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Systematic Review

Indirect Household Determinants of Child Nutrition: Parenting, Health Access, Food Security

ABSTRACT

Children under five are highly vulnerable to nutritional problems because they experience rapid growth and development. In Indonesia, the continuing prevalence of stunting indicates that chronic malnutrition remains a major public health concern. This study aimed to identify and analyze household-level indirect determinants associated with the nutritional status of children under five in Indonesia. A systematic literature review was conducted using nine peer-reviewed national articles published between 2015 and 2025. Eligible studies involved Indonesian children under five, examined indirect determinants of nutritional status, and applied quantitative or mixed-method designs. Data were synthesized using thematic content analysis. The findings showed that inadequate parenting practices, low household food security, limited maternal education, poor utilization of health services, inadequate sanitation, and unbalanced family dietary habits were associated with poorer nutritional status among children under five. These factors contributed to insufficient nutrient intake, increased susceptibility to infection, and impaired child growth. In conclusion, parenting practices, household food security, maternal education, health service utilization, sanitation, and family dietary habits were associated with the nutritional status of children under five. However, these determinants were interrelated and did not influence nutritional status independently.

Zulfa Erianti[1], Kasmita[1*)], Yuliana[1], Anni Faridah[1], Anisa Amalia[1], Indah Muthia Ayuni[1], Ramadhanti[1]

[1] Padang State University

Correspondent Email:
kasmita70@fpp.unp.ac.id

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INTRODUCTION

The success of a nation's development is determined by the quality of its human resources (HR). Resilient HR, strong mentality, excellent health, and good performance levels. Good quality HR starts early, namely during school age.[1] Nutrition problems in Indonesia are still very high, as can be seen from the high rates of stunting, wasting, and underweight children.[2] Poor nutrition is not only caused by biological factors, but also by indirect causes that occur within the household.[3] Indirect causes include parenting patterns, eating behaviors, food availability, and access to health services.[4]

Indirect household factors can interact in ways that increase children's exposure to health risks and affect their nutritional status.[5] Understanding these interactions is important for identifying the contextual determinants of child malnutrition at the community level. Therefore, this study aims to analyze the relationship between household-level determinants and child nutritional status in a

community context.

Unresponsive parenting patterns, where a lack of nutritional knowledge leads to inappropriate feeding, while limited access to services also hinders the rapid prevention and treatment of infections.[6] Eating habits within the family, such as a preference for instant foods over freshly prepared foods, and the availability of poor-quality food exacerbate nutritional deficits. Therefore, a holistic study examining indirect factors within households is crucial for designing effective and sustainable interventions.

The UNICEF conceptual framework was chosen as the analytical basis for this study because it provides a structured, multilevel explanation of the determinants of child malnutrition. This framework distinguishes between immediate causes, underlying causes, and root causes, enabling the systematic identification of household-level factors in a broader socioeconomic context. In this study, this framework guided the selection of variables by categorizing indicators such as food intake and exposure to disease as immediate causes, household care practices and food safety as underlying causes, and socio-economic conditions as root causes. These categories were then used to structure the analytical model and interpret the relationship between household characteristics and children's nutritional status.[7,8]

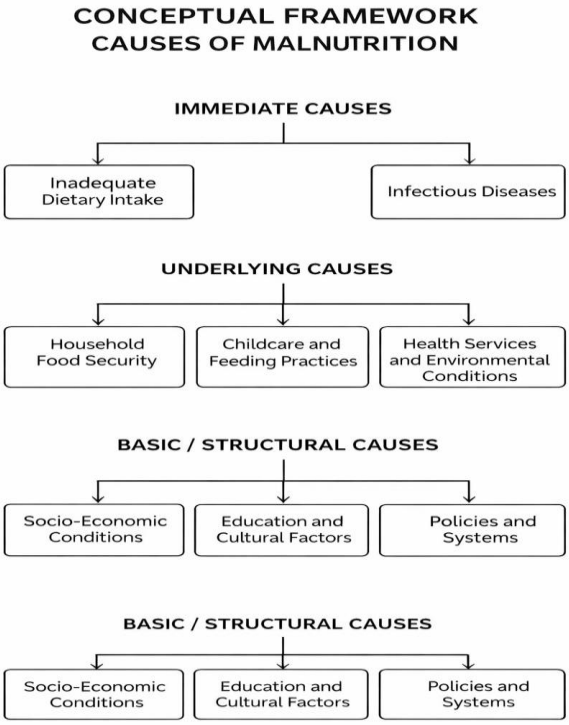

Figure 1. Conceptual Framework of the Causes of Nutritional Problems

According to UNICEF's conceptual framework, the determinants of child malnutrition are categorized into immediate causes, underlying causes, and root causes (9). In line with the objectives of this study, the analysis focuses specifically on the underlying (indirect) causes that operate at the household level. These include household food security, care and feeding practices, and access to health services and environmental sanitation. These factors shape children's daily living conditions and influence their vulnerability to inadequate nutrition and infection. By focusing on these indirect determinants, this study aims to explain how household conditions contribute to variations in children's nutritional status within the community context.

METHODS

This study used a Systematic Literature Review (SLR) approach with a structured protocol to ensure transparency, consistency, and replication of the review process. Data sources were scientific articles obtained through online searches using Google Scholar and Publish or Perish software to identify relevant indexed journal publications. The search strategy was developed based on predetermined keywords combined with Boolean operators, covering topics such as child nutrition, indirect determinants at the household level, parenting patterns, food security, access to health services, and eating habits. Literature collection was limited to the 2015–2025 publication period in order to obtain the latest empirical evidence and represent research developments over the past

decade, while ensuring relevance to current policy dynamics and socio-economic conditions that affect child nutrition status.

Inclusion criteria include empirical journal articles published within that time frame, written in English, and directly analyzing indirect determinants of child nutritional status. Exclusion criteria include non-peer-reviewed documents, conference abstracts, review articles without primary data, and studies that do not clearly explain methodological procedures. The selection process was carried out in stages through identification, screening, feasibility assessment, and final determination based on a review of titles, abstracts, and full texts. Through this procedure, 10 articles were obtained that met all inclusion criteria and passed the methodological quality evaluation. This final number was determined based on the suitability of the topic, the accuracy of the research design, and its contribution to the focus of the study, not solely on the quantity of findings available.

All selected articles were then analyzed using a thematic analysis approach to systematically identify patterns of research findings. The analysis stages included a thorough reading to understand the context and main results of each study, initial coding of variables and findings related to indirect factors, grouping codes into similar conceptual themes, and interpreting the relationships between themes to identify trends and consistency in research results. The ten articles were used as units of analysis to strengthen the comprehensive discussion and formulate broader conceptual implications in line with the research.

The article selection process was carried out using the PRISMA 2020 framework to describe the systematic stages of literature identification and selection. The process consisted of identification, screening, eligibility assessment, and final inclusion. Articles obtained from Google Scholar and Publish or Perish were screened based on title, abstract, and full-text review according to the inclusion and exclusion criteria. After the selection process, nine articles were considered eligible and included as the final sources for analysis in this systematic literature review. The complete selection process is illustrated in the PRISMA flow diagram (Figure 2).

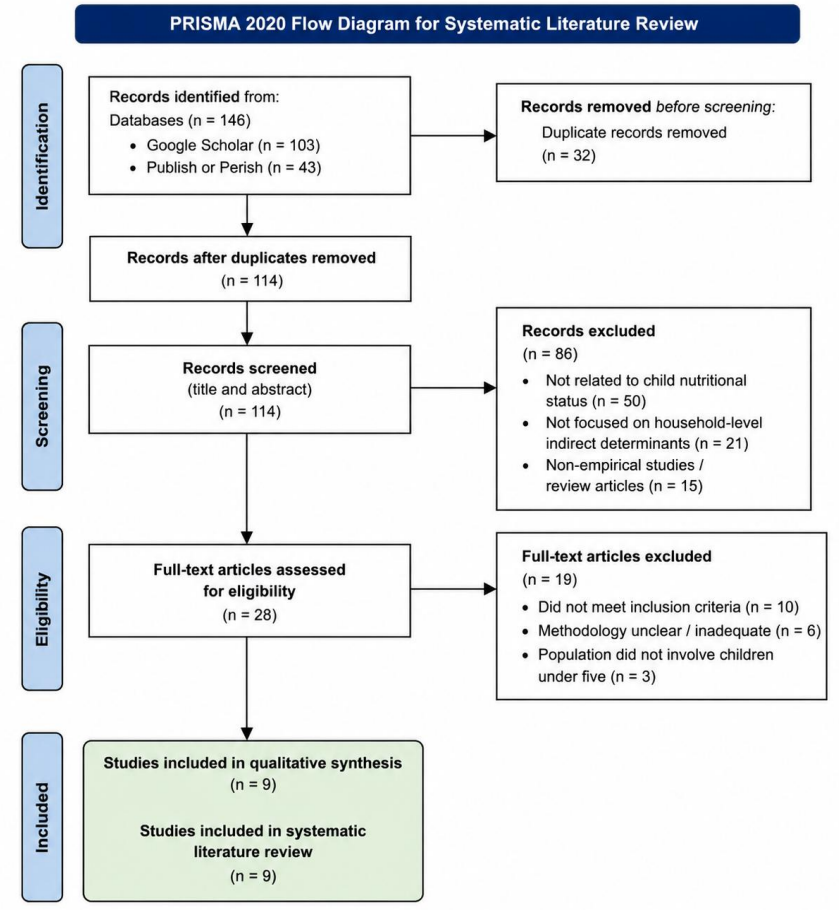

Figure 2. Prisma Flow Diagram

RESULT AND DISCUSSION

The results obtained from the articles and journals that were found are the result of several indirect factors that affect child nutrition within the household. (Table 1). Indirect causes of child nutrition problems at the household level form the main theoretical basis, focusing on consistently unresponsive parenting patterns, low utilization of health services and health access that is still difficult to reach for remote communities, and household food security. Additionally, equally important is the monotonous family eating habits due to parents' laziness in preparing diverse meals, high in carbohydrates and low in micronutrients.

Many do not realize that an important factor is that parents are not responsible for their children's health and nutrition due to the mother's mental health issues caused by economic pressures and problems within the household itself, resulting in an attitude of indifference towards the nutrition of children and the family. Mental health issues also have an important influence. In this case, it is hoped that the surrounding community and health services will take an approach towards households with problems.[10]

Parenting Patterns

The results show that parenting practices related to sanitation, clean and healthy living behaviors, and utilization of health services are indirect determinants that are consistently associated with children's nutritional status. Household sanitation practices, such as the habit of washing hands with soap before preparing food, before feeding children, after defecating, and after cleaning babies or children, play a role in breaking the chain of transmission of pathogens that cause infectious diseases. In addition, the use of clean water for consumption and food preparation, the ownership and use of sanitary toilets, and the maintenance of household environmental hygiene including the cleanliness of clothing, eating and drinking utensils, bedding, and objects that children often touch are part of clean and healthy living behaviors that contribute to the prevention of environment-based diseases.[11,12] Inadequate sanitation conditions increase the risk of infections such as diarrhea and respiratory tract infections, which in turn can interfere with nutrient absorption, reduce appetite, and worsen children's nutritional status.

In addition to sanitation, parenting practices in the form of feeding practices and utilization of health services are also important components in determining the quality of child growth. Breastfeeding until the age of two, accompanied by adequate complementary feeding in terms of quantity, quality, and nutritional diversity, has been identified as a parenting practice that supports the optimal fulfillment of children's nutritional needs. Breast milk serves as a source of essential nutrients while also providing immunological protection that helps reduce susceptibility to infection, while timely and age-appropriate complementary feeding supports linear growth and child development. Overall, these findings confirm that integrated parenting practices including sanitation, hygiene, diet, and access to health services create a protective home environment and contribute significantly to the prevention of nutritional problems in children.

Table 1. Journal Results on the Indirect Effect of Child Nutrition on Households

No	Author, Year, and Title	Research Objectives	Result
1.	Reska Handayani (2017) Faktor-faktor yang berbuhubungan dengan status gizi pada anak balita.[13]	The purpose of this study was to determine the factors associated with children's nutritional status at the Seberang Padang Community Health Center in 2014, in relation to infection history and parenting patterns.	The study findings indicate that the majority of toddlers experience suboptimal parenting practices (55%), and there is a significant association between parenting practices and the nutritional status of toddlers. Suboptimal parenting practices contribute to the poor quality of children's nutritional intake.
2.	Dedi Alamsyah, Maria Mexitalia, Ani Margawati, Suharyo Hadisaputro, Henry Setyawan (2017) Beberapa Faktor Risiko	This study aims to analyze the relationship between indirect risk factors, including birth weight, gender, age, and weight gain in children.	The analysis results show that birth weight, gender, age, and weight gain status have a significant relationship with the incidence of stunting, underweight, and wasting. Children with low birth weight and low birth length have a

No	Author, Year, and Title	Research Objectives	Result
	Gizi Kurang dan Gizi Buruk pada Balita 12-59 Bulan (Studi Kasus di Kota Pontianak).[3]		higher risk of experiencing nutritional problems. These findings confirm that indirect risk factors from birth and early life play an important role in determining a child's nutritional status.
3.	Kuat Sitepu , Tati Murni Karokaro , Sari Desi Esta Ulina Sitepu , Isidorus Jehaman , and Luci Riani Br Gintin (2020) Determinant of Nutritional Status Children.[14]	The purpose of this study is to analyze the determinants of toddler nutritional status in Sipirok subdistrict, South Tapanuli Regency, particularly indirect factors affecting child nutrition, including maternal nutritional knowledge, maternal employment, family income, number of children in the family, history of infectious diseases, nutritional intake, and practices for maintaining toddler nutritional status.	The results of this study indicate that there is a significant relationship between several indirect factors and children's nutritional status, namely that mothers' poor understanding of nutrition affects their feeding and care patterns, mothers' employment affects the amount of time available for childcare and feeding, low family income limits households' ability to provide nutritious food, number of children, history of infectious diseases, and nutritional intake. all indirectly influence children's nutritional status.
4.	Jihan Oktaviani Amalia 1 , Tyas Aisyah Putri (2022) Edukasi Gizi Seimbang Pada Anak-Anak Di Desa Bawuran, Kecamatan Pleret, Kabupaten Bantul.[15]	The purpose of this study is to improve children's knowledge about balanced nutrition through nutrition education using posters in Bawuran Village, Pleret District, Bantul Regency.	The results showed that there was a significant improvement in children's nutrition after they were given education on balanced nutrition, indicating that nutrition counseling is effective in improving children's understanding of balanced nutrition.
5.	Ufiyah Ramlah (2019) Gangguan Kesehatan Pada Anak Usia Dini Akibat Kekurangan Gizi Dan Upaya Pencegahannya.[16]	The purpose of this study is to increase awareness and understanding among educators and parents regarding the importance of adequate nutritional intake in early childhood as a determining factor in children's health, intelligence, and future growth and development.	Research findings indicate that childhood malnutrition is influenced by indirect factors, namely household food security, child-rearing practices, and the state of health services and the environment. These factors play a role in determining the quality of children's diets and their health status.
6.	Tsamara Alifia Ramadhani , Lailatul Muniroh (2023) Hubungan Perilaku Makan dan Status Gizi Anak Usia Prasekolah.[17]	This study aims to analyze the relationship between eating behavior and the nutritional status of preschool-aged children, along with the increase in children's autonomy, which influences variations in eating behavior and food intake.	The results of the study indicate that there is no significant association between eating behaviors and the nutritional status of preschool children. This is due to other sources that continue to meet children's energy and protein needs, such as family support in food provision, parental feeding practices, and access to sufficient

No	Author, Year, and Title	Research Objectives	Result
			food. These factors are related to indirect causes, namely parenting practices and family food security, which continue to ensure children's nutritional adequacy.
7.	Khayu Rohmi, M. Faqih Naufal, Fitry Candra Mulyani, Aksan, Achmad Zukhruf Alfaruqi, Zakarias B. Waatwahan (2024) Perumusan Masalah Penyebab Stunting di Indonesia.[18]	The purpose of this study is to systematically formulate and identify the causes of stunting in Indonesia, in order to gain a comprehensive understanding of the problem of stunting.	The results of this study indicate that economic and sociocultural factors, underlying causes including family factors such as the role of the mother, and immediate causes related to the mental condition of the mother and child, require holistic intervention with a focus on improving nutrition during the first 1000 days of a child's life.
8.	Santi Mutiara Purnama Asri (2018) Pengaruh Pola Asuh Orang Tua Dari Keluarga Kurang Mampu Terhadap Kejadian Stunting Pada Balita Di Kota Semarang (Studi Di Wilayah Kerja Puskesmas Kagok Kota Semarang)	The purpose of this study is to analyze the parenting patterns of underprivileged families, analyze sanitation practices, health care, feeding patterns practiced by parents, and determine the history of infections in toddlers, as well as determine the history of illness in mothers during pregnancy.	The results of this study indicate that parenting patterns, parental education levels, feeding patterns, sanitation, regular health services, and maternal health during pregnancy greatly determine whether a child's nutritional status is good or problematic. Early detection through regular health services, including checkups, child health consultations, and immunizations, is the best approach.
9.	Desyana Endarti Hendraswari , Helda (2023) Studi Ekologi : Determinan Kejadian Gizi Buruk Di Indonesia Tahun 2021.[12]	The purpose of this study is to analyze the correlation between malnutrition and social factors, health, and children's nutritional intake, including the number of poor people, sanitation, and average calorie and protein consumption in Indonesia.	The results show that poor people have a positive correlation with malnutrition, while complete basic immunization coverage, vitamin A supplementation, average calorie consumption, and protein intake show a negative correlation with increased malnutrition.

Health care begins with immunizing children, breastfeeding, and weighing children at health posts, hospitals, or health facilities on a regular basis. Immunization is the process of artificial immunity in the form of vaccinations and vitamin supplements for children. Good and careful health services are a way to help improve nutritional problems and are expected to have a positive effect on long-term nutritional status. By weighing children regularly and taking them to health facilities for early detection of growth and development problems, health workers can determine whether a child is stunted, whether their development is appropriate for their age, and whether they have emotional or behavioral disorders. 2 Health services can help with early detection so that problems with a child's nutritional status can be easily and quickly addressed.

Food Security

The results of the discussion also show that household food security is one of the most important indirect determinants of children's nutritional status, as it is directly related to the availability,

access, stability, and diversity of food provided in the family. Low household income and large family size are more likely to result in limitations in providing nutritionally balanced and nutrient-rich food. Increased risk of malnutrition and stunting in children is a condition of monotonous consumption patterns, dominated by carbohydrates and low in micronutrients.[19]

Eating Habits

Eating habits related to feeding children and sanitation will determine children's nutritional status, because not paying attention to the frequency of feeding, the nutritional quality of food, and inappropriate feeding methods will result in growth failure (20). Whether the food consumed by children is appropriate in terms of quantity and quality is an important matter that must be considered, planned, and implemented by a mother. Parents are expected to provide main meals and snacks that are dense in nutrients and good nutrition, with a variety of foods so that children can eat well, enjoy their meals, and be stimulated if they finish their food. Parents who are patient in meeting their children's nutritional needs will ensure that their children's nutritional status is good and continues to develop according to their age. Parents must be able to discern which foods are appropriate for their children to consume. In addition to the quality and quantity of the food itself, mothers must also pay attention to the process of meal preparation, food selection, food processing, and how food is given to children.

CONCLUSION

Based on the systematic literature review, parenting practices, household socioeconomic conditions, birth factors and early life history, and infectious diseases were the most consistent indirect determinants associated with children's nutritional status. Suboptimal feeding and caregiving practices, limited family economic resources, unfavorable birth characteristics, and exposure to infection increased the risk of stunting, underweight, and wasting. Therefore, improving children's nutritional status requires integrated efforts to strengthen parenting capacity, enhance household economic resilience, monitor child growth from birth, and prevent infectious diseases.

AUTHOR'S CONTRIBUTION STATEMENT

ZE contributed to the conceptualization of the study, development of the review protocol, literature search, article screening, data extraction, data analysis, and preparation of the original manuscript. K contributed to the conceptualization, methodology, supervision, validation of the findings, and critical revision of the manuscript Y and AF. contributed to the methodological development, interpretation of the findings, and review and editing of the manuscript. AA, IMA and R as assisted in the literature search, eligibility assessment, data extraction, thematic synthesis, and preparation of the initial draft. All authors reviewed and approved the final version of the manuscript and agreed to be accountable for all aspects of the work.

CONFLICTS OF INTEREST

The authors declare that there are no conflicts of interest related to the publication of this article. This study was conducted independently, and there were no financial, institutional, or personal relationships that could influence the research process, analysis, interpretation of findings, or preparation of the manuscript.

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