



The Empowerment of Family in Effort to Reduce Stunting in Under-Five Children: A Scoping Review

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ABSTRACT

Stunting is a chronic nutrition problems causing growth failures in under five years old children. The condition does not only affect physical growth but also brain intelligence which leads to the low quality of human resources and eventually affects national economy. Family empowerment efforts can be one of effective ways to help the government in decreasing stunting case. The study was to review family empowerment in stunting declining efforts in under five years old children. The study applied PRISM-ScR framework in article search through relevant databases namely Pubmed, Proquest and Willey, and then the Critical Appraisal used The Joanna Briggs Institute (JBI). Based on the article search, from 1,493 selected articles, there were 10 articles relevant to the inclusion criteria. In the study, it is revealed that there were 2 main aspects namely socio-demographic and child parenting style. Mothers' decision making in the household, education, and environment are considered as significant aspects in family empowerment, and they are expected to make changes, improve mothers' knowledge and skills in child nutritional intake as the effort os stunting decrease. However, further study on social economy, food intake practices, and food variation is important since they are the indicators in fulfilling child nutrition intake which becomes supporting factor in declining stunting cases in under five years old children.

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ABSTRAK

Stunting merupakan masalah gizi kronis yang mengakibatkan gagal tumbuh pada anak di bawah lima tahun. Keadaan ini bukan hanya mempengaruhi pertumbuhan fisik namun mempengaruhi kecerdasan otak sehingga mengakibatkan rendahnya kualitas sumber daya manusia yang berdampak pada ekonomi negara. Upaya pemberdayaan keluarga dapat menjadi salah satu langkah yang efektif dalam membantu pemerintah menurunkan kasus stunting. Tujuan penulisan studi ini adalah untuk mereview pemberdayaan keluarga dalam upaya penurunan stunting pada balita. Scoping Review ini menggunakan framework PRISMA-ScR dengan pencarian artikel melalui database yang relevan, yaitu Pubmed, Proquest dan Willey kemudian melakukan Critical Appraisal menggunakan The Joanna Briggs Institute (JBI). Berdasarkan hasil pencarian artikel dari 1.493 yang telah diseleksi didapatkan sebanyak 10 artikel yang sesuai dengan kriteria inklusi, dalam tinjauan ini ditemukan dua tema utama yaitu aspek sosio demografi dan pola asuh anak. Pengambilan keputusan ibu dalam rumah tangga, pendidikan dan lingkungan dianggap penting pemberdayaan keluarga yang outcomenya diharapkan dapat membangun perubahan, meningkatkan pengetahuan serta keterampilan ibu dalam pemenuhan kebutuhan gizi anak sebagai upaya penurunan stunting. Namun demikian perlunya dilakukan penelitian lebih lanjut terkait sosial ekonomi, praktik pemberian makan dan keragaman makanan karena hal tersebut merupakan

indikator dalam memenuhi kebutuhan nutrisi anak sebagai faktor pendorong dalam menurunkan angka kejadian stunting pada balita.

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INTRODUCTION

Rationale

Malnutrition is a major nutritional problem that occurs among children worldwide (Girma et al., 2019). The World Health Organization (WHO) reports that the prevalence of toddlers under five years suffering from stunting in 2019 reached about 144 million (21.3%) cases. This figure is the highest among the number of other malnutrition, such as wasting totaling 47 million (5.9%) and overweight reaching 38 million children (5.6%) (UNICEF et al., 2020). Stunting is a chronic nutritional problem that brings about growth failure in children under five years. Apart from having an impact on physical growth, stunting affects cognitive function and decreases learning ability, which results in low quality of Human Resources (HR) and impacts the economy and poverty of a country (Eshete Tadesse, et.al 2020).

Stunting can be influenced by several factors, such as lack of nutritional intake in the First 1000 Days of Life, maternal parenting (Bogale, et.al 2020), poor maternal health and nutrition, infection, inadequate health services, parental education, sanitation, clean water access, and economic factors (Komalasari, 2020). There is a need for family change as a pivotal aspect in child survival through family empowerment (Shafiq et al., 2019). Family empowerment can promote the SDGs program in a healthy and prosperous life for children and help to reduce child morbidity and mortality (Abreha, et.al 2020).

Attempts to reduce the prevalence of stunting require various parties, especially mothers in the household (Yaya et al., 2020). According to the research (Bliznashka, et.al 2021), mothers are indispensable indicators in the family so they can help reduce nutritional problems, namely stunting among children. Therefore, given those problems, the authors would review family empowerment in an effort to reduce stunting among toddlers.

Objectives

Table 1.
Framework

<i>P (Population)</i>	<i>E (Exposure)</i>	<i>O (Outcomes/ Theme)</i>
Toddlers of 6-59 months	Family Empowerment	Reducing Stunting

Based on the PEO framework, the research scoping review question is: How is The empowerment of family in effort to reduce stunting in under-five children

METHOD

This study applied a scoping review, which is a systematic design used to review the scope of the methodology, interpret evidence-based results, map the concepts that underlie the research scope and the types of

available evidence (Tricco et al. 2018). PRISMA-ScR was selected as a reference for the preparation of the literature study as it has a complete and detailed compilation checklist consisting of the following:

Protocol and Registration

Researchers used the PRISMA-ScR protocol, which is an extension for scoping reviews checklist encompassing 22 assessment items with 20 important reporting items and 2 selected items in the preparation of scoping reviews (Tricco et al. 2018).

Eligibility Criteria

Researchers identified articles with the following inclusion criteria: original research articles, English articles published from 2017 to 2021, full-text articles, documents/reports from UNICEF/certain formal institutions, and relevant articles on family empowerment in reducing stunting. The exclusion criteria included opinion papers, reviews, letters, book reviews, and irrelevant articles.

Information Sources

The search process by researchers to identify relevant articles was carried out using 3 databases; Pubmed, Proquest, and Willey online library. The databases are those subscribed by the Universitas 'Aisyiyah Yogyakarta.

Search

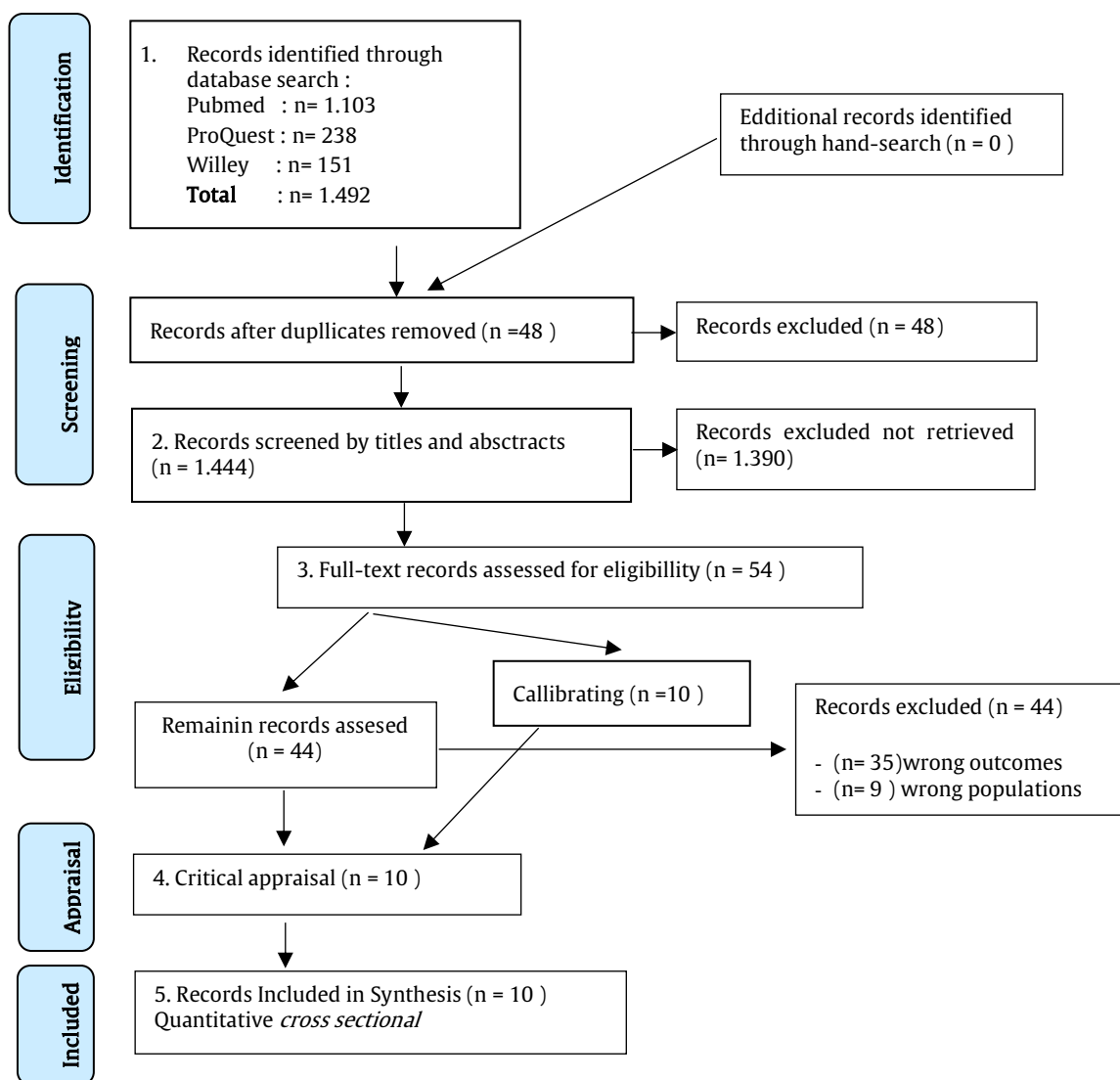
The keywords used in this literature search covered: "Infant OR Child underfive OR Toddler AND family empowerment OR Mother empowerment OR Women's empowerment OR Female empowerment AND Stunting OR Stunts OR Stunted OR Malnutrition OR Growth Disorders OR Status Nutrition OR Nutrition".

Selection of Sources Evidence

In this step, the researchers implemented Zotero as a reference management software tool for selecting articles, such as checking for duplication, finding abstracts, and operating full text-reading. The findings of the articles and the filter process are described in the (PRISMA) Flowchart (Tricco et al. 2018), as follows:

Data Charting (Optional)

After the selection process, the relevant and detailed information was were summarized according to the characteristics of the literature study. Researchers charted the data through the arrangement of tables that match the characteristics of the literature scoping review, which discusses family empowerment in reducing stunting among toddlers by mapping the data and discussing the results of the literature study (Tricco et al. 2018). The following is the data charting table:



Gambar 1. PRISMA-ScR Flow chart(Tricco et al. 2018)

Data Item

The researchers identified each article that was relevant to the topic of a review of the empowerment of family in effort to reduce stunting in under-five children.

Synthesis of Results

Based on the results of the article search process in three databases, 1,492 articles were found relevant to the scoping review question. There were 1,103 articles gathered from Pubmed, 238 articles from Proquest, and 151 articles from Willey Online Library. Furthermore, all articles were imported into Zotero reference management. As many as 48 duplicate articles were detected, therefore deleted with a final number of 1,444 articles. They were filtered based on titles and abstracts related to "Family Empowerment in Efforts to Reduce Stunting among Toddlers". A total of 1,390 articles were irrelevant and excluded, while 54 articles were obtained for access to the full text and re-filtered according to the framework. Following that, several articles were acquired, however, did not meet the inclusion criteria, review objectives, samples, and research results. Eventually, 10 articles were declared appropriate. PRISMA flowchart is

considered appropriate to use because it can improve the quality of publication reporting and as a basis for reporting systematic reviews from other researchers (Tricco et al. 2018).

RESULT AND DISCUSSION

Selection of Sources of Evidence

Based on search results from three databases using keywords through the PEOS framework, the screening process was conducted using Zotero. The article screening procedures were described in a Prism Flow Chart and 10 eligible articles were obtained and were suitable for the assessment stage by conducting a Critical Appraisal using the Joanna Briggs Institute (JBI) (Peter M, et.al 2015).

Characteristics Of Sources Of Evidence

There are several characteristics of those 10 selected articles, including the name of the country and the research method.

Table 2.
Data Charting

No	Title /Author(s)/Year	Country	Objective	Type of research	Data Collection	Participant / Sampel Size	Result
1	Women's empowerment and child growth faltering in Ethiopia: evidence from the Demographic and Health Survey Alemayehu,et.al/2021	Ethiopia	To investigate the relationship between women's empowerment with growth faltering among toddlers in Ethiopia.	Kuantitatif:desain <i>cross sectional</i>	The data collection method used the 2016 Ethiopia Demographic and Health Survey (EDHS) approved by ORC Macro Institutional and Ethiopian ethical review board.	The research sample consisted of 9,998 children aged 0-5 years and women aged 15-49 years, using a cluster sampling technique.	The results of the study explained that women's empowerment had a high influence in achieving optimal nutrition with a value (P = 0.049). This was due to an increase in women's social independence and household decision-making in parenting of feeding practices and food diversity to improve nutritional status to reduce stunting.
2	Associations between women's empowerment and children's health status in Ethiopia Solomon, et.al/2020	Ethiopia	To measure the extent to which women's empowerment can expand and examine its relationship with the health status of children in Ethiopia	Kuantitatif:desain <i>cross sectional</i>	The data collection method was conducted by interviewing using a questionnaire that had been tested by the National Research Ethics Review Committee (NRERC).	The research sample comprised 10,641 women aged 15-49 years and children under 5 years using a stratified random sampling technique.	The results of the study explained that women's socio-economic empowerment was principal to improve children's health status with a value (p <0.05). Therefore, gender-related policies that focus on increasing women's access to education, employment, media information, and participation in household decision-making are strategies to improve children's health and welfare in reducing stunting and wasting.
3	Rural women's empowerment and children's food and nutrition security in Bangladesh Cara Holland, et.al/2019	Bangladesh	To analyze the effect of women's empowerment in agriculture on food security and children's nutritional status.	Kuantitatif:desain <i>cross sectional</i>	The collection method used household survey data from two waves of BIHS 2011-12 and BIHS 2015 Bangladeh.	The sample in this study were mothers with children aged 6-59 months totaling 3,603 using the cluster sampling technique	The results showed that the average value of women's empowerment was (0.624). Women were empowered to advocate for household needs to decision-makers regarding food needs and crop production for necessities or sale so that this had a positive impact on children's nutritional status in reducing stunting.
4	The Effect of "Women's Empowerment" on Child Nutritional Status in Pakistan Shafiq	Pakistan	To Measure the relationship between empowerment women and child nutritional status	Kuantitatif:desain <i>cross sectional</i>	The data collection method used is PDHS 2012-2013 data.	The sample in this study were mothers with children less than 5 years totaling 1,163 participants using a	The results showed significance at the 5% level (P < 0.05). Indicators of women's empowerment such as mothers' education and employment status had a significant effect on the nutritional status of children. Higher maternal education levels could

	Awaisra, et.al/2019		among toddlers under 5 years in Pakistan			stratified random sampling technique	reduce maternal illiteracy, therefore reducing child malnutrition. In addition, the mother's employment status was an important factor in assessing malnutrition among children. Working mothers helped increase household income and allowed high-quality food to reduce malnutrition in children.
5	Associations between women's empowerment and child development, growth, and nurturing care practices in sub-Saharan Africa Bliznashk, et.al/2021	Afrika	To evaluate relationship between women's empowerment and child care and nutrition in sub-Saharan Africa	Kuantitatif:desain <i>cross sectional</i>	Data collection applied DHS secondary data of child development in 2011-2018 from 9 Sub-Saharan countries using Early Childhood Development Index (ECDI).	The samples in this study were married women of reproductive age 15-49 years and children aged 36-59 months using the cluster sampling technique	The results of the study obtained the value (P = 0.032), making it important for mothers to improve nutrition in children from an early age to reduce stunting cases. Empowered women would receive parenting support, care for families, and pay attention to child nutrition. Women's empowerment was positively related to the creation of a variety of foods provided to children.
6	What does women's empowerment have to do with malnutrition in Sub-Saharan Africa? Sanni Yaya, et.al/2020	Afrika	To understand the relationship between women's empowerment and the nutritional status of children in sub-Saharan African countries.	Kuantitatif:desain <i>cross sectional</i>	Data collection used the Demographic and Health Survey (DHS) conducted between 2011 and 2017 in 30 countries in sub-Saharan Africa.	The sample in this study was women aged 15 – 49 taken using cluster random sampling technique.	The results of the study explained that empowered women had a lot of potential in fulfilling children's needs with a value (p < 0.001). This is related to the level of regulation in the household of women to reduce malnutrition among children and pay attention to factors in malnutrition among children as well as prevent disease.
7	Water, sanitation, and hygiene practices mediate the association between women's empowerment and child length-for-age z-scores in Nepal Cunningham, et.al/2018	Nepal	To Understand the practice diversity of children's food, sanitation, water, and household hygiene related to women's empowerment and stunting.	Kuantitatif:desain <i>cross sectional</i>	The data collection method used is interview using a questionnaire that had previously been tested, revised, and translated.	This research sample was all mothers with children aged 6-24 months and 240 rural communities and 16 districts in Nepal using the Multistage technique sampling	The results of the study showed that women's empowerment was positively related to sanitation, water, and household hygiene with a value (P < 0.001), empowered mothers had more knowledge in making decisions about better WASH practices, such as washing hands with soap, disposing of feces properly. and creating a barrier between farms and homes. These changes could reduce stunting in children and the practice of food diversity was associated with a decrease in stunting with a value (P = 0.05).

8	Association between Women's Empowerment and Childhood Undernutrition in Cambodia: Evidence from the 2014 Demographic Trauner& Williams/2021	Kamboja	To identify specific aspects of women's empowerment related to child malnutrition in Cambodia.	Kuantitatif:desain <i>cross sectional</i>	Using secondary data from the Demographic Survey and Health Cambodia (CDHS) 2014 with a questionnaire approved by the Review Board Independent Inner City Fund (ICF).	The research sample was all women aged 15-49 years who had children aged 0-59 months as many as 3,453 using a stratified random sampling technique.	The results of the study explained that women's empowerment was proven to be able to reduce stunting and underweight in children with a CI value of 0.63-0.93). Mother's education had the most influential factor in reducing stunting with a value of (CI 0.08-0.33) since mothers played a role in making decisions about household needs, health care, and economic status was driving factors in reducing stunting and underweight among children.
9	Women Empowerment and the Nutrition Status of Children Aged Between 6-59 Months Chipili, et.al/2018	Tanzania	To determine the relationship between women's empowerment and the nutritional status of children aged 6-59 months in Kapiri-Mposhi Regency, Central Zambia.	Kuantitatif:desain <i>cross sectional</i>	Data were collected employing a Focus Group Discussion using a previously tested questionnaire.	The samples in this study were 99 households and 99 children aged 6-59 years using the Simple Random Sampling technique.	The results of the study explained that women's empowerment was related to the quality of children's health with a value (p = 0.018), this indicated that it was important for women to manage family finances so that they could support the family's food needs and invest in education, nutrition, and health care to improve the nutritional status of children in reducing stunting and wasting cases.
10	Women's Empowerment and Nutritional Status of their Children: A Community-based Study from Villages of Bhaktapur District, Nepal Shiwakoti R, et.al/2017	Nepal	To assess the relationship between women's empowerment and the nutritional status of children.	Kuantitatif:desain <i>cross sectional</i>	Data were collected using structured interviews using the NDHS Questionnaire which had been adapted and tested previously.	The sample of this research encompassed mothers with children aged 6-59 months as many as 402 with a systematic random sampling technique.	The results showed CI values: 1,885-13,638), implying that mothers with low empowerment were positively related to malnutrition in children. Likewise, the increase in women's empowerment had a positive impact on the nutritional status of children because empowered mothers were less likely to experience stunting and wasting children.

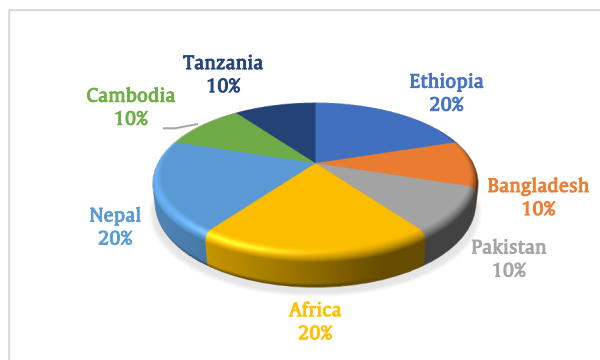


Figure 2. Characteristics by Country

The diagram above shows the characteristics of articles from several developing countries including [2] Ethiopia, [2] Africa, [2] Nepal, [1] Bangladesh, [1] Pakistan, [1] Cambodia, and [1] Tanzania.

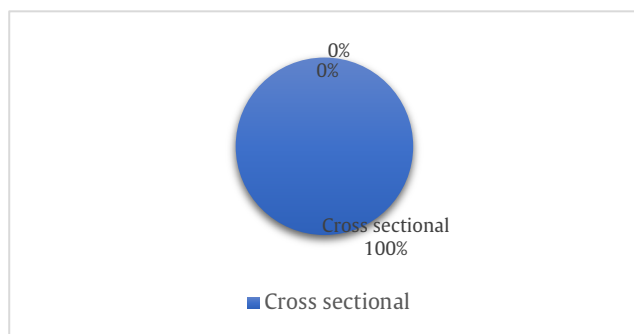


Figure 3. Characteristics by Research Design

Based on the diagram, the characteristics of articles given the research design are [1] quantitative research articles with cross-sectional design.

Critical Appraisal within Sources of Evidence

In this scoping review, 10 articles implemented quantitative studies with a cross-sectional design. There was a critical appraisal for 6 articles [2], [3], [5], [7], [9], and [10], answering "YES" to all question items in the Joanna Briggs Critical Appraisal Tools (JBI) and they were answered perfectly. In addition, the advantages of these articles are the data sources could be found in full format articles from samples, data collection methods, sampling techniques to instruments and they had been validated so the error rate could be minimized. Unsound results were observed in articles [1], [4], [6], and [8] which did not explain confounding factors and strategies for controlling confounding factors.

Results of Individual Sources of Evidence

The following are some of the themes discussed in the Scoping Review conducted by researchers. Based on the results of a review of 10 articles following the purpose of the scoping review, several articles were obtained that discussed the socio-demographic aspects that could affect family empowerment in reducing stunting in children under five.

Theme 1: Socio-Demographic Aspects

Education

Article [4] is the first article to show the results that education is an influential factor in reducing stunting, where education is the key to measuring children's nutritional status (Shafiq et al., 2019). Article [8] explains that high school education is essential concerning nutritional knowledge and family fulfillment nutrition, especially children because mothers with low education and the odds of being illiterate will discommode information access related to nutrition and be at risk of stunting (Trauner & Williams, 2021).

Table 3. Mapping Themes

Theme	Sub-theme	Article
Socio-Demographic Aspect	1. Education	4 & 8
	2. Economic Status	2
	3. Mother's Autonomy in Decision Making	1,2 & 3
	4. Environment	3,6 & 7
Parenting Pattern	1. Feeding Practices	1
	2. Variation in Food	3

Synthesis of Evidence

Economic Status

Article [2] is an article that displays the results that women's empowerment in the household affects women's economic status in access to education, sources of information, employment, and is significantly positively related to improving children's nutritional status in reducing stunting (Abreha, et.al 2020).

Mother's Autonomy in Decision Making

Article [1] is the first article to reveal the results that a mother's autonomy in decision making is a dimension of women's empowerment in the household that is significantly associated with malnutrition (stunting and underweight) (Mekonnen, et.al., 2021). Article [2] presents the results that empowerment of mother's decision making in the household has positive results in improving child nutrition (Abreha, et.al 2020). Article [3] shows the results that the decision-making of women in the family becomes a power in health care and procuring household needs so that the nutritional needs of families, especially children, can be fulfilled (Trauner & Williams, 2021).

Environment

Article [3] is the first article to show that the environment is a driving factor in reducing stunting, this is because women who are empowered independently can create crop production and raise livestock which aims to adequately support the nutritional needs of children in the household, and the possibility of stunting reduction (Holland & Rammohan, 2019). Article [7] shows that family empowerment has increased mothers' knowledge in better washing practices such as washing hands with soap and water, properly disposing of children's feces, and creating a barrier between animals and the house as stunting prevention (Cunningham et al., 2019).

On the theme of Parenting that can affect family empowerment in reducing stunting in toddlers, including:

Theme 2: Parenting

Feeding Practice

Article [3] is the first article to show the results that feeding practices have a great effect on the selection, procurement, preparation, and feeding of children to improve the nutritional status of children (Mekonnen et al., 2021).

Variation in Food

Article [3] is the first article to show the results that dietary diversity with various types of food provided in the household creates an additional mechanism, in which empowered women can influence the nutritional outcomes of children in the household (Holland & Rammohan, 2019).

Summary of Evidence

Based on the 10 selected articles, it was found articles that matched the purpose of the scoping review, which discusses the factors influencing family empowerment in efforts to reduce stunting among toddlers, including the following:

Theme 1: Socio-Demographic Aspects

This review found several articles discussing socio-demographic aspects; articles 4 and 8 discuss education, articles 2 focuses on economic status, articles 1, 2, and 3 explained the mother's autonomy in decision making, and articles 3 and 6 discuss the environment.

Education

Mother's education is one of the parameters in determining the socio-economic family. Education can facilitate a person to obtain information for daily life purposes (Nurmalasari, 2020). Mother's education levels of high school are related to the dimensions of women's empowerment in reducing stunting (Trauner & Williams, 2021). According to Basic Health Research (Riskesmas), stunting is mostly influenced by the low education of the mother (Dwi Kusumawati, 2021). This is in line with research conducted (Leroy, et.al., 2014) that a mother's education is a prominent factor of the nutrition fulfillment in the family, especially children. Mothers with low education will find it challenging to absorb information related to nutrition, causing children to experience stunting.

Economic Status

Socio-economic status is a socio-cultural aspect that modifies health status, especially in nutritional problems (Rusman, 2020). The family's ineptitude to manage finances is a situation that may result in nutritional intake and body needs so it leads to malnutrition among children (Astuti & Khasanah, 2021). This is in line with research (Endris, et.al, 2017) that household prosperity level affects the need for the nutritional content of food and feeding practices in children so it can decrease malnutrition occurrence that triggers stunting in children (Shaka, et.al, 2020).

Mother's Autonomy in Decision Making

Women's decision-making in the household is part of women's empowerment, their attitude in decision-making is social independence which is deemed important to determine the nutritional status of children. Apart from that, when women are given autonomy in decision-making, they can make better decisions regarding household needs and can provide foods for nutritional fulfillment. In addition, higher decision-making abilities can affect mothers in accessing health services to improve children's health (Mekonnen et al., 2021).

Environment

The environment is a dominant indicator of family health, sanitation, and personal hygiene have significant parts as well in stunting cases. This is indicated by the fact that many parents do not consider environmental hygiene seriously, such as open defecation which makes children susceptible to diseases, such as infections and diarrhea (Hasanah, 2021). Therefore, the community should be attentive to environmental hygiene by using healthy latrines, good personal hygiene by washing hands with soap properly, and consider environmental sanitation as an effort to prevent and reduce stunting (Aisah, et.al., 2019). This is following the findings of (Dodos et al., 2018) that family empowerment aims to make parents understand the importance of personal hygiene and improve environmental hygiene.

Theme 2: Parenting

In this review, some articles discuss parenting patterns. It includes article 1 discussing feeding practices and article 3 focusing on food diversity.

Feeding Practice

Feeding practice is one of the factors that contribute to the stunting occurrence so nutrition education is required regarding feeding practices covering knowledge and providing motivation towards attitude change and feeding behavior (Banowo & Hidayat, 2021). Feeding children can be done with early initiation of breastfeeding, exclusive breastfeeding, complementary feeding, frequency of feeding and drinking, and variation in food. Worth noting, IMD and exclusive breastfeeding can significantly prevent stunting (Eshete Tadesse et al., 2020).

Variation in Food

Inadequate feeding serves as the cause of malnutrition in children (Siddhanta, 2017). Food diversity can improve the quality of diet and fulfillment of a good Nutrition Adequacy Ratio (NAR) in children (Thobias & Djokusujono, 2021). Efforts to fulfill nutrition in children should be done by introducing various foods so it can change children's appetite. For example, 6-month toddlers are introduced to vegetables, fruits, staple foods as a source of calories (Kartika et al., 2022), dishes as protein sources, and animal sources related to stunting prevention. It is important because animal origin food is a source of protein that can be easily digested and has a higher absorption rate by the body. Thus, consistent protein intake from animal sources is essential for optimal physical growth (Eshete Tadesse et al., 2020).

LIMITATION OF THE STUDY

In this scoping review, incomplete reviews were found. Several articles did not explain the inclusion criteria clearly, confounding factors as well as strategies in controlling confounding factors.

CONCLUSION AND RECOMMENDATION

Mother's decision-making in the household, education, and the environment are important elements in family empowerment and these outcomes are expected to build change, increase the mother's knowledge and skills in fulfilling children's nutritional needs as an effort to reduce stunting. However, it is necessary to conduct further research related to economic status, feeding practices, and food diversity because these are indicators to fulfill children's nutritional needs as a driving factor in reducing the prevalence of stunting among children under five.

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ETHICAL CONSIDERATIONS

There is no ethical review in this review.

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Conflict of Interest Statement

There is no conflict of interest in this review.

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