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FACTORS AFFECTING STUNTED GROWTH IN CHILDREN WITH A FOCUS ON THE DEWORMING PROGRAM IN SOUTH KONAWE

Pratiwi Septarina[1], Handi Fitriyani[1], Nurzaima[1]

[1]Master Of Public Health Study Program, Faculty of Health Sciences, Mandala Waluya University

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Corresponding Author:

Pratiwi Septarina

Email:

ABSTRACT

Stunted growth in children in South Konawe is a serious health problem, with a high prevalence of worm infections contributing to malnutrition. This research discusses the medical, social and economic factors that influence this condition, and highlights the importance of deworming programs as a solution. Worm infections cause anemia, malabsorption, and increased energy requirements, all of which negatively impact a child's growth. Social aspects, including parental education and health awareness, as well as economic conditions, such as access to nutritious food, also influence children's nutritional status. To overcome stunted growth, it is necessary to increase deworming programs, public education and economic support. The research method used is quantitative descriptive. The research sample of 100 toddlers was taken using stratified random sampling technique. Research Results Of the 100 toddlers tested, the prevalence of worm infections was found in 35% of children. Pinworms: 60%, Roundworms: 30%, Hookworms: 10%, Toddlers infected with worms have a 2.5 times higher risk of stunted growth than those who are not infected ($p < 0.001$). 70% of toddlers living in environments with poor sanitation experienced stunted growth, compared with 25% of those living in clean environments ($p < 0.05$). There is a positive relationship between parental education level and children's nutritional status. Toddlers from highly educated parents had a lower risk of stunted growth ($p < 0.05$). Of the 100 toddlers, 60% take part in a routine deworming program. Toddlers who adhere to this program have a 1.5 times lower risk of stunted growth than those who do not comply ($p < 0.05$).

INTRODUCTION

Stunted growth in children is an urgent public health issue, especially in developing countries. In Indonesia, including South Konawe, the prevalence of stunting or stunted growth is quite high, which has a negative impact on children's physical and cognitive development. One of the main causes of this condition is worm infection, which often disrupts children's nutritional status and health. Worm infections, such as roundworms, hookworms, and flatworms, can cause anemia and nutritional malabsorption, resulting in children not getting enough nutrition for optimal growth (1,3,4).

Based on WHO data, in 2023 more than 1.5 billion people or 24% of the world's population, including 260 million pre-school children and 654 million school-age children, are infected with Soil Transmitted Helminths (STH). This worm disease is neglected, causing more than 500 thousand deaths every year. It is very common in developing countries, where the highest

prevalence with 70% of STH infection cases occurs in Asia, with Southeast Asia having the most(2). Worms deplete the host's iron and protein by consuming host tissue, including blood. Anemia, for example, can be caused by prolonged blood loss due to hookworms in the intestines. Worms also promote improper absorption of nutrients. In addition, certain worms that are transmitted through soil also cause loss of appetite, thereby reducing nutritional intake and fitness levels. In roundworms, the worms compete for vitamin A in the intestines(5,7).

In South Konawe, this challenge is exacerbated by social and economic factors, such as low levels of parental education and limited access to nutritious food. Therefore, a regular deworming program is an important step to reduce the burden of infection and improve the nutritional status of children. With a deeper understanding of the factors that influence stunted growth and the implementation of an effective deworming program, it is hoped that children's health in South Konawe can be improved, resulting in a healthier and more productive generation. This article will explore these factors further and propose strategic recommendations for overcoming the problem of stunted growth in children.

METHODOLOGY

The research method used is quantitative descriptive. The research sample of 100 toddlers was taken using Stratified random sampling technique. Using descriptive statistical analysis to describe sample characteristics. Correlation test to determine the relationship between the factors analyzed and toddler growth. Research instrument Explore information regarding compliance with the deworming program.

RESULTS AND DISCUSSION

Table 1. of nutritional status and prevalence of worm infections

No	Nutritional status	Persentase (%)
1	Good Nutrition	**45**
2	Malnutrition	**35**
3	Malnutrition	**20**
Total		**100**
N0	**Prevalence of Worm infections**	**Persentase (%)**
1	Pinworms	**60**
2	Roundworms	**30**
3	Hookworm	**10**
Total		**100**

The table of nutritional status that influences the growth and development of toddlers from 100 samples shows that good nutritional status is 45%, malnutrition is 35% and malnutrition is 20%. Meanwhile, the prevalence of worm infections is more pinworms, namely 60%, roundworms 30% and hookworms 10%.

Table 2. of Relationship between Factors and Stunted Growth using Correlation test

No	Inhibited Growth Factors	P_value
1	Worm infections	**0.001**
2	Nutritional status	**0.001**

3	Environmental Factors	**0.000**
4	Parental education	**0.001**
5	**Compliance with the deworming program**	**0.001**

Statistical analysis shows a significant relationship between several factors and stunted growth in toddlers consisting of worm infections with p_value = 0.001 < 0.05, nutritional status = 0.001 < 0.05, environmental factors = 0.000 < 0.05, parental education = 0.001 < 0.05 and compliance with deworming program = 0.001 < 0.05

Discussion

Bivariate analysis shows that there is a relationship between stunted growth factors and worm infections which influence stunted growth in children in South Konawe with a focus on the deworming program. Worms are an infectious disease that has a chronic impact on nutritional status. The impact on nutritional status caused by worm infections is related to the level of investment. Investment in intestinal worms is related to age, that the higher the age of the subject, the investment decreases, because as the child's age increases, the child will experience changes in playing patterns, activities and level of cleanliness or immune system. This research shows that the worm infection that occurs is caused by Ascaris lumbricoides. The disturbances that can be caused by adult Ascaris lumbricoides worms in the intestine are usually mild, however, in cases of severe infection, adult worms can cause abnormalities in the intestinal mucosa in the form of inflammation of the walls of the small intestine which results in disruption of food absorption, causing malnutrition(2,6).

Research conducted in South Konawe Regency shows that one of the factors that influences worm cases is related to age, that the higher the age of the subject, the investment decreases, because as the child's age increases, the child will experience changes in playing patterns, activities and level of cleanliness or endurance. body. This research shows that the worm infection that occurs is caused by Ascaris lumbricoides. The disturbances that can be caused by adult Ascaris lumbricoides worms in the intestine are usually mild, however, in cases of severe infection, adult worms can cause abnormalities in the intestinal mucosa in the form of inflammation of the walls of the small intestine which results in disruption of food absorption, causing malnutrition(8,9).

Rodiyah's research, 2023 showed that nutritional status in this study was categorized into Malnutrition (<10.5 kg/m2) and Normal Nutrition (10.5-25 kg/m2) and worms in school children in this study were categorized as Positive, if clinical signs are found in the child and Negative, if no clinical signs are found in the child(9).

Arifin's research, 2018, shows that one type of infectious disease in children is worm infection, which is an infection caused by the Soil-Transmitted Helminth (STH) group of worms. Cumulatively, worm infections can inhibit physical and mental development and can reduce the body's resistance so that it is susceptible to disease. others (11). Looking at the various consequences caused by worm infections, of course worms can be categorized as a health problem that is quite worrying and requires serious treatment because most of the sufferers are children or toddlers, who are still growing. Worm infections have a major impact on the health, nutrition, intelligence and productivity of sufferers. Economically, it also causes losses, because worms suck food into the human body, both in the form of carbohydrates and protein, which causes a decrease in the quality of human resources (10).

CONCLUSION

Stunted growth in children in South Konawe is a multifactorial problem influenced by medical, social, economic and environmental aspects. Worm infections, malnutrition, and lack of access to health services and education are the main factors that hinder optimal growth. Regular deworming programs,

increasing access to nutritious food, and educating the public about the importance of sanitation and health are important steps that need to be implemented. With a comprehensive and collaborative approach, it is hoped that the health status of children in South Konawe can improve, producing a healthier and more productive generation.

Sugestion

1. It is important to strengthen the implementation of deworming programs, involving the community and health workers to ensure optimal coverage.
2. Develop ongoing education programs for parents regarding the importance of balanced nutrition and good sanitation practices.
3. Encourage collaboration between the government, non-government organizations and the community in efforts to improve children's health, including the provision of nutritious food and health services.
4. Ensure better access to health services and adequate sanitation facilities, especially in remote areas.

Carry out regular monitoring and evaluation of child health programs to assess effectiveness and make necessary improvements

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