SOCIO-CULTURAL LINKS WITH STUNTING INCIDENTS

Petrorima Selva[1*] , Tri Krianto Karjoso [2]
Universitas Indonesia[1,2]
**Corresponding Author :* petrorima.selva@ui.ac.id

ABSTRAK
Tujuan penelitian ini yaitu untuk mengetahui hubungan sosial budaya dengan kejadian *stunting*. Penelitian ini merupakan tinjauan sistematis yang bertujuan untuk menganalisis hubungan faktor sosial budaya dengan kejadian *stunting* pada anak. *Stunting* merupakan masalah kesehatan global yang berdampak pada pertumbuhan fisik dan perkembangan kognitif anak. Faktor sosial budaya memainkan peran penting dalam mempengaruhi pola makan anak, perawatan kesehatan dan lingkungan sosial. Metode penelitian ini melibatkan identifikasi dan analisis studi empiris yang relevan dalam literatur ilmiah. Hasil studi yang dimuat dalam ulasan ini menunjukkan adanya hubungan yang kompleks antara faktor sosial budaya dengan kejadian *stunting*. Faktor sosial seperti pendidikan ibu, status sosial ekonomi keluarga, akses ke layanan kesehatan, dan praktik pemberian makan berperan dalam risiko *stunting*. Selain itu, faktor budaya seperti norma makan dan kepercayaan terkait kesehatan juga berperan penting dalam pola makan anak. Dalam konteks ini, intervensi yang efektif untuk mengurangi *stunting* perlu mempertimbangkan faktor sosial budaya tersebut. Pendidikan bagi ibu tentang gizi dan perawatan anak, penyediaan akses layanan kesehatan yang terjangkau, dan pendekatan yang peka terhadap konteks budaya dapat membantu mengurangi kejadian *stunting*. Kesimpulannya, tinjauan sistematis ini menggarisbawahi pentingnya memahami hubungan antara faktor sosial budaya dan kejadian *stunting*. Penanganan *stunting* tidak hanya memerlukan pendekatan medis, tetapi juga intervensi yang memperhatikan konteks sosial budaya dalam upaya pencegahan dan penurunan *stunting* pada anak.

Kata kunci : budaya, sosial, *stunting*

ABSTRACT
This study aims to determine the socio-cultural relationship with the incidence of stunting. This research is a systematic review that aims to analyze the relationship between socio-cultural factors and the incidence of stunting in children. Stunting is a global health problem that has an impact on children's physical growth and cognitive development. Socio-cultural factors play a significant role in influencing a child's diet, health care and social environment. This research method involves identifying and analyzing relevant empirical studies in the scientific literature. The results of the studies included in this review show that there is a complex relationship between socio-cultural factors and the incidence of stunting. Social factors such as mother's education, family socioeconomic status, access to health services, and feeding practices play a role in the risk of stunting. In addition, cultural factors such as eating norms and health-related beliefs also play an important role in a child's diet. In this context, effective interventions to reduce stunting need to take these socio-cultural factors into account. Education for mothers about nutrition and child care, providing access to affordable health services, and approaches that are sensitive to cultural contexts can help reduce the incidence of stunting. In conclusion, this systematic review underscores the importance of understanding the relationship between socio-cultural factors and the incidence of stunting. Treatment of stunting requires not only a medical approach, but also interventions that take into account the socio-cultural context in efforts to prevent and reduce stunting in children.

Keywords ***:*** *cultural, social, stunting*

INTRODUCTION

The link between socio-cultural aspects and the incidence of *stunting* is a complexity that includes norms, values, traditional practices, and access to health services in a society

(Suhardin et al., 2020). The phenomenon of *stunting* as a result of chronic malnutrition in children cannot be separated from the cultural context that forms the basis of their interactions with the surrounding environment. Norms governing eating patterns, sharing food portions in the family, and providing complementary food for ASI (MP-ASI) at the right time have a major impact on children's growth. In addition, values related to the mother's role in providing care and care also play an important role in *stunting* prevention (Sukmawati et al., 2023). Traditional practices such as giving babies certain herbs or foods can also affect a child's health and growth. Access to information on nutrition and health, which is often influenced by the level of education and level of awareness in society, also forms the basis for tackling *stunting*. Thus, a deep understanding of the socio-cultural linkages with the incidence of *stunting* is key in designing effective prevention and intervention strategies (Large & Marshman, 2022).

The socio-cultural linkage with *stunting* is a complex and multidimensional phenomenon, bringing together elements from culture, social norms, eating patterns, social interactions, and the physical environment. *Stunting*, which is defined as a condition of linear growth failure in children due to chronic malnutrition, has become a serious concern in the global health sector. Although efforts have been made to overcome this problem, the incidence of *stunting* is still high, especially in countries with low and middle economic levels. Therefore, an in-depth understanding of how socio-cultural factors contribute to *stunting* is important in prevention and management efforts (Oddo et al., 2019; Rachmad et al., 2023).

Socio-cultural linkages with *stunting* incidents can also be reflected in the physical environment. The living environment, sanitation, and access to clean water greatly affect children's health and nutrition. Socio-cultural factors can influence sanitation and hygiene practices, and the use of clean water facilities. Cultural norms regarding how to clean up or manage waste can affect the environment that supports or limits children's healthy growth (Gintis & Schaik, 2012). In the era of globalization, cultural changes can also affect the incidence of *stunting*. Changes in dietary patterns due to global cultural influences, such as the advent of fast food or high-calorie drinks, can change food preferences and lifestyles. This cultural change could shift traditional diets that are more nutritionally balanced, contributing to a higher risk of *stunting* (Kemenkes, 2018). It is important to recognize that the socio-cultural linkage with *stunting* is a complex and very contextual phenomenon. Each society has unique values, norms and practices that shape the way children grow and develop. Therefore, interventions to prevent and overcome *stunting* need to consider the local socio-cultural context. A culturally sensitive approach can be more effective in designing programs that are acceptable to the community and have a positive impact on reducing *stunting* (Rahmadhita, 2020).

In order to increase understanding of the socio-cultural linkages with the incidence of *stunting*, systematic review research as described in the context of the problem background can be an important tool. By analyzing existing empirical studies, this research was able to identify general trends, patterns, and variations in the relationship between socio-cultural factors and *stunting*. Through this research, it is hoped that deeper insights can be generated about how culture, social norms, and practices in society can shape the risk of *stunting* in children (Ghosh, 2016; Scheffler et al., 2020). This systematic review study aims to explore and analyze in depth the relationship between socio-cultural aspects and the incidence of *stunting* in children. *Stunting*, or failure of linear growth in children due to chronic malnutrition, is a serious problem in the field of public health in many countries, especially in countries with low and middle economic levels. This condition not only affects a child's physical growth, but also has an impact on cognitive development, health, and productivity in the future. Therefore, an in-depth understanding of the factors that influence the incidence of *stunting* is very important. In the context of this study, socio-cultural factors were identified as elements that play an important role in preventing or increasing the risk of *stunting* in children. Socio-cultural aspects include

norms, values, traditions, eating practices, parenting styles, and access to health and nutrition services. These factors can interact in a complex way and influence each other in the context of a particular society (Savitri, 2020).

One of the challenges in overcoming *stunting* is the complexity of the interaction between socio-cultural factors and biological and economic determinants. This linkage can affect diet, hygiene, access to clean water, sanitation, and knowledge about nutrition that is owned by the community. For example, norms governing the distribution of food portions between family members or the habit of giving complementary foods (MP-ASI) at the wrong age can contribute to *stunting*. On the other hand, limited access to economic resources can also limit access to adequate nutrition. In addition, mother's knowledge and awareness about the importance of balanced nutrition and proper parenting also have a significant impact on preventing *stunting*. These factors are strongly related to education and access to health information. Not only that, traditional practices such as the use of herbs or feeding certain foods to babies can also affect children's development (Abi Khalil et al., 2022; Sukmawati, 2019).

In the context of globalization and urbanization, socio-cultural aspects can experience significant changes. Changes in eating patterns, increased stress, and shifts in cultural values in society can have an impact on the incidence of *stunting*. Therefore, this systematic review study will also explore how globalization and cultural changes can affect the risk of *stunting* in children. This research will involve an analysis of a number of empirical studies that have been done before. Data taken from various sources, including scientific journals, government reports, and related international publications, will be processed systematically to obtain a comprehensive picture of the socio-cultural linkages with *stunting*. Thus, it is hoped that this research can provide a deeper understanding of socio-cultural factors that can influence the incidence of *stunting* in children (Adriany & Tesar, 2023).

Overall, this systematic review study aims to fill the knowledge gap in the socio-cultural linkages with *stunting*. With a better understanding of these factors, it is hoped that more effective and targeted interventions can be developed in efforts to prevent *stunting* in children. This research is expected to provide guidance for policy makers, health practitioners, and parties involved in efforts to improve the welfare of children in various communities. This study aims to determine the socio-cultural relationship with the incidence of stunting.

METHOD

This type of research systematic research (systematic review) is a research method that aims to collect, integrate, and analyze the results of existing research in a particular field (Sugiyono, 2019). The aim is to present a more comprehensive and in-depth understanding of a particular topic or research question. systematic research will seek and analyze previous studies on how socio-cultural factors relate to *stunting* in children. The following are the general steps involved in a systematic research method (systematic review) on the topic. Conduct a systematic search in scientific databases and relevant sources to identify all studies that have been conducted on the socio-cultural linkages with *stunting* in children. This search should cover a wide variety of sources, such as scientific journals, review articles, books, and research reports. Apply inclusion and exclusion criteria to select those studies that are most relevant to the research question. For example, inclusion criteria might include studies that examine the relationship between sociocultural factors and child *stunting*, and have a strong research methodology. Extraction of data from each study that met the inclusion criteria. The extracted data can be in the form of information about the study population, the research methods used, the findings, and the effect size of the socio-cultural linkages with the incidence of *stunting*. Assess the methodological quality of each study included in the systematic study. This can involve assessing the research design, sampling, controlling for confounding

variables, and statistical analysis used. Analyze the findings from each included study, and identify general patterns or findings related to socio-cultural links with *stunting*. This synthesis can be done through a narrative approach or, if possible, through meta-analysis if sufficient data is available. The conclusion from the synthesis analysis will provide an understanding of the extent to which socio-cultural factors are related to the incidence of *stunting*. The implications of these findings can assist in preparing policy recommendations or directions for further research. Write a systematic report describing all the steps taken in the study, from research questions, literature search, study selection, to analysis and interpretation of results. By following these steps, systematic research on the socio-cultural linkages with *stunting* will produce a comprehensive summary of the existing knowledge in the field, as well as make it possible to identify knowledge gaps that may need further research.

RESULTS

This section contains the results of the research presented in the form of narratives, tables and or pictures and the results of statistical tests with explanations without discussion. The table title is written above it while the figure title is written below it.

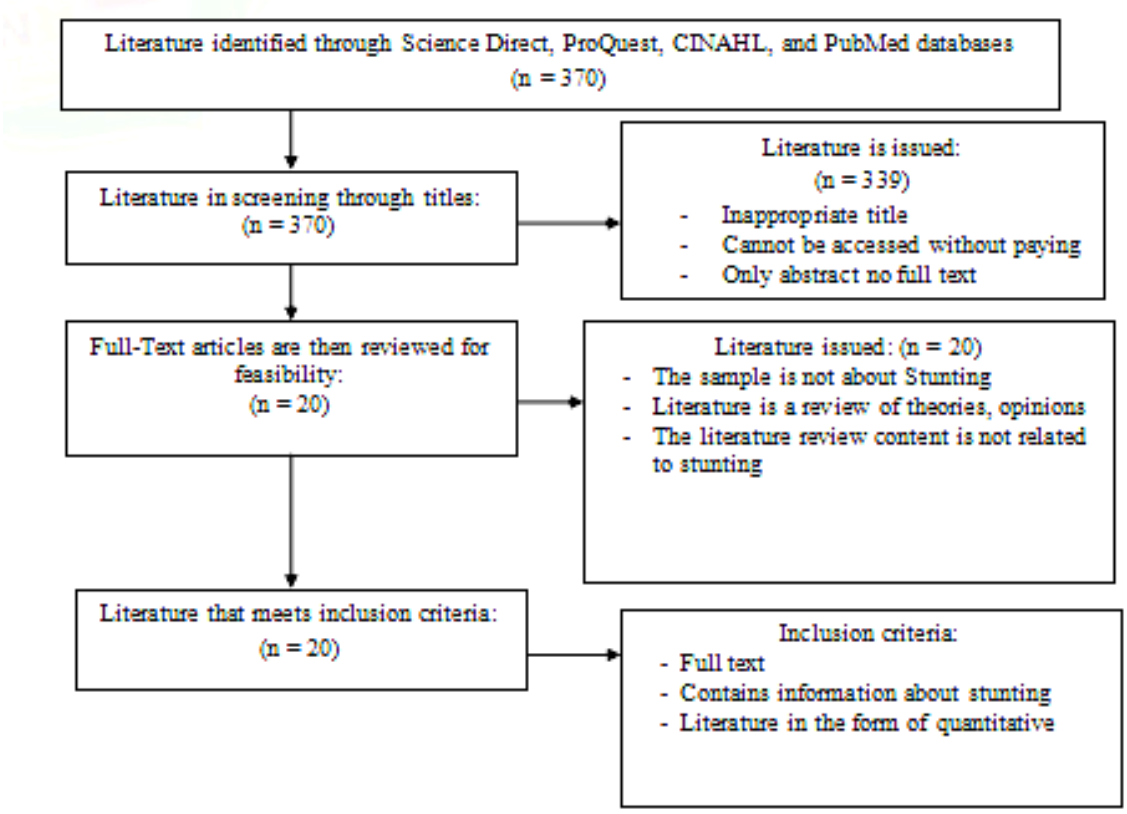

Chart 1. Literature Review Flow

Table 1. Literature Review

No.	Author Name and Year	Research methods	Research result
1	Mulyaningsih et al. (2021)	We analyzed data for 8045 children taken from the 2007 and 2014 waves of the Indonesian Family and Life Surveys (IFLS). We included individual-, family-/household- and community-level variables in the analyzes. A multilevel mixed effects model was employed to take into account the hierarchical structure of the data. Moreover, the model captured the effect of unobserved household-, subdistrict- and province-level characteristics on the probability of children being stunted.	We analyzed data for 8045 children taken from the 2007 and 2014 waves of the Indonesian Family and Life Surveys (IFLS). We included individual-, family-/household- and community-level variables in the analyzes. A multilevel mixed effects model was employed to take into account the hierarchical structure of the data. Moreover, the model captured the effect of unobserved household-, subdistrict- and province-level characteristics on the probability of children being stunted. Household wealth status and parental education are significant household-level covariates associated with a higher risk of *stunting*. Finally, the risk of *stunting* is higher for children living in communities without access to water, sanitation and hygiene.
2	Scheffler et al, (2020)	We measured 1716 Indonesian children, aged 6.0-13.2 years, from urban Kupang/West-Timor and rural Soe/West-Timor, urban Ubud/Bali, and rural Marbau/North Sumatra. We clinically assessed signs of malnutrition and skin infections.	There was no relevant correlation between nutritional status (indicated by skinfold thickness) and height SDS (hSDS). In total 53% of boys and 46% of girls in rural Soe were stunted, with no meaningful association between mean of triceps and subscapular skinfolds ($\bar{x}$SF) and height. Skinfold thickness was close to German values. Shortest and tallest children did not differ relevantly in skinfold thickness. The same applied for the association between hSDS and mid-upper-arm circumference (MUAC) using linear mixed effects models with both fixed and random effects. In total, 35.6% of boys and 29.2% of girls in urban Ubud were overweight; 21.4% boys and 12.4% girls are obese, but with mean hSDS = -0.3, still short.

3	Vilcins et al. (2018)	A systematic search of the literature was performed using PubMed, EMBASE, Scopus, TOXNET, and CINAHL. A search of the gray literature was conducted. Papers were included in this review if they examined an association between childhood *stunting* and exposure to environmental risk factors.	We included 71 reports in the final analysis. The included studies showed that food borne mycotoxins, a lack of adequate sanitation, dirt floors in the home, poor quality cooking fuels, and inadequate local waste disposal are associated with an increased risk of childhood *stunting*. Access to safe water sources was studied in a large number of studies, but the results remain inconclusive due to inconsistent study findings
4	Sartika et al. (2021)	This prospective, repeat, cross-sectional study investigated factors associated with *stunting* among 559 infants aged 0-11 months in Sambas District, Indonesia. Anthropometric measurements were performed by trained enumerators. Data from a 2016 survey of pregnant women and a 2017 survey on mothers and their children were used for postnatal data collection to quantify the prevalence of *stunting* at age 0-11 months.	Of 559 children analyzed, 20.8% were stunted. In the model with low birth weight (LBW) as a predictor for *stunting*, the odds of *stunting* increased significantly among children who weighed <2,500 g at birth; children who had diarrhea in the past 2 weeks and children who had incomplete basic immunization coverage as infants aged 9-11 months. In the model without LBW, the odds of *stunting* increase significantly among children who had preterm birth, short maternal stature and children who had incomplete basic immunization coverage for infants 9-11 months.
5	Sari & Sartika (2021)	This study analyzed secondary data from the national cross-sectional Indonesian Basic Health Survey 2018, conducted across 34 provinces and 514 districts/cities. Birth length data were available for 756 newborns. Univariable, bivariable, and multivariable logistic regression analyzes were performed to determine associations between the physical factors of parents and children and *stunting* at birth.	In total, 10.2% of children aged 0 months were stunted at birth (10.7% of males and 9.5% of females). *Stunting* at birth was associated with the mother's age at first pregnancy, parity, parents' height, parents' age, and gestational age. Children from mothers with short statures (height <145.0 cm) and fathers with short statures (height <161.9 cm) had an almost 6 times higher likelihood of being stunted at birth (adjusted odds ratio, 5.93; 95% confidence interval, 5.53 to 6.36).

6	Ali (2021)	This review discusses the etiology of child malnutrition and *stunting* in Pakistan, the role of various determinants of *stunting* and what types of intervention strategies and approaches should be developed and implemented to deal with these problems. Key teaching points Malnutrition is one of the greatest global health challenges.	This review discusses the etiology of child malnutrition and *stunting* in Pakistan, the role of various determinants of *stunting* and what types of intervention strategies and approaches should be developed and implemented to deal with these problems. Key teaching points Malnutrition is one of the greatest global health challenges.
7	Large & Marshman (2022)	Study selection The systematic review was conducted according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines and registered with PROSPERO (registration number CRD42018091581). A database search of Medline and Embase was conducted in March 2018 with an updated search in July 2019.	Conclusions Overall, the authors concluded that the balance of evidence favored an association between dental caries in the primary dentition and undernutrition in children but highlighted the complexity of synthesizing dental and nutritional data along with dentition type, age of child participants and income status of countries.
8	Khan et al. (2019)	A sample of 3071 Pakistani children aged 0-59 months from the PDHS 2012-2013, with complete anthropometric measurements were included in the study. Nutritional status was evaluated using anthropometric indices; height-for-age, weight-for-height and weight-for-age, as proxy measures of three forms of under-five malnutrition including *stunting*, wasting and underweight respectively.	About 44.4% of under-five children were stunted, 29.4% were underweight and 10.7% were wasted. Children whose mothers lived in rural areas (aOR = 0.67, 95%CI 0.48-0.92), were aged ≥18 years at marriage (aOR = 0.76, 95%CI 0.59-0.99) and had visited an antenatal clinic more than 3 times during pregnancy (aOR = 0.61, 95%CI 0.38-0.98) were less likely to be stunted.
9	Campos et al. (2020)	Secondary data analysis using the 2012 Mexican Health and Nutrition Survey, which allowed representativeness of rural and urban areas at national level and among 4 regions in Mexico. Our subset included data on 2,089 singleton Mexican children aged 6-35 months with information on previously identified risk and protective factors for *stunting*. We conducted fixed- and mixed-effects logistic regression models sequentially controlling for each level of factors.	Overall, 12.3% of children were stunted and 71.1% were breastfed for ≥6 months. Any breastfeeding and being female were consistent protective factors against child *stunting* across all models. In contrast, children with low birth weight, short maternal stature, higher number of children aged <5 years per household, and moderate to severe food insecurity were consistent risk factors for child *stunting* across all models.

10	Saleh et al. (2021)	A literature search was conducted on electronic databases such as ProQuest, PubMed, ScienceDirect, and Google Scholar to identify relevant published articles from January 1, 2010, to July 1, 2020. Additional articles were identified from the reference lists and gray literature.	Three main phases require optimal mother roles to prevent *stunting* in children during the golden phase. These phases include the preconception phase, the prenatal phase, and the infant-toddlerhood phase. Various mother roles include fulfilling maternal, fetal, infant, and child nutrition, carrying out early breastfeeding initiation, exclusive breastfeeding, and appropriate complementary feeding, optimizing the environment for child development, optimizing family support, and avoiding various psychosocial factors that can be detrimental during growth, and child development.
11	Prentice (2020)	The rationale for this is understandable since the first 1,000 days cover the period of most rapid growth and changes in body composition, the period of breastfeeding, and the complex transition from breastfeeding and weaning to complementary feeds, and then moving to the family/adult diet . There has also been a strong perception that, once a child has become stunted or wasted in the first 2 years of life, there is little hope of recovery, an assumption we address below.	This paper will describe the timing of the development of *stunting* and wasting, addressing 3 critical periods: intergenerational, in utero, and early postnatal life. The question of whether toddlers and young preschoolers can recover from *stunting* and wasting will also be addressed; our own studies suggest that a degree of recovery is certainly possible.
12	Sapartini et al. (2022)	Several studies have reported an association between obesity and asthma. However, only a handful of studies have identified *stunting* as a significant risk factor for wheezing, a symptom of asthma, although the underlying mechanism remains unclear.	Stunted children show a decreased lean body mass, which affects lung growth and function. Low leptin levels during undernutrition cause a Th1-Th2 imbalance toward Th2, resulting in increased interleukin (IL)-4 cytokine production and total immunoglobulin E (IgE).

13	Gansaonré et al. (2022)	We conducted a systematic review of studies (last update 20 March 2021) that assessed the association between *stunting*, or height-for-age, and at least one component of school trajectory using five databases (PubMed, Embase, Education Resources Information Center [ERIC], Web of Science and PsycINFO). Two independent reviewers performed study selection and data extraction.	We screened 3944 articles, and 16 were eligible for the qualitative and quantitative syntheses. Meta-analysis showed that an increase in height-for-age leads to an increase in early enrollment [OR = 1.34 (95% CI, 1.07-1.67)], a reduction in late enrollment [OR = 0.63 (95% CI, 0.51) -0.78)], an increase in schooling level [MD = 0.24 (95% CI, 0.14-0.34)] and a reduction in school overage [OR = 0.79 (95% CI, 0.70-0.90)]. Stunted children were more likely to repeat a grade than non-stunted [OR = 1.59 (95% CI, 1.18-2.14)].
14	Hijrawati et al. (2021)	In this study, which is looking for journals used in the literature review, journals used in literature review were obtained through the database of international journal providers such as Google scholar, PubMed, and Proquest. Researchers wrote the appropriate keywords, namely nutritional status of 1000 HPK, *stunting*, and application. The year limit used is ten years from 2010 to 2020.	Nutritional status in the first thousand days of life (1000 HPK), which is 270 days during pregnancy and 730 days in the baby's first life, is critical because the consequences are permanent and irreparable. Pregnant women and toddlers who are less attentive about their food intake will impact nutritional problems or nutritional status that will then affect their development in the future.
15	Yani et al. (2023)	A scoping review was undertaken with sources from PubMed, CINAHL, and Scopus, using the keywords "family characteristics" AND "growth". Inclusion criteria were (1) correlational study; (2) published between 2018 and 31 July 2022; (3) families with children under the age of 5 years; and (4) independent variable any measure of *stunting* factors from family and household factors. Of 376 articles, only 20 met the inclusion criteria of the study.	Various child variables, family factors, and environmental factors (the type of home, floor type, water access, source of drinking water, and household electricity) were identified as being associated with *stunting*. Therefore, these factors should be evaluated to prevent and control *stunting*, and they should be incorporated into health programs targeting *stunting*.
16	Zaragoza-Cortes et al. (2018)	a 24-hour recall was used to obtain information. Z-scores for length-for-age (ZLA), complementary feeding (CF) and minimal dietary diversity (MDD) were determined. The sample was divided into breastfed and not breastfed children.	a 24-hour recall was used to obtain information. Z-scores for length-for-age (ZLA), complementary feeding (CF) and minimal dietary diversity (MDD) were determined. The sample was divided into breastfed and not breastfed children.

17	Gabain et al. (2023)	The underlying aetiology and pathophysiological mechanisms leading to *stunting* remain elusive, and therefore few effective treatment and prevention strategies exist. Crucial evidence directly linking parasites to *stunting* is often lacking - in part due to the complex nature of *stunting*	We highlight the need for future multidisciplinary longitudinal studies and clinical trials aimed at elucidating the most influential factors, and synergies therein, that can lead to *stunting*, and ultimately towards finding solutions to successfully mitigate against it.
18	Perumal 2 et al. (2018)	although originally intended as a population-level statistical indicator of children's social and economic deprivation, the conventional anthropometric definition of *stunting* (height-for-age z scores <-2 SD) is now widely used to define chronic malnutrition.	We argue that the common use of *stunting* as an indicator of child linear growth has contributed to unsubstantiated assumptions about the biological mechanisms underlying linear growth impairment in low- and middle-income countries and has led to a systematic underestimation of the burden of linear growth deficits among children in low-resource settings.
19	M. et al. (2018)	We reviewed 19th and early 20th century pediatric journals in the Staatsbibliothek zu Berlin, the third largest European library with an almost complete collection of the German medical literature. During a three-day visit, we inspected 15 bookshelf meters of literature not available in electronic format.	Late 19th and early 20th century breastfed European infants and children, independent of social strata, grew far below World Health Organization (WHO) standards and 15-30% of adequately-fed children would be classified as stunted by the WHO standards.
20	Raj et al. (2022)	Inclusion criteria were as follows: infected with (and/or exposed to) helminths (soil-transmitted helminths, schistosomes or food-borne trematodes), children, pregnant or breastfeeding women as study participants .	Eighty studies were included in the analyzes. No significant overall evidence was found in support of the hypothesis that helminths cause physical *stunting* in children, although there is some association with wasting.

DISCUSSION

The socio-cultural linkage with *stunting* is a complex phenomenon that involves interactions between social and cultural factors and the risk of *stunting* in children. *Stunting* or stunted growth is a condition when a child has a lower height than the standard for his age, as a result of a lack of adequate nutritional intake and the influence of the surrounding environment (Mulyaningsih et al., 2021). However, the causes of *stunting* are not only limited to nutritional and physical environmental factors, but are also related to socio-cultural factors that shape diet, child care practices, and access to health services. One of the key aspects of the socio-cultural linkage with *stunting* is the traditional diet which can affect children's nutritional intake. In many cultures, there are traditional foods that may not meet the nutritional needs of growing children (Scheffler et al., 2020). Factors such as beliefs, cultural values and dietary habits can influence the type and amount of food consumed by children. For example, in some

cultures, children may be more likely to overeat carbohydrate foods than the proteins and vitamins that are essential for optimal growth (Vilcins et al., 2018).

In addition, child care practices also have a major impact on the incidence of *stunting*. In some communities, there are practices such as exclusive breastfeeding that is not prioritized, giving complementary foods that are not appropriate for the child's age, and irregular feeding patterns (Sartika et al., 2021).. Cultural factors and social norms regarding child care can influence the way parents care for and feed their children, which in turn can influence the nutritional status of children (Sari & Sartika, 2021).

Access to health services is also influenced by socio-cultural factors. Some families may experience difficulties in accessing quality health services due to economic, geographic or cultural factors. Social norms, such as reliance on traditional medicine over modern medicine, can also influence a family's decision to seek appropriate health care (Ali, 2021). In addition, economic factors also have an important role in the socio-cultural linkages with *stunting*. Families living in difficult economic conditions may not be able to afford nutritious food at higher prices. This can lead to consumption of food that is of poor quality and in sufficient quantity to support optimal child growth (Large & Marshman, 2022).

Efforts to reduce the incidence of *stunting* require not only nutrition and health interventions, but also involve a deep understanding of the socio-cultural context in certain communities (Khan et al., 2019). Education that is sensitive to existing cultural values, social norms and child care practices can help design programs that are more effective in tackling *stunting* (Campos et al., 2020). Collaboration between medical personnel, nutritionists and cultural experts is also important in developing appropriate strategies according to the specific needs of the community (Saleh et al., 2021).

One of the crucial aspects in the socio-cultural linkage with the incidence of *stunting* is the diet and feeding practices of children. Local culture can influence the type, amount and frequency of food consumed by children (Prentice, 2020). Family norms and meal rules can shape children's food preferences and eating patterns (Sapartini et al., 2022).. For example, in some cultures, complementary feeding (MP-ASI) may be started at an inappropriate age, or foods with low nutritional value are consumed more frequently due to tradition or availability. Unbalanced feeding practices can result in a deficiency of essential nutrients that support optimal growth (Gansaonré et al., 2022).

In addition, the values and social norms in society can also affect the distribution of food among family members. For example, in some cultures, larger portions are given to male family members or adults, while children and pregnant women may receive smaller portions. This can have a negative impact on the nutritional status of children and pregnant women, which in turn can increase the risk of *stunting*. Gender disparities in food distribution can reflect social norms and hierarchies that can affect the nutritional well-being of families (Hijrawati et al., 2021). In addition, parenting styles related to culture also play a role in socio-cultural linkages with *stunting* (Yani et al., 2023). Views on parenting can vary significantly between cultures. Parenting styles that include quality of care, child-parent interaction, and approaches to providing nutrition and health care can play an important role in a child's growth. For example, the practice of exclusive breastfeeding and the quality of care in early life have a major influence on a child's physical and cognitive development (Sukmawati et al., 2023). Unresponsive parenting and lack of knowledge about healthy eating patterns can contribute to *stunting* (Zaragoza-Cortes et al., 2018).

In addition, access to health and nutrition services is also strongly influenced by socio-cultural factors (Gabain et al., 2023). Societal norms and values can influence parents' decisions about seeking health or nutrition services for their children. For example, traditional beliefs or myths around health and nutrition can influence a parent's decision to seek necessary care. In addition, stigma towards certain health services or lack of knowledge about their benefits can

limit access to health services that can prevent *stunting* (Perumal 2 et al., 2018; Sukmawati E et al., 2018).

Overall, the socio-cultural linkage with *stunting* is a complex and multidimensional aspect. Cultural factors such as traditional diets, child care practices, social norms and access to health services play an important role in shaping children's nutritional status (M. et al., 2018; Sukmawati et al., 2021). In order to deal effectively with the problem of *stunting*, it is necessary to have a holistic and culture-based approach that considers socio-cultural factors in designing *stunting* prevention interventions and programs (Raj et al., 2022).

CONCLUSION

Research on the socio-cultural linkage with the incidence of *stunting* indicates that socio-cultural factors have a significant role in the prevalence of *stunting* in children. This study reveals that traditional practices, social norms, and dietary patterns passed down through culture can have a direct impact on a child's nutritional status. This linkage highlights the need for a more holistic approach in efforts to prevent *stunting*, which does not only focus on medical and nutritional aspects, but also considers the cultural and social context within it. By understanding the strong influence of socio-cultural factors on the incidence of *stunting*, intervention programs must be able to integrate these aspects in their efforts to reduce *stunting* rates and improve children's welfare more effectively.

ACKNOWLEDGEMENT

Thanks to all who have helped in the process of this research.

REFERENCES

Abi Khalil, H., Hawi, M., & Hoteit, M. (2022). Feeding Patterns, Mother-Child Dietary Diversity and Prevalence of Malnutrition Among Under-Five Children in Lebanon: A Cross-Sectional Study Based on Retrospective Recall. *Frontiers in Nutrition*, *9*. https://doi.org/10.3389/fnut.2022.815000

Adriany, V., & Tesar, M. (2023). Unpacking the discourses of *stunting* in Indonesian early childhood education and parenting. *Children and Society*, *37*(2). https://doi.org/10.1111/chso.12593

Ali, A. (2021). Current Status of Malnutrition and *Stunting* in Pakistani Children: What Needs to Be Done? *Journal of the American College of Nutrition*, *40*(2), 180–192. https://doi.org/10.1080/07315724.2020.1750504

Campos, A. P., Vilar-Compte, M., & Hawkins, S. S. (2020). Association between breastfeeding and child *stunting* in Mexico. *Annals of Global Health*, *86*(1), 1–14. https://doi.org/10.5334/aogh.2836

Gabain, I. L., Ramsteijn, A. S., & Webster, J. P. (2023). Parasites and childhood *stunting* – a mechanistic interplay with nutrition, anaemia, gut health, microbiota, and epigenetics. *Trends in Parasitology*, *39*(3), 167–180. https://doi.org/10.1016/j.pt.2022.12.004

Gansaonré, R. J., Moore, L., Bleau, L. P., Kobiané, J. F., & Haddad, S. (2022). *Stunting*, age at school entry and academic performance in developing countries: A systematic review and meta-analysis. *Acta Paediatrica, International Journal of Paediatrics*, *111*(10), 1853–1861. https://doi.org/10.1111/apa.16449

Ghosh, S. (2016). Protein Quality in the First Thousand Days of Life. *Food and Nutrition Bulletin*, *37*. https://doi.org/10.1177/0379572116629259

Gintis, H., & Schaik, C. V. (2012). Zoon Politicon: The Evolutionary Roots of Human

Sociopolitical Systems Herbert Gintis - forthcoming. *Cultural Evolution*.

Hijrawati, Usman, A. N., Syarif, S., Hadju, V., As'ad, S., & Baso, Y. S. (2021). Use of technology for monitoring the development of nutritional status 1000 hpk in *stunting* prevention in Indonesia. *Gaceta Sanitaria*, *35*. https://doi.org/10.1016/j.gaceta.2021.10.028

Kemenkes, R. I. (2018). *Pusat Data Dan Indormasi Situasi Balita Pendek (Stunting) di Indonesia*.

Khan, S., Zaheer, S., & Safdar, N. F. (2019). Determinants of *stunting*, underweight and wasting among children < 5 years of age: Evidence from 2012-2013 Pakistan demographic and health survey. *BMC Public Health*, *19*(1). https://doi.org/10.1186/s12889-019-6688-2

Large, J., & Marshman, Z. (2022). Does dental caries lead to *stunting* and wasting in children? *Evidence-Based Dentistry*, *23*(4), 144–145. https://doi.org/10.1038/s41432-022-0822-1

M., H., B., B., & C., S. (2018). *Stunting*, starvation and refeeding: a review of forgotten 19th and early 20th century literature. *Acta Paediatrica, International Journal of Paediatrics*, *107*(7), 1166–1176.

Mulyaningsih, T., Mohanty, I., Widyaningsih, V., Gebremedhin, T. A., Miranti, R., & Wiyono, V. H. (2021). Beyond personal factors: Multilevel determinants of childhood *stunting* in Indonesia. *PLoS ONE*, *16*(11 November). https://doi.org/10.1371/journal.pone.0260265

Oddo, V. M., Roshita, A., & Rah, J. H. (2019). Potential interventions targeting adolescent nutrition in Indonesia: A literature review. *Public Health Nutrition*, *22*(1). https://doi.org/10.1017/S1368980018002215

Perumal 2, N., Bassani 2, D. G. ., & Roth 3, daniel.roth@sickkids.ca, D. E. . (2018). Use and Misuse of *Stunting* as a Measure of Child Health. *Journal of Nutrition*, *148*(3), 311–315.

Prentice, A. M. (2020). Growth Faltering: Underweight and *Stunting*. *Nestle Nutrition Institute Workshop Series*. https://doi.org/10.1159/000511514

Rachmad, Y. E., Agnesiana, B., Agama, I., Ambon, K. N., Sukmawati, E., Ramli, A., Islam, U., Sultan, N., Muhammad, A., Samarinda, I., Sandra, R., & Zebua, Y. (2023). The Analysis of Parenting Patterns in Instilling Morals of Early Childhood. *JCD: Journal of Childhood Development CommonsAttribution-ShareAlike*, *3*(1), 2023. https://doi.org/10.25217/jcd

Rahmadhita, K. (2020). Permasalahan *Stunting* dan Pencegahannya. *Jurnal Ilmiah Kesehatan Sandi Husada*, *11*(1), 225–229. https://doi.org/10.35816/jiskh.v11i1.253

Raj, E., Calvo-Urbano, B., Heffernan, C., Halder, J., & Webster, J. P. (2022). Systematic review to evaluate a potential association between helminth infection and physical *stunting* in children. *Parasites and Vectors*, *15*(1). https://doi.org/10.1186/s13071-022-05235-5

Saleh, A., Syahrul, S., Hadju, V., Andriani, I., & Restika, I. (2021). Role of Maternal in Preventing *Stunting*: a Systematic Review. *Gaceta Sanitaria*, *35*. https://doi.org/10.1016/j.gaceta.2021.10.087

Sapartini, G., Wong, G. W. K., Indrati, A. R., Kartasasmita, C. B., & Setiabudiawan, B. (2022). *Stunting* as a Risk Factor for Asthma: The Role of Vitamin D, Leptin, IL-4, and CD23+. *Medicina (Lithuania)*, *58*(9). https://doi.org/10.3390/medicina58091236

Sari, K., & Sartika, R. A. D. (2021). The effect of the physical factors of parents and children on *stunting* at birth among newborns in indonesia. *Journal of Preventive Medicine and Public Health*, *54*(5), 309–316. https://doi.org/10.3961/jpmph.21.120

Sartika, A. N., Khoirunnisa, M., Meiyetriani, E., Ermayani, E., Pramesthi, I. L., & Nur Ananda, A. J. (2021). Prenatal and postnatal determinants of *stunting* at age 0–11 months: A cross-sectional study in Indonesia. *PLoS ONE*, *16*(7 July). https://doi.org/10.1371/journal.pone.0254662

Savitri, I. C. (2020). Faktor-faktor yang mempengaruhi status gizi pada balita. *Malaysian Palm Oil Council (MPOC)*, *21*(1).

Scheffler, C., Hermanussen, M., Bogin, B., Liana, D. S., Taolin, F., Cempaka, P. M. V. P., Irawan, M., Ibbibah, L. F., Mappapa, N. K., Payong, M. K. E., Homalessy, A. V., Takalapeta, A., Apriyanti, S., Manoeroe, M. G., Dupe, F. R., Ratri, R. R. K., Touw, S. Y., K, P. V., Murtani, B. J., … Pulungan, A. (2020). *Stunting* is not a synonym of malnutrition. *European Journal of Clinical Nutrition*, *74*(3), 377–386. https://doi.org/10.1038/s41430-019-0439-4

Sugiyono. (2019). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D* (1st ed.). Penerbit Alfabeta.

Suhardin, S., Indarwati, R., Meo, C. M., Putri, N. K., Sari, M., & Halimatunnisa, M. (2020). Social-cultural aspect of *stunting*: A systematic review. *International Journal of Psychosocial Rehabilitation*, *24*(7).

Sukmawati, E. (2019). PENGARUH MORINGA OLEIFERA TERHADAP PENINGKATAN ASI PADA IBU MENYUSUI. *JIKA*, *4*.

Sukmawati, E., Imanah, N. D. N., & Suwariyah, P. (2021). Pengaruh Pendampingan Kader Kesehatan terhadap Keberhasilan Menyusui untuk Memberikan ASI Eksklusif. *Jurnal Kebidanan Indonesia*, *12*(2).

Sukmawati, E., Marzuki, K., Batubara, A., Afifah Harahap, N., & Weraman, P. (2023). The Effectiveness of Early Childhood Nutrition Health Education on Reducing the Incidence of *Stunting*. *Jurnal Pendidikan Anak Usia Dini*, *7*(4), 4002–4012. https://doi.org/10.31004/obsesi.v7i4.4846

Sukmawati E, wahyunita yulia sari, & indah sulistyoningrum. (2018). *Farmakologi Kebidanan*. Trans Info Media (TIM). https://scholar.google.com/scholar?oi=bibs&cluster=11760770443894442881&btnI=1&hl=id

Vilcins, D., Sly, P. D., & Jagals, P. (2018). Environmental risk factors associated with child *stunting*: A systematic review of the literature. *Annals of Global Health*, *84*(4), 551–562. https://doi.org/10.29024/aogh.2361

Yani, D. I., Rahayuwati, L., Sari, C. W. M., Komariah, M., & Fauziah, S. R. (2023). Family Household Characteristics and *Stunting*: An Update Scoping Review. *Nutrients*, *15*(1). https://doi.org/10.3390/nu15010233

Zaragoza-Cortes, J., Trejo-Osti, L. E., Ocampo-Torres, M., Maldonado-Vargas, L., & Ortiz-Gress, A. A. (2018). Poor breastfeeding, complementary feeding and dietary diversity in children and their relationship with *stunting* in rural communities TT - Pobre lactancia materna, alimentación complementaria y diversidad de la dieta, y su relación con la baja talla en c. *Nutr. Hosp*, *35*(2), 271–278.