



Mothers' Needs in Managing Stunting among Under-Two Children: A Qualitative Study in Surakarta City

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ABSTRACT

Background: Although the government has implemented various interventions, stunting remains a serious public health issue in Indonesia. This condition calls for a new understanding, particularly from the perspective of mothers with stunted children.

Objective: This study aims to explore the mothers' needs managing stunting under-two children in Surakarta City.

Method: A qualitative was employed through focus group discussions (FGDs). A total of 20 informants aged 24–50 years were selected as participants. They resided in Surakarta City and were divided into two groups: the first group consisted of four nutritionists from health facilities and six health cadres, while the second group included ten mothers of stunted children. Data were analysed using Colaizzi's method and managed with Nvivo software.

Result: The study revealed five main themes related to mothers' needs: (1) societal perceptions of stunting, (2) program availability, (3) barriers to program implementation, (4) expected prevention efforts, and (5) stunting management requirements. These findings indicate that mothers of stunted children require a deeper understanding of effective stunting management strategies and access to affordable nutritional resources to support their children's physical growth and cognitive development.

Conclusion: Social support from the community, easy access to information, and education on healthy eating patterns and stunting prevention are crucial aspects. Mothers with stunted children need adequate information on proper stunting management and access to affordable nutrition. Furthermore, community support and the availability of easily understandable information, including through audio-visual media, play a significant role in stunting prevention and management.

Keywords: *mothers' needs; managing stunting, under-two children, qualitative study*

INTRODUCTION

Stunting is a condition in which infants have a length or height that is not in accordance with their age ^[1]. The National Strategy for Accelerating Stunting Prevention 2018–2024 comprises five main pillars, one of which focuses on increasing awareness, understanding, and behavioral changes to prevent stunting. However, the implementation of this strategy still requires cross-sectoral collaboration and the involvement of various stakeholders to create nutrition-aware families.

Although stunting prevention programs have been implemented, their effectiveness and coverage remain suboptimal. Challenges include limited access of pregnant women and children under two years old to essential health services. The early life period, particularly the first 1,000 days, is a critical phase for child growth and requires both specific and sensitive nutritional interventions. Several government programs, including family planning initiatives through the National Population and Family Planning Board (BKKBN), have emphasized reducing stunting prevalence by improving the nutritional status of prospective brides before pregnancy. Nevertheless, there is still no specific program targeting the family as a whole, especially mothers with more than one child experiencing stunting. Mothers are the individuals who best understand their children's needs ^[2,3].

Surakarta City, Indonesia, currently has 17 Public Health Centers (Puskesmas) and recorded 26,885 toddlers in 2021. The nutritional status of toddlers is monitored monthly through weight and height measurements at Integrated Health Service Posts (Posyandu). Data indicate that there were no toddlers with severe malnutrition (0%), similar to 2020 (0%). However, there was an increase in toddlers classified as below the red line (BGM) from 0.11% in 2020 to 0.45% in 2021, an increase of 0.34% ^[4].

Additionally, nutritional issues were reflected in 461 toddlers (1.26%) with undernutrition status and 393 toddlers (1.07%) with below-standard body weight. Furthermore, the prevalence of stunting among toddlers in Surakarta in 2021 was recorded at 1.39%, a decrease compared to 2020, which reached 3.23% ^[4].

This study aims to identify mothers' needs in addressing stunting in their children so they can receive timely and specific interventions to improve their physical health and cognitive abilities to be on par with their peers. This research aligns with national family development policies aimed at empowering families to function optimally. Emphasizing the family's role, particularly mothers as central figures, is also in line with Surakarta City policies, which highlight the importance of family functions in solving problems and promoting family empowerment through health-oriented family development programs.

METHODS

This study aimed to identify the needs that mothers must fulfil in addressing stunting among their children in Surakarta City, Indonesia. A qualitative design, involving two participant groups. The first group consisted of four nutrition officers from health service centres and six community health cadres, while the second group included ten mothers with children under two-children who were diagnosed with stunting. Prior to participation, all respondents provided informed consent.

The study was conducted face-to-face (offline) in compliance with COVID-19 prevention protocols between September and October 2022. Participants were selected using a purposive sampling technique from existing data. Initially, researchers reviewed data on children under-two children with stunting obtained from the Surakarta City Health Office. Based on recommendations from the Health Office, five public health centers (Puskesmas) with the highest number of

stunted children were chosen. Researchers then contacted these centers to obtain the contact information of nutrition officers, community health cadres, and mothers of stunted children.

Once contact information was obtained, the researchers reached out to the mothers and invited them to participate as informants. Before each discussion, participants were informed about the study objectives and invited to join a Focus Group Discussion (FGD) upon consent. A total of 20 participants aged between 24 and 50 years, all residing in Surakarta City, were involved. They were divided into two groups: the first group comprised four nutrition officers and six health cadres, while the second group consisted of ten mothers with stunted children.

Data collection was carried out using open-ended questions supplemented with follow-up questions based on participant responses (the question guide is presented in Table 1). A qualitative interview technique with an inductive approach was applied during data analysis to obtain an in-depth understanding. This approach allowed for a comprehensive exploration of the needs of mothers with children under two years old suffering from stunting.

Tabel 1. Open Questions for FGD

Open Questions for FGD
1. How does the community around you perceive stunting?
2. Are there any specific guidelines for recording and supporting families with stunted toddlers?
3. Are there any programs or efforts currently in place to prevent stunting?
4. What challenges have been encountered so far in implementing existing stunting prevention programs?
The following questions are related to efforts to improve mothers' knowledge in reducing stunting rates:
5. In your opinion, what is needed to prevent stunting?

6. The current stunting rate is still relatively high. In your opinion, what type of information delivery model would be effective in helping reduce stunting?
7. What new strategies do you expect or recommend?
8. What is your opinion if an information delivery model in the form of a module containing stunting management guidelines is implemented in Surakarta City?
9. What is your opinion if you are given a stunting prevention information module to study at home?
10. What kind of module format would you prefer?
11. Would you prefer a digital module (e-module) or a printed module?
12. What type of information do you expect to assist in planning your child's health and growth?

Data were collected through open-ended questions listed in Table 1 and discussed during a Focus Group Discussion (FGD). Prior to conducting the FGD, each informant was asked to provide informed consent.

The FGD was conducted over two days in face-to-face sessions by the research team, with each session lasting approximately 90 minutes. The first session was held on the first day with the first group, consisting of stunting management facilitators, primary health care staff, four informants, and six health cadres. The second session was held the following day with the second group, which included mothers of stunted children. The main objective of these FGDs was to identify the needs of mothers in addressing stunting issues in their children.

Data analysis was carried out using Colaizzi's method, which included the following steps: The data analysis process began with obtaining a comprehensive understanding of the phenomenon under

study. Observational and interview data were documented by transcribing the audio recordings verbatim into written text. The transcripts from all participants were then read repeatedly to allow the researcher to become deeply familiar with the content. From these readings, keywords were identified from each participant's statements.

The researcher subsequently interpreted the meaning of significant statements and organized the data into categories, from which main themes were developed. The overall findings were then synthesized into a coherent narrative description. To ensure credibility, member checking was conducted by returning to the participants for clarification of the interview data and to obtain additional information that had not been captured previously. Finally, the analysis was refined with supplementary data gathered during the validation process.

The analysis process was supported by NVivo software to facilitate data management.

This study has obtained an ethical clearance letter from the Ethics Committee of the Faculty of Medicine, Universitas Sebelas Maret, with ethical approval issued under decision number 117/UN27.06.11/KEP/EC/2022.

RESULT

1. Demographic Characteristics

Surakarta City, widely known as Solo, is one of the cities in Central Java Province, Indonesia, serving as a supporting city for other urban centers. The city is located in a lowland area and is divided into five sub-districts: Laweyan, Serengan, Pasar Kliwon, Jebres, and Banjarsari. Approximately 65% of its area is utilized for residential purposes, while around 16% is allocated for economic activities.

This study involved 20 informants aged between 24 and 50 years. The participants came from various backgrounds, including nutrition officers working at several community health centers (Puskesmas) such as Puskesmas Gajahan, Puskesmas Kratonan, and Puskesmas Gilingan. In addition, the study included health cadres from several integrated health posts (Posyandu), such as Posyandu Melati (under Puskesmas Gajahan), Posyandu Mawar (also under Puskesmas Gajahan), Posyandu Dahlia (affiliated with Puskesmas Sibela), Posyandu Kamboja (under Puskesmas Pucangsawit), and Posyandu Bakung (under Puskesmas Kratonan).

Other informants were mothers residing in various neighborhoods, including Kampung Baru, Pasar Kliwon, Kratonan, Pucang Sawit, Joyontakan, Kristalan, Kampung Sewu, Punggawan, and Gilingan. More detailed characteristics of the respondents are presented in Table 2.

Table 2. Description of Respondent Characteristics of Qualitative Study

Respondent(s) ID	Work	Location
P1	Nutritionist	Puskesmas Sibela
P2	Nutritionist	Puskesmas Gajahan
P3	Nutritionist	Puskesmas Kratonan
P4	Nutritionist	Puskesmas Gilingan
P5	Cadre	Posyandu Melati Puskesmas Gajahan
P6	Cadre	Posyandu Mawar Puskesmas Gajahan
P7	Cadre	Posyandu Dahlia, Puskesmas Sibela
P8	Cadre	Posyandu Melati, Puskesmas Gilingan
P9	Cadre	Posyandu Kamboja, Puskesmas

P10	Cadre	pucangsawit Posyandu Bakung, Puskesmas kratonan
P11	Mother	Kampung Baru
P12	Mother	Pasar Kliwon
P13	Mother	Kratonan
P14	Mother	Pucang Sawit
P15	Mother	Pucang Sawit
P16	Mother	Joyontakan
P17	Mother	Kristalan
P18	Mother	Kampung sewu
P19	Mother	Punggawan
P20	Mother	Gilingan

2. Mothers' Needs in Addressing Child Stunting

The qualitative analysis using a approach revealed five main themes reflecting mothers' needs: Current community perceptions of stunting; Availability of existing programs; Barriers faced in program implementation; Expectations for stunting prevention efforts; Needs in managing stunting. This is explained as follows:

a. Current Community Perceptions of Stunting

Within the community, social stigma and misconceptions about stunting and its causes still persist. Parents of stunted children reported that their children often receive comments regarding their height and weight, and even their developmental progress such as language skills is often perceived as slower compared to their peers.

On the other hand, nutrition officers from community health centers (Puskesmas) expressed frustration over the negative stigma associating stunting solely with malnutrition. In reality, stunting is not always caused by poor nutrition but rather by more complex factors.

These findings highlight the importance of raising public awareness and understanding through proper education to reduce misconceptions and negative stigma that remain prevalent in society.

"Getting comments about having less height, less weight than others are common things, the children are older than the grand-children, but they are slow-talkers (Parents of children with stunting P11)."

"Sometimes there's still anger. Why are they so angry that there's still a stigma in society that stunting is such bad nutrition when it differs from bad nutrition? That's the perception of parents. While in other communities, she doesn't have a toddler, they know about stunting, but they're not aware of stunting (Nutrition of Public Health Centre P3)."

b. Availability of Existing Programs

Parents are aware of the importance of providing additional food and supplements, such as biscuits, to support the growth of children affected by stunting. They also mentioned that routine check-ups at health facilities are conducted to monitor the child's weight and development.

In addition, health workers from community health centers (Puskesmas) emphasized the importance of administering iron tablets to address anemia, which may be associated with stunting. These findings indicate an understanding of the role of nutrition and supplementation in managing

stunting, as well as its relation to maternal health.

"Every day there's extra food. Once a month it was checked at the medical center, his son would weigh the development. The biscuit will make the extra food and the additional biscuits (Parents of children with stunting P16)."

"The tablets that add blood to the term will also cut off the stunting links from birth defects or anemic mothers (the staff of the public health center P4)."

c. Barriers Face in Program Implementation

Parents of stunted children face difficulties attending health-related meetings due to time constraints caused by work commitments. They emphasized the need for more flexible scheduling, such as after working hours, to enable their participation.

On the other hand, health workers from community health centers (Puskesmas) expressed concerns regarding the living environment of these children, including exposure to cigarette smoke from fathers who smoke in cramped rental spaces. This situation poses potential health risks for the child, highlighting the importance of creating smoke-free environments to support overall child health

"I work. So if we have a meeting, you can't come to it if you want to. We can check after work. If you repeat it again, you can still do it (Parents of children with stunting P18)."

"One of the problems is the dad of the child is a heavy-smoker. Often smoking in the room. Moreover, our rental room is only 3x3 large. Sometimes the child is in the same room as the dad who is smoking at the moment. I have reminded him a million times to smoke a cigarette outside of the room (The staff of the Public Health Centre P2)."

d. Expectations for Stunting Prevention Efforts

The government has launched various programs related to stunting prevention and mitigation. However, respondents expressed the need for more practical and easily accessible efforts. Their expectations for stunting prevention and management strategies include: 1) Establishment of a support community for parents of stunted children, serving as a platform for sharing experiences and information; 2) Flexible access to information without time restrictions, allowing parents to learn at their convenience; 3) Delivery of information in an engaging way, supported by audio-visual media, to ensure better understanding and prevent boredom; 4) Information on sources of healthy food ingredients, particularly those that are affordable and meet the child's nutritional needs; 5) Comprehensive educational materials on stunting, including prevention, impacts, and management strategies; 6) Guidance on varied and appealing meal options for children to increase appetite and meet nutritional requirements.

"I'd prefer a phone, if it is a book formed it could possibly lose or be torn by the child. Moreover, it's more efficient that way (Parents with stunting children P15)."

"We can do a video. Miss XXX might know better (laughing). Instead of just counselling, it is better if we use video (Cadre P8)."

e. Needs in Stunting Management

There is a need to enhance education and awareness regarding nutrition and stunting, particularly among parents of stunted children and community leaders. Stunting is still often perceived negatively and even considered shameful, highlighting the need for efforts to reduce this stigma. Health workers emphasized that stunting is not solely caused by poor dietary habits. This indicates that a more

comprehensive and supportive approach is required, both to provide accurate understanding of the causes of stunting and to promote practical solutions within the community.

"Well, let's say this is like mentoring a decent nutrition, how to eat, how to innovate, how to do it (Parents of children with stunting P12)."

"For stakeholders of public figures perhaps yes or officials consider stunting to be a shame when the high number of stunts is also present. Yeah,

because it was a red report card when there was a stunt in the territory. We as health workers in the center need to confirm that stunting is not an awful thing. it's not bad nutrition (the staff of a public health centre P1)."

Table 3. Main Themes of Qualitative Analysis

Theme	Subtheme	Issues and Needs
Current community perceptions of stunting	<ul style="list-style-type: none"> • Unconcerned • Unmoved • Concerned • Feeling Stigmatized 	Weaknesses were identified in the current stunting management program, and there is a need for a new information delivery program for stunting prevention
Availability of existing programs	<ul style="list-style-type: none"> • Family mentoring by cadres • Provision of supplementary food • Early prevention by providing iron (Fe) to adolescents • Ashamed to admit that a family member was stunted • The supplementary food intended for the child was eaten by other members • Absent from the counseling because of busyness • Failed to comply with the cadre's recommendations • Certain family members have given up smoking 	through engaging audio-visual that are not time-restricted
Barriers faced in program implementation		
Expectations for stunting prevention efforts	<ul style="list-style-type: none"> • Stunting information • Information about healthy food sources • Information about diverse meal options appealing to children • Flexible access to information anytime • Access to engaging audio-visual information 	

Needs in managing stunting	• The presence of a community of stunting advocates
	• Provision of additional nutritional care
	• Awareness of stunting

DISCUSSION

Concerns regarding children with stunting remain prevalent, as the condition is often perceived as a common occurrence, leading to indifference and a sense of shame among families [5]. Consequently, families with stunted children frequently experience social stigma from their communities. Perceptions of stunting, including the level of knowledge and the way such understanding is constructed, differ across groups. When stunting in young children is not considered a health problem, variations in caregiving practices related to nutritional fulfillment are inevitable [6].

Health policies have established specific standards for nutritional supplement products to address the diverse dietary requirements of toddlers, school-age children, and pregnant women [7]. Supplementary feeding programs primarily focus on providing adequate macro- and micronutrients for young children and pregnant women as part of stunting prevention and management strategies [8-10].

In addition to nutritional aspects, environmental conditions play a significant role in the occurrence of stunting, extending beyond issues of hygiene and water quality [11]. Consequently, interventions should not be limited to improving water quality but must also encompass sanitation and hygiene improvements to support optimal child growth and development [12-14]. Exposure to air pollution during pregnancy, particularly pollutants containing free radicals, can disrupt cellular mechanisms, induce inflammation, and hinder fetal growth [15]. Such exposure increases the risk of stunting by up to 90%. Among

various pollutants, cigarette smoke has the greatest impact, exerting ten times more harmful effects than vehicle emissions. Therefore, families of stunted children require targeted counselling regarding the dangers of smoking on child growth and development [16-18].

Feelings of shame often arise due to discrimination and social exclusion within the community. Such discrimination is driven by stereotypes and prejudice, which encourage avoidance or restriction of interactions with affected families. Improving public understanding of stunting is crucial and can be achieved through health education, community empowerment programs, and awareness campaigns, as public knowledge strongly influences the reduction of negative stigma [19].

Access to engaging information is a critical need for mothers of stunted children, particularly through audio-visual media. This method is highly effective as information is processed through both auditory and visual channels simultaneously. Educational videos have been proven to enhance maternal knowledge regarding stunting, nutritional adequacy, and child care practices [20]. Short animated videos or commercials of varying lengths are considered effective due to their accessibility and simplicity. With proper access to such information, mothers gain greater confidence in their ability to improve their child's condition [21-22]. Therefore, audio-visual-based health education through Communication, Information, and Education (CIE) strategies should be strengthened by healthcare professionals to improve family understanding and skills in stunting management.

The limitations of this study include the use of a qualitative design with an FGD approach that may introduce social bias, a sample limited to a single city, and the absence of observational triangulation.

CONCLUSION

Mothers of children with stunting require a comprehensive understanding of appropriate strategies for stunting management, as well as access to affordable sources of nutritious food to support their children's physical growth and cognitive development. These strong needs for information that is easily accessible at any time and in various formats, particularly through audio-visual media. Such information should include practical guidance on selecting healthy food, a clear understanding of stunting and its implications, and examples of diverse and appealing meal plans to increase children's interest in food. Audio-visual media, particularly videos, serve as an effective strategy for communication, information, and education in stunting prevention.

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