

Nutritional Status of Toddler in Agricultural Areas

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Abstract

Introduction: Nutritional status in toddlers has an important role in the growth and development of toddlers, which is related to health and intelligence. Nutritional status in toddlers involves measuring height, weight, and age. Providing insufficient or excessive nutrition can cause poor nutritional status. **Objective:** Find out the nutritional status of toddlers and the problems of malnutrition that occur in toddlers in agricultural areas. **Method:** This research uses the literature review method or literature review. Literature sources were collected from research journal databases and the internet, focusing on Google Scholar, Science Direct, and Pubmed for publications between 2019 and 2024. **Results:** The nutritional status of toddlers is influenced by various factors, including parenting patterns, family roles, nutritional consumption, and the environment. Balanced nutrition education can increase understanding among mothers of toddlers. Toddlers in farming families and non-fishing communities have a higher prevalence of stunting. **Conclusion:** The nutritional status of children under five in agricultural areas still needs to improve. Comprehensive interventions need to always be carried out by ensuring that toddlers receive nutritional intake and a healthy environment for optimal growth and development.

Keywords: toddler, agriculture, nutritional status

Introduction

The toddler years are a critical period in human formation and development. During this critical period, toddlers will be susceptible to growth disorders. The problem of nutritional status is a problem that often arises during childhood. Nutritional status is

a measure of success in providing adequate nutrition. Nutritional status in toddlers is important in their growth and development, which is related to health and intelligence. Nutritional status in toddlers involves measuring height, weight, and age. Providing insufficient or excessive nutrition can cause poor nutritional status^{1, 2}(Wijayanti, 2023; Kurniyawan, et al., 2023).

The problems of nutritional status in toddlers, or as we know that malnutrition or stunting is a frightening thing for all citizens of the world because the problem of malnourished or stunted toddlers can impact the development and growth of a country. According to the WHO, in 2023, the prevalence of cases of malnourished children under five will reach 54 million to 144,5 million children under five, or 28,7% of the world's population. The country in first place for cases of malnourished children under five is an African country with a prevalence of 32.2%. Followed by Southeast Asian countries at 30,9%, South America at 22%, and Europe at 16,5%.³ (World Health Organization, 2023). Meanwhile, the prevalence of under-five children experiencing malnutrition or stunting is 21,6%, according to the Indonesian Ministry of Health in 2022, which has decreased by 2,8% from 2021. From 2023 to 2024, the Indonesian state is targeting a reduction in the incidence of malnutrition and stunting to 14%. In Indonesia, most stunting cases occur in West Java, East Java, Central Java, North Sumatra, and Banten⁴ (Rokom, 2023). The incidence of malnourished or stunted toddlers in the East Java region in 2022 has a prevalence of 19,2%, with three districts being the highest contributors to stunting cases in East Java, namely Jember district with 34,9%, Situbondo district with 30,9%, and Bondowoso district with as much as 32%.⁵(Tim Percepatan Penurunan Stunting Sekretariat Wakil Presiden, 2023).

The occurrence of nutritional status problems can be influenced by several factors, not only unbalanced nutritional consumption but also parenting patterns, family roles, and environmental factors. Parenting style is how parents interact with their children through behavior and attitudes. This method also includes how parents show their emotions when treating, guiding, and disciplining children. Apart from that, the role of the family is also important in influencing the nutritional status of toddlers. An active and supportive family role can minimize nutritional status problems in toddlers^{6,7}(Rahmawati et al., 2019; Nurprastiwi, et al., 2024).

Malnourished or stunted toddlers can be managed through several prevention

programs that are synergized by the village government in collaboration with the local health center and health service in the form of providing access to basic sanitation such as clean water, clean latrines, household waste disposal facilities, preventing the incidence of malnourished children under five can be done by providing access to health in the form of providing KIA facilities and equipment, providing health insurance for underprivileged residents, providing health education and parenting patterns children to their parents, providing routine check-up facilities through Posyandu and improving nutrition for stunted toddlers. Nurses as caregivers can provide care by providing health promotion^{8,9} (Hadijah et al., 2022; Afandi, et al., 2023). Therefore, we are interested in raising this topic because of the high long-term impact of malnutrition, which can be used as an important step in optimizing children's health and development.

Method

This research uses the literature review method. Literature sources were collected from research journal databases and the internet, focusing on Google Scholar, ScienceDirect, and Pubmed for publications between 2019 and 2024. Search keywords in English and Indonesian were used to find relevant literature. The literature search used Indonesian with the keywords used in the search, namely "*Gizi Balita*" AND "*Agricultural*." When searching for literature in English, use the keywords "*Toddler*," "*Agriculture*," AND "*Nutritional Status*."

The journal search process begins by identifying specific keywords. During the search phase, 17,900 journals were found that matched the keywords listed. The next stage is to carry out screening on the journal's publication year, which aims to ensure alignment with research requirements. During the screening stage, 14,202 journals were found that met the criteria. Next, the publication enters the screening stage based on research criteria for inclusion and exclusion, with inclusion criteria, namely those that match the keywords "*Toddler*" and "*Agriculture*," while exclusion criteria, namely journals that are not relevant to the keywords. A total of 988 journals were found that met the inclusion and exclusion criteria obtained in the search. In the next stage, there were a total of 80 journals that met the criteria for full free text. Furthermore, the 80 selected journals were screened again based on language, research methodology, results, and

other predetermined factors. After screening, ten journals were selected that met the predetermined criteria and were deemed worthy of further research.

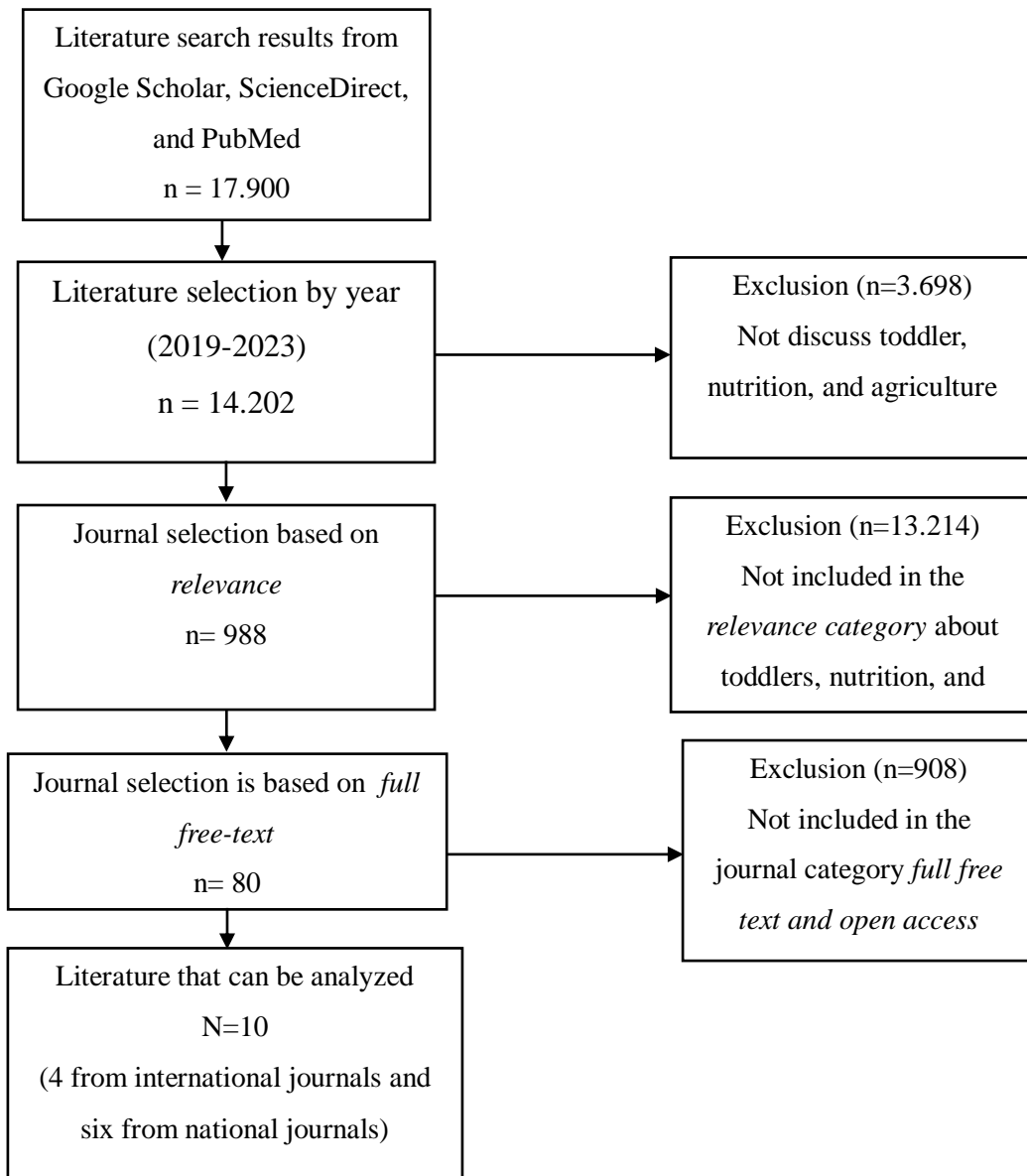


Figure 1. Flow Diagram of Analysis Literature

Results

Of the ten articles examined, it was found that four articles discuss the relationship between malnutrition and stunting in toddlers. This shows that malnutrition is one of the main factors causing stunting. In addition, three articles discuss the nutritional status of children, two articles discuss balanced nutrition, and the rest discuss nutritional deficiencies in general. Check Table 1 for the following literature analysis result for more detailed information.

Table 1. Table Literature Review

ID Numb er	Author and Journal Identity	Journal Title	Objective	Population and Sample	Method	Summary and Results
A1	Author: Fatkuriyah & Sukowati Journal Identity: Adi Husada Nursing Journal, Volume. 8 No 2, Halaman 129. e-ISSN: 2502-2083 DOI: https://doi.org/10.37036/ahnj.v8i2.357 [Accessed on Friday, 10 May 2024]	Parenting Patterns and Toddler Nutritional Status in Jember Regency10	This research aims to determine the relationship between maternal parenting patterns and the nutritional status of toddlers.	Toddlers who permanently reside in the research location and mothers who are literate served as the research samples for this study. The mothers and toddlers were drawn from the working area of Posyandu Catleya 85, 86, and Catleya 87 Karangrejo Subdistrict.	This research used a cross-sectional method. The subjects studied were mothers and children under five years old (toddlers) who were in the area of Posyandu Catleya 85, 86, and Catleya 87 in Karangrejo Village. The criteria for being part of the sample were toddlers who must be permanent residents in the study location, and mothers must be able to read and write. The criteria that were not included in this study were toddlers with physical disabilities and toddlers who were not handled directly or not cared for by their own mothers.	This study produced a p-value of 0.023, which means a relationship exists between maternal parenting and the nutritional status of toddlers. Mothers who apply an authoritative parenting style will have high responsiveness and demands for the eating process. Children by placing limits on the types of food they can or cannot consume. Children can build a dining atmosphere that supports their healthy eating patterns by preparing a schedule for their meals, serving highly nutritious food choices, and allowing them to decide how much food they eat.
A2	Author: Kartika., et al	Improving Mothers' Knowledge	This research aims to increase the	Thirty-eight moms of toddlers at Posyandu Catleya	The method used in this research is a community service	The results of this research on balanced nutrition counseling show that there

Journal Identity: Journal of Nutrition Community Development, Volume. 2 No. 2, Halaman 91–96
 DOI: <https://doi.org/10.47134/comdev.v2i2.52>

[Accessed on Friday, 10 May 2024]

e About knowledge of 19 made up the method where the has been an increase in
 Balanced mothers of research sample. activities will use pre- understanding of balanced
 Nutrition toddlers tests and post-tests to nutrition among mothers
 to Prevent regarding determine the results of toddlers. So this
 Nutritional balanced to be obtained and outreach activity is
 Problems nutrition in evaluate the effective in increasing
 in preventing implementation of mothers' knowledge about
 Toddlers nutritional activities. nutrition balance for
 in Jember problems in toddlers. Implementation
 Regency11 toddlers. of nutrition education in
 community efforts to
 prevent nutritional
 problems must continue to
 be carried out
 comprehensively.
 Therefore, community
 service programs need to
 be implemented. The next
 step is practicing how to
 arrange a balanced
 nutritional menu and
 processing food
 ingredients by
 implementing balanced
 nutrition according to
 children's nutritional
 adequacy (RDA). Meeting
 these nutritional needs
 must also pay attention to
 the principle of diversity.
 Food, physical activity,
 clean living behavior, and
 maintaining a normal body
 weight to prevent
 nutritional problems.

A3 **Author:** Hubungan Pelaksanaa This research aims to A cluster random selection technique, This study used a cross-sectional This research produces a p-value=0.002, which

et al n Peran analyze the the research sample research design with means a relationship exists
 Keluarga relationship comprised 117 sampling techniques between the
Journal dengan between the respondents from and cluster random implementation of family
Identity: Kejadian implementatio the Arjasa District sampling techniques. roles and the incidence of
 Pustaka Stunting n of family in the Jember stunting in toddlers in
 Kesehatan, pada roles and the Regency. Arjasa District, Jember
 Volume. 7 No. Balita di incidence of Regency. It cannot be
 2, Halaman Kecamatan stunting denied that the family
 112 n Arjasa, among form can provide. The
 Jember6 toddlers in influence on the incidence
 DOI : Arjasa of stunting is in line with
<https://doi.org/10.19184/pk.v7i2.19123> District, the characteristics of the
 Jember number of children in the
 Regency. family because the number
 of children determines
 whether a family is large
 or small. By implementing
 good family roles, families
 can provide nutrition to
 children under five.

[Accessed on
 Friday, 10th
 May 2024]

A4 **Author:** Optimizin The aim of Twenty-five people In the health literacy After providing health
 Kusuma., et al g Media this research participated in the research documented education about balanced
 Literacy in is to increase research activities in this journal, the nutrition guidelines, there
Journal Creating knowledge in conducted at the methods used were was a significant increase
Identity: Nutrition- the Mojoparon Village lectures and in participants' knowledge,
 Jurnal Peduli Aware community Village Hall in the discussions, which where literacy was
 Masyarakat, Families regarding the Rembang District of have been proven to provided about balanced
 Volume. 5 (SADARZ balanced the Pasuruan effectively increase nutrition guidelines, which
 No.1, D) in nutritional Regency. community are expected to be able to
 Halaman 203– Agricultur status of understanding and create conscious families.
 208. e-ISSN : al children and knowledge. The Nutrition (awareness) in
 2721-9747 Communit toddlers. supporting media agricultural communities
 ies12 used in the literacy to prevent and reduce the
 DOI : activities were X- incidence of stunting in
<https://doi.org/10.37287/jpm.v5i1.1625> banners and leaflets. agriculture areas.
 Evaluation was
 conducted to measure

[Accessed on
 Monday, 6
 May 2024]

participants' ability to absorb and understand the material presented. Questionnaires were used to measure the increase in participants' knowledge about good and balanced nutrition before and after the material was delivered.

<p>A5</p>	<p>Author: Ningrum, V. Journal Identity: Jurnal Pangan, Volume. 28 No. 1, Halaman 73–82 DOI: https://doi.org/10.33964/jp.v28i1.424 [Accessed on Friday, 10 May 2024]</p>	<p>Food Access and the Incidence of Toddler Stunting: A Case of Agricultural Villages in Klaten The aim of this research is to determine the families in four villages within Klaten Regency with toddlers between the ages of two and five. The research targets included ten mothers in Sumyang Village who had stunted toddlers and 62 houses chosen by purposive snowballing technique. 4 villages of Klaten Regency, Central Java.</p>	<p>Data was collected using quantitative and qualitative methods, including household surveys, direct interviews, and focus group discussions.</p>	<p>The programs carried out by researchers to restore the nutritional status of toddlers who experience stunting have resulted in changes in consumption behavior in accessing and managing family food, which is influenced by modernization in rural areas, namely the increasing culture of buying cooked food and changes in agricultural production becoming monoculture. However, access to food in this respondent's household has many factors that influence limitations in meeting the nutritional needs of their toddlers, namely due to the subsistence farming</p>
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culture, economic limitations, parenting patterns for their toddlers, and the lack of creative ideas of parents in utilizing the land to cultivate food for their children. Meet the nutritional needs of toddlers.

<p>A6</p>	<p>Author: Purba., et al Journal Identity: Jurnal Kesehatan Lingkungan Indonesia, Volume. 21 No. 3, Halaman 320–328. e-ISSN : 2502-7085 DOI : https://doi.org/10.14710/jkli.21.3.320-328 [Accessed on Monday, 6th May 2024]</p>	<p>Stunting Incidence in Toddlers Exposed to Pesticides in Agricultural Areas This research aims to analyze the relationship between pesticide exposure and the incidence of stunting in agricultural areas.</p>	<p>This research uses Cluster sampling, a sample of 136 mothers of toddlers exposed to pesticides in Sekayu District, Lumpatan 1 Village, and Lumpatan 2 Village was taken.</p>	<p>This research uses quantitative analytical methods with a cross-sectional study approach. A cross-sectional study is used to analyze the relationship between pesticides and the incidence of stunting in toddlers.</p>	<p>The programs carried out by researchers to restore the nutritional status of toddlers who experience stunting have resulted in changes in consumption behavior in accessing and managing family food, which was influenced by modernization in rural areas, namely the increasing culture of buying cooked food and changes in agricultural production becoming monoculture. However, access to food in this respondent's household has many factors that influence limitations in meeting the nutritional needs of their toddlers, namely due to the subsistence farming culture, economic limitations, parenting patterns for their toddlers,</p>
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and the lack of creative ideas of parents in utilizing the land to cultivate food for their children. Meet the nutritional needs of toddlers.

<p>A7</p> <p>Author: Nassreddine., et al</p> <p>Journal Identity: Nutritional Epidemiology and Public Health, Volume. 6 No. 5</p> <p>DOI: https://doi.org/10.1093/cdn/nzac080</p> <p>[Accessed on Wednesday, 15 May 2024]</p>	<p>Total Usual Nutrient Intakes and Nutritional Status of United Arab Emirates Children (<4 Years): Findings from the Feeding Infants and Toddlers Study (FITS) 2021 15</p>	<p>The research aims to investigate the eating habits and nutritional status of children under 4 years old in the United Arab Emirates (UAE), as well as their compliance with dietary and nutritional guidelines.</p>	<p>A cross-sectional survey aimed at 525 children aged 0–47.9 months was carried out in three significant emirates: Abu Dhabi, Dubai, and Sharjah.</p>	<p>In a cross-sectional study, data are collected from a population or a sample at one point. The researchers in this study used a stratified random cluster sampling framework to recruit participants.</p>	<p>This research shows that there are three burdens on toddlers experiencing malnutrition in the United Arab Emirates, where almost all toddlers fail to meet adequate fiber intake as well as micronutrient deficiencies, especially calcium, zinc, folate, and vitamins A and D. In children aged 0–4 years, as many as 10% experience stunting, 6% are thin, 17% are at risk of being overweight, 5% are overweight, and 3% are obese. This research also shows low compliance with recommendations for nutrient-dense foods, so more attention needs to be paid to policies and strategies to improve the quality of dietary patterns among children under five in the United Arab Emirates.</p>
<p>A8</p> <p>Author: Okidi., et al</p>	<p>Disparity in</p>	<p>This research aims to find</p>	<p>In the Karamoja sub-region</p>	<p>This research applied a cross-sectional</p>	<p>The prevalence of underweight, stunting, and</p>

Journal Identity: BMC Pediatrics, Volume. 22 No. 1, Halaman 1–16
 DOI: <https://doi.org/10.1186/s12887-022-03363-6>
 [Accessed on Thursday, 9 May 2024]

prevalence out whether Uganda, the approach in its wasting ranges from 36 and the factors of research population design. It was 58% but varies according to agroecology regarding predictors malnutrition consisted of all conducted in pastoral, to agroecology regarding BMC of in children children under five agro-pastoral, and peak age, which ranges Pediatrics, undernutrit under five are years old who lived agricultural from 6 to 37 months. Volume. 22 ion in related to in three ecosystems in the Child characteristics, No. 1, children their agroecological Karamoja sub-region, feeding practices, home Halaman 1–16 under five agroecologica zones: agricultural, located in the economics factors, among l location. agro-pastoral, and northeastern sector of sanitation factors, and DOI: agricultura pastoral. Phased Uganda, from caregiver characteristics <https://doi.org/10.1186/s12887-022-03363-6> l, pastoral, sampling from each October to December that predict malnutrition in and agro-pastoral of the three 2019. children under five were identified as much as ecological zones of Karamoja sub-region, (p≤0.05). This form of malnutrition is associated with contextual characteristics of the household, such as unhygienic food handling, feeding children, and poor diet.

Uganda: a cross-sectional study16

A9 **Author:** Fatch., et al
Journal Identity: Scientific African
 DOI: <https://doi.org/10.1016/j.sciaf.2023.e01569>
 [Accessed on Wednesday,

Agricultural This study The study's al aims to population The study employed a This research did not find diversity ascertain how comprised all repeated cross- a significant relationship linkage to agricultural farming households sectional study between agricultural income, diversity with children under design. Researchers diversity and the Scientific wealth, affects five in Malawi's used statistical nutritional status of African diets and wealth, Lilongwe district. In November 2016, variables and men. However, nutrition: income, and 424 households examine their agricultural diversity is a Case of nutrition, and 424 households were polled to form impacts. A solitary reasonable strategy to improve farming district in Lilongwe diet. the research sample. questionnaire was improve farming households' welfare in Malawi. utilized to test both independent and dependent variables

15 May 2024]

simultaneously.

<p>A10</p> <p>Author: Marinda., et al</p> <p>Journal Identity: Scientific African</p> <p>DOI : https://doi.org/10.1016/j.sciaf.2022.e01527</p> <p>[Accessed on Thursday, 9 May 2024]</p>	<p>Dietary diversity and nutritional status of children aged 6–59 months from rural fishing and non-fishing communities in Zambia</p> <p>This study aims to explore dietary diversity, fish consumption, and nutritional status of children in Luapula Province.</p> <p>The study's participants comprised all mother-child pairs residing in Luapula Province with children between 6 and 23 months. The study's target population consisted of 203 mother-child couples who were chosen through a progressive selection procedure and fulfilled the inclusion criteria.</p>	<p>This research uses a cross-sectional method and a semi-structured questionnaire that will be used to collect socio-economic characteristics, food intake, and anthropometric data. Then, descriptive statistical methods and Bivariate associations were also used in this study.</p>	<p>Children in fishing communities often need more fruits, vegetables, and animal protein despite access to fish. While food variety does not directly improve nutrition, promoting diverse local foods like fish can improve children's health.</p>
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Discussion

From the journal review that has been carried out, it was found that parental parenting patterns, unbalanced nutritional consumption, and environmental factors can influence nutritional status problems in toddlers. Research by Fatkuriyah and Sukowati (2022) explains that parenting patterns can influence the nutritional status of toddlers. Inappropriate parenting patterns can increase the risk of malnutrition by 12.6 times. The majority of parents with permissive or authoritarian parenting styles tend to have children with poor nutrition. In contrast, authoritative parenting styles that involve two-way communication and clear rules have been proven to support better nutrition. Apart from parenting patterns, the nutritional status of toddlers can be influenced by the role of the family.

This is supported by the results of research by Rahmawati et al. (2019), which

state that the role of the family is optimal in supporting the improvement of nutritional status in toddlers so that it can reduce the incidence of stunting. The role of the family can be carried out well so that the family can increase its role, especially in providing nutrition to children under five years old. In research by Kartika et al. (2021) and Kusuma et al. (2023), education was carried out to prevent nutritional status problems, namely stunting. The education provided is about providing balanced nutrition for toddlers. The results of this balanced nutrition education activity show an increased understanding of balanced nutrition among mothers of toddlers. Apart from providing balanced nutrition to overcome nutritional status problems, the environment around toddlers can also influence their nutritional status.

In Ningrum's (2019) research, food access is related to nutritional status problems in toddlers, namely stunting. It was stated that mothers who were used to buying ready-to-eat food had toddlers with nutritional status problems, namely stunting. The culture of buying ready-to-eat food is because women in the village also work outside the home, reducing the time needed for activities at home. Apart from that, research by Nassreddine et al. (2021) states that unhealthy eating patterns can also contribute to the nutritional status of toddlers. However, toddlers in farming families have nutritional status problems, namely stunting with a prevalence of more than 30% and toddlers with underweight above 5%.

This is also supported by research by Marinda et al. (2023), which explains that toddlers in non-fishing communities have a higher prevalence than toddlers in fishing communities. Apart from that, research by Fatch et al. (2023) states that no significant relationship exists between agricultural diversity and nutritional status. Research by Okidi et al. (2022) also states that environmental cleanliness influences the nutritional status of toddlers. Meanwhile, research by Purba et al. (2022) shows no significant relationship between exposure to pesticides in mothers of toddlers and the incidence of stunting in toddlers. Exposure to pesticides in toddlers also does not show a significant relationship with the incidence of stunting in toddlers.

Conclusion

The nutritional status of children under five in agricultural areas still needs to

improve. The main factors influencing toddlers' nutritional status include parenting patterns, unbalanced nutritional consumption, and environmental factors. The importance of comprehensive interventions, such as education about parenting patterns and balanced nutrition, increasing access to nutritious food, improving sanitation, and limiting exposure to pesticides, emphasizes the need for cooperation from various parties to ensure that toddlers receive optimal nutritional intake and a healthy environment for optimal growth and development.

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Conflict of Interest

None.

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Example:

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