

ORIGINAL RESEARCH

Stunting Prevention Based on Local Wisdom in Bantul Regency, Yogyakarta, Indonesia

Prevención del desmedro basado en la sabiduría ancestral de la regencia de Bantul, Yogyakarta, Indonesia

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Abstract

The large number of stunting cases worldwide is a global nutritional issue. Stunting is a problem that needs to be addressed since it can jeopardize future human resources and impact health and even child mortality. The Yogyakarta Special Region in Indonesia has managed to bring down the prevalence rate of stunting to a level below the national average. Bantul, a Yogyakarta regency, has been successful in bucking the trend of stunting cases for three years in a row (2020–2022). To facilitate their eventual implementation in other regions, this report outlines the procedures and initiatives that have been carried out in the Bantul Regency. To investigate the role of stakeholder efforts to expedite stunting reduction, this research used a qualitative study methodology using a case study technique. The following sources were specifically chosen as informants: the head of the Imogiri I and II Public Health Centers; the head of the Imogiri Sub-district; eight village heads in the Imogiri Village; the head of the Imogiri Office of Religious Affairs; and one coordinator of family planning cadres in Imogiri Village. Focus Group Discussions (FGD), in-depth interviews, and document reviews were the methods of data gathering employed in this study. Content analysis techniques were applied to the data. The head of the community health center utilized specific nutritional interventions by creating an innovative program, which provided additional food to toddlers, called Community Feeding Center (CFC), YourPROTEIN, and Alms One Egg Program. Sensitive nutrition intervention must involve cross-sector collaboration and synergy, by prioritizing the local Indonesian culture of *gotong royong* (community mutual assistance). It is essential to build a mindset in the community that stunting is a health issue, to maximize efforts to lessen stunting. Therefore, ongoing proactive communication interventions, using a variety of channels and approaches, are required at the village level.

Keywords: innovation, local wisdom, specific-nutrition intervention, sensitive-nutrition intervention, stunting

Resumen

El gran número de casos de desmedro en todo el mundo constituye un problema nutricional global. El desmedro es un problema que hay que abordar, ya que pone en riesgo los futuros recursos humanos y repercute sobre la salud e incluso en la mortandad infantil. La Región Especial de Yogyakarta, en Indonesia, ha conseguido reducir la tasa de prevalencia a un nivel inferior a la media nacional. Bantul, una regencia de Yogyakarta, ha logrado revertir la tendencia de retrasos en el desarrollo durante tres años consecutivos (2020–2022). Para facilitar su eventual aplicación en otras regiones, este informe expone los procedimientos e iniciativas que se han llevado a cabo en la regencia de Bantul. Para investigar el papel de los esfuerzos relacionados por los sectores involucrados para acelerar la reducción del retraso en el crecimiento infantil, esta investigación utilizó una metodología de estudio cualitativo mediante una técnica de estudio de casos. Las siguientes fuentes fueron elegidas específicamente como informantes: el jefe de los Centros de Salud Pública de Imogiri I y II; el jefe del Subdistrito de Imogiri; ocho jefes de aldea; el jefe de la Oficina de Asuntos Religiosos de Imogiri; y un coordinador de cuadros de planificación familiar en la aldea. Los métodos de recopilación de datos empleados para este estudio fueron: debates en grupos focales, entrevistas a profundidad y revisión de documentos. Se aplicaron técnicas de análisis de contenidos a los datos recabados. Las intervenciones nutricionales específicas fueron realizadas por el jefe del centro de salud de la comunidad mediante la creación de un programa innovador en forma de suministro de alimentos adicionales para niños pequeños llamado Centro de Alimentación Comunitaria (CFC, por sus siglas en inglés), *Your PROTEIN*, y el Programa "Dona Un Huevo". Se promovió la intervención nutricional sensible en forma de colaboración y sinergia intersectorial dando prioridad a la cultura del *gotong royong* (financiación colectiva), parte de la sabiduría local indonesia. Crear en la comunidad la mentalidad de que el retraso del crecimiento es un problema de salud fue esencial para maximizar los esfuerzos por minimizarlo. En resumen, se requiere una intervención de comunicación proactiva y continua a través de diversos canales y enfoques a nivel aldea.

Palabras clave: innovación, sabiduría local, intervención nutricional específica, intervención nutricional sensible, retraso en el crecimiento



Introduction

The high number of stunting cases throughout the world, an estimated 145 million stunted children under the age of 5¹, is a global nutritional problem. Stunting is a growth and development disorder experienced by children due to poor nutrition, repeated infections, and inadequate psychosocial stimulation; this causes delays in brain development and children's growth and development. The problem of stunting is important to resolve because it risks disrupting potential human resources and relates to health levels and even child mortality.² Stunting is a focus of national health development. The Indonesian Nutrition Status Survey (INSS) found that the prevalence of stunting in Indonesia in 2021 was 24.4%, this condition is still quite high according to WHO (>20%).³

The Special Region of Yogyakarta, Indonesia has reduced the stunting prevalence rate to lower than the national figure. Based on the 2022 INSS in the Special Region of Yogyakarta, the prevalence of stunting was 16.4%, which was a decrease compared to 2021 with a prevalence of 17.3%,⁴ with the following figures for Gunungkidul Regency 23.5%; Bantul Regency 14.9%; Kulonprogo Regency 15.8%; Sleman Regency 15%, and Yogyakarta City 13.8%. Based on Nutritional Status Monitoring (NSM), Bantul Regency has successfully reduced the trend of stunting cases for three consecutive years (2020-2022). Trend data on stunting cases shows that the prevalence of stunting in Bantul Regency continues to decline from 2020 to 2022, respectively 9.74%, 8.36%, and 6.42%.⁵ Imogiri is the sub-district with the highest stunting rate in the Bantul Regency. Imogirisub-district has two Primary Health Care (PHC) working areas, namely Imogiri I PHC and Imogiri II PHC. The stunting rate for each PHC in February 2023 is 11.68% for Imogiri I and 15.49% for Imogiri II. In the Imogiri II PHC working area, there is one village with the highest stunting rate in Bantul, namely Selopamiro Village with 18% stunting cases⁶

The problem of stunting is still seen mostly as just an issue of malnutrition, so responses are still focused on institutions and health service providers. Therefore, the community-based

stunting prevention program becomes the focus of national development to prevent or control disease, injury, disability, and death.⁷ Actions to prevent stunting are carried out through two interventions. First, specific nutritional interventions target the direct causes of stunting. Second, sensitive nutritional interventions target indirect causes.⁸ The program to accelerate stunting reduction in Indonesia adheres to Presidential Decree No. 72 of 2021, where Stunting Reduction is defined as every effort which includes Specific Interventions and Sensitive Interventions, implemented convergently, holistically, integratively, and with quality, through multi-sector collaboration at the central, regional and village levels.⁹ Sensitive interventions play a big role, namely 70%, in reducing stunting prevalence rates, while specific interventions make up 30%¹⁰.

The reduction in stunting rates achieved by the Bantul Regency cannot be separated from the role of the Stunting Reduction Acceleration Team and Family Assistance Team. The Stunting Reduction Acceleration Team coordinates, synergizes, and evaluates the implementation of stunting reduction acceleration. In this way, this team becomes a forum for implementing multisectoral convergence actions tasked with carrying out convergence, coordination, and consolidation of central, regional, and village programs, as well as the role of stakeholders. This team consists of heads of regional government and heads of related institutions.¹¹

The Family Assistance Team consists of midwives, cadres of Empowerment and Family Welfare (EFW)*, and family planning cadres to carry out assistance, including counseling, facilitation of referral services, and facilitation of acceptance of social assistance programs for prospective brides/prospective couples of childbearing age, pregnant women, postpartum mothers, and children aged 0-59 months, and conducting surveillance of families at risk of stunting to detect early risk factors for stunting. In various conditions, the composition of the Family Assistance Team can be adjusted by collaborating with midwives from other villages/districts or involving nurses or other health workers.¹² The success in reducing the stunting rate in Bantul

Regency highlights the need for a study to evaluate the effectiveness of the practices implemented in this region to accelerate stunting reduction. This study aims to outline the steps and activities undertaken in Bantul Regency, providing insights that can be implemented in other areas.

Methods

This research used a qualitative study design with a case study approach to explore the role of stakeholders regarding efforts to accelerate stunting reduction. Informants were selected purposively, with the criteria that they had been part of the accelerated stunting reduction program for the last two years and were willing to become research informants. The main informants in this research are stakeholders involved in the program to accelerate the stunting reduction in the Bantul Regency area, consisting of: the Family Assistance Team, namely the Head of Imogiri I Public Health Center (PHC) and the Head of Imogiri II PHC. The Stunting Reduction Acceleration Team consists of the Head of the Imogiri Sub-district; eight village chiefs in the Imogiri region; the head of the Imogiri Office of Religious Affairs; one coordinator of EFW and one coordinator of family planning cadres in Imogiri Village. The data collection techniques used in this study consisted of in-depth interviews, Focus Group Discussions (FGD), and document review. Data collection using in-depth interviews was aimed at the heads of Imogiri I and Imogiri II PHC, as well as the coordinator of family planning cadres. The FGD involved the head of the Imogiri Sub-district; the head of the Imogiri Office of Religious Affairs; the coordinator of EFW, and eight village chiefs in the Imogiri region. The document review was carried out by examining stunting prevention policies in Bantul Regency, namely Bantul Regent Regulation Number 8 of 2022, Amendment to Bantul Regent Regulation Number 72 of 2019 concerning Stunting Prevention, and Regent's Decree No. 97 of 2022 concerning the Formation of a Team to Accelerate Stunting Reduction. Data was analyzed using content analysis techniques. This research has obtained ethical clearance from the Ahmad Dahlan University research ethics committee with approval number 012309206.

Results

In implementing the stunting prevention acceleration program, the Bantul Regency Government follows the direction of the national strategy and the central government's framework of reference for intervention. Acceleration is prioritized on increasing intervention coverage in the first 1000 days of life. Interventions are based on a targeted approach, specific nutrition interventions, and nutrition-sensitive interventions. For specific nutritional interventions, the health sector responsible is the Department of Health with the technical implementation unit Imogiri I and Imogiri II PHC in the Imogiri Sub-District area. These two health centers have carried out a series of stunting management programs, while also having innovation programs that are unique to the health centers. The description of the form of intervention carried out is as follows

1. *Specific nutrition interventions*

Specific nutritional intervention is an intervention that involves the health sector, targeting the direct causes of stunting. Regular specific nutrition intervention programs carried out by Imogiri I and Imogiri II PHC to reduce stunting rates include visits to the homes of stunted patients, classes for mothers of stunted toddlers, and clinical examinations by referring stunted toddlers to hospitals. Apart from that, efforts are also being made to prevent the emergence of new cases of stunting through bride and groom classes, pregnant women classes, and interventions for adolescents.

During the home visit, the PHC team carried out an initial assessment, such as interviewing the toddler's parents, observing the condition of the house, and carrying out food surveys. From this home visit, the results showed that the majority of toddlers suffering from stunting had poor eating patterns which were motivated by low maternal knowledge and were exacerbated by poor home conditions and sanitation. This is in accordance with the following interview quote, which asked, based on analysis in the field, what causes stunting?

"On average, sis, almost all of them don't have a good diet, so they don't eat animal protein every

day, well, there are many reasons for this because their mothers don't understand... many people, the house is not suitable, it's mostly damp, so the mattress is near the wall so it's damp." (Head of Imogiri I PHC)

Additionally, there is an activity called "The class for mothers of toddlers with stunting." This activity is an educational class for mothers who have stunted children regarding food assistance, hygiene and sanitation in the domestic area, and common diseases in toddlers. The health practitioners, such as medical doctors, nutritionists, and the community health and environmental staff from the public health center deliver the materials. This activity aims to increase knowledge of stunting among mothers who have stunted children under five years old. Imogiri I PHC refers children with nutritional assessments considered to be severe stunting (Z-Score < 3 SD) to Panembahan Senopati Regional Hospital, which is the closest regional hospital. As of June 2023, 40 children have been referred for further clinical examination to determine comorbidities that cause the child to become stunted. Imogiri II PHC collaborates with the Indonesian Doctors Association to carry out clinical examinations on toddlers suffering from stunting. From the results of the clinical examination, it was found that several toddlers suffering from severe stunting had comorbidities such as heart disease and tuberculosis.

Prevention of stunting for pregnant women is carried out through integrated Antenatal Care (ANC) and pregnancy classes by providing stunting education to increase awareness, held once a month. Prevention of stunting in prospective brides and grooms is in the form of health screening, namely carrying out laboratory blood sugar tests, measuring height and weight, screening for chronic energy deficiency, and screening for other diseases as well as providing health education through counseling.

The stunting prevention program targeting adolescents is realized in the distribution of Fe tablets and adolescent community health services. Fe tablets are distributed through several junior and senior high schools in the Imogiri Sub-district area. However, there is no control system to ensure whether Fe tablets are consumed by

adolescents or not, and this is a weakness of this intervention. The adolescent community health services were implemented in one of the villages with the highest stunting rate in the Imogiri area, namely Selopamioro Village. In these adolescent community health services, counseling is provided regarding adolescent health in general, including stunting prevention material. However, many adolescents find these activities less interesting so their participation is low. To follow up on this, the PHC will invite adolescents to discuss the education model they prefer.

"We do prevention starting from teenagers. With the distribution of Fe and held ICH for adolescents, the weakness is that there is no control system to know whether the Fe is actually being taken by teenagers or not. Well, the youth ICH contains counseling which is sometimes less interesting for teenagers. "So the plan is for you to gather teenagers to ask what they want, what they like so that we can create a program with high youth participation." (Head of Imogiri II PHC)

In addition to regular programs implemented by Imogiri I and Imogiri IIPHC to reduce and prevent stunting, both PHCs also organize innovation programs based on local wisdom to reduce stunting cases, namely:

a. "YourPROTEIN" Innovation

Your PROTEIN is an innovative initiative created by the Imogiri I PHC at the beginning of 2023. It is implemented by finding foster parents who commit to providing one child under two years old with wholesome food for 90 days. The allocated cost is approximately 20 USD per child per month. This fee is used to provide nutritious food. This food is processed by health cadres and distributed to stunted children in the form of ready-to-eat food. As of June 2023, Imogiri I PHC received 13 donors for 13 children. If after 90 days of intervention, the children have not experienced an improvement in their nutritional status, the community health center will carry out a clinical examination to determine whether they have comorbidities. The following is an excerpt from an interview with an informant regarding the Your PROTEIN program

"We have Your PROTEIN program, so we are looking for foster parents who want to pay for

stunted children, the focus is under 2 years.... So, one foster parent will pay for food for 1 stunted child, but the food is not raw. It is cooked by the cadres so it's ready to be eaten with the toddlers. This lasts for three months, so 90 days according to the recommendation, this has only been going on for one month so far" (Head of Imogiri I PHC).

b. "Community Feeding Center (CFC)" Innovation

The CFC program is a balanced food-eating center where the Imogiri II PHC gathers 50 stunted toddlers to eat together in one place, specifically in two villages, Selopamioro and Sriharjo. This CFC activity is carried out every day with food cooked by local health cadres. Toddlers participating in CFC will come to the location once a day for 90 days to eat together at that location. The families are not allowed to take the food home, which ensures that the toddlers eat the food provided until it is finished.

CFC activities are evaluated every two weeks by measuring the nutritional status of participating toddlers. If during two consecutive evaluations, a toddler experiences an improvement in nutritional status (no longer stunted) then the toddler will be declared passed and replaced by another stunted toddler. On the other hand, if a stunted toddler experiences a decline in nutritional status during two evaluations, he will be removed from the CFC program and then referred for clinical examination at the hospital, and replaced by another stunted toddler. So the number of stunted toddlers participating in CFC is always 50 stunted toddlers. This CFC activity is sponsored by funding from the Indonesian Doctors Association until July 2023 and will be continued by funds from the Sub-district Headquarters. Indonesian Doctors Association has also carried out examinations on all toddlers participating in CFC and it is known that 41% of stunted toddlers suffer from anemia, and 52.1% of stunted toddlers suffer from leukocyte infections.

c. "Alms One Egg" Innovation

Alms One Egg Innovation Program is an innovation program at the Imogiri II PHC where every Friday the PHC officers donate one egg to be distributed to stunted toddlers in the work area of Imogiri II PHC. As of June 2023, there are 11 stunted toddlers with low socio-economic levels as

recipients of Alms One Egg assistance. This activity is evaluated every two weeks. If for two consecutive weeks, the toddler experiences an improvement in nutritional status, the toddler is declared to have passed and replaced with another stunted toddler.

2. *Sensitive nutrition interventions*

Sensitive nutrition interventions address indirect causes of stunting. The sensitive nutrition intervention in this research involved the sub-district government, village government, religious affairs office, cadres of EFW, and family planning cadres. The intervention program carried out by each stakeholder is as follows:

a. Imogiri Sub-district government

In the Special Region of Yogyakarta, the sub-district head is called Panewu. According to Panewu Imogiri, handling stunting is a shared responsibility. To reduce the number of stunting cases in the Imogirisub-district area, Panewu wrote a letter of instruction down to the community level which focuses on increasing public awareness that stunting is a collective matter and funding does not only come from the government. PanewuImogiri also explores the potential for stunting prevention through culinary entrepreneurs in the Imogirisub-district area by donating a small amount of their food to children suffering from stunting, involving the organization of Village-Owned Enterprises (BUMKal*), funding participation from communities with sufficient economic capacity, both those with children and those without a toddler. To accommodate all efforts to overcome stunting, PanewuImogiri initiated the "Stunting Free Neighborhood" movement.

b. Village Governments

ImogiriSub-district consists of eight villages, and each village has implemented programs to prevent and overcome stunting, including promotion of stunting prevention and control through EFW forums, providing additional food to toddlers through the allocation of village funds, stunting-related training for health cadres and toddler mothers. In more detail, the programs that have been carried out are described in Table 1

Table 1. Stunting Program implemented in Village

No	Name of Village	Stunting Program	Obstacles experienced
1.	Wukirsari Village	a. Wukirsari EFW team in Wukirsari village visits the integrated health care center every month b. The supplementary food program is carried out in the form of ready-to-eat food which can be picked up at the Village Office c. Monitoring Your PROTEIN program d. Collaborating with the Indonesian humanitarian-based institutions that manage zakat and alms named BAZNAS and Dompot Duafa, for assistance in providing additional food e. Budgeting village funds for providing additional food and equipping integrated health center equipment in collaboration with the private sector and the Maritime and Fisheries Service of Bantul City	Some parents actually feel happy to receive assistance from the urban-village government in the form of providing additional food, so that they do not consider stunting as a serious problem for their children's growth and development.
2.	Imogiri Village	a. Imogiri EFW team collaborates with PHC cadres to monitor stunting toddlers b. Monitoring Your PROTEIN program c. Budgeting funds for stunting through the 2023 Regional Government Budget, if it is insufficient, it will be covered with an additional budget	(Did not report any obstacles)
3.	Girirejo Village	a. Budgeting of USD 400 for 40 stunted children from the village's Regional Government Budget b. Girirejo EFW provides health education about good eating patterns for children <2 years old c. Girirejo EFW provides outreach on the use of yard land so that it can be used for family medical plants and catfish cultivation by families d. Girirejo EFW plans to hold outreach on adolescent reproductive health	Some residents feel embarrassed if their child is detected as stunted, so they are reluctant to participate in stunting programs
4	Karangtalum Village	a. There is an appeal that supplementary food for toddlers at integrated health centers must contain rice, fish (or other types of animal protein), and vegetables.	a. Some families have more than three children closely spaced b. Sometimes integrated health centers for toddlers do not comply with the rules for providing additional food by only providing green bean porridge
5	Kebonagung Village	a. Kebonagung EFW team visits every month to pregnant women, toddlers, and prospective brides and grooms (if any) b. Training on feeding babies and toddlers in the	(Did not report any obstacles)

		<p>form of practicing correct food processing methods at each <i>Integrated Community Health (ICH)</i>*</p> <p>c. Budgeting Urban-Village funds for providing additional food</p> <p>d. Use of <i>Neighborhood Association</i>* budget to handle stunting</p> <p>e. There is an agreement between the <i>Village Consultative Body (BAMUSKAL)</i>* and the Urban-Village government for budgeting stunting funds which are realized by conducting socialization about stunting in every RT</p>	
6	Karangtengah Village	<p>a. Assistance from health cadres and ICH for stunting toddlers</p> <p>b. Stunting budgeting from village funds and Budget from the Regional Government Budget</p> <p>c. Organizing parenting classes</p> <p>d. The marriage arrangement procedure must have a certificate obtained from an electronic application that contains information for the prospective bride and groom before being signed by the village government</p> <p>e. There are home visits to stunted toddlers</p>	<p>a. The additional food given to toddlers is eaten by other family members</p> <p>b. Mothers pay less attention to the need for animal protein consumption in toddlers and replace it with milk</p>
7	Sriharjo Village	<p>a. Invite pediatricians to examine stunted children who are suspected of having comorbidities to provide treatment</p> <p>b. Assistance to pregnant women at high-risk</p> <p>c. Monitoring Alms One Egg program</p> <p>d. Education regarding nutritional requirements for prospective brides and grooms</p>	<p>Some mothers refuse to provide additional food in the form of eggs because they self-diagnose that their children are allergic to eggs</p>
8	Selopamioro Village	<p>a. Implementing the CFC and Alms One Egg programs</p> <p>b. Distributing assistance from PHC in the form of USD 200 per month to 15 children (children who receive aid change every month)</p> <p>c. Providing a token of service to health cadres in the form of transportation money when visiting stunted toddlers</p>	<p>There is a mindset in society that animal protein is expensive food, so people do not prioritize animal protein for children's consumption</p>

c. Imogiri Office of Religious Affairs

For the Office of Religious Affairs, the main duties regarding stunting are at the prevention level. Stunting prevention in the realm of the Office of Religious Affairs is integrated into marriage guidance classes, whereby 2023, 100% of prospective brides and grooms will have been guided in these classes, which are held twice a month. In the marriage guidance class, prospective brides and grooms will receive marriage

preparation guidance, which includes education regarding nutrition and parenting patterns to prevent stunting. Apart from that, information about stunting is also conveyed in religious forums in narratives with religious messages, as conveyed by the head of the Imogiri Office of Religious Affairs in the following quote.

"So we convey stunting in a religious narrative, that reducing or preventing stunting is one of the religious commandments because one of the

humans' duties is to create a good generation, a good generation that is not stunted." (Head of Imogiri Office of Religious Affairs)

d. Cadres of EFW

The role of EFW mothers in reducing stunting rates is realized by participating in ICH activities held every month. EFW cadres help provide additional food and distribute it through ICH. EFW cadres are also involved in budgeting funds to purchase ICH equipment, in this regard they collaborate with the private sector, and Indonesian humanitarian-based institutions named *Baznas*, and *Dompét Duafa*. Apart from that, EFW cadres also monitor the implementation of innovation programs from community health centers, namely Your PROTEIN, CFC, and Alms One Egg as well as the implementation of toddler classes from Imogiri I Community Health Center.

e. Family Planning Cadres

Family planning cadres who are under the authority of the Department of Women's Empowerment and Child Protection, Population Control and Family Planning, Bantul Regency, implement stunting prevention programs by optimizing the Three Family Development programs formed by The National Population and Family Planning Board, namely Family Development for Toddlers, Family Development for Teenagers, and Family Development Elderly, as well as the Youth Information and Counseling Center. Of the three Family Development programs, the stunting program prioritizes Family Development for Toddlers. However, the implementation of the Family Development for Toddlers is often hampered due to limited funding. Family planning cadres highlighted that the high number of stunting cases in Imogiri cannot be separated from the high number of unwanted pregnancies and the high number of unmet needs in the 35-40-year-old age group. Unmet need is the percentage of married women who do not want to have more children or want to space births but do not use contraception. One of the causes of the high rate of Unmet Need is the existence of religious sects that prohibit their adherents from using contraception so that they have many children with close birth spacing.

The family planning cadres also said that the low level of education of residents in one of the villages with the highest stunting rate (Selopamiro Village) was an obstacle in providing stunting prevention education, where it was known that many residents had only graduated from elementary school. This is also thought to be the cause of poor toddler diets. Toddlers are often only given ready-to-eat food such as instant noodles and low consumption of animal protein and vegetables. This condition is exacerbated by the low economic capacity of residents.

Therefore, to prevent long-term stunting, family planning cadres will form "Genre Ambassadors" where each sub-district sends two teenagers as representatives. A "Genre Ambassador" is a young man or woman selected as a role model and motivator among teenagers, who will play a role in providing insight to the younger generation about reproductive health. It is hoped that this Genre Ambassador activity can involve all teenagers in promoting the prevention of stunting and early marriage.

"There are lots of families who have lots of children and they are still small, so it seems like they are not taking good care of their children... because in Selopamiro there is a kind of religious sect that forbids using birth control, so that's how it is, plus the people's economy is low, and many of them are elementary school graduates. Nowadays, it's difficult for just elementary school graduates to be educated, it's difficult for them to understand." (Family Planning Cader)

Discussion

Stunting syndrome includes several pathological changes, characterized by linear growth retardation in early life associated with increased morbidity, mortality, and decline in physical and neurological development as well as an increased risk of metabolic disease into adulthood. Stunting is a cycle because women who are stunted in childhood tend to also have offspring whose growth and development are hampered, thus creating a cycle of intergenerational poverty and a decline in the quality of human resources that is difficult to stop.¹³

As a member of the United Nations (UN), Indonesia is committed to reducing the prevalence of stunting and making it a focus for public health. Presidential Regulation No. 72 of 2021, Accelerating the Reduction of Stunting Rates in Indonesia, is expected to further accelerate the reduction of stunting, utilizing among its strategies Scaling Up Nutrition (SUN).¹⁴ As support for national regulations and the commitment of regional governments at the district/city level, there are renewal programs that encourage accelerated efforts to combat stunting carried out by the Bantul Regency Government in the form of specific nutrition interventions and sensitive nutrition interventions, by developing innovation programs based on local wisdom.

Specific nutrition interventions

Through a specific nutritional intervention framework, the concept of handling nutritional problems becomes the responsibility of the health sector, which can reduce the risk of stunting. The main target group for specific nutritional interventions is babies in the first 1000 days of life.¹⁵ The focus on stunting management in the form of specific nutritional interventions in the First 1000 Days of Life is an important intervention because the period from pregnancy to the child's two-year-old age is a crucial period for the onset of stunting.¹⁶ Substantial improvements in postnatal growth are likely to depend on improved intrauterine growth, especially during early pregnancy, such as providing the micronutrients iron and folic acid.^{17, 18} In this research, we see that the application of interventions in preparation for pregnancy to achieve the optimal First 1000 Days of Life was given to teenagers and prospective brides in the form of education and provision of Fe Tablet supplementation. It is estimated that specific nutritional interventions in the form of special nutritional intervention packages (provision of maternal folic acid, calcium, supplementation of vitamin A, zinc, and several micronutrients as well as balanced energy protein; promotion of breastfeeding and appropriate complementary foods, and management of moderate and severe malnutrition) are improved to up to 90% coverage, and stunting will be reduced by an average of 20.3% (range 10.2–28.9%) and under-five

mortality will be reduced by 15% (range 9–19%).¹³

Anemia was present in the majority of stunted children, and anemia is significantly exacerbated by numerous nutritional deficiencies, malaria, and other illnesses.¹⁹ So targeted dietary therapies also seek to raise children's hemoglobin (Hb). In children under 5 years old, higher Hb concentrations were linked to daily and sporadic iron supplementation, vitamin powders, treatment for malaria, usage of insecticide-treated nets (ITNs), postponed cord clamping, and daily iron-folic acid supplementation in children older than five years old.²⁰

Implementation of specific nutritional interventions, especially in the First 1000 Days of Life period, often meets with obstacles, both in terms of community participation and in terms of program capacity, as experienced by the Bantul Regency Government in this study. Various similar obstacles were also experienced by other regional governments in implementing the First 1000 Days of Life movement as an effort to reduce stunting. A systematic review reported that the obstacles experienced were the high prevalence of anemia in pregnant women due to the low coverage of Fe tablet supplementation in adolescents and pregnant women, participation of mothers who exclusively breastfeed, low community participation in *ICH*, and basic immunization coverage have not yet reached the target. Additionally, weak program capacity in the form of the absence of stakeholder involvement, limited support for infrastructure and personnel, lack of special budgeting, and minimal monitoring and evaluation of First 1000 Days of Life Movement program activities were also reported as factors inhibiting the provision of specific nutrition interventions.²¹

Sensitive nutrition interventions

Stunting management initiatives are based on the premise that the causes of malnutrition are multisectoral, so solutions to the problem of malnutrition also require a multisectoral approach, in the form of sensitive nutrition interventions.²² It is noted that about 40% of the impact came from direct and indirect nutrition-related health

strategies, 50% from other sectoral strategies, and 10% remained unexplained. Improvements in child growth faltering and reductions in stunting were related to investments within and outside the health sector. Notably, some of the biggest benefits came from advances in maternal nutrition, maternal education, comprehensive mother and child health care, and fertility patterns.²³

Sensitive nutrition intervention is the government's effort to minimize the incidence of stunting through activity programs outside of the health aspect(15).A study identified that nine multisectoral determinants have the potential to contribute to achieving the goal of reducing stunting rates if applied adequately, namely maternal Body Mass Index (BMI), maternal height, ANC visits ≥ 4 times, delivery in a health facility, reduction in child disease rates, asset index, mother's education, father's education, and distance between previous births.²⁴

Kapanewon Imogiri, Bantul Regency applies cross-sector collaboration in carrying out sensitive nutrition interventions by involving the sub-district and village administrators, the religious affairs office, EFW, and family planning cadres to handle and prevent the problem of stunting, especially in providing additional food for toddlers who are diagnosed with stunting. The steps taken by the Sub-district Imogiri government are deemed appropriate, because various policies and programs initiated or implemented in various sectors are considered potentially relevant to reducing stunting and anemia in children over time, including those that focus on feeding infants and young children.²⁵

Stunting is substantially more common in children older than one, in boys, in low birth weight, in pregnancies that were closer together in time, in women with less education, and in households where there was a lack of food. Important risk factors include maternal education, feeding habits, and environmental aspects (such as climate change). Given that these are the most powerful drivers, policies and interventions should focus on women's education, child-feeding habits, and environmental issues, including climate change.^{26, 27, 28} However, this study found that there is still a need to increase collaboration and synergy with

sectors dealing with environmental sanitation, clean water supply, education, and poverty eradication. Another study emphasizes that the availability of clean water is needed to realize the behavior of washing hands with soap, maintaining personal and environmental cleanliness as well as the mother's ability to practice breastfeeding and complementary foods.¹⁵

Cross-sector meetings at the sub-district and Kapanewon levels need to be increased to map the development of stunting conditions in each region, and there needs to be collaboration and synergy between each sector and program, especially in terms of budgeting and utilization of stunting prevention funds so that there is no overlapping of programs. Other countries also feel the lack of optimal coverage of planning and monitoring of stunting-sensitive nutritional interventions. Research on nutrition-sensitive interventions in Ghana states that there is no integrated nutrition surveillance system to track the implementation and coverage of stunting interventions across sectors. The existing health information management system only monitors health programs (including nutrition) but not information systems in other sectors such as agriculture, social protection, education, etc..²⁵

The lack of optimal collaboration and synergy between sectors to implement specific nutrition interventions, especially for sensitive nutrition, was found in this research. The continuation of the CFC program and clinical examinations for stunted children initiated by the Indonesian Doctors Association at the Imogiri II PHC needs to be followed up by other parties so that the stunting alleviation program can run optimally. The same financial limitations are also often found in stunting prevention interventions in various regions.^{25,29,30,31}

Reflecting on the problems above, for sustainable prevention and control of stunting, it is necessary to increase public awareness and mainstream nutrition into other sector activities such as social protection and agriculture.²⁵ It was notable how the government and donors prioritized these important nutrition-sensitive programs. Community health workers stressed the significance of greater funding from donors and

development partners as a means of fostering the growth of healthcare providers and enhancing the capacity to address nutrition and the health of mothers, newborns, and children.³²

Sub-District Imogiri's efforts to overcome budget limitations in tackling stunting involve putting aside competition between institutions, instead emphasizing cooperative, collaborative, and synergistic principles. To overcome budget limitations at the government level, individuals come together as a community to participate in forms of alms, such as giving one egg to one individual on Friday in the Alms One Egg program. The involvement of professional associations, such as the Indonesian Doctors Association, in budgeting and monitoring the results of nutritional interventions, as well as the involvement of universities through research activities, community service, and teaching at stunting locations, has also helped accelerate stunting reduction.

The findings of this study agree with findings which state that overcoming stunting is a shared responsibility of the community, and not just of the government.³³ Community independence is the key to the successful direction of nutrition program performance.³⁴ Implementation of stunting prevention policies can provide effective results if driven by the development of empowerment-based community participation, collaborative funding support between the government and the community, prioritizing local wisdom, and innovative initiatives implemented as solutions to overcome existing inhibiting factors.³⁵ Innovations carried out by the community in Alms One Egg and CFC activities, by prioritizing local wisdom, have been carried out by the Bantul Regency Government, upholding the principle of *gotong-royong* which means cooperation which is a characteristic of Indonesian culture.³⁶

Conclusion

The keys to success in efforts to overcome and prevent stunting in Bantul Regency are collaboration and synergy. Collaboration, which is a part of local wisdom in Indonesian society and is called *gotong-royong*, was realized by crowdfunding, crowdsourcing by EFW, and health

cadres who work together to cook healthy food during the sensitive nutrition intervention period. *Gotong-royong* is also utilized to acquire food sources (donated eggs) and for discussion (deliberation for planning and evaluating stunting programs). Another key to success is innovation. Innovation is realized in specific nutritional interventions, especially in efforts to provide additional food for toddlers by developing the CFC, YourPROTEIN, and Alms One Egg programs.

Recommendation

It is crucial to build a mindset in the community that stunting is a health problem and that continuous proactive communication intervention is needed at the village level through various methods and channels, such as the ICH program. To support this, it is necessary to optimize the role of stunting cadres or add EFW cadres who specifically help deal with nutritional problems (stunting) in villages with the support of operational funds from the Government and across sectors.

Every level of government, from villages, sub-districts, and regencies, should hold stunting prevention planning meetings to synchronize planning and budgeting for stunting prevention programs, and if necessary this can be stated in regency regulations. It is also necessary to establish a Stunting Prevention Program by providing food intake with the high nutritional value of animal protein that is affordable from an economic perspective, by utilizing regional resources for livestock and agriculture, based on local wisdom.

Glossary of terms

*The *Empowerment and Family Welfare (EFW) program* is a community organization to empower women and participate in the development of Indonesia's prosperity.

**BUMKal* is the term for Village-Owned Enterprises in the Special Region of Yogyakarta, hereinafter

referred to as BUMKal, is a business entity whose capital is wholly or largely owned by the village

head.

**Integrated Community Health(ICH) is a forum for health care carried out from, by and for the community guided by relevant Officers*

** Neighborhood Association is a neighborhood unit that brings together several heads of families in each village and is led by one chairman*

**BAMUSKAL is an institution that functions as a community representative in planning, monitoring and implementing development at the sub-district or village level*

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