The Effect of Economic Status and Mother's Knowledge in Stunting Cases: A Systematic Review

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Abstract

Background: A reduction in the incidence of stunting has been reported globally over the past few decades. However, stunting remains a big problem for developing countries. The purpose of this research was to review in-depth The Role of Social Economy, Knowledge, behaviour, and stunting in Stunting Cases. Narrative studies with scientific journal database sources published in PubMed, Proquest, Science Direct, and Google Scholar were used. The keywords used in the search were Social economy, Knowledge, behaviour, and stunting. The search included research published within the last five years, that is, 2018-2022. A total of 144 articles were found according to the search titles, and 11 articles were selected for review. After the article was obtained, it was tabulated in an Excel table. The findings show that the family economy will support children’s nutritional intake and needs so that children are not underweight during this period of growth and development. A good family economy can support childcare patterns, and healthy home settlements so they can access clean water. The family economy plays a role in overcoming the large number of children and preventing early marriages. Parents' knowledge will influence the mother's attitude in caring for and caring for children from birth to adolescence. This knowledge is closely related to the practice of exclusive breastfeeding, traditional food nutrition, the management of food hygiene, the diversity of children's diets, the nutritional value of food including the fulfillment of certain nutrients both micro and macro and education about stunting. Economic status has a very important impact on stunting prevention because it will affect other aspects related to stunting. Not only that, all the research that has been reviewed shows that the educational level of parents will affect attitudes about how to care for their children.

Keywords: Economic Status, Mother’s Knowledge, Stunting, Systematic Review.

INTRODUCTION

Stunting is one of the nutritional problems experienced by toddlers globally (1–3). About 56% of stunted children live in Asia and 36% in Africa (2–6). Meanwhile, around 30% of children under five are stunted globally (4–7). Stunted children make up around a quarter of all young children worldwide, primarily in low-income and middle-income nations (8). The problem of urbanization in developing countries is now causing new problems, namely increasing poverty and slum settlements (9–12). Children who grow up in slum areas are vulnerable to stunting (13–16).

Stunting can occur due to malnutrition or malnutrition, especially in the first 1000 days of life (17,18,27,19–26). Stunting is indicated to be the cause of death of 1 million children each year (21,22). This is due to frequent illness and body posture that is not ideal during the growth period (28). The bad effects of stunting can also occur in the short term. Some of the disorders associated with stunting are intelligence, brain disorders, metabolic disorders in the body and growth disorders (21,22,29). Meanwhile, in the long term, stunting can cause a decrease in cognitive abilities and academic achievement, a high risk of diabetes, and decreased

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immunity which increases susceptibility to disease, obesity, cancer, heart and blood vessel disease, stroke, poverty, and disability in old age. Poverty occurs as a result of the quality of work with short people leading to low productivity (2,3,18,19,22,30,31).

Previous studies reported that many factors influence stunting (17,28,32,33). However, the most influential basic factors are the mother's economy and education (5,34), as well as other intermediary factors such as the number of family members, parents' height and mother's age (28,35,36). Followed by proximal factors such as age and exclusive breastfeeding (17,37). There is an information gap on how stunting is affected by a country's economic growth (38–44). For instance, (38) found an important role in economic growth in reducing the prevalence of stunting. This is in line with several studies (43–45) found that the contribution of economic growth may be even more influential than previously thought.

On the other hand, According to (40) the relationship between economic growth and malnutrition in early childhood is quantitatively very small. (46) also found that economic growth has a very small positive impact on the likelihood of stunting occurring in Africa. Both studies rely on multilevel modelling that combines micro and macro data to draw conclusions (42). In particular, when combining both types of data, small cross-country variations are likely to exacerbate measurement error bias and make it difficult to document strong outcome relationships between the variables studied (42). In several previous studies, it was also reported that stunting was still influenced by the economy but had no significant impact (47,48). Several studies have found that the impact of economic growth on stunting cases tends to be significant but moderate (46,49).

Increased maternal knowledge regarding the health benefits of food among mothers in Ecuador reduced child malnutrition (50). A cross-sectional study in Indonesia and Bangladesh concluded that increased maternal education resulted in a significant reduction in the risk of stunting in both countries (51). Several studies have reported that a mother's nutritional knowledge is positively related to a child's nutritional status (52–54). Other research also shows that knowledge does not always direct mothers to provide good nutrition to their children (36,55,56).

The magnitude of the influence of the determinants of stunting varies in the coastal, highland, and inland areas. This is due to socio-economic diversity, wealth inequality, eating culture and geographical location (57–59). Various strategies and efforts have been made to overcome malnutrition, including stunting. In Indonesia, stunting is handled through the five pillars of the national strategy to accelerate its handling (60,61). In China, food supplements and nutrition education are used to improve the nutrition of children in underdeveloped rural communities (62). In Madagascar, stunting prevention has been carried out over the last few decades (63). In Malaysia, primary care is used to correct malnutrition (64). In Ethiopia, stunting is prevented and treated through a cross-sectoral child welfare strategy (65).

There are so many conflicting opinions regarding the relationship between economic influence, knowledge and attitudes towards stunting, for this reason, researchers will look deeper by reviewing the latest and previously published articles so that results are obtained that can represent the entire debate that has occurred. In-depth review research is still needed to determine the causal relationship between economic factors, attitudes and knowledge of stunting by looking at the causal relationships that occur in these factors.

This review aims to provide an in-depth review regarding the relationship between economic status and knowledge of the incidence of stunting by taking several previously published articles from reputable sources. The novelty of this study is that it does not thoroughly discuss the economy and knowledge of previous stunting events. Based on this review, it is hoped that it will become a new source for examining the relationship between economics, attitudes and knowledge collectively on the incidence of stunting. This review is also expected to provide benefits to policymakers worldwide in preventing stunting and intervening in the three factors studied.

**Method**

Narrative studies with scientific journal database sources published in Proquest, Science Direct, and Google Scholar were used. The keywords used in the search were “Social”, AND “Economy”, AND “Knowledge”, AND “stunting”. The search included research published within the last five years, that is, 2018-2022. A total of 144 articles were found according to the search titles, and 11 articles were selected for review. After the
article was obtained, it was tabulated in an Excel table. A flowchart of the article search process is shown in Figure 1. The inclusion criteria in this study were the population the study included articles that were published in the last 5 years and discussed the impact of the economy and knowledge on stunting cases. Articles are in English with full text. Articles that have been identified are entered into Mendeley if there is duplication and deletion are carried out. Next, the title and abstract of the article were screened. In the last phase, read the full text of the remaining articles and defend the articles that met the inclusion criteria. After that the articles that meet the criteria are extracted into a table containing; Sources, Population, research objectives, research design, and Findings.

**Figure 1. Research Flow Chart**

**FINDINGS**

**The Effect of Socioeconomic Status on the Incidence of Stunting**

The findings show that the education and occupation of the father's parents are closely related to the income in the family, which varies in the area of domicile of the family. The family economy supports children's nutritional intake and needs so that children are not underweight during this period of growth and development. A good family economy can support parenting patterns, and healthy home settlements, namely access to clean water so that stunting does not occur. The family economy plays a role in overcoming the large number of children and preventing early marriages. It can be seen that the types of research have varied by combining quantitative and qualitative research. The population in previous studies was also identified as involving families, children, toddlers and adolescents.
Table 1. The effect of socioeconomic status on the incidence of stunting

<table>
<thead>
<tr>
<th>Sources</th>
<th>Country</th>
<th>Population</th>
<th>Research Type</th>
<th>Research Objectives</th>
<th>Findings</th>
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</thead>
<tbody>
<tr>
<td>(66)</td>
<td>India</td>
<td>The National Family in India</td>
<td>Quantitative Research</td>
<td>To examine socioeconomic inequality in child malnutrition in 640 districts of India.</td>
<td>The results showed that around 38% of children in India were stunted and 35% were underweight during the period from 2015 to 2016. The prevalence of stunting and wasting varies widely across Indian districts. The districts that have a higher percentage of malnourished children are from certain areas such as the central, eastern and western parts of the country. On average, about 35% of households in a district have access to safe drinking water and 42% of households have unsafe access to clean water. This study found an inverse relationship between the district's economic development and childhood stunting and underweight.</td>
</tr>
<tr>
<td>(66)</td>
<td>India</td>
<td>Child malnutrition in 640 districts</td>
<td>A quantitative study using secondary data</td>
<td>To identify socioeconomic inequality in child malnutrition</td>
<td>Has research shows that around 38% of children are stunted and 35% are underweight during 2015–2016. The prevalence of stunting and wasting varies greatly across Indian districts (13 to 65% to 67%). The districts that have a higher percentage of malnourished children are from specific areas such as the central, eastern and western parts of the country.</td>
</tr>
<tr>
<td>(67)</td>
<td>Nepal</td>
<td>3773 youth aged 10-19 years (1888 boys and 1885 girls).</td>
<td>Quantitative Research</td>
<td>This study aims to provide an overall picture of the sociocultural and economic determinants of stunting and thinness in adolescent boys and girls in Nepal.</td>
<td>The results of the study show that the relationship between work and father's education, household income, number of earning household members, the geographical place of residence, caste/ethnicity and nutritional knowledge are associated with stunting, with higher odds for older males and adolescents. Father's occupation, education, household income, geographic region, caste/ethnicity and knowledge of nutrition are associated with wasting, with higher odds for boys and younger adolescents.</td>
</tr>
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<td>(68)</td>
<td>Sub-Saharan Africa</td>
<td>data from nationally representative demographic and health- and multiple indicator cluster-surveys (DHS and MICS) to disaggregate</td>
<td>cross-sectional Demographic and Health Surveys (DHS)</td>
<td>evaluate how the prevalence of stunting has changed based on socioeconomic status and rural/urban residence, and assess inequalities in</td>
<td>Stunting disproportionately affects the poorest villages and regions. Inequalities are also evident in access to health care and provision of quality food.</td>
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The findings show that parental knowledge will influence the attitudes and practices of mothers in caring for and caring for children from birth to adolescence. This knowledge is closely related to the practice of exclusive breastfeeding, traditional food nutrition, the management of food hygiene, the diversity of children's diets, the nutritional value of food including the fulfillment of certain nutrients both micro and macro and education about stunting.

Previous studies have shown that the study population involved mothers and their children, toddlers and caregivers. The research designs carried out in previous studies showed various types including cross-sectional, observational analytic and community-based cross-sectional designs. The research design is still less varied so this can be considered in future research to use methods that have not been used before by combining quantitative and qualitative research.

Table 2. The effect of mother's knowledge on the incidence of stunting

<table>
<thead>
<tr>
<th>Sources</th>
<th>Country</th>
<th>Population</th>
<th>Research Type</th>
<th>Research Objectives</th>
<th>Findings</th>
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<tbody>
<tr>
<td>(82)</td>
<td>Malaysia</td>
<td>The participants in this study were all mothers who have toddlers</td>
<td>Study with cross-sectional design</td>
<td>To see the relationship between knowledge and attitudes about stunting and the incidence of stunting</td>
<td>The results showed that knowledge about stunting was good, namely 37 (77.1%), and the mother's attitude about stunting was positive by 40 (83.3%) and the incidence of stunting was 62.5%. The findings with the Chi-Square test analysis show that there is a significant influence between knowledge and attitudes about stunting and stunting events where knowledge with prevalence values and confidence intervals is 7.2 (1.59 – 32.67) and attitudes with prevalence values and confidence intervals of 7.0 (1.23 – 39.78)</td>
</tr>
<tr>
<td>(83)</td>
<td>Indonesia</td>
<td>The population in this study were all mothers in agricultural areas who had</td>
<td>Analytical observational research using a</td>
<td>To see the relationship between mother's</td>
<td>The research results show that there is no relationship between traditional food</td>
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<tr>
<td>Studies</td>
<td>Location</td>
<td>Participants</td>
<td>Study Design</td>
<td>Objective</td>
<td>Findings</td>
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<td>(84)</td>
<td>Ghana</td>
<td>226 mother/caregiver pairs and child</td>
<td>Cross-sectional study design</td>
<td>To explore the relationship between maternal nutritional knowledge and stunting and its effect on the nutritional status of children aged 6-59 months in Sefwi Wiawso Village, Ghana.</td>
<td>The results showed that the average level of nutrition knowledge (61.5%) was for caregivers/mothers. Most caregivers (92.3%) started breastfeeding within one hour of delivery. As many as 66% of mothers practice exclusive breastfeeding. Complementary feeding was started at 6 months in 83.6% of cases. The prevalence of underweight, wasting and stunting was 8.29%, 10.23% and 16.74% respectively. There was no significant relationship between maternal nutrition/caregiver knowledge and child malnutrition status although the risk of wasting decreased with increasing caregiver knowledge of nutrition (p=0.118).</td>
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<td>(85)</td>
<td>India</td>
<td>A total of 710 adolescents were randomly selected aged 10-17 years. The study participants were the mothers of these teenagers.</td>
<td>Cross-sectional study design</td>
<td>This study focuses on assessing maternal nutritional knowledge and hygiene practices and their influence on dietary diversity and nutritional status of school adolescents in Dhaka city.</td>
<td>The results of the study showed that one-third (35.8%) of mothers maintained good hygiene and sanitation. Although 53.1% of them had satisfactory general knowledge of healthy diets, only 6.5% demonstrated good knowledge of the nutritional value of food. The prevalence of short, thin and obese were 8, 4.6 and 5.8%, respectively. Fair hygiene practices were positively related (P = 0.048) to height-for-age z-scores. Mothers' knowledge of the nutritional value of food was positively related (P = 0.027) to the diversity of adolescent diets.</td>
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<td>(86)</td>
<td>Indonesia</td>
<td>The population in this study were all mothers who had children under five in Kutelintang village in July-August, totalling 30 people.</td>
<td>Cross-sectional research design</td>
<td>To find out the relationship between knowledge and mothers’ attitudes towards stunting in Kutelintang Village, Gayo Luas Regency in 2022.</td>
<td>The results showed that 12 people (40.0%) had less knowledge, 18 people (60.0%) had a negative attitude towards stunting and 21 people (70.1%) had stunted. 12 people (40%), the results of the Chi-Square test, namely the results obtained p value = 0.002. This value is &lt;0.05 so the hypothesis is accepted, which means that there is a significant relationship between Knowledge and Mother’s Attitudes towards Stunting Incidents in Kutelintang Village, Gayo Luas Regency in 2022.</td>
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Socio-economic factors that affect the child’s growth process are income, education, and parental knowledge (66). Economic conditions are related to a family’s ability to meet nutritional needs and how a person chooses health services for pregnant women and toddlers (71). Family income and parental education can be family socio-economic factors that can cause stunting in children (72). The level of family income has a significant relationship with the incidence of stunting, low economic status is considered to have a dominant influence on the incidence of wasting and stunting in children (73). Parents with sufficient income can provide nutritious and varied food (74). Families with good economic status will have access to good health services (75). Meanwhile, those with low economic status tend to consume food in less quantity, quality and variety (76).

Higher food insecurity vulnerabilities are associated with lower household socio-economic status because the affordability of nutritious food is closely related to purchasing power (77). Because poor economic growth causes children to experience malnutrition, the practice of open defecation has a positive effect on stunting and underweight inequality. Undernutrition inequality is accelerated by the mother’s height and education, as well as the lack of drinking water availability. These results are similar to the research (78). Households that lack food have a higher prevalence of malnutrition (stunting, wasting and underweight) in children compared to access to adequate food in children (79,80). Adequate nutrition promotes health and disease resistance, while inadequate nutrition leads to increased severity of stunting, wasting and underweight (81).

Stunted children are at risk of experiencing increased morbidity and mortality, retarded motor and mental development, decreased intellectual and productivity, increased risk of degenerative diseases, obesity and are more susceptible to infectious diseases. Among the factors that influence the incidence of stunting, parenting plays an important role in the occurrence of growth disorders in children. Poor parenting can cause nutritional problems in society (87). Mother’s nutritional knowledge is one of the factors that have a significant influence on the incidence of stunting. The role of parents, especially a mother, is very important in fulfilling child nutrition because children need the attention and support of parents in facing very rapid growth and development. To get good nutrition in children, good nutrition knowledge from parents is needed so they can provide a balanced menu of food choices. The level of parental nutritional knowledge greatly influences attitudes and behaviour in food selection (88).

The mother’s knowledge about stunting is lacking but the mother’s attitude regarding stunting is good because the mother does stunting prevention unconsciously, without knowing that this can prevent stunting so the mother’s knowledge about stunting is lacking. Mother did not know that what she did/her attitude turned out to be good. This attitude includes an affective component that is based on emotions or feelings (84). Mother’s knowledge is one part that determines the ability to apply health behaviours for families such as sorting and processing food so that nutrition is guaranteed. The task of parents, especially mothers, is needed when providing consumption to help monitor growth and development so that an understanding of nutrition is needed so that they can serve comparable food (89).

Mothers with good knowledge significantly influence the incidence of stunting. Mothers with a positive attitude have a significant effect on the incidence of stunting. Mother’s education level has a relationship with the incidence of stunting in children aged 24-59 months. A woman or a mother usually takes care of children, therefore education is very important. Education causes a woman to be aware of parenting styles related to the need for good nutrition for children. In addition, a woman can also provide the necessary nutrition for her child. If the mother’s education is low, it will affect the incidence of stunting. Knowledge of mothers with low education will affect the incidence of stunting where mothers do not know how to care for children and provide good food for them (82).

Research conducted by (86) shows that there is a significant relationship between the mother’s attitude and the incidence of stunting in children. Attitude is an individual’s tendency to react to a stimulus or object in a certain way, the form of the reaction can be a positive or negative reaction. A person’s attitude can be influenced by factors such as age, occupation, education, and parity. Someone who has a negative attitude, then his actions and behaviour will tend to be negative so in this case it can have an impact on the occurrence of nutritional problems in children (86). Another study by (90) showed that adequate mothers’ knowledge and attitude towards diet could be a factor in preventing nutritional problems (stunting and malnutrition). The behaviour
of consumption patterns that are assessed shows that there is still a lack of fulfilment of certain nutrients, both macro (fibre) and micronutrients, against the reference number for nutritional adequacy (86). However, another study by Betty, et.al showed different results, namely finding no relationship between maternal knowledge, attitudes, and practices with the incidence of stunting (91).

Some of the factors causing stunting that cause high stunting are low levels of knowledge and inadequate practice in caring for children with stunting, which means that an increase in the incidence of stunting requires treatment to increase mother's knowledge and improve the ability of mothers to practice caring for children with stunting by doing education. Most nutrition education interventions aim to reduce nutritional problems targeted at changing the knowledge, attitudes, and behaviour of parents or caregivers related to fulfilling toddler nutrition. The attitude change approach used usually focuses on parents as the closest people in fulfilling nutrition, solids, early initiation of breastfeeding, breastfeeding for up to 2 years, diversity of food, diet, and recommended drinks (92).

The incidence of stunting in toddlers is of course not only due to a lack of knowledge or a bad mother's attitude in fulfilling nutrition in children. However, other indirect factors play a major role in the occurrence of stunting in toddlers, including age, education level, income and mother's occupation. From the results of this study, it was found that most of the under-fives who were stunted were young adult mothers aged between 18-35 years, with primary and secondary education, with income below the minimum wage and mothers who did not work. Age, gender, and toddler age also contribute to stunting. Mothers who have higher education tend to have children with good nutrition and vice versa (83).

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