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PREVENTING STUNTING IN RURAL INDONESIA: A COMMUNITY-BASED PERSPECTIVE

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ABSTRACT

Child stunting is a critical concern with far-reaching consequences for the developmental prospects of affected children. To address this issue, Indonesia has initiated a targeted program to support rural families. This program's two-fold approach includes aiding with dietary needs and delivering counseling services via Community Health Centers. The primary aim of the current study was to explore the determinants that promote or inhibit engagement with this stunting prevention initiative. Methodologically, the research encompassed 10 direct observations, 45 focus group discussions, and 23 in-depth interviews to gather comprehensive data. The participants were drawn from a cross-section of the rural populace, including households, village government officials, and healthcare providers. Feedback on the program was predominantly positive, with participants demonstrating favorable perceptions towards it. Notably, the program's contribution to improving household health was apparent, serving as an impetus for active participation. Nevertheless, the research identified significant barriers to program engagement, namely the existence of social behaviors that were at odds with the program's objectives and a widespread deficit in the understanding of the importance of nutritional food security. These factors present considerable challenges to fully realizing the program's potential impact. Direct observations highlighted the program's effectiveness in regions with strong community health infrastructure. Focus group discussions underscored the importance of cultural sensitivity in program implementation, as local customs and traditions significantly influenced participation levels. In-depth interviews with healthcare providers shed light on logistical challenges, such as inconsistent supply chains for nutritional supplements and gaps in training for health workers. Village government officials emphasized the need for greater inter-agency coordination to streamline services and reduce redundancy. Despite these challenges, the program's strengths were evident. Participants appreciated the holistic approach, combining immediate dietary support with educational components aimed at fostering sustainable health practices. For the program to achieve broader success, it must address the identified barriers through targeted interventions, such as enhanced community education campaigns, improved logistical support, and greater cultural integration into program design.

Key words: Prevention, rural, food security, society, nutrition, stunting, qualitative, Indonesia

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INTRODUCTION

The right of every child to adequate growth, nutrition, and health is paramount, yet this right is often unmet, particularly in low-income and developing countries where malnutrition fuels the tragedy of stunting [1]. This issue casts a long shadow over the Southeast Asian region, where a staggering 30.1% of children suffer from stunting [2]. Among rural infants, the problem is compounded by a complex interplay of factors, including suboptimal complementary feeding practices, high rates of childhood illness [3], and inadequate breastfeeding practices [4]. These challenges are often exacerbated by broader societal issues such as entrenched poverty and persistent food insecurity, which form the bedrock of widespread stunting in children [5, 6].

Indonesia, however, offers a beacon of hope. While stunting remains a significant concern, the nation has witnessed a heartening decline in its prevalence. Reported rates have fallen from 37% in 2013 to 34% in 2016, 28% in 2019 and, most notably, to 24.4% in 2021 [7]. This progress underscores the potential for effective intervention. Strategies focusing on optimal nutrition and stunting prevention, particularly during critical growth periods, have shown promise. These interventions emphasize prenatal care, ensuring proper nutrition for expectant mothers, and postnatal support, promoting breastfeeding and the provision of adequate complementary foods for infants aged 0-24 months [8].

In 2011, Indonesia demonstrated global leadership by becoming the first nation to join the Scaling Up Nutrition movement, a worldwide campaign dedicated to combating stunting. This commitment led to the launch of a comprehensive nutrition enhancement program, formalized through Presidential Regulation No. 42 of 2013, which established the National Movement for the Acceleration of Nutrition Improvement. This pivotal policy prioritizes interventions during the crucial First 1000 Days of Life, bolstered by technical, logistical, and financial support from key partners, including the World Food Program and World Vision. The program's multifaceted approach encompasses initiatives designed to foster social change, reshape household behaviors—with a particular focus on strengthening maternal roles in child nutrition—provide essential nutritional support to expectant mothers, and improve sanitation standards. Critically, interventions aimed at enhancing breastfeeding and complementary feeding practices are grounded in a holistic framework. This approach not only addresses key aspects of child development—such as feeding practices, caregiving, hygiene, and social networks—but also operates across multiple levels of influence, encompassing the child, the mother-child dyad, the household, the community, and society at large. The effectiveness of such multi-level interventions in promoting optimal breastfeeding and complementary feeding for children aged 6-23 months has been compellingly

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demonstrated by studies from the Alive and Thrive initiative in Bangladesh, Ethiopia, and Vietnam [9, 10, 11, 12].

While infant and young child feeding programs have demonstrated considerable promise, their impact on reducing stunting prevalence has been inconsistent. However, a growing body of evidence suggests that improved complementary feeding practices are strongly linked to significant gains in child growth, as evidenced by increases in height-for-age z-scores and a corresponding reduction in stunting risk. It is important to note that most research to date has primarily focused on the nutritional and physiological aspects of infant and young child feeding—such as timing, composition, and frequency—often overlooking the critical influence of social connections and contexts.

Policy interventions, while holding the potential to significantly enhance child growth, often encounter challenges in achieving effective delivery and large-scale implementation. These challenges stem from a complex interplay of factors, including the unique physical and sociocultural characteristics of communities and the realities of real-world settings, which can sometimes hinder the achievement of desired nutritional outcomes. Given that nearly a decade has passed since the launch of Indonesia's ambitious nutrition program, this study seeks to provide a nuanced understanding of the key enablers and barriers that influence access, participation, and ultimately, the benefits derived from the child nutrition program within the specific context of Bone Regency.

MATERIALS AND METHODS

Research Design

This study adopts a qualitative research approach, employing narrative inquiry to gain an in-depth understanding of stunting prevention experiences within rural communities. Qualitative methods are essential for uncovering the intricate interplay of situational and structural factors that shape health outcomes [13]. Narrative inquiry, in particular, is well-suited for this purpose, as it excels at capturing the lived experiences of individuals, revealing the chronological unfolding of events, actions, and their associated meanings [14]. This approach aligns perfectly with the aims of this research, as it allows us to explore the multifaceted dimensions of stunting prevention within the specific social and environmental contexts of rural communities. This is particularly crucial in these settings, where health challenges often necessitate unique adaptations and coping mechanisms.

Site Selection

This study was strategically situated in Bone Regency, South Sulawesi, Indonesia, a location carefully chosen based on several key factors gleaned from preliminary interviews with diverse rural communities. Bone Regency's rich tapestry of

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ethnicities, socioeconomic backgrounds, and health conditions provides a fertile ground for understanding the multifaceted nature of stunting across different segments of society. Furthermore, conducting research in this region holds significant weight, as findings have the potential to directly inform and shape national health policies related to nutrition and child development, a key priority for public health officials. Finally, Bone Regency is renowned for its unique cultural and dietary practices, some of which have been traditionally linked to stunting reduction. Understanding these practices is crucial for developing culturally sensitive and effective stunting prevention strategies.

Recognizing that stunting is a complex issue that transcends administrative boundaries, this qualitative study specifically targeted rural communities within Bone Regency. The research delved into community perceptions and challenges surrounding three core components of the Indonesian government's stunting prevention program: 1) Provision of Animal Protein-Rich Foods: Examining the accessibility and utilization of animal protein-rich foods for children under five, 2) Educational Initiatives: Exploring the reach and impact of educational programs targeting adolescent pregnant women and their families, 3) Behavioral Change Strategies: Investigating the effectiveness of strategies aimed at promoting safe sanitation practices and discouraging open defecation.

This multifaceted approach ensures a comprehensive and nuanced understanding of stunting prevention efforts within the rural context of Bone Regency.

Determination of Informants

The study employed a two-tiered sampling strategy to select participating households. First, a purposive sampling technique was used to identify villages with diverse characteristics, ensuring representation from at least five sub-districts and capturing variations in household size (average or above-average number of children) and health coverage participation rates (high engagement - 50% or above, and low engagement - below 50%). This approach aimed to maximize the generalizability of findings regarding program engagement across different village contexts. Within the selected villages, a convenience sampling method was then used to 23 recruit households with children aged 1-23 months. This approach, while acknowledging potential limitations in representativeness within each village, was deemed most feasible given the resource constraints of the study and allowed for a manageable sample size within the targeted demographic. Figure 1 illustrates the sampling framework and provides a visual representation of the study's methodological design:

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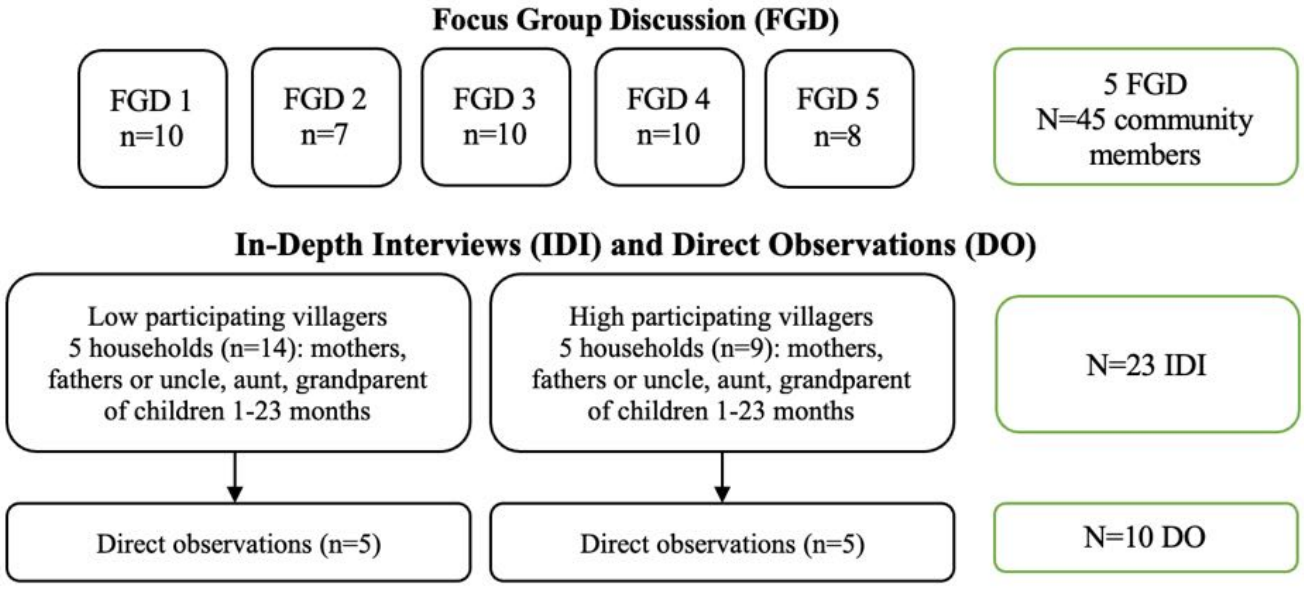

Figure 1: Sampling schematic and sample sizes for this qualitative study

For the focus group discussions (FGDs), village government officials and staff from the Community Health Centers (CHCs) were sampled at the village level (VL) utilizing a convenience sampling approach. This method was strategically employed to optimize public engagement, ensuring that a diverse range of perspectives from those directly involved in local governance and public health services were included in the study. The convenience sampling facilitated the inclusion of readily available participants, thereby enhancing the feasibility of the FGDs and enriching the discourse with their practical insights and experiences.

Qualitative Data Collection Techniques

Data was collected from March to May 2023. Before the field research, several formal permits were sought from agencies within the South Sulawesi Province and Bone Regency Local Government. Research guidelines were phased and iterative, allowing for a flexible yet systematic exploration of informants' lived experiences. Data collection was facilitated by a team of two people from Bone Regency, who were proficient in Bugis, to ensure good communication and understanding. Data was collected through various methods, namely literature review, observation, Focus Group Discussion (FGD), and in-depth interviews. The following is an explanation of each data collection method used in this research:

Literature study

Studies of literature were undertaken to explore the ecological theoretical perspective and its practical use in case analysis, alongside gathering information about policies on stunting regulation and rural communities. A range of relevant materials, including books, journals, and scientific articles, were used for this literary

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review. These books were accessed in printed and digital formats to support the research topic.

Observation

This academic inquiry sought to gauge the perceptions of households concerning nutrition and their choices of food, employing a methodology of direct observation. A systematic approach of structured direct observation was employed to corroborate the findings obtained from the in-depth interviews (IDIs). This method facilitated a comprehensive assessment of a range of household behaviors pertinent to the selection and preparation of food, the types of containers utilized for storage and cooking, the quantities of food consumed, and practices concerning water and sanitation. Additionally, these observations provided insights into the interactions occurring within and between households. Observers specifically focused on capturing any relevant activities that the households engaged in, extending to approximately 30 minutes before and after the conduct of the IDIs. This timing was strategically chosen to capture a representative snapshot of routine behaviors around food and nutrition practices, enabling a richer understanding of the household environment and dynamics concerning nutritional choices and health.

Focus Group Discussion (FGD)

This activity was designed to elucidate the levels of understanding these households possessed concerning locally accessible and frequently consumed food items. The foods examined included staples and common ingredients such as rice, maize, spinach, cabbage, carrots, potatoes, eggs, beef, chicken, sweet potatoes, cassava, tomatoes, chili, beans, bananas and fish. During this exercise, mothers were encouraged to organize these foodstuffs into categories of their devising, subsequently naming each group. They were further requested to provide rationales for their categorizations, thereby offering insights into their conceptual frameworks and practical considerations regarding food and nutrition. This participatory method not only illuminated household food preferences and practices, but also highlighted the cultural and contextual factors that influence dietary habits within the community.

Focus group discussions (FGDs) were convened with village leaders and officers from CHCs to deepen the understanding of household perspectives on nutrition fulfillment and stunting prevention measures. The rationale for engaging these stakeholders—representatives of the village government and CHC officers—was to enable the identification and categorization of themes emerging from the discussions that align with their specific roles and responsibilities within the community. The inclusion of these individuals also illuminated their degree of involvement in executing stunting prevention strategies, as well as the challenges and barriers encountered in this context. This approach ensured that the study encapsulated a multifaceted view of the community's efforts to address nutritional needs, reflecting

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the perspectives of those affected by and those responsible for implementing public health interventions.

In-depth interview (IDI)

To ensure clarity and depth, informants underwent one or two interview sessions, with additional sessions scheduled as needed to refine the focus of the investigation. Interviews were conducted in the comfort of the participants' homes, with each session lasting approximately 60 minutes. The sessions were audio-recorded and later transcribed verbatim. The transcription involved careful translation from Bugis to English to preserve the integrity of the participants' stories. After data collection, a comprehensive debriefing session was conducted. The research team carefully reviewed the interview transcripts during this session to identify emerging themes. This rigorous examination was crucial in summarizing the essence of the participants' experiences and ensuring that the thematic analysis was reflective, and representative of the data collected.

Qualitative Data Analysis

The analytical process was characterized by an inductive approach to generate formal codes, which were systematically derived from the salient themes identified in the in-depth interviews (IDIs) and focus group discussions (FGDs). This comprehensive analysis entailed a meticulous examination of all textual materials, incorporating a multistage process that included the management of data, the coding of transcripts, and the categorization of quotations into coherent themes. The resultant findings were systematically organized and subsequently presented within a conceptual framework informed by the methodological precedents established [15]. This framework was crafted to articulate and visualize the interrelationships and the dynamic interplay between the two targeted program components under study, situating them within the context of the ten components comprising the program's infrastructure. The conceptual model thus served as both a reflective and organizational tool, capturing the essence of the program's multifaceted components and their role in the overarching research narrative.

Ethical Consideration

Prior to commencing the study, ethical approval was obtained from the Research Institute of Universitas Cahaya Prima. Informed consent was obtained from all participants before they were involved in the study. The participants were informed of the purpose, procedures, potential benefits, and risks of the study, as well as their right to withdraw from the study at any time without any consequences. Confidentiality and anonymity were maintained throughout the research process by using pseudonyms or codes to identify participants and ensuring that all data collected was stored safely.

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RESULTS AND DISCUSSION

Informants' characteristics and study settings

In-depth interviews were conducted with a diverse group of 23 participants, comprising ten mothers, six fathers, one aunt, two uncles, one grandfather, and three grandmothers. Five focus group discussions were also held, with participant composition varying as follows: 1) FGD 1, 3, and 4: 10 participants each (8 mothers, 1 village head, 1 Community Health Center [CHC] staff), 2) FGD 2: 7 participants (5 mothers, 1 village head, 1 CHC staff); 3) FGD 5: 8 participants (6 mothers, 1 village head, 1 CHC staff). Figure 1 provides a detailed overview of the sociodemographic characteristics of both IDI and FGD participants. Notably, most IDIs participants were married (69.6%) and had completed primary school (73.9%). Farming emerged as the primary occupation among interviewees (82.6%). While farming dominated the occupational landscape, there was greater diversity among men in the study. Specifically, 17.4% of men were engaged in small-scale enterprises, such as construction or operating market stalls, while the remaining male participants were employed in the agricultural sector. A recurring theme across all interviews and focus group discussions was the challenge posed by prolonged dry seasons. Participants consistently highlighted the detrimental impact of these dry periods on harvests, leading to concerns about food security and market price fluctuations.

Conceptual framework on the factors that influence stunting prevention

The conceptual framework highlights key factors (Fig. 2) that both facilitate and hinder stunting prevention efforts. Widespread community acceptance of nutritious diets and a strong understanding of the National Movement for the Acceleration of Nutrition Improvement (NM-ACI) objectives among household members are crucial in supporting the NM-ACI's effectiveness and achieving its goals of reducing stunting rates and improving child development. However, several challenges impede progress in achieving optimal nutrition during pregnancy and the postnatal period. Sporadic attendance of expectant and new mothers at Community Health Centers for essential consultations hinders access to vital services. The remote location of CHCs poses logistical challenges for families seeking healthcare. A pervasive lack of awareness regarding the importance of medical guidance during pregnancy and childbirth persists. Deeply ingrained customs that prioritize the needs of mothers over those of infants and young children can negatively impact child feeding practices. Insufficient knowledge within households and inconsistencies between knowledge and actual behaviors present significant obstacles to adequate infant and young child feeding. Finally, effective implementation of Social and Behavioral Change strategies is often hampered by a scarcity of resources needed to emphasize the critical importance of these interventions.

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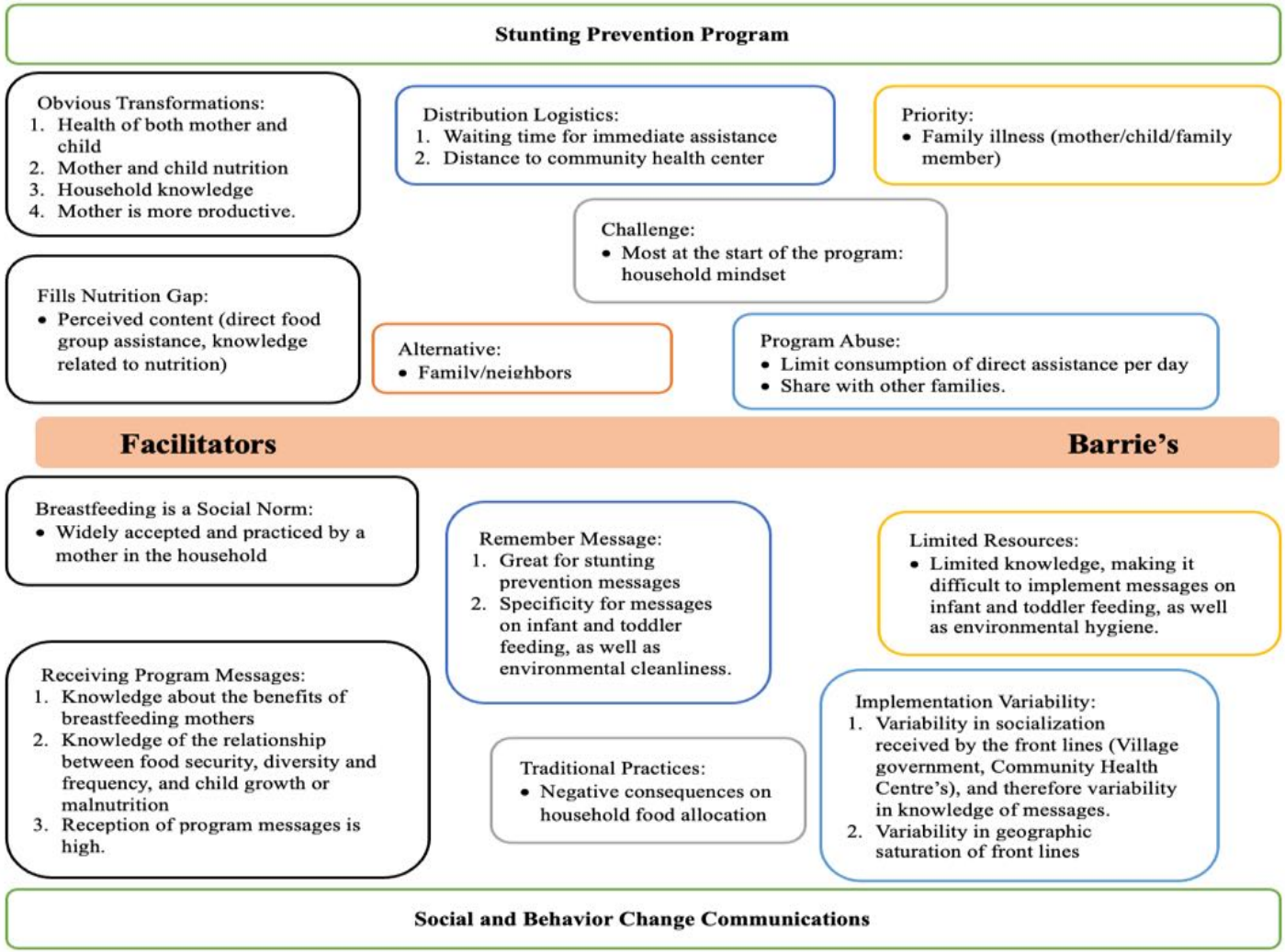

Figure 2: Facilitators and barriers that might affect stunting prevention program

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Perceptions of the Stunting Prevention Program and its facilitators and barriers

Stunting, a pervasive consequence of chronic undernutrition, casts a long shadow over the lives of millions of children, particularly in resource-constrained regions. This devastating condition, arising from inadequate nutrition and care during crucial developmental windows (fetal development and early childhood), profoundly impairs physical growth and cognitive development, perpetuating cycles of poverty and diminished opportunity. To combat this global challenge, many nations have implemented multifaceted Stunting Prevention Programs. These strategic initiatives represent a concerted effort to mitigate the multifaceted causes of stunting and empower children to reach their full potential. Instead of directly stating the program's components, consider weaving them into a narrative that highlights their significance:

> *"For example, recognizing the critical link between maternal health and child well-being, these programs prioritize maternal nutrition during pregnancy. They champion exclusive breastfeeding for the first six months of life, laying the foundation for optimal growth. Furthermore, understanding that nutritional needs evolve, the programs emphasize the timely introduction of nutrient-rich complementary foods, ensuring children receive the building blocks essential for healthy development."*

Stunting prevention initiatives have been widely embraced by the community, local governing bodies, and individual households. This positive reception stems from tangible improvements observed across multiple domains. Households have experienced increased food support, leading to improved child nutrition and maternal health outcomes. Participants reported a decline in both the frequency and severity of illnesses among mothers and children. Furthermore, assessments conducted at Community Health Centers consistently demonstrate that children are maintaining healthy weight parameters.

These positive changes, particularly the enhancement of child nutrition and maternal health, are crucial drivers of continued household participation in programs aimed at fulfilling the nutritional needs of mothers and children (Fig. 2). Village governments have also recognized the link between stunting prevention programs and reduced rates of child malnutrition. The national program to reduce stunting rates has been instrumental in creating opportunities for mothers and children to access nutritious food, ultimately contributing to improved health and nutrition. Household members employed various methods to articulate the positive impacts of these initiatives. Some interviews described households' desire for their children to be healthy and do well in school, while others described their children growing up well and rarely getting sick, as one interview with a mother stated:

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> "*When households receive the government's nutritious food program every month, they become healthy. Healthy children seem to grow well and do not get sick easily,"*-Mother, age 38, of an 18-month-old girl.

In addition, as a mother who has a culturally implied role in taking care of their family's food provisioning needs, government assistance programs are perceived to fill a gap for rural households who are farmers to be able to ensure adequate food for their children:

> *"I thought of enrolling our family as beneficiaries, because I knew that my husband's income would not be enough to provide fully for the family's food needs. So, I decided to enroll our family, to get what my husband failed to provide for nutritious food."*- Mother, 40 years old, of a 24-month-old daughter.

Some households attributed positive changes in family health to increased family productivity. The direct assistance programs, which provided essential food items like eggs, fish, rice and vegetables, were perceived to contribute to a happier household atmosphere. Mothers, relieved from some childcare burdens, could dedicate more time to other tasks, while fathers had more opportunities to engage in income-generating activities. The combination of cash transfers and mandatory consultations at CHCs, focusing on nutritional knowledge, was well-received by most households. Participants appreciated the encouragement to provide nutritious food for their families, particularly mothers and children. For instance, some respondents (n = 30) highlighted the food variety facilitated by the cash transfers, while others (n = 21) emphasized the improved nutrient content of meals. Several fathers (n = 4) noted their wives' satisfaction with the cash transfers, which allowed them to prepare diverse meals throughout the day.

The arrangements for direct assistance and mandatory CHC consultations were generally viewed favorably. The benefits of receiving in-person support outweighed inconveniences such as distance to distribution points (as food suppliers were already present in every village), occasional stock shortages, or the distance to CHCs. While a small number of household members mentioned these inconveniences as potential areas for program evaluation, they did not appear to significantly hinder direct assistance implementation (Fig. 2). Unforeseen household obligations, such as a family member requiring medical attention, were more commonly cited as disruptions to program participation (Fig. 2).

Despite the positive aspects of the program, beneficiary households occasionally faced challenges in consistently consuming nutritious food. One contributing factor was the depletion of food stocks before the next distribution date, sometimes due to

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sharing assistance with neighbors or relatives, even among households knowledgeable about the stunting prevention program (Fig. 3). This highlights the need to address food insecurity within a broader social context.

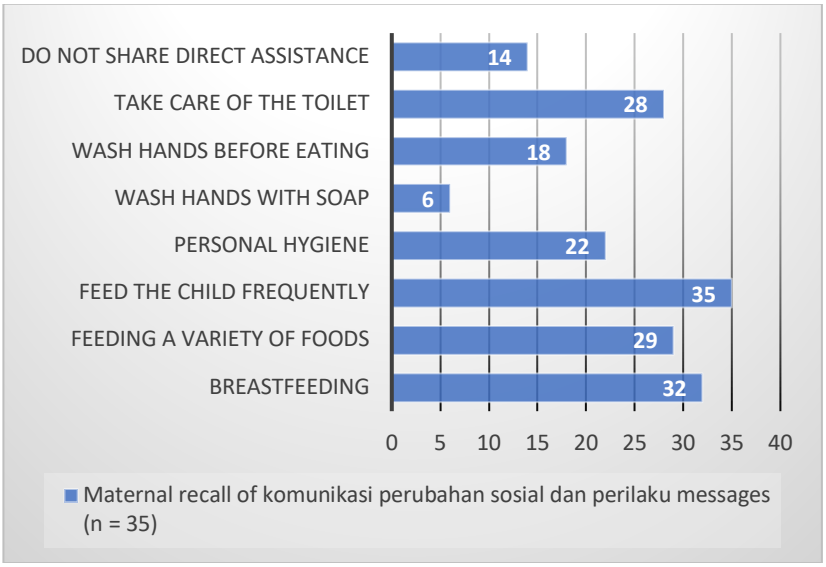

Figure 3: Number of households remembering optimal infant and child feeding, as well as hygiene messages

Most mothers participating in the Focus Group Discussions demonstrated positive feeding practices. Out of 35 mothers, 32 reported breastfeeding their children daily, and 29 emphasized the significance of providing diverse meals. All mothers (n=35) prioritized frequent feeding in response to their child's hunger cues. However, a concerning finding was that 21 mothers admitted to distributing food directly to other families or neighbors, highlighting potential food insecurity within the community. Regarding hygiene practices, there is room for improvement. A significant proportion of mothers were less inclined to wash their hands before meals (n=17), and even fewer consistently used soap (n=29). These findings underscore the need to strengthen hygiene education and promotion within the program. Increased engagement with CHCs, where mothers can access information on the importance of hygiene, could effectively address this issue.

Facilitators and barriers to improved feeding and hygiene behaviors

Only three mothers (8.6%) in the FGDs reported breastfeeding their children, with the remaining 91.4% reporting that they did not breastfeed. The importance of breastfeeding for promoting child health and growth was known and mentioned by 32 out of 35 mothers in the FGDs (Fig. 3). Focus Group Discussions (FGDs) participants also frequently linked food consumption, diversity, and frequency with child growth. Further exploration through interviews with family members illustrated:

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> "*The child should be given plenty of food frequently. . . the mother should breastfeed, give porridge, and fresh fruit. So that the baby can grow up smart and healthy, must not be malnourished, and must look fat.*"- Father, 39 years old, of an 18-month-old boy

While Focus Group Discussion participants demonstrated good recall and knowledge of stunting prevention principles, there was a noticeable gap between knowledge and practice regarding hygiene. Although participants could articulate the importance of hygiene, follow-up interviews revealed a lack of specificity in recalling healthy behaviors. For instance, only six mothers mentioned handwashing with soap, and only 18 mentioned hand washing before meals (Fig. 3). Furthermore, there were inconsistencies in understanding food categories. In-depth interviews with 23 households revealed varying levels of knowledge. Only five interviewees could identify all food groups (carbohydrates, animal proteins, vegetables, fruits, nuts, oils and fats), while others could only name four or fewer, often focusing on foods that enhance resilience or are favored by children.

Interestingly, aunts and uncles demonstrated a better grasp of family hygiene knowledge, despite their limited involvement in childcare activities or interactions with CHCs. This suggests that information dissemination through social media platforms like YouTube, Facebook and Instagram, frequently mentioned by this demographic, might be an effective strategy. However, it also highlights potential variations in knowledge retention among different household members.

Several significant barriers hinder the effective implementation of stunting prevention programs in rural areas. Financial constraints and seasonal limitations restrict families' access to nutritious food. Pervasive poverty, food insecurity, food seasonality and a heavy reliance on rice as the staple food crop pose considerable challenges to adopting and sustaining stunting prevention behaviors (Fig. 2). One grandmother described a combination of financial and seasonal constraints to food diversification:

> *"We cannot access all food groups daily, especially during the long dry season. Finding food sources is more difficult in rural areas, unlike in the city where it is easy to access food because it is widely available in supermarkets. The high poverty rate in rural areas is also a barrier, because if every rural household has a lot of money, it will be easy to go and buy a variety of foods in the city."*- Grandmother, 54 years old, with 20-month-old grandson

While not directly stated by household members, there are underlying practices and beliefs that prioritize the husband as the head of the household, influencing food and nutrition allocation. For instance, a husband's directive regarding childcare can

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motivate a mother to prioritize her children's nutritional needs, even amidst other commitments. This highlights the influence of traditional gender roles on household dynamics.

This study examines factors influencing the effectiveness of a stunting prevention program, focusing on interventions aimed at changing family behaviors related to nutrition and hygiene. The program, which integrates rural households into its framework, has been well-received by the community and has contributed to reducing stunting prevalence. Despite positive responses to direct aid initiatives that strengthen food security and hygiene practices, there is room for improvement. Key challenges hindering program implementation at the household level include: 1) Health-related family emergencies: These unforeseen circumstances can disrupt routine practices and access to program resources, 2) Community participation: While the program enjoys general support, active and consistent engagement from all community segments is crucial for sustained impact, 3) Awareness at the household level: Despite program efforts, knowledge gaps persist regarding specific stunting prevention behaviors and their long-term benefits.

The stunting prevention program's success stems from its participatory approach, encouraging household engagement through monthly food assistance distribution at designated village outlets. This foster continued participation and effective stunting reduction. Furthermore, mandatory consultations at CHCs for food aid recipients promote family collaboration and reinforce program messages. The palatability and effectiveness of this intervention have been corroborated by analogous research endeavors in diverse global contexts, including Ghana [16], Burkina Faso [17], Niger [18,19], and Malawi [20,21,22]. Furthermore, the interplay amongst family units, as evidenced in Niger [19] aligns with the precept's transactional theory of development [23], underscoring the dynamic interactions between individuals and their evolving environments in the developmental process.

The study revealed that while rural households are beginning to adopt healthier nutritional behaviors, a limited understanding of child feeding practices and household hygiene hinders the effective implementation of these changes at home. Acquiring comprehensive knowledge about behavioral adjustments, including a broader understanding of food groups, poses a significant challenge for rural residents. Several factors contribute to this limited understanding of behavior change, including a disconnect between standard food categorization (carbohydrates, animal proteins, vegetables, fruits, legumes, oils and fats) and the traditional food grouping practices used by community members. This discrepancy can lead to confusion and hinder the adoption of recommended dietary guidelines.

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Studies in Bangladesh and India highlight the effectiveness of diverse media channels in promoting social and behavioral changes crucial for stunting prevention. A multifaceted program in Bangladesh, combining interpersonal counseling, mass media campaigns, and community engagement, led to significant improvements in adopting healthy dietary practices within households [24]. Similarly, research in India demonstrated a strong correlation between increased media access in rural areas and improved breastfeeding and complementary feeding practices [25]. However, the impact of a similar program in Malawi, which disseminated information through television, billboards, and counseling sessions, remains inconclusive regarding its reach across all household segments. This suggests that while multi-channel approaches hold promise, careful evaluation is crucial to ensure equitable program access and impact.

Data suggest that while the program has made strides in engaging rural families, the degree of progress may be limited in certain contexts. It remains unclear whether increased knowledge of behavioral change and sanitation practices consistently translates into improved nutritional outcomes. A study examining the link between program recall and child growth indicators across Guatemala, Pakistan, Zambia and Congo offers encouraging insights [26]. The findings revealed a positive association between higher program message recall and positive child growth outcomes. This suggests that effective message dissemination and retention may be key factors in driving behavior change and ultimately improving child nutrition. However, further research is needed to understand the specific mechanisms through which program awareness translates into improved practices and to identify any contextual factors that may influence this relationship.

Studies by Alive and Thrive in Bangladesh [24] and Ethiopia [12]. reveal a critical challenge: despite significant progress in rural households adopting healthier dietary practices due to family-level social and behavioral changes, these shifts have not consistently translated into substantial improvements in child growth outcomes. While positive behavioral changes are encouraging, the Alive and Thrive findings, along with a comprehensive review of early childhood development interventions [27], emphasize the crucial need to disseminate clear, actionable community-level messages. Factors such as limited understanding of household nutrition programs, financial constraints, and recurring droughts within a broader context of food insecurity can hinder the translation of nutritional knowledge into practice. Addressing these systemic barriers is essential to ensure that positive behavioral changes effectively translate into improved child nutrition and development [28].

This qualitative study's primary limitation is its limited generalizability. The selection of specific districts and interview locations based on pre-defined criteria (poverty, food security status, and nutrition levels) means the findings are most applicable to

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contexts resembling the study setting. This primarily includes resource-limited rural areas experiencing cyclical food insecurity and deeply ingrained socio-cultural norms. However, the deliberate use of purposive sampling aligns with the research objective of capturing a diverse range of perspectives on stunting prevention efforts. This methodological approach allows for a richer collection of experiences, strengthening the validity of the study's insights within similar contexts.

CONCLUSION AND RECOMMENDATIONS FOR DEVELOPMENT

Since 2013, the Indonesian government has demonstrated a strong commitment to tackling high stunting rates through targeted nutrition interventions for rural families. A key element of this strategy is a comprehensive program providing direct support for household food security and health services, particularly during the crucial first 1,000 days of a child's life. To optimize program impact and achieve sustained reductions in stunting, it is vital to understand the factors influencing program uptake from the perspective of diverse rural households. Future program evaluations should prioritize strengthening social and behavior change components at the household level, focusing on nutritious food security and hygiene practices. Collaboration between local governments, Community Health Centers, and communities is essential to develop tailored, age-appropriate, and nutrient-rich food security programs. These programs should be customized to each household's needs and utilize locally recognized food classifications to enhance cultural relevance and understanding. Furthermore, leveraging effective communication channels like social media platforms, proven to reach specific demographics, can significantly enhance the reach and impact of stunting prevention campaigns. By ensuring behavior change is practical, sustainable and culturally relevant, Indonesia can make significant strides in improving long-term household nutrition standards and the well-being of its children.

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Table 1: Sociodemographic characteristics of the study sample participating in IDI and FGD

	IDI		FGD	
	N	Mean	N	Mean
Informant type:				
Father	6	26.0	-	-
Mother	10	43.5	35	77.8
Aunt	1	4.4	-	-
Uncle	2	8.7	-	-
Grandfather	1	4.4	-	-
Grandmother	3	13.0	-	-
Village head	-	-	5	11.1
Village Community Health Center staff	-	-	5	11.1
Gender:				
Male	9	39.2	4	8.9
Female	14	60.9	41	91.1
Marital status				
Married	16	69.6	38	84.4
Divorced	1	4.4	4	8.9
Widowed	3	13.0	2	4.4
Single	3	13.0	1	2.3
Education				
None	2	8.7	5	11.1
Completed primary	17	73.9	26	57.8
Secondary or higher	4	17.4	14	31.1
Occupation				
Farming	19	82.6	30	66.7
Owning a business	4	17.4	5	11.1
government employees	-	-	10	22.2

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