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The Role of Food Security in the Incident of Stunting in Toddlers

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A B S T R A C T

Food security has a direct impact on the nutritional intake received by children. When a community or country is unable to ensure a consistent supply of nutritious food, children become vulnerable to deficiencies in essential nutrients needed for their growth and development. This can cause stunting if not treated properly. This study aimed to present the role of food security in the incidence of stunting in toddlers. The literature search process was carried out on various databases (PubMed, Web of Sciences, EMBASE, Cochrane Libraries, and Google Scholar) regarding the role of food security on the incidence of stunting in toddlers. This study follows the preferred reporting items for systematic reviews and meta-analysis (PRISMA) recommendations. Food security plays a key role in preventing stunting in children. This includes the availability of sufficient and nutritious food, fair access to food, food security, food diversification, good environmental sanitation, support for farmers, nutrition education, and public awareness about nutritious food. In order to prevent stunting, it is important to ensure that children have adequate access to nutrient-rich and safe food, as well as to educate the public about the importance of good nutrition. With this comprehensive effort, we can create an environment that supports healthy growth and development in children and reduces stunting rates in communities.

1. Introduction

Food security is an important aspect of maintaining human welfare, especially in the context of health. Food security does not only refer to the physical availability of food but also includes fair and safe access to adequate and nutritious nutrition. In the midst of global challenges such as climate change, population growth, and economic insecurity, health problems such as stunting in children under five are becoming increasingly significant and require serious attention. Stunting is a condition when a child is shorter than the average height for his age, and this often indicates nutritional problems in his early life. Stunting not only has a negative impact on the health of toddlers themselves but also impacts their cognitive development, learning ability, productivity, and quality of life in the future. Therefore, understanding the role of food security in preventing stunting in toddlers is very important. Food security has a direct impact on the nutritional intake received by children. When a community or country is unable to ensure a consistent supply of nutritious food, children become vulnerable to deficiencies in essential nutrients needed for their growth and development. This can cause stunting if not treated properly.[1,2]

Apart from that, food security also has an impact on food security. When the food supply is unsafe, such as contaminated by dangerous chemicals or

pathogenic microbes, children can contract infections that interfere with the absorption of nutrients in their bodies, which can ultimately lead to stunting problems. To overcome stunting in toddlers, serious efforts need to be made to increase food security. This includes ensuring the availability of nutritious food, educating the public about the importance of good nutrition, and providing equitable and affordable access to healthy food. Apart from that, policies that support farmers, safe food processing, and sustainable management of natural resources also play an important role in achieving sustainable food security.[3,4] This study aimed to present the role of food security in the incidence of stunting in toddlers.

2. Methods

The literature search process was carried out on various databases (PubMed, Web of Sciences, EMBASE, Cochrane Libraries, and Google Scholar) regarding the role of food security on the incidence of stunting in toddlers. The search was performed using the terms: (1) "food" OR "food security" OR" stunting" OR "toddlers" AND (2) "food security" OR "stunting." The literature is limited to clinical studies and published in English. The literature selection criteria are articles published in the form of original articles, a study about the role of food security on the incidence of stunting in toddlers, studies were conducted in a timeframe from 2013-2023, and the main outcome was the role of food security on the incidence of stunting in toddlers. Meanwhile, the exclusion criteria were the studies that were not related to the role of food security on the incidence of stunting in toddlers, the absence of a control group, and the duplication of publications. This study follows the preferred reporting items for systematic reviews and meta-analysis (PRISMA) recommendations.

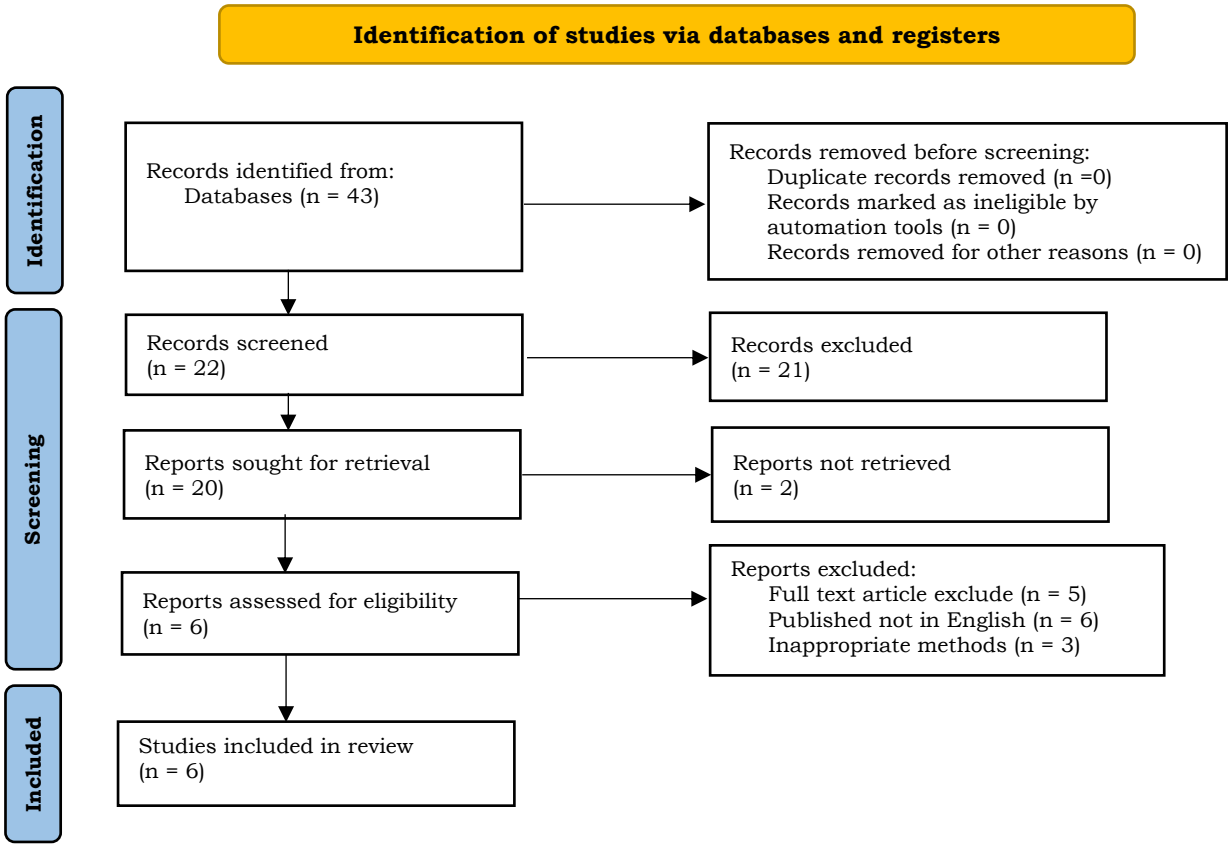

Figure 1. PRISMA flowchart.

3. Results and Discussion

Availability of nutritious food

Food security is a condition where a community or country is able to ensure the availability of sufficient food for all its members. This includes adequate food supplies to meet the nutritional, calorie, and nutritional needs required by the population. Food security includes not only the physical availability of food but also fair and safe access to that food. When a community achieves good levels of food security, this can help prevent stunting and other nutritional problems because all its members can access sufficient and nutritious food necessary for healthy growth and development. Therefore, food security is a key factor in efforts to prevent stunting in children under five and improve community welfare.[5,6]

The availability of adequate foods, especially those rich in nutrients such as protein, iron, vitamins, and minerals, is essential to ensure that children receive adequate nutritional intake for healthy growth and development. These nutrients are important elements in the formation of body tissue, brain development, and the general health of children. When children have access to foods rich in these nutrients, they have a better chance of optimal growth and development, with lower rates of stunting and nutritional problems. Conversely, a lack of these nutrients can result in stunting and other negative impacts on children's health and development. Therefore, ensuring the availability of nutritious food is an important step in efforts to prevent stunting in children under five and create a healthier and stronger generation.[7,8]

Access to food

Community access to sufficient and nutritious food is an important component of the concept of food security. When communities have adequate access to healthy, affordable, quality food, this helps increase the likelihood that children will receive sufficient nutritional intake for healthy growth and development. Good access to food also includes the availability of food that is affordable in terms of price, transportation, and distribution, as well as adequate nutrition education to help people make healthy food choices. When people can buy and access nutritious food easily, this helps reduce the risk of stunting in toddlers and other nutritional problems. In addition, factors such as family income, employment, and social policies can also influence people's access to food. Therefore, creating an environment that supports good access to nutritious food is very important in efforts to prevent stunting and improve children's welfare.[9,10]

Food quality and safety

Food quality and safety are important aspects of food security that should not be ignored. Food that is safe and free from contamination by pathogenic microbes, dangerous chemicals, and other substances that can harm health is the main factor in maintaining children's health and preventing stunting. Food contaminated by pathogenic bacteria, viruses, or parasites can cause digestive tract infections in children. These infections can not only cause symptoms such as diarrhea, vomiting, and fever but also interfere with the absorption of nutrients necessary for healthy growth. This can contribute to stunting if it occurs over a prolonged period of time. Contamination of food with dangerous chemicals such as pesticides, heavy metals, or other chemical substances can poison children and have a negative impact on their health. Some of these chemicals can disrupt the function of organs in the body and affect growth. Food safety plays an important role in maintaining the health of children's digestive systems. Indigestion can hinder the efficient absorption of nutrients, even if those nutrients are available in food.[11,12]

Food diversification

Food diversification is an important component in achieving good food security and preventing stunting in children under five. Food diversification refers to consuming a variety of different types of food in your daily diet. By consuming a variety of foods, children

have access to a variety of different nutrients. Each type of food contains various vitamins, minerals, proteins, and other nutrients. Thus, dietary diversification helps ensure that children receive a variety of nutrients necessary for optimal growth. Dietary diversification helps avoid deficiencies in certain nutrients. For example, different vegetables and fruits have different nutritional contents, so consuming a variety can prevent certain vitamin or mineral deficiencies that might occur if you only rely on one type of food. Food diversification helps in achieving a good nutritional balance. This means children not only receive calories but also get the proteins, fats, carbohydrates, fiber, vitamins, and minerals necessary for healthy growth and development. Food diversification can also make food more interesting and motivate children to try different types of food. This can help prevent boredom with a monotonous eating pattern and increase motivation to eat healthy foods.[13]

Food safety and environmental health

Efforts to maintain food safety and environmental health are very relevant in the context of preventing stunting in children. Food safety and good environmental sanitation help prevent the spread of diseases that can affect nutrient absorption. Diseases such as diarrhea, cholera, and other infections can result in a loss of nutrients in the body, which can cause nutritional problems and stunting if they occur over a long period of time. Drinking water contaminated by pathogenic microbes or dangerous chemicals can result in digestive tract infections and other health problems. Children who consume unsafe drinking water are at risk of significant fluid and nutrient loss through diarrhea and vomiting, which can impair their growth. Food contamination with pathogens such as *Salmonella* or *E. coli* can also cause digestive infections. In addition, food contaminated with dangerous chemicals, such as pesticide residues, can also endanger children's health. Good waste management can help reduce environmental pollution, which in turn minimizes the risk of water and soil contamination. This will create a healthier environment for children and help maintain the quality of food and drinking water.[14,15]

Support for farmers and sustainable agriculture

Support for farmers and sustainable agricultural practices is an integral part of efforts to increase food security. Support for farmers and sustainable agricultural practices can increase food production in a community or country. This means there is a greater supply of various types of food that can meet the nutritional needs of people, including children. By increasing food production, local communities can have better access to nutritious food. This can help reduce hunger and malnutrition, which are risk factors for stunting. Sustainable farming practices often include crop diversification so that a wider variety of foods are produced. This gives people more food choices, which can support dietary diversification and a more balanced nutritional intake. Sustainable agricultural practices often emphasize food safety and quality. This can reduce the risk of food contamination with pathogens or dangerous chemicals, which can harm children's health. Support to farmers can also increase their income and standard of living. This allows them to provide better food for their families and to support stunting prevention efforts in their communities.[16]

Nutrition education and public awareness

Nutrition education and public awareness about the importance of nutritious food are important components in achieving good food security and preventing stunting in children. Nutrition education helps people understand the concept of good nutrition and what the body needs to grow and develop optimally. With this knowledge, parents and caregivers can make better food choices for their children, ensuring that they get adequate nutritional intake. Public awareness about the importance of nutritious food can help change eating behavior. When people know how to choose healthy foods, they are more likely to choose foods that contain important nutrients, such

as fruit, vegetables, protein sources, and whole grains.[17,18]

Nutrition education also helps people recognize signs of malnutrition and nutrition-related diseases. This can allow them to seek medical help earlier and prevent the severity of nutritional problems. Awareness of the link between nutrition and health can help people understand that good nutritional intake is the key to maintaining children's health, including healthy growth. Nutrition education gives people the tools to make wiser decisions in selecting and preparing food. This includes knowledge of how to cook food in a way that maintains nutrition and food hygiene.[19,20]

4. Conclusion

Food security plays a key role in preventing stunting in children. This includes the availability of sufficient and nutritious food, fair access to food, food security, food diversification, good environmental sanitation, support for farmers, nutrition education, and public awareness about nutritious food. In order to prevent stunting, it is important to ensure that children have adequate access to nutrient-rich and safe food, as well as to educate the public about the importance of good nutrition. With this comprehensive effort, we can create an environment that supports healthy growth and development in children and reduces stunting rates in communities.

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