

Primary Health Service Efforts to Reduce Stunting in Children in Coastal Areas: A qualitative study

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Abstract: Background: The condition of stunting must be treated seriously, considering that stunting has an impact on disrupting cognitive, motor, and verbal development in children. Community Health Centers (Puskesmas), as a type of first-level health-service-facility, have an important role in the national health system, especially the health-effort-subsystem. The aim of the research is to understand the strategies and actions of community health centers in reducing stunting among children. Methods: Qualitative research with a phenomenological design involving 11 participants with in-depth interviews was used to collect data, which was then analyzed using Braun & Clark's theme framework. Results: According to the research findings, there are 4 main themes that describe the role of primary health services at community health centers in reducing stunting in children, including: 1. Revalidation of Stunting Rates in Children 2. Providing Education 3. Cross-sector Collaboration and 4. Providing Supplemental Food. Conclusion: It is hoped that there will be training to increase the competency of health cadres, and the role and cooperation of all components in reducing stunting in children.

Keywords: Children, Community Health Center, Stunting

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INTRODUCTION

Childhood Malnutrition is still a health-development-problem in the world, including in Indonesia. Health development is essentially the implementation of health efforts to achieve the ability to live a healthy life for every Indonesian citizen, as an effort to achieve optimal health status, and is a major contribution to the development and development of human resources as national development capital. The Millennium Development Goals (MDGs) has now been replaced with Sustainable Development Goals (SDGs), where the program has 17 goals with 169 measurable targets and specified deadlines ([Ermalena, 2017](#)).

Of the 17 goals contained in the SDGs, there are 2 goals in the second goal, namely: Overcoming hunger and poverty and ending hunger, achieving food security and improving nutrition and encouraging sustainable agriculture. In the second goal, there is a target that must be achieved by 2030, namely ending all forms of malnutrition, including achieving the international target, which is reducing stunting and wasting in children under 5. Stunting is a chronic nutritional problem, caused by insufficient nutritional intake over a long period of time, generally due to food intake that does not meet nutritional needs. Stunting starts in the womb and becomes visible when the child is two years old. Stunting has long-term effects, in the form of reduced cognitive abilities and physical development, as well as reduced health-capacity.

Community Health Center (Puskesmas) as a health service facility that carries out first-level public health efforts and individual health, by prioritizing promotive and preventive efforts to achieve the highest level of health in the working area of the Community Health Center ([Asriati et al., 2023](#)).

Stunting is a condition of failure to thrive in children under five years of age (toddlers) due to chronic malnutrition and recurrent infections, especially during the First 1,000 Days of Life (HPK), namely from the fetus to a child aged 23 months ([Kementerian Sekretariat Negara, 2021](#)). Children are classified as stunted, if their length or height is below 2 standard deviations for children of their age ([WHO, 2022](#)).

In Indonesia, the proportion of stunting in children aged 0-59 months in 2021 will be 24.4%. Based on SSGI-Data (2021) in North Kalimantan, the prevalence of stunted toddlers (height according to age) is (27.5) based on the district/city of Tanah Tidung Regency (22.8), Bulungan Regency (22.9), Malinau Regency (24.2), Tarakan City (25.9) and Nunukan Regency (30%) ([KEMENKES RI, 2021](#)). SSGI Data Results (2022) stunting incidents in North Kalimantan (22.1%), Tanah Tidung Regency (30.07%), Nunukan Regency (30.05%), Malinau Regency (23.5%), Bulungan Regency (18.9%), and Tarakan City (15.4%) ([KEMENKES RI, 2023](#)). Therefore, it is still above the threshold set by WHO of 20%.

The condition of stunting must be treated seriously, considering that stunting has an impact on disrupting cognitive, motor and verbal development in children. Stunted children with iodine and iron deficiencies can experience irreversible brain damage, which can prevent them from achieving optimal development (WHO, 2022). If stunting continues, it is estimated that 127 million children under 5 will experience stunting in 2025 (WHO 2022). To prevent this from happening, WHO targets, by 2025 there will be a 40 % Reduction in Stunting-Rates in under 5 years.

Families socio-economic status such as family income, parental education, mothers knowledge about nutrition and the number of family members can indirectly be related to the incidence of stunting. The results of KEMENKES RI (2013) show that the incidence of toddler stunting is largely influenced by low income and parental education. Families with high incomes will have easier access to education and health, so that children's nutritional status can be better ([Bishwakarma, 2011](#)). Research in Semarang states that the number of family members is a risk factor for Stunting in toddlers aged 24–36 months ([Nasikhah & Margawati, 2012](#)). Stunting is caused by multi-dimensional factors. The most decisive intervention at 1000 HPK (First 1000 Days of Life).

In Indonesia, preventing stunting is in line with the strategy focused by WHO, namely focusing on addressing the causes of nutritional problems, namely factors related to food security, especially access to nutritious food (food), and the social environment related to the practice of feeding babies and children (caregiving), access to health services for prevention and treatment (health), as well as environmental health, which includes the availability of clean water and sanitation facilities (environment). These four factors indirectly influence the nutritional intake and the health status of mothers and children. Interventions on these four factors are expected to prevent malnutrition, both undernutrition and excess nutrition. The results of the Indonesian Nutrition Status Survey in 2022 saw the stunting rate in the City of Tarakan decrease to 15.4%.

Based on the background and phenomena above, researchers are interested in conducting research on the role of community health center services in reducing stunting among children in coastal areas.

METHODS

This study explores the experience of community health centers in Tarakan City in reducing stunting in children; this is because Tarakan City is a city with the lowest prevalence of stunting for North Kalimantan Province and is below the standard set by WHO <20%. This research uses a qualitative research method with a phenomenological design. The informants are determined using purposive sampling considerations related to the research problem. Determining the number of informants considers the data, and the answers are saturated. The participants numbered 11 people with the following criteria: heads of health centers, nutritionists who have assignments in the field of stunting and the community, and are willing to be participants. The data collection instruments used were the

researcher himself, an interview guide, a digital audio recorder to record interview results, and field notes to record respondent expressions.

Data collection was carried out from July to September 2023. The data collection method was carried out using in-depth interviews for 50-60 minutes in a room attended only by researchers and participants. Data analysis is carried out by listening to the interview results and then writing them down in written text. This text is then read repeatedly while listening to the recording, to determine which statements are considered related to the research. These statements are then collected according to categories, sub-themes, and themes. The validity of the data was determined using four steps. Credibility by validating data on participants. Dependability by asking the second and third authors to audit all research activities. Confirmability by showing all documentation of research results to the second and third authors. Transferability means that researchers make research results complete and clear so that readers can easily understand them (Polit & Beck, 2017).

This research was conducted with due regard to research ethical principles and has received ethical approval from the Ethics Commission of the Faculty of Health Sciences, Universitas Borneo Tarakan, Indonesia.

RESULTS

The results of this research found that there were four themes based on the thematic analysis conducted by Braun and Clack Polit & Beck (2017). The four themes produced in this research describe the role of community health centers in preventing stunting, including: 1. revalidation of stunting rates; 2. providing education; 3. cross-sector collaboration; and 4. providing PMT (supplementary food provision).

Table 1. Participant Characteristics

Characteristics	n	%
Age		
>20	2	18.1
>30	4	36.4
>40	5	45.5
Gender		
Male	4	36.4
Female	7	63.6

Theme 1 (Revalidation of stunting numbers)

Revalidating stunting data to ensure data accuracy at the time of measurement and population data accuracy. The situation that caused the revalidation can be described in the participant's statement below:

During the pandemic period, to overcome the transmission, activities were limited, including at community health centers, so that children's measurements by health cadres independently, where there was concern that there would be bias in measurements, due to nonstandard equipment or errors in measurement techniques (P3).

Some of the Health-Cadres do not have a health-background, so they remeasure children, who are recorded as stunting, by inviting the children to the Community-Health-Center, and for those, who don't come, we carry out visits and measurements at people's homes (P4).

There are concerns about the high number of measurements of children at risk of stunting that there may be bias from previous measurements, so to ensure the accuracy of the data, revalidation is carried out (P5).

After the pandemic subsided, we coordinated again with the RT-Head, and it turned out that there were people with stunted children, who moved (P1).

There are immigrants who have wasting children who move to their hometowns (P10)

Theme 2 (Providing Education)

Providing education to the community to increase public knowledge regarding stunting prevention, the types of educational support provided to the community, for example:

Improving the quality and health services, providing health education regarding nutritional intake for children. We also created a Puspa-Friends-Program (P1).

Providing socialization of nutrition and the importance of fish consumption are intended so that the public understands the importance of nutrition for children in supporting children's growth and development, as well as preventing and reducing stunting in children (P5).

Provide education on the importance of using clean water and healthy toilets (P6).

When visiting and monitoring children at risk als Health-Cadres, we always remind children of the nutrition that children at risk get (P8).

Theme 3 (Cross-Sector Collaboration)

The completion of stunting must involve many parties. The participants also said that they had collaborated for the stunting prevention and control program. The experience in this study is expressed in the following excerpt:

To prevent and reduce children who are at risk of stunting, apart from involving health cadres in the Community, the Community Health Center also collaborates with the Sub-district, Health Service, TNI and CSR, as well as the Community (P3).

Apart from trying to reduce stunting according to our main duties and authority, we also collaborate with all components, both individuals and institutions, because every person and institution has a responsibility to care for reducing stunting (P5).

We together check the quality of drinking water at drinking water depot sellers to determine the quality of drinking water in the community (P11).

Collaborating with CSR in the procurement and distribution of basic necessities (P2)

Theme 4 Provision of PMT (Provision of Additional Food)

Participants also said that there was a supplementary feeding program to improve the nutritional status of children at risk of stunting and pregnant women at risk. The experience in this study is expressed in the following excerpt:

Delivery of nutrition to children when the child arrives at the growth and development clinic, where this activity is carried out after measuring the child's growth and development (P2).

We participate in improving children's nutrition by providing additional food for children for 90 days and monitoring days 1 to 6 in the form of snacks and day 7 in the form of complete meals (P5).

Preparation of additional food is carried out by health cadres in the form of snacks and complete meals with different menus in accordance with the guidelines/ Technical guide of the Ministry of Health (P1).

Providing PMT in the form of snacks and complete food from central funds for KEK-pregnant women and wasting-toddlers (P7).

DISCUSSION

Children are every family's dream. Apart from that, every family also hopes that their children will grow and develop optimally (physically, mentally/cognitively and socially healthy), be proud of and be useful for the country and the nation. As national assets, children must receive attention from the time they are in the womb until they become adults.

Measuring height is a process that can be said to be easy, but also difficult. Inaccuracy in the Measurement-Step can affect whether or not the Data obtained is valid. Errors in measuring children's height can also affect stunting rates in children ([Fuada & Irawati, 2014](#)).

During the Covid-19 pandemic with large-scale social restrictions, height measurements in Tarakan City were carried out independently by Health cadres and the results obtained were the height of children suspected of having stunting. Therefore, the health center in Tarakan City re-measured the measurement data carried out by cadres to ensure that the data was valid. After the measurements were carried out, a reduction in the number of children at risk of stunting in the Community was obtained.

Validation and Mapping, which is carried out by obtaining data from cadres, then filtering the data and then re-examining the weight and height of toddlers suspected of stunting in 5 Hamlets of Muncanglarang Village. Then, next, pinpoint the location using Google My Maps to create a stunting-datamap. Data validation activities for toddlers suspected of stunting were carried out in 5 Hamlets in Muncanglarang Village, Bumijawa District, Tegal Regency, namely Tirtajaya, Krajan, Mobok Dana, Mobok Karsih, and Tenjo. The tools used in this stunting data-validation-activity are meters and body-scales. For Mapping, location coordinates are used and entered in Google My Maps as a stunting map ([Purnaningsih et al., 2023](#))

Health development, as part of efforts to develop the whole human being, is carried out, among other things, durch child-health-efforts, carried out so early as possible, when the child is still in the womb. Children are the biggest investment for parents, therefore all kinds of efforts will be made by parents to provide the best for their children.

Socialization activities are the beginning of a series of all activities. Public understanding of the problem of stunting in children is still quite low. One way that can be done to increase understanding and awareness of the problem of stunting in children is by providing health-outreach ([Damanik et al., 2021](#)).

Results of research conducted in the Cempaka Community Health Center area, Banjarbaru, South Kalimantan. The research concluded that there was a significant relationship between the mothers education level and the incidence of stunting in children. Based on multivariate analysis, maternal education is the factor that has the most dominant relationship with the incidence of stunting in children. Education level has an influence on health, one of which is nutritional status. Individuals who have a high level of education are more likely to know healthy lifestyle patterns and how to keep their bodies fit, which is reflected in implementing healthy lifestyle patterns such as consuming a nutritious diet. Individuals with a high level of education tend to avoid it.

The results of the study by [Siagian & Ramschie \(2024\)](#) showed that mothers' knowledge about toddler nutrition was related to mothers' knowledge about stunting, with a significance value of 0.007 ($p < 0.05$). The most dominant cause of stunting is the low awareness of the community, especially

pregnant women, about the importance of nutrients in food, with the assumption that the food consumed is filling enough ([Roederer et al., 2014](#)). Effective prevention of stunting can be done through nutritional education to cadres, mothers of toddlers, pregnant women, and prospective mothers. Nutrition education, starting with the formation of study groups, is considered effective in preventing stunting because it provides a learning and discussion forum for mothers who have toddlers independently, but is still accompanied by a health facilitator.

Collaborative governance is a concept that describes cross-sectoral cooperation ([Emerson & Gerlak, 2016](#)). According to [Ansell & Gash \(2014\)](#), collaborative governance is defined as one government arrangement that involves non-state stakeholders in a collective decision-making process aimed at implementing public policy.

Policies and regulations issued by the government regarding efforts to overcome malnutrition are then followed up and interpreted in a series of programs and activities, carried out by each relevant ministry/institution in accordance with their main tasks and functions as a form of government intervention. Interventions carried out by the government are grouped in sensitive interventions and in specific interventions. Specific nutritional interventions are carried out by the Ministry of Health (Kemenkes) through Community Health Centers (Puskesmas) and Integrated Service Posts (Posyandu).

The results of a study conducted by [Imron et al \(2022\)](#) found that the program to accelerate the reduction of stunting does not only rely on the role of the Government but also provides space for other sectors (society) inclusively, so collaborative governance is needed. Therefore, inclusive participation from social actors is able to form a collective awareness on the basis of humanity that will work together to reduce stunting in society.

Activities to strengthen the knowledge and skills of health-cadre in monitoring children's growth, especially measuring body length/height, are very necessary, so that examination results are accurate. In this way, the measurement data reported by health cadres to the Posyandu becomes accurate data, which will be processed in stunting prevalence data in Indonesia. There needs to be synergy between Posyandu and local health centers to increase health cadres' knowledge about stunting and monitor and evaluate the implementation of length/height checks at Posyandu ([Rohmah & Arifah, 2021](#)).

One of the efforts to accelerate the reduction of stunting is through the Provision of Additional Food (PMT) of local food. Provision of additional food (PMT) is additional food, not a substitute for main food ([KEMENKES RI, 2023](#)). As one of the efforts to reduce stunting in 2023, the Health Center in Tarakan City, together with Health cadres, created a PMT program based on nutritious local food in the form of snacks and complete meals given to mothers with chronic energy deficiency (KEK) and toddlers washing.

The policy of providing additional food in the Health Center by involving cadres and the community in integrated health post activities. The Health Center has standardized procedures related to PMT. including: 1) Local food or food ingredients and not given in the form of money 2) Recovery PMT is only an addition to the food consumed by target toddlers daily, not as a substitute for main food. 3) PMT is intended to meet the nutritional needs of target toddlers, as well as a learning process and means of communication between mothers of target toddlers. 4) PMT is an activity outside the Health-Center-Building with a Community-Empowerment-Approach, that can be integrated in activities across programs and other related sectors.

The results of a study conducted by [Khoeroh, Himatul & Indriyanti \(2017\)](#) The coverage of infant and toddler output during the integrated health post (posyandu) who received PMT at the Sirampog Health Center in 2015 was 76.8%. This means that it is in accordance with the Sirampog Health Center policy and standards; however, children must always be considered in terms of food quality and quantity so that their health, especially nutritional status, can be optimal. Distribution of nutritious supplementary food to children together with household support must remain the pillars of intervention in addressing nutritional problems ([Roederer et al., 2014](#)).

It can be concluded that the importance of the accuracy of measurement, the importance of increasing knowledge through education so that the role of mothers and families can be optimized in

the growth and development of children, the importance of cross-sector cooperation because the causes of stunting are very complex, and the provision of additional food. Our study's results demonstrate the crucial role of health centers in mitigating stunting and nutrition issues, thereby safeguarding children from the risk of malnutrition and stunting. This study shows that, in addition to considering the methods and abilities involved, it is crucial to integrate the education system with an understanding of nutrition and stunting while also making maximum efforts to reduce stunting among Indonesian children. This study does not examine how much each topic contributes to the decrease in stunting..

CONCLUSIONS

Based on the analysis of the role of Community Health Centers in preventing stunting in children in coastal areas, several activities were found, including: Revalidation of stunting rates in children, providing education, cross-sector collaboration and providing additional food.

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AUTHOR CONTRIBUTION

Author 1 contributed to the study's conceptualization and design, data collection, and paper drafting. Author 2 contributed to data analysis (data reduction, data presentation, conclusion formulation, and verification) and the finalization of the manuscript. Author 3 was responsible for converting the recorded interviews into written form.

STATEMENT OF CONFLICT OF INTEREST

The author declares no conflict of interest for the publishing of this paper.

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DATA AVAILABILITY STATEMENT

The data underpinning the study's conclusions is not publicly available due to ethical and privacy considerations.

CONFLICT OF INTEREST

The authors hereby declare that there's no conflict of interest in this study, either with any institutions or individuals

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