

Community Health Center Worker Perspectives on Stunting Risk Factors and Challenge of Stunting Prevention Program: A Qualitative Study

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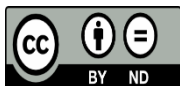


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ABSTRACT

The prevalence of stunting in lower and middle-income countries is relatively high especially in Indonesia which accounted for 27.5% of total children in 2019. In response to this, the government instituted stunting prevention program nationally, which includes supplementation of iron for high school female students and pregnant women, complementary feeding for young children, Integrated Health Service for children (Posyandu), and workshop and counseling of feeding practice for parents and health cadres. However, among many programs, evaluation on which programs succeed and what challenges are behind them rarely exists. The purpose of this study is to determine the factors associated with stunting and the effectiveness of the government-run stunting prevention program. The study used a qualitative approach with an in-depth interview method to explore the experience of health professionals in 10 Community Health Centers regarding the challenge of the stunting prevention program and the phenomenon of factors linked to stunting. Factors associated with stunting were low economic level, low education level, poor feeding practice, low birth weight, genetic disorder, infection, and poor sanitation. Challenges to the program included minimal effectiveness of supplementation of iron, invalid measurement, lack of monitoring and evaluation, and lack of sectoral collaboration. To prevent stunting, collaboration between various sectors and awareness and knowledge of stunting among parents and health cadres are needed.



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1. INTRODUCTION

According to WHO, 150 million children are stunted, the largest proportion of which in the world is in Asia [1]. In Southeast Asia, 25.7% of children had stunting, the second-highest after South Asia [1]. Children under five who have stunting show poor growth and development during critical periods. Global figures showed that 22.2% of children were stunted, while the prevalence of stunting based on height divided by age in Indonesia was 27.3% [1], [2]. The data showed that Indonesia's prevalence rate is still above the world average. In 2019, the stunting prevalence rate in Central Java was 27.2% [2]. Although this figure was below the national prevalence, the prevalence of stunting in Central Java is the highest in Java island.

Children under five who experience stunting show poor growth during their critical periods. Although Global Nutrition Targets 2025 aim to reduce the stunting prevalence up to 40% worldwide and mandate 3.9% relative reduction per year between 2012-2025, the stunting prevalence in Indonesia increased from 8.5% to 11.5% during 2016-2018 [3], [4]. Stunting in infant and early childhood causes long-lasting damage, including poor cognition, poor educational performance, short stature in adulthood, and also increased risk of perinatal and neonatal death [5], [6]. Therefore, stunting can prevent the growth and development of the whole community. UNICEF recorded that there were 149.2 million children under 5 years old who were affected by stunting in 2020, in which Southeast Asia was the second highest (27.4%) in Asia after South Asia (30.7%) [7]. Recent analysis shows that the three main causes of child stunting in South Asia are poor diets in children in the first years of life, poor nutrition of women before and during pregnancy, and poor sanitation practices in households and communities [8]. Similarly, factors associated with stunting in Southeast Asia are low family income, low level of education which results in wrong practices in providing nutrition for infants, poor sanitation and hygiene, and inappropriate treatment of sick children [9]. Over the past decade, there had been little changes in the national figures for stunting prevalence in Indonesia. This shows that variations in the population's exposure to the determinants of child stunting appear to be more vulnerable. Many potential causes of stunting in Indonesia have been proposed, including proximate factors such as maternal nutritional status, breastfeeding practices, complementary feeding practices, and exposure to infection and other determinants such as education, food systems, healthcare, water, and sanitation [10]. In addition, stunting in infancy and early childhood causes lasting damage for the children including increased risk of perinatal and neonatal death, increased morbidity, poor cognition and educational performance in childhood, lower productivity and reduced income in adults. Short stature — if worsened by excessive weight gain later in life — increase the risk of chronic disease. Therefore, stunting hinders the development of the whole society [11– 14].

The national strategy for accelerating stunting prevention in 2018-2024 has five pillars, one of which is to increase awareness and understanding and encourage behavior change to prevent stunting. However, it still needs cooperation and efforts from various parties, especially to solve the problems based on the determinants in the community. Various studies have found that family factors, both socio-demographic characteristics, knowledge, and attitudes of parents contribute greatly to the risk of stunting in children [15– 17]. Community and social factors are supposed to play an important role in the effectiveness of stunting prevention programs in Indonesia, but not many published scientific papers have stated this. Even though regular programs on improving nutritional status such as Hope Family Program (PKH/Program Keluarga Harapan), food vouchers, and supplementary food program have made distinctive outputs by reducing the number of poverty by 20% and of stunting cases on one hand and improving nutritional status in some areas on the other hand, the national prevalence of stunting has not decreased [4], [18]. Therefore, the research purposes are to explore the factors of stunting based on health professionals' perspectives and to evaluate the effectiveness of the program run by Community Health Centers to prevent stunting.

2. METHOD

A qualitative study was conducted in April 2021 to determine the factors associated with stunting and the evaluation of stunting prevention program in Community Health Centers across Surakarta. In-depth interviews were held to explore the perception and evaluation of 10 health professionals who are responsible for stunting prevention program in their Community Health Center. Sample size was determined by the number of stunting prevalence in Surakarta which was high in 10 areas. Data were gathered and analyzed by using coding from the individual interview process. The eligibility criteria of this study were health professionals who are responsible for stunting prevention programs and have full-time employment in their Community Health Center. The ethical clearance was granted by Universitas Sebelas

Maret review board of the Faculty of Medicine and by the Health Office of Surakarta. Before the interview, all participants were informed that the data would be anonymous and that no information would be leaked. The participants were also informed that they could withdraw at any time during this interview.

The study was conducted individually by using semi-structured questions which were asked to each participant. The sample was taken through purposive sampling. Ten open-ended questions were asked to allow the participants to explain the phenomena related to stunting, the prevention program management, and the implication and evaluation of the program. The interviews were conducted to professional nutritionists for approximately 1 hour each. Before conducting the interviews, all of the interviewees agreed to follow the open-ended questions and to record all of the conversations using the smartphone. After the interviews were recorded, they were then transcribed. The following are the questions asked to participants.

The interview guide questions:

1. What are the factors that probably cause stunting?
2. Who is responsible for the stunting prevention program?
3. How is the management of stunting reports?
4. Is there any accompaniment if the children are diagnosed with stunting?
5. How is the target achievement of the Government Stunting Program?
6. How is the evaluation of each program?

Data analysis was conducted by using Miles, Huberman, and Saldana method in three steps: Data coding, presentation, and verification. The data codification stage is the coding stage of data (19). This stage aims to obtain themes or classification of research results. The themes or classifications were named by the researchers. The researchers rewrote the notes of each transcript. Next, the researchers read the entire field notes or transcripts and sorted out and marked the important information. Then the researchers interpreted what was conveyed in the passage to find out what was conveyed by the informants or by the document in the fragment. The data were then presented in a table and verified by the researchers. After conclusions were drawn, the researcher then re-checked the validity of the interpretation. After this stage was carried out, the researcher obtained research findings based on data analysis carried out on a result of in-depth interviews or documents. The participant's stories were generated into quotations which were used for strengthening the data. All of the interviews were conducted and analyzed in Indonesian and the quotations were translated into English.

3. RESULTS

There are three themes that will be discussed in this section, including the factors associated with stunting, management of stunting prevention program, and challenges of the stunting prevention program.

3.1 Theme 1: The factors associated with stunting from Community Health Center perspectives

3.1.1 Economy

The main causes of stunting in the Surakarta area were poverty and low purchasing power of nutritious ingredients. In suburban areas, the economic level of the community was relatively low, so stunting cases were quite often found in these areas. Overcrowded housing with poor hygiene and sanitation were found in the area in which the majority of citizens are poor. Unhealthy drinking water was closely related to low levels of parental education and low- income status.

".. I see most of the poor family have difficulties in providing good nutrition for their baby, especially protein"

"...our biggest challenge is family with low income. It means that people cannot buy ideal food with high

nutrition. So, I think, with all of the limitations, the way we solve this problem is with affordable and high in nutrition. But they understand, the people understand, 'oh, this is the food with high nutrition...'"

3.1.2 Low education and poor feeding practice

Low parental education was linked to health literacy and the level of parental understanding of medical instructions or recommendations. All informants stated that health workers had provided education related to stunting including definition, causes, and treatment. Education about optimal nutrition for infants and toddlers had also been carried out by providing classes for mothers of toddlers, baby cafés, and live demonstrations of making complementary food. However, the knowledge provided did not increase the weight of toddlers because the behavior and priorities of parents had not changed. An informant stated that although parents had money to buy nutritious food, they prioritized buying tertiary needs such as cellphones or phone credits. In addition, the definition of nutritious eating accepted by families of toddlers was different from the recommendation for nutritious food that includes carbohydrates, proteins, minerals, and vitamins. An informant explained that when the health professionals made home visits to underprivileged families who had stunted children, the families said that their children had enough meals. However, after being reviewed directly by the officers, the feeding of one portion did not follow the expected proportions.

3.1.3 Parenting

Some children who have stunted growth were not raised directly by their parents but their relatives, such as aunts or grandmothers. Therefore, the recommendation of food was not optimal and did not suit their age. For example, an informant explained that caregivers who fed toddlers did not know the age-appropriate portion of food. Another issue was that the responsibility for providing nutrition to toddlers was only focused on the mother, where the father's role was not dominant enough in providing support. The informant said that the father/husband sometimes only gave orders to the mother/wife to give breast milk, without giving approach and affection.

"In our subdistrict, after we analyze the factor of stunting, the first that comes to mind is poverty and parenting style which also influence stunting, because sometimes the caregivers are not the toddlers' parents, for example, the parents are workers and the caregivers are less knowledgeable"

3.1.4 Low birth weight and other genetic disorders

Several informants explained that stunted children in their area had a history of low birth weight at birth. Other conditions such as Down's syndrome were also found in stunted toddlers in certain areas. Informants in an area said that there might be a genetic factor, namely short stature where the genetic role of parents who tended to be short would affect children under five who were short or stunted. However, investigations related to the role of genetics in stunted toddlers have not been studied in depth.

"...low birth weight is a risk factor of stunting since when the baby was born, the body length is less than 47 (centimeters)..."

3.1.5 Infection and poor sanitation

Repeated disease infections in toddlers posed a risk in reducing the effectiveness of nutrient absorption for the body, resulting in suboptimal growth. Diseases such as diarrhea were described by several informants as one of the causes of stunting in their area. Informants mentioned that families with stunted children had smoking fathers. In addition, in residential areas such as riverbanks with poor sanitation, the absence of family latrines was also found in families with stunted children.

3.2 Theme II: Management of stunting prevention program

3.2.1 The mechanism of stunting surveillance

Most of the stunting cases were found during the integrated health service (Posyandu) sessions for children. These activities were held in each village in Indonesia with toddlers under 5 years old as specific targets. The main activities were weight and length measurements, brief counseling to the parents about children feeding practices, and food supplementation. Health officers who are responsible for this program were midwives, nutritionists, and the Public Health Office. One of the participants said that the data collection was taken by health cadres by visiting the toddlers' houses. The data were then submitted to health officers responsible to each village. When they met severely stunted children, the stunted children would be sent to a pediatrician.

3.2.2 The stunting prevention program initiated by Community Health Centers

There were several programs initiated by Community Health Centers to prevent stunting such as supplementation of iron for teenagers and pregnant women, complementary feeding for toddlers, baby cafés selling high-nutrition and affordable food for children, education, and counseling for mothers on complementary feeding practice. The programs also reached village cadres which aim to improve their skills and knowledge on neonatal care, exclusive breastfeeding, and food preparation. Those cadres, equipped with sufficient skills, then shared their knowledge to the toddlers' parents.

3.2.3 Collaboration between sectors

The program which aims to provide food security were conducted in collaboration with the Agriculture Office by providing food supplies such as fish, vegetables, and grain for families with stunted children. This program also invited teachers from kindergarten schools to help measure each children's body weight and length. In addition, The Office of Social Affairs gave financial help to improve the economic status of underprivileged families.

3.3 Theme III: Challenges and evaluation of stunting prevention program

3.3.1 Irregular supplementation intake

A participant explained that iron supplementation given to pregnant women was not consumed regularly. Most of the women said that this was caused by the supplement's bad taste and inexistence of follow-up by health officers to ensure that the supplement was consumed correctly and regularly. Another problem was that the food given was shared with another sibling or family members.

3.3.2 Improper anthropometrics measurement

The participant said that the measurement of body weight and length in the community was different in every appointment. Moreover, the cadres who were given the task to measure sometimes did not validate the result, resulting in the wrong conclusion. The tools used were rarely validated, causing invalid results. This result was linked to over-diagnosed or underdiagnosed children's development. Concern about the capabilities of cadres should have been addressed, especially since cadres mostly consisted of elderly women. Moreover, even though the workshop for measuring the children's development as well as using the updated technology and information regarding the feeding practice had been conducted, the different educational backgrounds and perceptions might differentiate the information acceptability.

Moreover, participants acknowledged that the workshops were usually attended by the leader of the cadres, not all of the cadres.

"So, there was a time when the number of stunted children based on our data was nearly 50 people, but then we checked them again, and there were only 15. The fact was that the cadres in charge put wrong height measurement"

3.3.3 Lack of monitoring and evaluation

The participant said that lack of monitor and evaluation was caused by the confusion between children with stunted and wasted growth. Also, the role of cadres or volunteers seemed very important during the monitoring and evaluation rather than the health officials. However, it was noted that not all health cadres had the same ability to perform anthropometric evaluation, thus, the monitoring was insufficient.

"The programs have small impacts on the stunting prevention, which are not significant.

... it is because the program target is not only for children with stunted growth but also children with wasted growth"

"Then for monitoring and evaluation, the clearest program is complementary feeding. The monthly evaluation is done by asking the health cadres to measure the children's weight. Then, we evaluate the problem, however, even though in our region there are only 21 toddlers to monitor and report, but (the evaluation report) is yet to be collected"

"(for the evaluation) we are asked each month about the target number. Some pregnant women receive complementary food, but we have difficulties in ensuring that the food is already consumed because we don't wait every day. So, we only know that the food is received, but probably it has not been consumed"

3.3.4 Lack of sectoral and collective collaboration

Some of the participants said that there was no integration between government sectors such as the Agriculture Office, village administrations, and Health Office. Stunting is known to be multifactorial, but the prevention is mostly focused on the Health Office. In addition, participants emphasized the knowledge on stunting that needs to be improved.

"Household is under the subdistrict administration. We are from the Health Office, but (stunting) factors are multifactorial. Factors linked to the health issues are only 30% while the other 70% come from other sectors. So, it can be said that stunting is not wholly under the Health Office's responsibility"

"Unfortunately, at this moment, the nutrition problem only becomes the problem and responsibility of nutritionists. I feel that the physicians (who work in Community Health Centers) are not present to prevent stunting"

"So, the challenges are multifactorial and multisectoral and not only present in giving complementary feeding, but also in the education and knowledge since adolescence, before they are married and have children, in education for mothers and parents who already have children, in the ways they raise the children... and in the immunization awareness and routine medical check-up for children"

4. DISCUSSION

This is the first study to explore the perspectives of health workers who run the stunting prevention program in several Community Health Centers in Surakarta. Stunting prevention programs are included in national strategies since 2017. The factors are mostly known to be low economic and education status, poor hygiene and sanitation, disease infection, and low birth weight. Many published articles have agreed upon the economic factor in which the family has lost purchasing power when they do not have money to buy food. Lower-income households tend to buy less healthy foods such as fewer fruits and vegetables, and more sugary food [20], [38], [39]. Therefore, babies born to a low-income family face more risk to be stunted than those born to a rich family [21]. Low education level also leads to poor feeding practices. More educated mothers are more aware of the nutrition and health of their babies [16], [22]. The mothers' education level affects their level of understanding in obtaining health information and applying it in daily life. Mothers with low levels of education tend to have more difficulties in accepting information outside of themselves. The way education affects a mother's knowledge to prevent stunted children was explained by [23]. First, formal education provides knowledge, including health knowledge. Second, the literacy and numeric skills of educated women increase their ability to recognize diseases and to seek treatment for their

children. Third, mothers with good literacy are easier to understand medical instructions or medication and apply them. Severe disease infection will result in wasted growth, i.e., acute malnutrition and have long-term consequences on linear growth, depending on the severity, duration, and incidence of repeated infections. In addition, unvaccinated children are closely related to the risk of stunting. Immunization in children is one of the protections to prevent children from diseases and stunting [24]. Stunted children are associated with frequent digestive problems. Digestive problems are one of the symptoms of disease infection in children, especially in areas with poor hygiene and sanitation [25].

The causes of stunting specifically include the nutritional status of pregnant women before, during, and after gestation, in which the fetus first grows in the womb. For example, intra-uterine growth restriction (IUGR) caused by poor nutrition of pregnant women contributes to 20% of stunting cases [26]. IUGR is defined as fetal growth that is less than normal and is usually the result of several factors that inhibit fetal growth in the womb. IUGR is also a clinical definition that is applied to neonates born with malnutrition and experiencing stunted growth in the womb [27]. Babies with low birth weight of <2500 grams are more at risk of stunting compared to babies with normal weight [28]. This finding is also supported by several studies in Mexico and Nepal [29], [30]. In one of this study, low birth weight is closely related to inadequate maternal nutrition. Meanwhile, the other study stated that prematurity and fetal growth restriction or IUGR at birth are one of the main factors for stunting with a 32.5% prevalence of stunting caused by this factor, amounting to as many as 14.4 million cases (95% CI 12.6 million–16.2 million) [31]. Even though numerous programs were conducted to prevent stunting, challenges such as lack of monitoring and evaluation on each program, invalid measurement, and minimum collaboration between sectors have existed. The program was initially formed by the Indonesian government by virtue of Presidential Regulation No. 42/2013 on the National Movement for the Acceleration of Nutrition Improvement (Germas-PPG). This effort is in line with the global movement of the Scaling Up Nutrition (SUN) Movement. In the implementation, each Community Health Center has the autonomy to create an innovation program based on the purposes of SUN.

Furthermore, the programs depend on the socio-demographic characteristics of each area in which the factors and challenges may differ from one to another. Remarkable programs such as supplementary feeding with strategic support such as routine health care program successfully reduce stunting [32]. However, due to the lack of monitoring and evaluation, and the difference of implementation of complementary feeding in Surakarta compared to that in the Dominican Republic, the effectiveness of the program seems to be unknown. The longitudinal intervention which combines the programs with most effectiveness such as feeding supplementation, water use, hygiene, and sanitation can be conducted in Indonesia [33], [34]. The invalid measurement has been talked about by the participants because there is a gap between cadres on knowledge and practice of anthropometric measurement. In addition, there is a need for a structured and integrated workshop for cadres or volunteers to minimize invalid results. Parents are also required to monitor the growth and development of their children regularly while cadres and monthly measurements are not present, particularly during the pandemic. Community health volunteers were reported to perform less in counseling and diagnosis, mostly done in stunting prevention program. Therefore, regular supervision with adequate training and logistical support is recommended [35]. Along with building the capacity of health cadres, monitoring and evaluation should also be conducted regularly by health professionals.

Minimum collaboration between various sectors is another problem mainly discussed by the informants. Since all of the informants are health officers, the perspectives of stunting are mostly felt by them. Moreover, the economic factor is not under the responsibility of the Health Office. Therefore, any food

supplies from other City Offices which aim to lift the economic status are prominently recommended. Such programs in giving food supply, financial support, and staple food source have been applied in most of the region. However, its integration to improvement of children nutritional status has rarely been conducted. Building a program that aims to approach underprivileged families and provide direct supply and support for them is necessary for the setting where the health cadres or community volunteer workers are present. The family-based approach helps the families to be more engaged in medical instruction and to be transparent about their toddlers' growth condition. Moreover, any health education and counseling by the volunteer are mostly accepted by patients [36] and are proven to be cost-effective in reducing disease infections [37]. The integration and collaboration between various sectors and health cadres probably drive the successful result.

The present study is limited to the participants who are already health officers, and thus the information was mostly about the factors that were generally perceived in their area. Individual approach to collect the risk factors as well as the exploration on the way the parents received the program is required in further study. Also, because of the purposive sample, the data are limited for representation and description of stunting program prevention in Community Health Centers in Indonesia. In addition, the cadres who also play a role in the program were not recruited in this study because the exploration of the stakeholder becomes the main goal, and thus the experience of cadres is worth to be known.

5. CONCLUSION

The factors linked to stunting from community health workers' perspectives were poverty, low education and poor feeding practice, poor parenting, low birth weight, genetic disorders, infection, and poor sanitation. The management of the stunting prevention program was still focused on the health sector including surveillance helped by health cadres and initiative programs by Community Health Centers. The informants noted several challenges to stunting prevention programs such as the irregular consumption of supplementation and complementary feeding, invalid anthropometrics assessment measurement and results, and lack of monitoring and evaluation. More collaboration between various sectors and health cadres is required along with proper monitoring and evaluation on each program. Also, the family-based approach probably promises positive results in a setting like Indonesia, where community health workers or cadres also hold important roles in public health.

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