FAMILY EMPOWERMENT FOR THE PREVENTION OF CHILDHOOD STUNTING IN LOW AND MIDDLE-INCOME COUNTRIES: SCOPING REVIEW

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ABSTRACT

Background: Progress has been made worldwide in reducing chronic undernutrition and rates of linear growth stunting in children under five years of age. However, rates remain high in many regions. Policies, programs, and interventions supporting maternal and child health and nutrition have the potential to improve child growth and development. An important factor contributing to the prevalence of stunting, a manifestation of malnutrition among children, is believed to be the lack of empowerment among women and families. This study aimed to review all available family approaches to prevent childhood stunting.
Subjects and Method: This scoping review explored the available published literature on family empowerment approaches to the prevention of childhood stunting. Online articles from January, 2012 to August, 2021 were searched from various databases, including PubMed, Science Direct, ProQuest, EBSCO, and Google Scholar. The searching keywords included family OR parent AND empowerment OR participation AND child OR children OR childhood OR infant AND stunting OR growth disorder OR feeding behavior OR nutritional status. As many as 697 articles were identified, of which 6 articles were included using the inclusion criteria. The data were analyzed narratively.
Results: Family empowerment for stunting prevention were carried out by health education approaches at the levels of individual, group, and community (such as campaign by the mass media). Changes in family behavior were maintained by counseling and monitoring through home visit. The other empowerment approaches included provision of food supplement, cash assistance, family food security strengthening, free health services, clean water, and construction of latrines.
Conclusion: Empowerment for families with low economic status and food-insecurity have been implemented through various approaches. It is necessary to examine the effectiveness of family empowerment intervention in the prevention of stunting.

Keywords: family empowerment, stunting, prevention, low and middle-income countries

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BACKGROUND

UNICEF/World Health Organization World Bank Group Joint Malnutrition Estimates (2021) reports that in 2020 the prevalence of stunting in Asia will reach 53% and Africa 41%. Stunting is not only a problem of length/height, but is also associated with a decline in children's cognitive and motor skills, the risk of obesity, susceptibility to

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infection, and an increased risk of chronic disease in adulthood (Onis and Branca, 2016). Stunting prevention interventions aim to achieve optimal fetal and child development through improved nutrition and preventing recurrent infectious diseases in children under two years of age (WHO, 2012).

Improving nutrition and preventing infectious diseases in children cannot be separated from the role of the family. Health promotion strategies to increase family empowerment in stunting prevention efforts are carried out through the provision of information, health education, and communication for behavior change (WHO, 2017; Arikpo et al., 2018; Aramico et al., 2020). Information, health education and communication are mostly addressed to mothers or caregivers. They are part of a family that is directly related to the provision of nutrition and child health care (Galasso et al., 2019; Jardí, Casanova and Arija, 2021). Interventions aimed at other family members were given to fathers and grandmothers (Menon et al., 2016; Faye, Fonn and Kimani-Murage, 2019).

Ongoing monitoring and support is needed to help direct behavior change, increase family member care and social support. Behavioral change techniques can increase self-efficacy to provide good nutrition to children (Hulme, 1999; Webb Girard et al., 2020). Monitoring is carried out by means of home visits, holding discussion group meetings involving the role of the community. Monitoring and counseling can also be done through electronic messaging (Hulme, 1999; Galasso et al., 2019; Rafieyan-Kopaei et al., 2019; Webb Girard et al., 2020).

The success of family empowerment interventions in stunting prevention is influenced by the characteristics of each family and the social environment in which they live (Vuorenmaa et al., 2016; Faye et al., 2019; Januarti, Abdillah and Priyanto, 2020). Family empowerment interventions in low-income families need efforts to increase family income, such as cash assistance, food supplementation, or increasing family income through food security training through agricultural programs (Renzaho et al., 2017; Galasso et al., 2019; Heckert , Olney and Ruel, 2019).

Unfortunately, there are still relatively few studies on family empowerment interventions in stunting prevention that are appropriate for low- and middle-income countries (Acero et al., 2020; Dibley et al., 2020; Huda et al., 2020; Kirkwood et al., 2020). We reviewed the published literature to gauge the scope of family empowerment interventions relevant to stunting prevention in low- and middle-income countries. We consider family empowerment as a household-level activity influenced by sectors outside of health and nutrition, and summarize the challenges, gaps and implications for further research. Our goal to guide this scoping review was to identify the approach used to review all available family approaches to prevent child stunting.

SUBJECTS AND METHOD

1. Study Design

This was a scoping review. Articles were obtained from 5 online databases, namely PubMed, Science Direct,

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ProQuest, EBSCO, and Google Scholar. The keywords used in the article search were family OR parent AND empowerment OR participation AND child OR children OR childhood OR infant AND stunting OR growth disorder OR feeding behavior OR nutritional status.

2. Inclusion Criteria

The inclusion criteria we used in this study were guided by Peters et al. (2020), covering participants, concepts, and context. We include studies that focus on family empowerment interventions in stunting prevention efforts through approaches to aspects of education, improvement in the economy, physical environment, social situation, culture, politics, and technology. Intervention for families who have children aged 0-23 months. Addressed to mothers, caregivers, other family members. English-language publications published in the last 10 years (from January 2012 to August 30, 2021) and conducted in low- and middle-income countries according to the 2010 World Bank.

3. Exclusion Criteria

This study does not include literature with an observational research design or uses secondary data, but a study whose intervention only uses one approach in an effort to empower families.

4. Data Analysis

Data is analyzed in a narrative way.

RESULTS

The results of the electronic search got as many as 697 articles. We found 35 duplicates, the number of articles considered further was 662 articles. After being selected based on the title and abstract, there were 43 articles with full text that were assessed. Each article was identified based on the established criteria, 4 articles were systematically reviewed, 4 articles were still in protocol form (study is in progress), 5 articles where the study was not conducted in low- and middle-income countries, 5 articles had inappropriate populations (children with nutritional problems; wasting and stunting), 5 articles with interventions that did not show the process of family empowerment, and 17 articles only using one approach technique. A manual search was carried out through Google Scholar based on references to the two systematic reviews, and 3 articles were found that were relevant to the objective. found 6 articles that were identified according to the study criteria Flowchart in Figure 1.

There are three studies conducted in low-income countries, namely Ethiopia (Fenn et al., 2012), Madagascar (Galasso et al., 2019), Burkina Faso (Heckert, Olney and Ruel, 2019). The studies were conducted in middle-income countries, including Indonesia (Fahmida et al., 2020), Nepal (Renzaho et al., 2017), and Cambodia (Reinbott et al., 2016). Almost all interventions are directed at the mother/caregiver, and the intervention has been started since pregnancy (Fenn et al., 2012; Galasso et al., 2019; Fahmida et al., 2020).

Table 1 compiles all intervention approaches. Most of the research aims to influence the behavior of mothers/ caregivers/other family members to practice nutrition and disease prevention. The average family empowerment intervention is carried out in a span of 3 - 24 months. There are two studies

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that evaluate interventions over a 5-year period, conducted by Fenn, et.al (2012) and Renzaho, et.al (2017). Most studies involve the role and support of the community, namely community health workers.

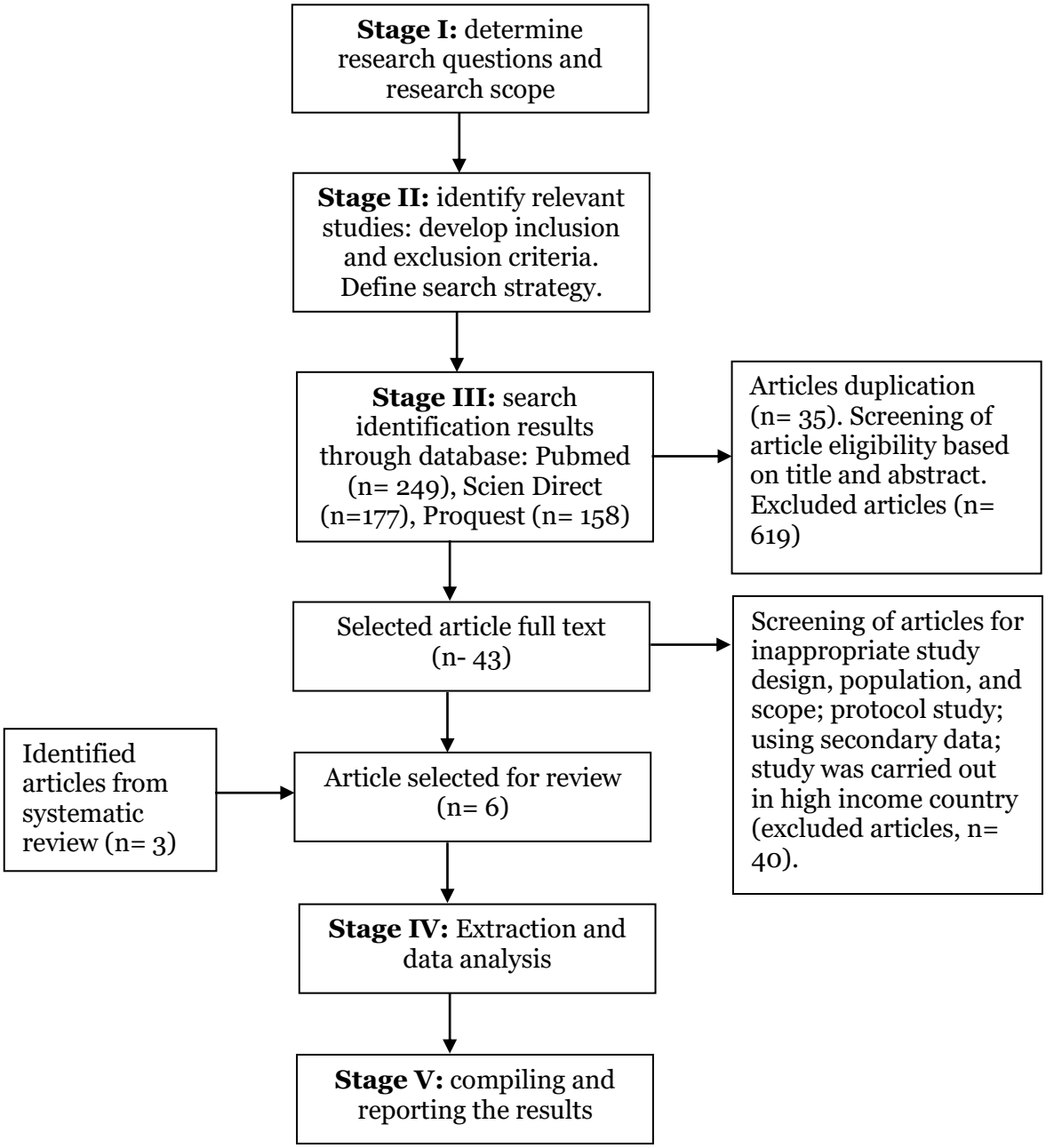

Figure 1. Stages of scoping review

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Table 1. Family Empowerment Intervention Approach

No	Author	Country (Year)	Family Empowerment Approach
1	Fenn et al. (2012)	Ethiopia	Behavior change communication interventions through health education, free health services, clean water supply, latrine construction, and agricultural programs for food security. Health education regarding child nutrition, hygiene, and disease prevention is carried out with monthly home visits. Given during pregnancy until the child is 38 months old. Promoter: trained public health worker
2	Heckert et al. (2019)	Burkina Faso	Behavior change communication interventions through health education are integrated with activities for food security (livestock and gardening). Health education on child nutrition and health maintenance Promoters: community health workers and health professionals.
3	Galasso et al. (2019)	Madagascar	Health education interventions, provision of lipid supplements, and stimulation of children's plants and flowers. Health education on child nutrition, food security, hygiene, and developmental stimulation. Home visits are carried out since the mother is pregnant, to provide counseling and monitoring of growth and development until the child is 24 months old. Promoter: trained community health worker.
4	Fahmida et al. (2020)	Indonesia	Behavior change interventions through health education (counseling with home visits and mass media campaigns), strengthening the health system, and providing clean water. Health education on nutrition for pregnant women and infants, and disease prevention. The treatment was given from the third trimester of pregnancy until the child was 18 months old. Promoter: professional health workers (midwives) and trained community health workers (health cadres and trained facilitators
5	Renzaho et al. (2017)	Nepal	Intervention: communication of social behavior change through counseling and mass media campaigns (radio), and the provision of cash assistance. Health education on nutrition, hygiene, and sanitation. Treatment is given for 5 years Promoter: trained public health volunteer
6	Reinbott et al. (2016)	Cambodia	Behavior change communication interventions through health education and agricultural training for food security. Health education on infant feeding and hygiene practices The treatment was given for 7 months. Promoter: trained community nutritionist

DISCUSSION

Family empowerment is a condition where a person has self-confidence and is no longer dependent on others in making decisions (Friedman, Bowden and Jones, 2003). Family empowerment interventions will increase the ability of families to overcome problems through increasing competence, utilizing access and control over the resources needed, making decisions and solving problems (Hulme, 1999). From the synthesis of the results of this study, we highlight the important things found, which are related to the

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family empowerment intervention approach.

Appropriate family empowerment strategies for child care and stunting prevention have begun to be tested in several countries. Based on a review of existing articles, identified six approaches that are used as interventions for family empowerment in stunting prevention efforts. Behavioral change communication programs through health education were found in all studies. Health education facilitates families to interact with health workers and increases understanding, and confidence in making decisions (self-efficacy) (Hulme, 1999).

Individual, group health education, mass media campaigns (radio and TV spots) and mass mobilization (video and theater) in Indonesia and Nepal (Renzaho et al., 2017; Fahmida et al., 2020). Administration of micronutrients and lipid supplements in Madagascar (Galasso et al., 2019). Cash transfer and social service protection programs in Nepal (Renzaho et al., 2017). Family food security programs through agricultural projects in Ethiopia, Burkina Faso, and Cambodia (Fenn et al., 2012; Reinbott et al., 2016; Heckert, Olney and Ruel, 2019). The provision of clean water and the provision of environmental sanitation are carried out in Ethiopia, Indonesia, and Nepal (Fenn et al., 2012; Renzaho et al., 2017; Fahmida et al., 2020).

The researchers concluded that family empowerment interventions that have a strong influence are providing external stimuli such as providing education, improving the economy, physical environment, social situation, culture, politics, and technology (Vuorenmaa et al., 2016; Januarti, Abdillah and Priyanto, 2020). External factor intervention is expected to affect family characteristics (family systems and functions), so that it will increase self-confidence and make decisions to take care and improve nutrition in children (Hulme, 1999; Vuorenmaa et al., 2016; Januarti, Abdillah and Priyanto , 2020).

The results of testing the family empowerment model conducted by Januarti et al. (2020) mentions that external factors that have a strong influence are socio-cultural factors. Social support from the environment is also found in all articles that include the role of community health workers in the process of health education, counseling, and monitoring (Fenn et al., 2012; Reinbott et al., 2016; Renzaho et al., 2017; Galasso et al. ., 2019; Heckert, Olney and Ruel, 2019; Fahmida et al., 2020). The more stimulus factors from outside are given to the family, it is expected that the higher the level of family empowerment achieved (Januarti et al., 2020).

All studies indicate that health education targets are aimed at mothers. Mothers are individuals who are directly related to child care. According to Friedman et al. (2003), the family is a collection of individuals who can cause or prevent health problems. The limited influence of mothers in making decisions about caring for and fulfilling nutrition for children occurs due to the influence of cultural factors (Faye et al., 2019; Heckert et al., 2019). So that the involvement of fathers and grandmothers is proven to increase family empowerment (Menon et al., 2016; Owais et al., 2017).

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The duration of the intervention carried out for the family empowerment process varies from researcher to researcher, ranging from a minimum of 7 months (Reinbott et al., 2016) and a maximum of 5 years (Renzaho et al., 2017). Family empowerment intervention is a process of developing family relationships with health practitioners starting from building trust, gathering information, participation and decision making. So that the intervention techniques planned to carry out family empowerment interventions require sufficient time (Hulme, 1999). The results of studies that demonstrate the effectiveness of a comprehensive family empowerment intervention approach and complete intervention results are needed to be able to form a family empowerment intervention model to prevent stunting in early childhood in low and middle income countries.

AUTHOR CONTRBUTION

IN prepared the first draft of the research protocol, then BM and SM provided directions for developing the first draft. All authors contributed to the development of eligibility criteria, search strategies, and selection of articles included in the study. All authors read and agree to the final manuscript.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest with any party.

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