

## Community-Based Stunting Intervention Strategies: Literature Review

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### ABSTRAK

*Stunting* merupakan gangguan pertumbuhan pada anak yang disebabkan oleh malnutrisi dalam jangka waktu yang lama. Kondisi anak menjadi lebih pendek dari anak normal seusianya dan memiliki keterlambatan dalam berpikir. Angka kejadian *stunting* di Indonesia cukup tinggi sehingga *stunting* menjadi masalah prioritas kesehatan saat ini. Strategi yang efektif sangat diperlukan untuk pengendalian *stunting* di Indonesia. Tujuan kajian literatur ini untuk mengeksplorasi strategi intervensi *stunting* yang dapat diterapkan di Indonesia. Desain kajian literatur digunakan untuk mengeksplorasi strategi intervensi *stunting*. Studi literatur dari 14 artikel ilmiah diperoleh dari *database* jurnal Science Direct, Proquest, Scopus, dan EBSCO 5 tahun terakhir dengan kata kunci *stunting*, intervensi, perdesaan, and berbasis komunitas. Analisis data disajikan dalam tabel yang terdiri dari judul, penulis, tahun, sampel, metodologi, dan hasil. Pengendalian dan pencegahan *stunting* dapat dilakukan melalui intervensi gizi yang terpadu. Strategi intervensi gizi spesifik seperti penyediaan suplementasi dan makanan tambahan ditambah dengan intervensi gizi sensitif mencakup intervensi non kesehatan, peningkatan ekonomi keluarga, akses dan pemanfaatan air bersih, sanitasi (khususnya jamban dan tangki septik yang aman), yang sangat dibutuhkan untuk mendukung perilaku higienis pribadi dan lingkungan. Intervensi dapat menggunakan metode konseling dan dukungan ibu secara teratur oleh tenaga kesehatan dengan melibatkan kader kesehatan. Strategi intervensi spesifik dan sensitif merupakan strategi yang efektif dalam pengendalian dan pencegahan *stunting*. Monitoring dan evaluasi pengetahuan, sikap dan praktik gizi ditambah dengan penilaian status gizi dan morbiditas ibu dan anak juga sangat perlu dilakukan dalam pengendalian dan pencegahan *stunting* di Indonesia.

**Kata-kata** : komunitas, strategi intervensi, *stunting*

### ABSTRACT

*Stunting is a growth disorder in children caused by malnutrition for a long time. The child's condition becomes shorter than normal children his age and has a delay in thinking. The incidence of stunting in Indonesia is quite high sostunting is becoming a priority health problem now. An effective strategy is needed to control stunting in Indonesia. The aim of this review was to explore the stunting management strategies to potentially implement in Indonesia. A literature review design was used to explore the stunting management strategies. Literature study of 15 articles retrieved from the journal database of Science Direct, Proquest, Scopus, and EBSCO in the last 5 years using keywords stunting, management, rural areas, and community based. Data were analyzed in tables consist of title, author, year, sample, methodology, and result. Control and preventionstunting could done through integrated nutrition interventions.Strategy Specific nutritional interventions such as providing supplementation and supplementary food plus nutritional interventions including non-health interventions, improving the family's economy, access and utilization of clean water, sanitation (especially latrines and safe septic tanks), which are urgently needed to support personal hygiene behavior and the environment . Interventions can use mother's counseling and support methods regularly by health workers by involving health cadres.Specific and sensitive intervention strategies are effective strategies within stunting control and prevention. Monitoring and evaluation of nutritional knowledge, attitudes and practices coupled with an assessment of the nutritional status and morbidity of mothers and children is also very necessary in controlling and preventing stunting in Indonesia.*

**Keywords:** community based, intervention strategy, *stunting*

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## BACKGROUND

Nutrition problems in Indonesia affect the quality of human resources. The threat of stunting to the quality of Indonesia's human resources is increasingly alarming. Basic Health Research (Riskesmas) in 2018 shows that as many as 30.8% of Indonesian children under five are stunted (1). This figure decreased by 6.4%, compared to Riskesmas five years before (2). Although the number of children with very short postures decreased by 6.4% compared to Riskesmas in 2013 at 18.0%, an increase in this proportion should not be careless (3). Because actually the number of short-bodied children actually has increased. Stunting is an indicator of chronic malnutrition caused by poor interaction of various risk factors that have taken place at least in the first 1000 days of life(4)

At present, the number of children under five in Indonesia is around 22.4 million and 5.2 million women in Indonesia are pregnant (5). The average number of babies born every year is 4.9 million children. Three out of 10 toddlers in Indonesia are stunted or have a lower height than the standard age (6). Not only short stature, the domino effect on toddlers who experience stunting is more complex. In addition to physical problems and cognitive development, stunting toddlers also have the potential to face other problems beyond that. Stunting does not mean that malnutrition is characterized by the condition of a child's body that is so thin (7). What often happens, children who experience stunting are not very visible physically. Stunting children or toddlers generally look normal and healthy (8). However, if examined further there are other aspects that actually become a problem. Not only cognitive or physical, stunted children tend to have a body metabolism system that is not optimal. For example, if another child can grow up, he actually grows to the side. This then has the risk of non-communicable diseases in Indonesia such as diabetes or obesity (9).

Nutrition becomes a very important thing related to stunting. Fulfillment of malnutrition to chronic is influenced by maternal nutrition during pregnancy,

socioeconomic conditions, diseases affecting infants, and malnutrition in infants (10). LBW affects 20% of the occurrence of stunting. In addition to LBW, the age of giving birth to babies who are too young can also cause babies born vulnerable to stunting (11). Fulfillment of adequate nutrition when the baby is very influential on the growth and development of the baby and stunting. Exclusive breastfeeding is also one way to meet the nutrition of the baby. In addition to exclusive breastfeeding, fulfillment of food nutrition must also pay attention to quantitative, qualitative, and food security provided (12).

The government and development partners working in the health sector need to change understanding of stunting. This can be done by conducting health promotion about what is stunting, stunting risk factors, the impact of stunting on children's health now and in the long term (13). The implementation of the stunting prevention program is expected to involve the entire community, including adolescents, parents and health cadres (14). In addition, health workers play a very important role in preventing and managing stunting. Prevention and handling of stunting can be done with good nutrition education to adolescents, parents, health cadres. Education is a part that is closely related to the knowledge, attitudes and health behaviors of adolescents, parents and health cadres. Knowledge and awareness are very necessary for the fulfillment of nutrition when the baby is in the womb so that the baby's birth weight is fulfilled (15). Nutrition fulfillment can be done by health workers by means of four Community Nursing strategies including health education, empowerment, group processes, and partnerships (14). Health workers also play a role in intensively monitoring adolescents and especially pregnant women who are prone to lack of adequate nutrition. The main factor influencing adequate nutrition is financial. Low standard of living tends to have poor nutrition (16). This is very vulnerable to stunting. Therefore, special attention needs to be paid to pregnant women who have a low standard of living. The implication of this research for the development of nursing science is to add reference sources related to various

community-based stunting handling interventions, so nurses can play a role in providing appropriate interventions to deal with stunting problems experienced by clients, especially with community-based strategies.

## METHODS

This study used the literature review method of relevant studies, with the inclusion criteria of articles taken as a reference source, which are published and indexed international Scopus articles for the period 2015-2019 in English, and can be accessed in full text. The articles used were taken by Science Direct, ProQuest, SAGE, Scopus, EBSCO, and Taylor and Francis within community-based, management strategies, stunting. Research articles obtained as many as 15 articles and analyzed through several stages, namely, first the researcher chose the article to be examined by reading the title of the research article, followed by reading the abstract. If the title and abstract match the reference criteria required by the researcher, then the article continues to be analyzed as a whole. The inclusion criteria are articles published 2015-2019, original research, literature or systematic review were included. The exclusion criteria are duplicated and abstract only. Articles with substance that fit the criteria needed by researchers are taken as a source of reference (the article selection process flow and the analysis table attached). (*Figure 1*)

## RESULTS AND DISCUSSIONS

### (*Table 1*)

Stunting is a chronic malnutrition in the form of growth failure characterized by linear growth retardation in children so, the child is shorter than a normal child his age and has a delay in thinking (10). Nutritional deficiencies that occur in the womb and early in life cause the fetus to make adjustments to reactions including slowing growth by reducing the number and development of body cells including brain cells and organs such as the heart, liver, pancreas, muscles, and kidneys (17).

Stunting in children is influenced by a history of maternal nutritional status and during pregnancy can affect the growth of the fetus being conceived. Maternal nutritional status during pregnancy is characterized by weight gain during pregnancy, mothers suffering from KEK (Chronic Energy Deficiency), anemia and other nutritional deficiencies or experiencing infectious diseases such as malaria during pregnancy (18). History of maternal nutritional status and history of the disease will affect fetal growth, causing intrauterine growth retardation (IUGR) and affect babies born, such as the weight and length of the baby's body potentially experiencing nutritional and health problems in the next age period (19). Stunting can also be caused by indirect determinants such as access to health care, availability and access to food, care patterns, family characteristics, education, urbanization, socioeconomic, political stability, environmental sanitation and clean water, population density and social support (20).

Stunting prevention is carried out through integrated nutrition interventions, including specific nutrition interventions and sensitive nutrition (15). Specific interventions relate to health interventions such as providing supplementation and supplementary food. Specific interventions have been carried out in various countries aimed at changing feeding practices, supplementation with folic acid, calcium, zinc, vitamin A, balanced protein-energy supplementation, breastfeeding and complementary feeding, handling acute and severe malnutrition (9). Sensitive interventions include non-health interventions, improved family economics, access and use of clean water, sanitation (especially latrines and safe septic tanks), which are urgently needed to support personal and environmental hygiene behavior (8). Through combining specific and sensitive nutrition interventions in the fields of health, food, environmental sanitation, economy, education and infrastructure shows a reduction in stunting from 36% to 28% (9).

The strategy for implementing the Hone, Asih and Foster program interventions consists of: increasing the capacity of

cooperation between stakeholders to accelerate evidence-based nutrition improvement activities, increasing the capacity to facilitate cooperation between stakeholders, increasing the capacity to implement mutually beneficial cooperation among various stakeholders, increase the capacity to monitor and evaluate joint performance to achieve nutritional improvement targets, increase the capacity for identification by sharing experiences or interventions related to the model to increase understanding of achieving goals, and increase advocacy capacity in the context of increasing political commitment and mobilizing resources and technical assistance (21).

Stunting prevention interventions are more effective by involving public health cadres. Optimization of health cadres in the implementation of the stunting treatment

program is able to motivate mothers to participate in the handling and prevention of stunting. Community-based interventions effectively optimize optimal breastfeeding and other infant feeding practices (22). Cadre training is needed to improve the knowledge and skills related to nutrition of mothers, infants and toddlers. The importance of breastfeeding and the promotion of optimal infant feeding in the survival of children is largely determined by the knowledge and skills of the mother (9). Kang, Suh, Debele, Juon, & Christian also explained *community-based participatory nutrition promotion (CPNP)* can increase the growth of children by involving all components of the community, especially health cadres (23). Stunting prevention interventions are very important to improve social health in Indonesia.

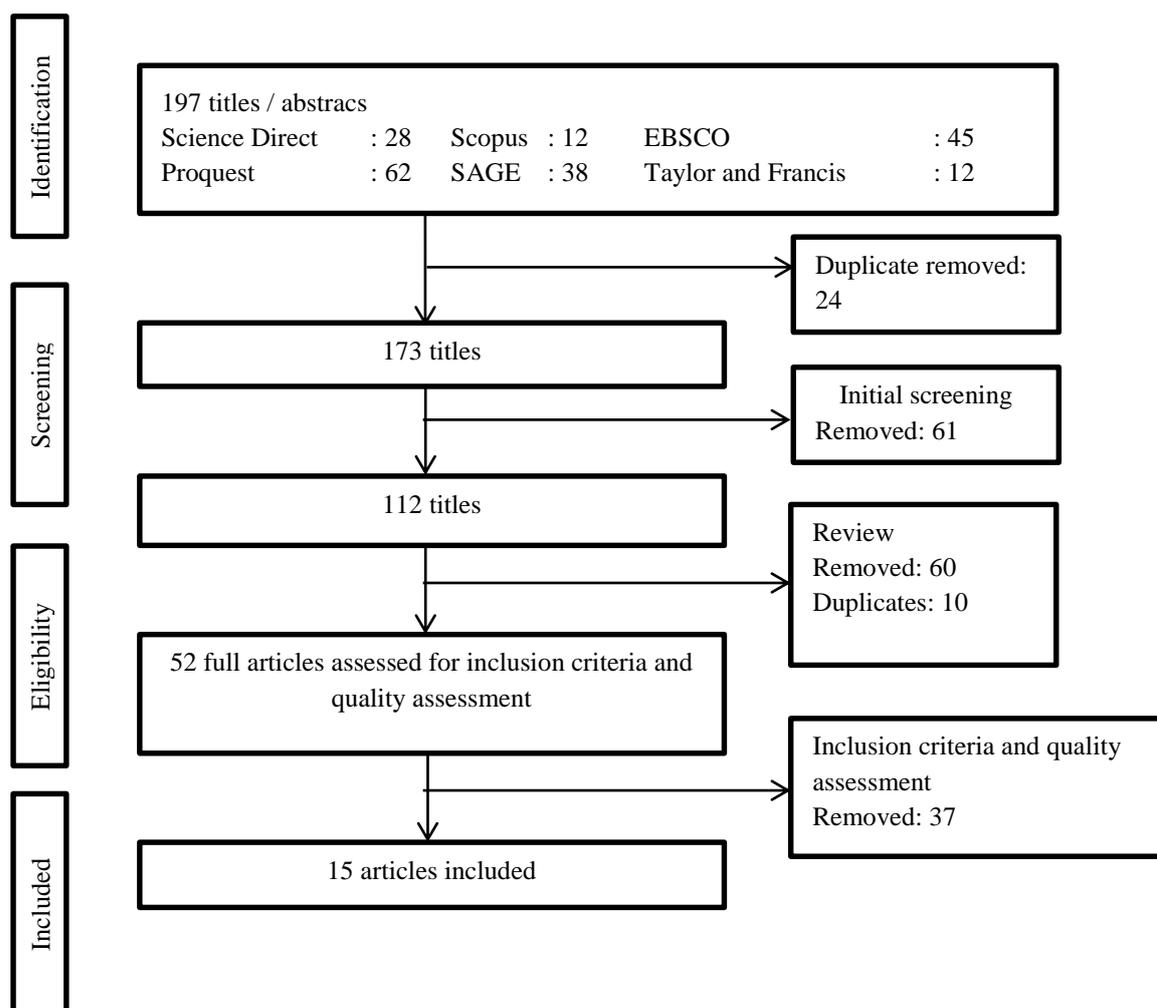


Figure 1: Article selection based on inclusion and exclusion

Table 1. The summary of articles on concurrent community-based stunting strategies in 2015-2019 (n = 15)

Author	Year	Methodology	Results
Yawson AE, et al (24)	2017	<i>Mixed methods approach</i>	Nutrition interventions conducted by health cadres in Ghana as a whole showed results, including: health cadres were trained in lactation management and breastfeeding counseling and support, mothers of children 0-2 years started breastfeeding one hour after giving birth, and mothers with children 0-5 months consume iron supplements and folic acid for 90 days or more during pregnancy. Overall, among infants aged 6-8 months, 6.9% were fed with a minimum dietary variety, as many as 50.6% had a frequency of eating according to age and 21.6% were on an iron-rich diet. Children 12-59 months consume two doses of vitamin A supplement in one calendar year, children 6-59 months with acute malnutrition are treated in health facilities.
Natalie Leon, et al (25)	2015	<i>Literature Study</i>	Community Health Workers (CHW) in Nigeria, Mali and Ethiopia generally tastes! from the community and they form the relationship between the community and the health system, Community Health Workers (CHW) participate in village health structures and are highly valued in the community. CHW encouraging healthy family models and providing community-based nutrition programs through counseling to mothers, home visits to monitor children's growth, and referring sick or malnourished children to health posts. In Ethiopia, CHW was part of the government and member social protection programs
Paul A Freeman, et al (26)	2017	<i>Literature Review</i>	The promotion of exclusive breastfeeding is effectively promoted in the community by CHW. The findings of this study showed that nutritional deficiencies can be successfully overcome at the community level through health education involving Community Health Workers (CHW) in the form of household visits, periodic monitoring of children's growth in the community, and provision of food supplements (RUTF). Exclusive breastfeeding during the first 6 months with continued exclusive breastfeeding during the first two months of the baby's life is an important contributor to good child nutrition, reducing morbidity, and increasing mortality in limited resources.
Yulia Sofiatin, et al (10)	2016	<i>A longitudinal study (Risk Approach Strategy)</i>	The study also involved and empowered community health cadres, which are key to strengthening the health care system in rural areas. The recording of community-based postnatal growth conducted by health cadres is very important, especially to distinguish between rural and urban communities related to factors that affect growth (eg maternal nutrition and infection or environmental factors such as sanitation)
Boris Martinez, et al (27)	2018	<i>Parallel-group superiority trial</i>	This study found that CHW (Community Health Worker) provides home visiting services targeting families with children aged 6-24 months with stunting. In the control group, CHW conducts monthly visits by monitoring growth, providing daily micronutrient supplements and food supplements, while in the intervention group, CHW provides daily care, monthly individualized care counseling that is focused on increasing the frequency of eating and diet diversity for children from another CHW team

<b>Author</b>	<b>Year</b>	<b>Methodology</b>	<b>Result</b>
Intan Fitri Meutia and Devi Yulianti (21)	2019	Qualitative descriptive	Community empowerment in the implementation of this intervention program consists of the Government as the initiator, facilitator and motivator in the application of the home, foster and foster program that has the role of developing partners, community health organizations
Anika Reinbott, et al (15)	2016	<i>Randomized controlled trial cluster</i>	The nutrition education program begins by training community health cadres to become community nutrition promoters (CNP). The series of intervention activities carried out included the provision of nutrition education, distribution of educational posters and cooking equipment to the KK, cooking demonstrations, and experience sharing sessions between CNP and participants. The results of the nurses education program and agricultural interventions are data that the variety of food consumption in children has a significant difference from before the intervention. In addition, there is an increase in consumption of foods high in provitamin-A, vegetables and fruits
Aulo Gelli, et al (28)	2018	A longitudinal cluster-randomized controlled trial	The Nutrition Embedded Evaluation Program Impact Evaluation (NEEP-IE) program consists of aspects of early childhood development, nutrition, and agriculture. The activities carried out are health education for parents with pre-school children, food preparation, food supply throughout the year, feeding children, food production and processing, seeds and chicks, savings and village loans. Expected outcomes are stimulation and care for children, nutritious food for pre-school children throughout the year, increased knowledge about nutrition and effective agricultural techniques, early learning, improved dietary and eating behavior, production of nutritious food sources. The results obtained are child development, increased nutrition, increased safety and food availability
Elizabeth W. Kimani-Murage, et al (22)	2015	A <i>Cluster-randomized trial design</i>	Cadre training to improve knowledge and skills related to nutrition of mothers, infants and toddlers. The importance of breastfeeding and the promotion of optimal infant feeding in the survival of children. Community-based interventions effectively optimize optimal breastfeeding and other infant feeding practices
Yunhee Kang, et al (17)	2017	A <i>Cluster-randomized trial design</i>	The prevalence of children in the intervention area showed 8.1% (p = 0.02) lower stunting compared to the control group. A total of 6.3% (p = 0.046) decreased the prevalence of underweight greater. No statistically significant program effects were found for the prevalence of wasting (p = 0.34)

Author	Year	Methodology	Result
Kureishy, et al (9)	2017	A Mix methods study design	Providing sufficient evidence to develop policies and programs aimed at preventing stunting of children 6-59 months to improve maternal and child health and growth outcomes in community-based human resource management by involving health cadres. The strength of our research is the first operational research study with RCTs that examine the impact and benefits of optimal supplementation for children (6–59 months) and pregnant women
Mwanza M, et al (29)	2016	A Mix methods study design	The majority (83.9%) of children are aged between 12 and 59 months, and only 16.2% are under 12 months of age. The prevalence of malnutrition in children under 5 years was 49.5% suffering from stunting, 3.6% wasting, 12.7%, underweight and 1.3% Severe Acute Malnutrition (SAM). OTP interventions have improved the health outcomes of children received with SAM in the Eastern district of Mwanza Zambia.
Kang Y, et al (23)	2016	A randomized trial cluster	Mothers in the intervention group showed higher scores than those in the control group regarding eating frequency, composite feeding score; addition score from current breastfeeding, feeding frequency and diversity of food) and composite feeding score. The Community-Based Nutrition Promotion Programme is effective in improving children's eating behavior in rural East Ethiopia.
Jessica Heckert, et al (30)	2019	A randomized controlled trial	The sensitive nutrition intervention program aims to improve children's nutritional outcomes. The results found an increase in women's empowerment in partner communication, health care decisions, and family planning decisions contributing to the program's impact on reducing wasting. Programs that aim to improve the nutritional status of children must include interventions designed to empower women
Muttaquina Hossain, et al (31)	2017	A systematic review	Fourteen programs, which were demonstrated to reduce stunting, were identified from 19 low and middle income countries. The most implemented interventions are sensitive and specific nutrition interventions including nutrition education and counseling, monitoring and promotion of growth, immunization, water, sanitation and hygiene, and social safety nets. A program is considered to have an effective stunting reduction. Successful interventions are characterized by a combination of political commitment, multi-sectoral collaboration, community involvement, community-based service delivery platforms, and wider program coverage and compliance

## LIMITATIONS

This study has limitations including reference sources that examine stunting prevention and treatment, still limited research related to specific stunting issues, as well as published articles and international indexed related to open access stunting issues.

## CONFLICT OF INTEREST

The authors declare that they have no conflict of interest

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## CONCLUSION

Conclusions from this study stunting management strategies can be carried out through specific nutrition interventions, the implementation of a sharpening, fostering and fostering program carried out by taking into account human resource indicators in the form of local regulations. Nutrition services need to be supported with basic commodities to provide complete services. the involvement of all health cadres at the sub-district, district and community level and community-based cadres, and the involvement of health facility managers, policy makers, and partners are key nutrition services. the dissemination of all new policies and policies and field guides to a lower level will be very important. national and sub-national levels must increase data validation activities through regular monitoring and coordination. It is necessary to increase the capacity of cross-sectoral

cooperation to accelerate the improvement of nutrition in Indonesia in handling stunting.

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