the importance of nutrition and environmental cleanliness.

The overall decline in stunting prevalence in Batubara Regency shows that a coordinated intervention program between the government, health workers, and the community can bring significant results. However, in Pahlawan Village, further steps are still needed to overcome the challenges faced, especially in terms of improving sanitation and utilizing local resource potential.

Thus, this study provides recommendations to continue interventions that focus on environmental improvements and increasing access to nutritious food, while continuing to involve local communities in sustainable stunting prevention efforts.

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