

NUTRITIONAL NEEDS OF FISH TO PREVENT STUNTING IN EARLY CHILDHOOD

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Submit: May, 20, 2021; Revised: July, 17, 2021; Accepted: August, 14, 2021

Abstract

Currently, many children are faced with the problem of malnutrition, one of which is stunting in children. Stunting is a growth and development disorder that can cause children to have a shorter body posture than children their age. Stunting itself can be prevented since in the womb by paying attention to the food intake consumed by the mother during pregnancy. In addition, paying attention to children's diet, parenting patterns, and meeting the needs of clean water and sanitation for children. Currently, Indonesia is still in fourth place in the world and second in Southeast Asia in terms of cases of stunting under five. It is known, the number of stunting cases in Indonesia in 2019 reached 27.67 percent. The figure was successfully suppressed from 37.8 percent in 2013. However, This figure is still higher than the maximum tolerance for stunting set by the World Health Organization (WHO), which is less than 20 percent. Related to diet and nutritional needs of pregnant women and children to prevent stunting is to eat fish. The nutritional content of fish is very relevant to support stunting prevention programs, especially in the first 1,000 days of life. The advantages in nutrition found in fish include high Omega 3 fatty acids for the development of the eyes, brain and nervous tissue and have a complete amino acid composition. first 000 days of life. The advantages in nutrition found in fish include high Omega 3 fatty acids for the development of the eyes, brain and nervous tissue and have a complete amino acid composition. first 000 days of life. The advantages in nutrition found in fish include high Omega 3 fatty acids for the development of the eyes, brain and nervous tissue and have a complete amino acid composition.

Keywords: stunting, nutrition, fish, child

Introduction

Globally, in 2013, Indonesia was ranked the fifth largest for stunting prevalence. This ranking certainly requires serious attention because in addition to humans themselves, the prevalence of stunting that exceeds the limit (20% according to WHO) will become a public health problem and affect the development of a country from various sectors. Not only that, toddlers who experience stunting tend to have low cognitive abilities so that it has an impact on decreasing productivity (Baker, 2008).

Malnutrition occurs since the baby is in the womb and in the early days after the child is born, but only appears after the child is 2 years old. stunting in children reflects the condition of failure to thrive in children under 5 years of age as a result of chronic malnutrition, so that children become too short for their age.

Short toddlers are toddlers with nutritional status based on length or height according to age when compared to the 2005 WHO-MGRS (World Health Organization of Multicentre Growth Reference Study) standard. Short category if the z-score is less than -2SD and categorized as very short if the z-score is less

than -3SD. The problem of stunting can hinder development in children, with negative impacts that will last in the next life. Children who experience stunting have a risk of decreased intellectual ability, productivity, and an increased risk of degenerative diseases in the future.

The incidence of stunting is caused by four main factors, namely maternal and environmental factors, inadequate complementary feeding, barriers to breastfeeding, and infection factors. One of the points that contribute to the inadequacy of complementary feeding is the lack of food diversity, especially food sourced from animal food. One source of protein that is widely available at an affordable price is fish. As a maritime and archipelagic country with most of its territory consisting of waters, Indonesia has a wealth of animal food resources in the form of very abundant fish. However, the abundance of fish resources has not been utilized optimally. Fish is a source of nutrition (high quality protein, high content of omega 3 fatty acids, a source of vitamins A, D, mineral sources, low in calories and low in saturated fat). Research in Rowosari, Semarang showed that fish consumption was significantly correlated with the incidence of stunting.

Method

between the independent variable and the dependent variable. This means that each research subject is only observed once and measurements are made on the status of the character or variable of the subject at the time of examination. This cross-sectional study is often referred to as a transverse study and is often used in epidemiological studies.

Discussion

is a health problem because it is associated with the risk of morbidity and mortality, suboptimal brain development, resulting in delayed movement development and stunted mental growth. This is a serious threat to the existence of children as the next generation of a nation. Short children are a widely accepted predictor of poor quality of human resources, which in turn reduces the productive ability of a nation in the future. From the results of the 2013 Riskesdas, the prevalence of stunting in Gorontalo Province was 38.8%. Meanwhile, based on the results of Riskesdas in 2018, the prevalence of stunting in Gorontalo Province fell to 32.5%. Although still above the national average of 28%, the prevalence of under-five undernourished was less than 19.6% to 17.7%, and the prevalence of stunting was decreased from 37.2% to 30.8%. The prevalence of wasting under five is 14.4% and the prevalence of obesity has decreased from 5.4%. Another study in Thailand showed that 70 stunting toddlers 22.9% of them experienced developmental delays in general domain abilities including language (14.3%), gross motion (10.0%), social independence (5.7%) and fine motion (2.9%). The highest prevalence of lateness in males is 21.4% compared to females, which is 9.5%.

Causes of Stunting, poor nutritional status in pregnant women and infants are the main factors that cause children under five to experience stunting. There are several things that can trigger malnutrition. These causes include the following:

1. Inadequate knowledge of mothers

Since in the womb, babies need various nutrients for growth and development. To achieve this, the mother must be in good health and well nourished. If the mother does not have knowledge of good nutrition for her and the fetus, this will be difficult to obtain. Likewise after birth, the first 1000 days of life (0-2 years) is a very crucial time for growth and development. At this time, babies need exclusive breastfeeding for 6 months and additional quality complementary foods (MPASI) afterward. Therefore, mothers must have sufficient knowledge about child nutrition.

2. Recurrent or chronic infections

The body gets energy from food intake. Recurrent infectious diseases experienced since infancy cause

the child's body to always need more energy to fight disease. If this need is not balanced with adequate intake, children will experience malnutrition and eventually end up with stunting. The occurrence of infection is closely related to the mother's knowledge on how to prepare food for children and sanitation in the place of residence.

3. Poor sanitation

The difficulty of clean water and poor sanitation can cause stunting in children. The use of unclean well water for cooking or drinking accompanied by the lack of availability of latrines is the most common cause of infection. Both of these can increase the risk of children suffering from repeated diarrhea and intestinal worm infections (worms).

4. Limited health services

In fact, there are still disadvantaged areas in Indonesia that lack health services. In fact, in addition to providing care for sick children or pregnant women, health workers are also needed to provide knowledge about nutrition for pregnant women and children in their early life.

5. Access to nutritious food is inadequate.

Families who cannot access nutritious food adequately can be caused by various factors such as family income and purchasing power as well as food security in the area where the family lives.

Impact of Stunting on Children's Health

Looking at the complexity of the stunting problem, there are two types of impacts caused by stunting based on the time period.

Stunting in children can affect him from childhood to adulthood. In the short term, stunting in children causes disruption of brain development, body metabolism, and physical growth. At first glance, the body proportions of stunted children may look normal. However, the reality is that children who suffer from stunting will be shorter than children their age. As children get older, stunting can cause various problems, including: Children's intelligence is below average so that their learning achievement cannot be maximized. The child's immune system is not good so that children get sick easily. Children will be at higher risk of suffering from diabetes, heart disease, stroke, and cancer. The bad impact of stunting that haunts old age makes this condition very important to prevent. Good nutrition and a healthy body are the keys to preventing stunting.

The nutrients found in fish can prevent stunting

Fish based on their habitat consist of two types, namely seawater fish and freshwater fish, both of which are important food sources of protein, especially during growth and development. Even so, the potential for marine fisheries in Indonesia is greater because Indonesia is a maritime country with a wealth of diverse marine resources and a very wide sea area even wider than its land area, so this is what makes the world's marine fish potential of seven percent located in Indonesian territory. (Generous, 2017).

Protein from fish is an important nutritional component for countries with a high population where protein adequacy is at a low level. Consuming fish is very important during pregnancy and the first two years of life and can help reduce the risk of dying from a heart attack. The fisheries sector also plays an important role in providing employment and income, accounting for 10-12 percent of the world's population.

No less important attention focuses on fishery products as a source of micronutrients such as vitamins and minerals. This is especially true for small fish species that are consumed whole from the head to the bones, which can be excellent sources of essential minerals such as iodine, selenium, zinc, iron,

calcium, phosphorus and potassium, as well as vitamins such as vitamin A and potassium. vitamin D, and some vitamins from group B. Fish is a type of heme protein that has a good level of iron absorption. The protein content in fish reaches 18% and consists of essential amino acids. Fish have an important role as a source of energy, protein and a variety of essential nutrients that account for about 20% of the total animal protein.

Nutritional Content of Fish

1. Protein

Seafood is a great source of high-quality protein because they are generally low in bad fats. This protein is very good consumed by children and adolescents because it can increase muscle mass and strength. Meanwhile, for adults, high-protein food intake can also keep the body fit and strong. The protein contained in fish is 13%-20% which can also support the growth of brain cells. The texture of fish meat is softer and easier to chew even by toddlers because of its shorter protein fiber and collagen proportions (3-5% of total protein).

2. Vitamin

Seafood also contains a number of vitamins to support the body's organs to function optimally. Some of these vitamins are:

- Vitamin A for eye health
- Vitamin D for healthy teeth and bones
- Vitamin E as an antioxidant that is useful for fighting free radicals
- Vitamin B12 to protect nerve cells

3. Mineral

Minerals that can be found in seafood include iron and iodine. Both have an important role in health. These minerals certainly have benefits for the body, such as magnesium which functions to strengthen muscles and bones, iron that meets the needs of hemoglobin and prevents anemia, iodine which prevents thyroid hormone-related diseases and low IQ, zinc which can increase the body's immunity and speed up the immune system. wound healing process, as well as selenium which is useful for maintaining tissue elasticity along with vitamin E.

4. Omega-3 fatty acids

Seafood is known for its content of omega-3 fatty acids consisting of DHA and EPA. Both types of fat have a very beneficial role for the body. EPA plays a role in helping fight inflammation, while DHA plays an important role in supporting the development of brain function and vision function, as well as lowering the risk of chronic disease.

Seeing the rich nutrients that fish have, especially macro protein nutrients as building blocks especially during the growth period of infants and toddlers, fish is very good to be consumed every day. In addition, fish protein which is not easily damaged even though it undergoes a cooking process keeps the nutritional value of protein in fish high, especially for the brain development of infants and toddlers at the age of growth. No less important, according to FAO (2014), fish is not only a source of protein but also a source of micronutrients or micronutrients such as minerals and vitamins, especially small fish species that can be consumed from the head to the bones. Some of these species are certainly a source of important minerals such as selenium, zinc, iron, iodine, potassium, phosphorus and calcium because almost all parts of the body, even bones can be consumed. Apart from mineral. Consumption of fish as a recommended source of protein is 60% of 25% of animal protein that must be consumed from protein adequacy in a day (Muhilal, 1994). Therefore, it is actually not difficult to meet the needs of animal protein from fish because only a small amount is needed when compared to other protein sources. In addition to the need for daily consumption of fish meat which is needed less than other protein sources, several motivations can be given to especially children who are still in their growth and development

period to eat fish.

Protein adequacy level. Everyone has a different level of nutritional adequacy depending on activity, age, weight and height. Protein requirements according to FAO / WHO (1985) are "consumptions needed to prevent loss of body protein and allow the production of proteins needed during growth, pregnancy, or lactation". The protein adequacy rate according to research results for adults on average is 0.75 grams/kg body weight whose benchmark is in the form of egg protein (because the digestibility of egg protein is 100%) which is called the safe level of intake. The recommended protein adequacy rate by age group can be seen in the following table.

Protein Adequacy Rate

Infant/child age group	Protein(g)
0-6 months	12
7-11 months	18
1-3 years	26
4-6 years	35
7-9 years	49

The level of protein adequacy with stunting itself has been investigated that there is a relationship between protein consumed and the incidence of stunting for toddlers aged 12-59 months, where protein adequacy in this case protein consumption for toddlers has a relationship with stunting.

Conclusion

Consumption of fish in families, especially early childhood has not reached 100% coverage. The reason is because there are some children who don't like fish and some parents still don't understand the nutrition contained in fish. So that fish consumption in early childhood is still relatively low. Nutritional intake, one of which is fish consumption, can affect the nutritional status of children. Children need adequate nutrition in order to grow and develop healthily. The nutritional content of fish which is rich in protein is certainly very good for children's growth.

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