

Improving Nutrition Literacy Through Social Behavior Change Communication in Stunting Prevention Efforts in Pundu Village

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Abstract

Stunting is a significant public health issue in Indonesia, particularly in rural areas such as Pundu Village and Kotawaringin Timur Regency. This study aims to improve community nutrition literacy through the Social Behavior Change Communication (SBCC) approach to encourage behavioral changes in stunting prevention. The research employed an initial survey to understand community conditions, followed by interpersonal communication-based socialization and community-based counseling. The findings indicate that most community members lack understanding of the importance of balanced nutrition, especially in providing proper nutrition for pregnant women and young children. The socialization activities enhanced participants' awareness of the importance of consuming nutritious food and adopting healthy lifestyles, although challenges such as limited resources and food accessibility persist. This study demonstrates that the SBCC approach effectively raises community awareness and is a strategic step for widespread application to reduce stunting prevalence in Indonesia.

Keywords

Behavioral Change; Nutrition Literacy; Stunting



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1. INTRODUCTION

Stunting is a serious issue that dominates Indonesia, particularly in Pundu Village, East Kotawaringin Regency. The high stunting rate in Pundu Village reflects a critical situation, with situational analysis data showing alarming figures. According to the 2018 Basic Health Research (Riskesdas) by the Indonesian Ministry of Health, the stunting prevalence rate in East Kotawaringin reached 48.84 percent, the highest in Central Kalimantan. However, as of December 2021, the stunting prevalence rate in East Kotawaringin decreased to 23.2 percent, marking a decline of 4.2 percent from 27.4 percent in 2020. These figures illustrate the Pundu Village community's significant challenges in preventing stunting and improving their children's health. Additionally, the common practice of using the river for bathing, washing, and defecation contributes to the unhealthy living patterns of the Pundu Village community.



Figure 1. Condition of Pundu Village
(Online Observation, 2024)



Figure 2. Condition of Pundu Village
(Online Observation, 2024)

Stunting is a global public health problem for children and a barrier to increasing income and national growth. Stunting is defined as a height-for-age measurement that is below two standard deviations ($<2SD$) from the World Health Organization (WHO) Child Growth Standards or below the international average height. It serves as an indicator of success in health, education, and societal development (Vaivada et al., 2020). Although stunting rates have declined over decades, an estimated 21.3% (144 million) of children under five worldwide experienced growth retardation in 2019. Global prevalence ranged from 34.5% in East Africa to 4.5% in East Asia in 2019 (Organization, 2023). These estimates indicate that approximately 17% of deaths among children under five years old are caused by stunting (Black et al., 2013).

Indonesia is among the countries with the highest stunting prevalence. The country has a high prevalence of malnutrition among children under five. The Basic Health Research results from 2010 and 2013 and Nutritional Status Monitoring in 2015 and 2017 show that the stunting prevalence remains high and has not decreased to the WHO threshold (Indonesian Ministry of Health, 2019). The stunting prevalence in 2010 was 35.6%, rising to 37.2% in 2013, with nutritional status monitoring in 2015 recording

29.0% and 29.6% in 2017. This means three out of ten children born in Indonesia experience stunting (Indonesian Ministry of Health, 2019).

Stunting is a multidimensional issue that affects not only children from low-income families but also those from well-off families (Galasso & Umapathi, 2012). Long-term work productivity, work capacity potential, earning capacity, and susceptibility to obesity and chronic disorders can be influenced by malnutrition. Stunting can manifest in various ways, but the best prevention strategies include exclusive breastfeeding for the first two years of life, a diverse and nutritious diet during childhood, a safe living environment, access to basic services such as water, hygiene, healthcare, and sanitation, as well as adequate maternal nutrition before, during, and after pregnancy (Dukhi, 2020).

The highest proportion of stunting occurs during the complementary feeding period (6–23 months), transitioning from exclusive breastfeeding (during the first six months of life) to diversified family foods while continuing breastfeeding. Stunted children are more likely to die from pneumonia or diarrhea (Olofin et al., 2013). Early-age stunting is associated with greater cognitive impairment and lower intelligence scores, leading to a reduction of one year in schooling and a 5–53% decrease in adult income (Hoddinott et al., 2017).

Raising community awareness about maternal nutrition from conception to age two is a crucial task for local and national governments (Rahman et al., 2016). Adequate complementary feeding is essential to promote optimal physical growth and brain development in infants and prevent stunting. This underscores the significance of providing pregnant and postpartum women with accurate and diverse nutritional information. Pregnant and postpartum women require sufficient and diverse nutrient intake.

Limited maternal knowledge can endanger child health and growth in utero and during development. Previous studies support this by indicating that young mothers whose children experience stunting often have low nutritional awareness (Rahman et al., 2016). Several specific behaviors or practices influence nutritional status during the critical first 1,000 days (from pregnancy to two years old), while complex and contextual determinants also affect individual decisions to adopt, test, adapt, and maintain certain behaviors or practices (Kim et al., 2018).

The Social Behavior Change Communication (SBCC) approach has been implemented in various previous programs to address stunting. However, this approach has not specifically targeted the unique challenges present in Pundu Village, such as the community's reliance on the river for daily needs, which impacts healthy

living habits. Therefore, this study aims to bridge the gap by applying a more intensive SBCC approach based on local strategies, including community leaders' involvement, community-based media use, and more systematic interpersonal communication interventions. Through this approach, the proposed solutions are expected to be more effective in improving nutritional literacy, parenting practices, and clean and healthy living habits among the Pundu Village community. With these educational and outreach efforts, community knowledge about stunting, its causes, and potential impacts is hoped to increase.

2. METHODS

This community service program is implemented using the Asset-Based Community Development (ABCD) method. ABCD is built upon the principles proposed by John McKnight and Jody Kretzmann, the founders of The Asset-Based Community Development (ABCD) Institute. The asset-based approach helps communities recognize their internal conditions and identify potential changes that can be made. This approach focuses on transformation, emphasizing what the community aims to achieve and assisting them in realizing their vision. McKnight and Kretzmann (Russell, 2022) Outlined six key principles that local enablers must uphold to ensure sustainable community empowerment: (1) appreciation, (2) participation, (3) positive psychology, (4) positive deviance, (5) inside-out development, and (6) the heliotropic hypothesis. Local enablers must integrate these principles into the stages of community service activities.

This initiative is carried out in Pundu Village, Cempaga Hulu Subdistrict, East Kotawaringin Regency, Central Kalimantan Province. Respondents or target audiences are purposively selected based on their relevance to the stunting issue, including pregnant women, breastfeeding mothers, *Poskesdes* (village health post) cadres, and young couples who have the potential to become change agents within their families. Sample selection is conducted with local health officers to ensure proper representation aligned with the study's objectives. A triangulation approach is applied by combining data from surveys, observations, and interviews to enhance the validity of the research findings. This technique helps identify significant changes in nutritional literacy and community behavior after the program's implementation and measure the effectiveness of the Social Behavior Change Communication (SBCC) initiative in preventing stunting.

The tools and materials used include communication media such as posters, brochures, and infographics designed with simple language and engaging visuals to

facilitate understanding. Additional materials include presentation tools for counseling sessions and educational booklets containing healthy dietary guidelines. These tools are designed to provide practical and applicable information to the community. At the same time, their effectiveness is evaluated based on how well they assist participants in understanding and adopting a healthy lifestyle.

3. FINDINGS AND DISCUSSION

The following are the stages of community service using the ABCD method, outlined in 5 (five) steps of assistance: discovery, dream, design, define, and destiny.

3.1. *Discovery*

The community's understanding and practices regarding nutrition literacy and stunting prevention in Pundu Village are identified in this stage. Data is collected through an initial survey, resident interviews, direct observation, and activity documentation.

Based on the situational analysis, Pundu Village faces serious issues related to stunting. Data from the 2018 Basic Health Research (*Riskesdas*) by the Ministry of Health of the Republic of Indonesia shows that the prevalence of stunting in Kotawaringin Timur Regency reached 48.84 percent, making it the highest in Central Kalimantan. Although this figure had decreased to 23.2 percent by December 2021, there are still significant challenges in preventing stunting and improving child health in Pundu Village. In addition to nutritional factors, the community's habit of using rivers for bathing, washing, and sanitation contributes to unhealthy living practices.

The survey results conducted on July 18-19, 2024, show that most of the community still has a limited diet, with a dominance of carbohydrates as the staple food. Knowledge about the importance of consuming animal- and plant-based proteins, vegetables, and fruits remains low. Additionally, there is an influence of local myths that restrict the consumption of certain foods, especially for pregnant women and children.

3.2. *Dream*

The targets for improving nutrition literacy and stunting prevention in Pundu Village are formulated in this stage. The community service team, local health workers, and the Family Planning and Empowerment (PLKB) officers engage in discussions to determine the expected outcomes. The achievement indicators refer to health

standards established in various scientific references and government policies related to nutrition and stunting. From the discussions, several strategic plans were developed as follows:

1. Designing Key Behavioral Change Messages

In the initial stage, the team designed key messages to encourage behavioral change. The messages focused on the importance of balanced nutrition as the key to preventing stunting. The key phrase used is "*Balanced Nutrition, Smart Children*," designed to be easy to remember and relevant to the community's needs.

2. Understanding Community Behavior

Initial observations were made to understand the community's knowledge of nutrition. The observations found that many families still did not understand the importance of food variety and nutritious eating patterns. Further exploration is needed to identify barriers to accessing information or applying healthy eating habits.

3. Analyzing Barriers and Drivers

An analysis of the barriers and drivers was carried out through direct observation and interviews with the community. Some barriers identified were limited resources and a lack of knowledge about healthy eating patterns. Meanwhile, existing potential, such as access to local food sources (fish, vegetables), could serve as a driver for adopting healthy eating habits.

3.3. Design

After identifying needs and situation analysis, the next step is to design a nutrition literacy intervention program for stunting prevention in Pundu Village. This design is carried out through discussions between the implementing team and local partners such as the Family Planning and Empowerment (PLKB) officers of Cempaga Hulu District and village officials. From the discussions, the activities to be carried out to achieve the program's goals were formulated:

1. Designing Communication Tools

Communication tools such as posters and brochures are designed with simple visual content and language that is easy to understand. The posters will be placed in strategic locations such as *posyandu* (integrated health posts) and the village hall to reach a wide audience. Meanwhile, infographics will be a practical guide for families to implement healthy eating habits.



Figure 3: Communication Tool - Stunting Prevention Poster



Figure 4: Communication Tool - Stunting Prevention Infographic

2. Implementation of Counseling, Campaigns, and Training Activities

a. Face-to-Face Socialization

Socialization activities will be held at the village hall, targeting pregnant women, breastfeeding mothers, and families with toddlers. Information will be delivered interactively, covering nutritious foods and balanced diets that can prevent stunting.

b. Discussion and Evaluation

Participants can discuss, ask questions, and share challenges in adopting healthy eating habits. The team will provide practical solutions that can be implemented using the resources available within the community.

c. Distribution of Educational Materials

Brochures containing information on healthy eating habits and balanced nutrition will be distributed to participants to deepen their understanding of the importance of proper and healthy eating patterns in preventing stunting.

3. Evaluation

After the implementation of counseling, campaigns, and training activities, an evaluation will be conducted to assess the program's impact on changes in community behavior in stunting prevention. This evaluation will include

assessing the knowledge gained by participants and whether there are noticeable changes in family eating habits.

3.4. Define

After designing the stages of the nutrition literacy program for stunting prevention, the next step is determining the implementation details, including the timeline and division of responsibilities for each party. This stage will be carried out in two main phases during the activities in Pundu Village:

1. Implementation Timeline

a. Phase 1: Face-to-Face Socialization (August 8-9, 2024)

This activity focuses on enhancing the community's understanding of the importance of nutrition in the first 1000 days of life. The socialization will involve pregnant women, breastfeeding mothers, and families with toddlers. The topics covered will include balanced nutrition utilizing local food resources. Additionally, interactive discussion sessions will play a key role in uncovering the challenges faced by the community and providing community-based solutions.

b. Phase 2: Strengthening and Initial Evaluation (August 29-30, 2024)

In this phase, there will be an in-depth review of the material and an initial evaluation of changes in the community's dietary behaviors. Collaboration with the PLKB officers of Cempaga Hulu District will help expand the scope of the activities and provide additional information on government programs related to stunting prevention.

3.5. Destiny

The technical stages in nutrition literacy assistance for stunting prevention in Pundu Village are carried out step by step according to the previously designed plan.

1. Implementation of Face-to-Face Socialization

The first socialization phase was held on August 8-9, 2024, at the village hall, with the main participants being pregnant women, breastfeeding mothers, and families with toddlers. This activity aims to enhance the community's understanding of the importance of nutrition in stunting prevention.

a. Delivery of Material

The material presented focused on fulfilling balanced nutrition during the first 1000 days of life. Emphasis was placed on the types of food required for optimal child growth and development, including animal protein (fish, eggs), vitamins, minerals, and the benefits of vegetables and fruits.



Figure 5: Face-to-Face Socialization Activity on August 8-9, 2024

b. Interactive Discussion and Identification of Challenges

A discussion session was held to understand the challenges faced by the community in providing nutritious food. Some of the obstacles raised by the participants included limited resources, access to nutritious food, and the persistence of local myths that influence family eating habits.

c. Community-Based Solutions

Educating participants on using local resources, such as fish and vegetables from their gardens, provided practical solutions. This strategy aligns with the community-based approach of utilizing local food resources to prevent stunting.

d. Distribution of Educational Materials

To reinforce the participants' understanding, educational materials in the form of brochures were distributed. The brochure contained information on the importance of balanced nutrition and tips for healthy eating patterns, designed to be easily understood and serve as a practical guide for families.

2. Strengthening and Development of Socialization

The second phase of the socialization activities was held on August 29-30, 2024, focusing on strengthening and developing the material previously delivered. In this phase, the activities were carried out in collaboration with PLKB (Family Planning Field Officers) from Cempaga Hulu District to expand the reach of socialization and deepen the understanding of behavioral changes related to eating patterns and nutrition.

a. Implementation of the Second Phase of Socialization

This socialization was attended by participants who had already attended the first phase and some new families who had not been able to attend earlier. In this session, PLKB provided additional material on the role of families in maintaining the health of mothers and children through the fulfillment of balanced nutrition. Additionally, the community received information about government programs that can be utilized to support stunting prevention.



Figure 6: Second Phase of Socialization Activity on August 29-30, 2024

b. In-depth counseling on Behavioral Change

The main focus of this phase was to encourage behavioral changes in family eating habits. The community was encouraged to understand the importance of replacing unhealthy eating patterns with more nutritious ones. An interactive discussion was again held to explore the challenges faced in implementing these changes, and the solutions provided were tailored to local conditions.

c. Initial Evaluation of Activity Impact

A preliminary evaluation was conducted through interviews and observations to measure the impact of the socialization activities. The initial results showed that most participants had begun to apply the recommended dietary changes, with more frequent consumption of nutritious foods such as vegetables, fruits, and animal protein. However, challenges, such as limited resources and access to nutritious food, remained the main obstacles.

3.6. Discussion

Implementing a nutrition literacy improvement program for stunting prevention in Pundu Village demonstrates that education-based interventions can significantly contribute to increasing public understanding of healthy eating patterns. Various approaches, such as direct socialization, distribution of educational materials, and visual media, have proven effective in changing people's mindsets and food consumption habits. Initial survey results showed that most of the community still followed a carbohydrate-focused diet with minimal animal- and plant-based protein consumption. After the program had been running for six months, public understanding of the importance of balanced nutrition increased by 35%, as reflected in the post-intervention survey results. These findings align with the research of Dewey & Begum (2011), which states that an unbalanced diet is one of the main causes of malnutrition in developing countries.

In addition to a limited understanding of balanced nutrition, cultural factors shape food consumption habits. Some local myths restrict the consumption of certain nutritious foods, especially for pregnant women and children, complicating nutritional intervention efforts. In this context, a community-based approach becomes a relevant strategy by introducing easily accessible and economically affordable nutritious food sources, such as local fish and vegetables—the study by Bhutta et al. (2013) Emphasizes that community-based interventions that utilize local resources have a more sustainable impact on improving people's nutritional behavior. Compared to the research by Menon et al. (2016), which highlights the importance of interpersonal communication in SBCC to increase adherence to breastfeeding practices; this study shows that a combination of direct interaction and visual media is more effective in changing the food consumption patterns of the people in Pundu Village.

The implementation of this program also adopts an interactive discussion method, allowing the community to share experiences and challenges in applying healthy eating patterns. This approach allows the intervention team to offer more contextual solutions that the community can practically implement. The effectiveness of this method is reflected in the increased understanding and adoption of better nutritional practices. However, limited access to nutritious food remains a major challenge that must be addressed in line with the findings of Leroy et al. (2016), educational interventions must be integrated with structural policies, such as improving access to healthy food and subsidies for vulnerable groups, to ensure the program's long-term sustainability.

The main challenges in implementing this program include the low initial level of community participation due to a lack of awareness of the importance of balanced nutrition. Economic factors also present significant obstacles, as limited purchasing power causes people to continue choosing cheaper but less nutritious food. Another challenge faced is the community's reliance on traditional practices that often contradict the principles of balanced nutrition. Therefore, SBCC interventions must be more adaptive and consider local social and economic factors to enhance their effectiveness.

The success of this program is also supported by a significant reduction in the number of Stunting Risk Families (KRS), from 726 KRS before the program was implemented to 425 KRS afterward. This data was obtained from the mini-workshop report of Cempaga Hulu District, compiled by the Family Assistance Team (TPK), consisting of village midwives, family planning cadres, and PKK cadres. The decline

in KRS numbers indicates the effectiveness of communication strategies in raising awareness and promoting balanced nutrition practices at the household level. Collaboration between the service team, local cadres, and the community played a crucial role in achieving these results, reinforcing the importance of cross-sectoral efforts in comprehensively addressing the issue of stunting.

4. CONCLUSION

Based on the evaluation results of the nutrition literacy improvement program for stunting prevention in Pundu Village, it can be concluded that the interventions have significantly contributed to increasing community understanding and awareness of the importance of healthy eating, particularly during the first 1000 days of life. The initial survey findings showed that most of the community had limited understanding regarding the composition of a balanced diet, especially in consuming animal protein, plant-based protein, vegetables, and fruits. The interventions, through the distribution of visual communication media such as nutrition education posters, direct counseling, and interactive discussions, have proven effective in enhancing community knowledge. This highlights that community-based communication strategies positively impact changing nutrition consumption behavior.

However, some challenges must be addressed to achieve sustainability in stunting prevention efforts, particularly related to limited access to nutritious food and the social and economic factors influencing consumption patterns. The program evaluation indicated signs of a change in food consumption behavior towards healthier options, such as increased consumption of vegetables, fruits, and animal protein, although the adoption rate still varies. Therefore, future program development should strengthen cross-sector collaboration, including the health department's involvement, the private sector, and local communities, to improve accessibility to nutritious and affordable food.

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