

ORIGINAL ARTICLE

How Families Fulfil Nutrition for Stunted Children in Rural Areas of Indonesia?

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ABSTRACT

Background: Stunting remains a major health challenge in Indonesia, particularly in rural areas. Family functionality and local food sources play a crucial role in addressing stunting, highlighting the need for culturally sensitive interventions rooted in local wisdom, such as the *Pandalungan* families approach to child care and nutrition. This study aimed to explore the depth and complexity of the experiences of families in fulfilling of nutrition with stunted children in rural areas.

Methods: A descriptive phenomenological approach was employed to explore the experiences of families in caring for children with stunting in rural areas, considering sociodemographic, sociocultural, and environmental factors. Data were collected through participant observation, in-depth interviews, and focus group discussions with 34 key informants, consisting of 30 of parents and 4 of health cadres in three health centres in agricultural areas of Indonesia using semi-structured interview guidelines. Data were analysed using the Colizzi approach.

Results: Three main themes in the care of children with stunting were highlighted, namely the fulfilment of nutritional needs, family and community involvement, and barriers to improving nutritional status, with the important role of health cadres and community health centre nurses in education, counselling, and supplementary feeding programs.

Conclusion: Families caring of stunted children were explored on nutritional needs, family and community involvement, and obstacles in increasing nutrition status. Therefore, health education, family counselling, and complementary feeding should be provided to correct nutritional practices within the community.

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Introduction

Stunting is a critical global health concern that affects children under five, particularly posing a serious challenge for communities in Indonesia, especially in rural areas (1, 2). Stunted children experience delayed growth and development compared to their peers physically and cognitively (3). Furthermore, stunted children have a low body weight and are vulnerable to infection and other health problems (4). According to the WHO, Indonesia is ranked third in the highest prevalence of stunting in children under five years old, with 36% prevalence (5). According to the results of the 2023 Indonesian Health Survey published by the Ministry of Health, the prevalence of stunting in Indonesia was 21.5%, which represents a decrease of only 0.1 from the 2022 survey data of 21.6 % up to now. The actual reduction in stunting is still far from the target of 14 percent by 2024 (6). Jember is one of the 3 districts that has the highest prevalence of stunting in East Java, with the prevalence according to the Nutrition Status Survey of Indonesia (SSGI) in 2022 at 34.9% (6).

Stunting has a significant impact on impaired cognitive-motor-verbal development, increased morbidity-mortality, as well as a shorter body posture that is permanent in adulthood (3). Indonesia is one of the countries with the highest food production, but stunting is still a big challenge for Indonesia. Based on data from the Ministry of Health, 92% of the child population in Indonesia consume low amounts of fruits and vegetables that are below the limits set by the World Health Organization (7). Therefore, the treatment of stunted children in the family by optimizing local food sources and the role of the family are needed in family nursing care (4). Several studies have stated that food consumption patterns and living behaviours in the family are factors that cause stunting (8). Family functionality can influence the formation of a healthy lifestyle in the household, including the fulfilment of appropriate nutritional needs for children (9). A well-functioning family would influence mothers in providing effective care for their children (10, 11). The problem of stunting requires comprehensive handling by utilizing local potential through the involvement of all elements of society, both from the central and local governments (12).

Convergence, coordination, and consolidation of balanced nutrition programs in providing nutrition for children must be implemented in the regions with an approach that emphasizes local wisdom and the potential of local food sources to overcome stunting (1). Pandalungan local wisdom in family parenting can shape family structure and function

in meeting children's nutritional needs. The values of local wisdom in Pandalungan families can be optimized in child care, including in terms of feeding and selecting local food ingredients revealing a significant relationship among family function, child-feeding attitude, and practices concerning the nutritional status of children experiencing stunting (13). It emphasizes the significance of progressing family work and supporting solid child-feeding. Being focused on mediations based on local cultural understanding is basic for successfully decreasing stunting. This study aimed to explore the depth and complexity of the experiences of families in fulfilling of nutrition with stunted children in rural areas.

Materials and Methods

This study aimed to explore how family care for stunted children, while focusing on cultural awareness of eating habits, nutritional preparedness, and challenges can improve nutritional status. The study identified seven specific categories of how families managed the care of stunted children. Implementing an agronursing-based family nursing care system adapted to Pandalungan local wisdom was hoped to overcome the problem of stunting in families. A qualitative study was used employing a phenomenological approach to explore the depth and complexity of the experiences of families with stunted children in rural areas. Families' experiences in rural areas were unique to be correlated with the sociodemographic, socio-cultural, and the environmental data of families in rural areas. Family care for children with stunting was proposed to vary in rural areas.

A qualitative study with descriptive phenomenology was conducted including bracketing, intuiting, analysing, and assessing the essence of the phenomenon of families caring for children with stunting in rural areas. Data involving 4 months of participant observation (PO) in the community were collected by in-depth interviews (IDI), and focus group discussions (FGD). Data saturation was achieved with 34 key informants from 30 parents (mother or father) and 4 cadres in agricultural regions of Indonesia involving 3 public health centers, namely Sukorambi, Banjarsengon, and Panti, with an ethnic background of Pandalungan. A purposive sampling technique was utilized to recruit participants with secondary data from three public health centers suffering from severe stunting problems.

The participants were health cadres and mothers with malnourished (stunted) children. Participants were selected based on inclusion criteria of (i) families who were caring for malnourished (stunted) children under 5 years of age; and (ii) parents who worked as

farmers of the Pandalungan tribe to be able to explore the phenomenon of child care based on the local wisdom of the Pandalungan culture. The exclusion criteria were being temporary residents who lived in the research area. Totally, we could recruit a total of 30 parents with malnourished (stunted) children and 4 cadres (Figure 1). Participants as informants were asked to determine the schedule and place for

the FGD; while we ensured to protect their privacy during the FGD too.

A semi-structured interview guide was applied to conduct the FGD (Table 1). The FGDs were conducted in local Madurese, Javanese, and Indonesian languages. Researchers were fluent in Madurese (RAY and IR), Javanese (ND and SB), and Indonesian (AH and NR) to conduct research in the Pandalungan area.

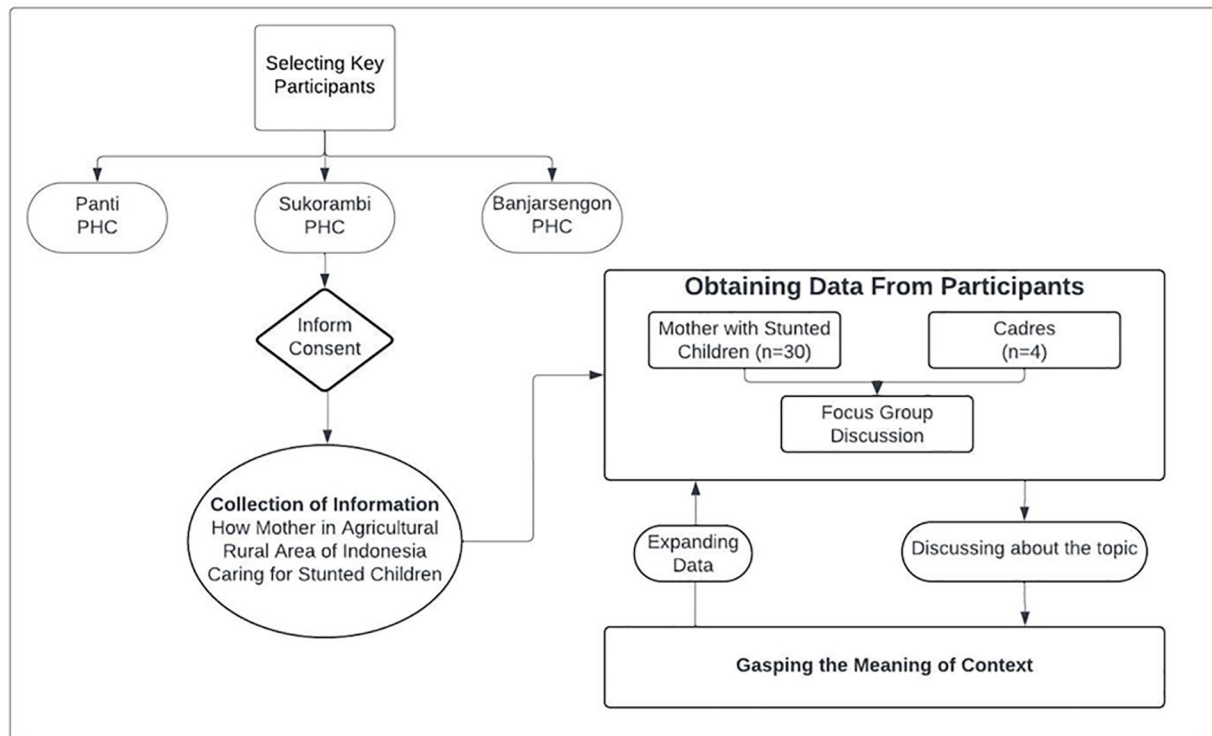


Figure 1: Data collection process.

Table 1: Interview guideline of the study.

- A. I want to know about growth and development care practices (mother/caregiver)
 1. Does the mother/caregiver stimulate the child's growth and development?
 2. How does the mother/caregiver monitor the child's growth and development?
 3. Does the mother/caregiver know about appropriate growth and development according to the child's age?
- B. Feeding techniques (by mother/caregiver)
 1. How does the mother/caregiver provide food to the child? Being fed or not fed (eating alone), sitting at the dining table, being carried, while playing, etc.?
 2. What should the mother/caregiver do if your child eats a large amount?
 3. What should the mother/caregiver do if your child eats a small amount?
 4. Is food provided to children regularly according to the feeding schedule?
 5. How do mothers/caregivers create a pleasant atmosphere when children eat? (giving favorite food, asking to eat while playing, going for a walk outside the house, etc.)
- C. Children's activities and children's problems (cadres)
 1. What is the role of cadres in optimizing children's growth and development through children's activities?
 2. Child problems encountered in the cadre's work area?
- D. I want to hear about the maternal and child health program at Puskesmas
 1. How is maternal and child health program data managed and utilized in community health centers? What health problems need to be fixed?
 2. Has the program been implemented optimally?
- E. Resources and community support for children with stunting
 1. Are there efforts to utilize local resources in preventing and overcoming stunting?
 2. What is the form of community support for children with stunting?

Participants were divided into 3 groups; each consisted of 10 mothers and 1 health cadre. Each participant underwent FGDs at least twice to ensure the credibility of the responses. The time allocation for each FGD lasted from 60 to 120 minutes. In the phenomenological study, an investigator explored the issues of families with stunting children through IDIs and FGD to obtain comprehensive information on the phenomenon of caring for children with stunting in rural areas. Other data collection tools that supported the collection of data in this study were tape recorders during the interview. Field notes were utilized to observe the response of non-verbal responses of participants during the interview. To measure the stunting of children, height and weight of children using anthropometric instruments and the body mass index of children (BMI) for interpreting stunting were measured.

The sociodemographic data of families were collected including the age, gender, educational level, and occupation. Interview guidelines were prepared based on the research objectives, which were also translated into a number of questions to explore the experience of the families. Interview guidelines were also employed to conduct in-depth interviews with the participants. Field notes were used to record the non-verbal responses of the participants during the interviews. All of the non-verbal responses made by the participants during the interviews were documented. Tape recorders were used to record all of the information obtained during the interviews. In qualitative research, the information obtained was not in the form of numbers, and qualitative researchers used data retrieval tools instead of a tape recorder.

The structured interview questions used in thematic analysis focused on fulfilling of nutrition for stunted children. The items of question were developed based on a previous study (13). The five questions were about (i) growth and development care practices, (ii) feeding techniques, (iii) children's activities and children's problems, (iv) maternal and child health program at public health centers, and (v) resources and community support for children with stunting. The field notes were collected based on observations made during the interviews involving the researchers and participants, including descriptions of the responses made by participants in the pre-interaction, interaction, and termination phases.

Data were collected during in-depth interviews based on open-ended questions for one month. In the orientation stage, the researchers tried to enquire about the general health condition of the families (father or mother) to identify their readiness to participate in the interviews. An investigator measured the height and weight of children and created a comfortable atmosphere to maintain the privacy of the families

by conducting the interviews of IDIs and FGDs in a closed room. The investigator prepared a tape recorder to record the conversation during the interview and stationery to record the non-verbal language of the participants. The investigator started the interviews by giving the following question to the families: "What was your experience caring for the children with stunting?" This core question was used to obtain general impressions from the families.

Some families found it difficult to understand the question. The investigator used an interview guide comprising 5 categories and 14 questions, including open questions to elaborate on the core questions. The interview guide contained special questions based on the research objectives. The investigator provided a general description associated with the core question. If the families could not understand the questions, the investigator outlined the core questions in accordance with the interview guide and tried not to pass judgment based on their understanding or experience when answers were given by the families. The interview process in this study was terminated when the necessary information was obtained according to the research objectives based on the saturation of data.

The investigator wrote field notes containing important details related to the research objectives in order to complete the interview, so they did not forget helpful elements of the natural data obtained during the interviews. The field notes documented the atmosphere, facial expressions, behaviour, and non-verbal responses of the families during the interviews and were compiled to describe the responses of the families. They were written during the interviews and coupled with the transcripts. The interviews were terminated after all of the questions were answered by the families. The investigator closed the interviews by thanking the families for their participation and cooperation during the interviews and then was engaged with the families in the next meeting to validate the data.

The characteristics of the families were analysed using descriptive statistics. After collecting the data, the recordings of the families were transcribed by investigators who analysed the transcripts by reading and identifying the keywords related to this study. A thematic analysis procedure was used to determine the experiences and meanings of the views in each family's transcript. In the phenomenology approach, the meaning of a participant's life experience comprised the key thematic points in the findings.

The data analysis process employed in this study was followed as the steps including (i) the life experiences of the participants by compiling a literature survey of the theory and researches related to the experiences

of families caring for children with stunting were described; (ii) an overview of the experiences of families caring for children with stunting based on in-depth interviews with the participants and the field notes was compiled; (iii) the transcripts of the interviews to obtain an overall view of the life experiences of families caring for children with stunting were read; (iv) the transcripts to select significant statements that were meaningful for our research purposes were read; (v) the meanings of any significant statements by choosing keywords before categorizing the statements made by the participants were articulated; (vi) the statements into themed groups in a table, which included a breakdown of the categories into sub-themes and themes were grouped; (vii) in-depth descriptions were written; and finally (viii) the findings based on feedback from the participants were validated.

The data analysis yielded a textual description and a structural description of the narrative or story about the events as objects that could be studied. The qualitative research information was presented in the form of a text or picture format of a life experience. The textual

descriptions used in this qualitative study were (a) use of the categories mentioned by each participant, (b) the transcript of the interview, (c) using the statements that varied among participants, (d) a narrative or story, and (e) establishing keywords based on the interpretations of the researchers and participants. This study was approved by the Ethical Committee Board of the University in Indonesia (No. 049/UN25.8/KEPK/DL/2023). As part of the Committee of Ethics of Health Research (KEPK), support from KEPK of the Ministry of Health, Indonesia, and the Department of Health Office of Jember district was also attained. All participants received informed consent and were free to attend this study.

Results

We identified the experiences of families caring for children with stunting among 30 participants. All respondents were from the Pendalungan tribe, including 30 mothers, while there were 30 children participants. The characteristics of families and their children were illustrated in Table 2

Table 2: Characteristic of the respondents.

Characteristics of parents	Family (n, %)
Characteristics of participants	
Age (years)	
21 st	8 (27)
22 nd	6 (20)
23 rd	6 (20)
24 th	5 (17)
25 th	5 (17)
Total	30 (100)
Gender	
Female	30 (100%)
Male	0 (0%)
Total	30 (100%)
Educational level	
Elementary school	6 (20%)
Junior high school	17 (57%)
Senior high school	7 (23%)
Total	30 (100%)
Employment	
Housewife	30 (100%)
Total	30 (100%)
Characteristics of children	Children (n, %)
Age (months)	
0-12	3 (10)
13-24	8 (27)
25-36	11 (37)
37-48	7 (23)
49-60	1 (3)
Total	30 (100)
Gender	
Female	17 (57)
Male	13 (43)
Total	30 (100)

that reveals dominated families with an age of 21 years, a junior high school educational level, and being a housewife. Three themes of families caring for children with stunting were identified, including nutritional needs; family and community involvement; and obstacles in increasing nutrition status (Figure 2).

The participants stated that they processed their main food by themselves, they also prioritized the consumption of vegetables and animal proteins, and they prepared the food ingredients into dishes that their children liked, such as vegetable pudding and meat nuggets or roulades. They reported feeding technique by cooking themselves; and requested vegetables, and proteins like fish, meat, eggs, or chicken. The children did not like chicken, but liked eggs and if it was difficult to feed, it could be done in other ways, such as processing. Some mothers stated that they had a special schedule for feeding

the children, including making breakfast mandatory, and some others set times for milk consumption, heavy meals, and the children's sleep schedule.

Interview results with parents showed that children had varying preferences for the types of food they consumed and the source of nutrition. The child liked to eat soup, vegetables like moringa, spinach, and side dishes such as eggs and skipjack tuna. The child did not like fish, but sometimes liked eggs, or soya beans. Sometimes the child liked mixed with sausage made like a rolade and it was dependent on the child's preference. If it was vegetables, they liked spinach, moringa leaves, and carrots. They liked vegetables, proteins like fish, meat, eggs, or chicken. Based on information from participants, children in villages had access to diverse sources of nutrition including plant-based and animal-based food sources. Nutritional sources were directly planted by mothers, such as moringa leaves, and

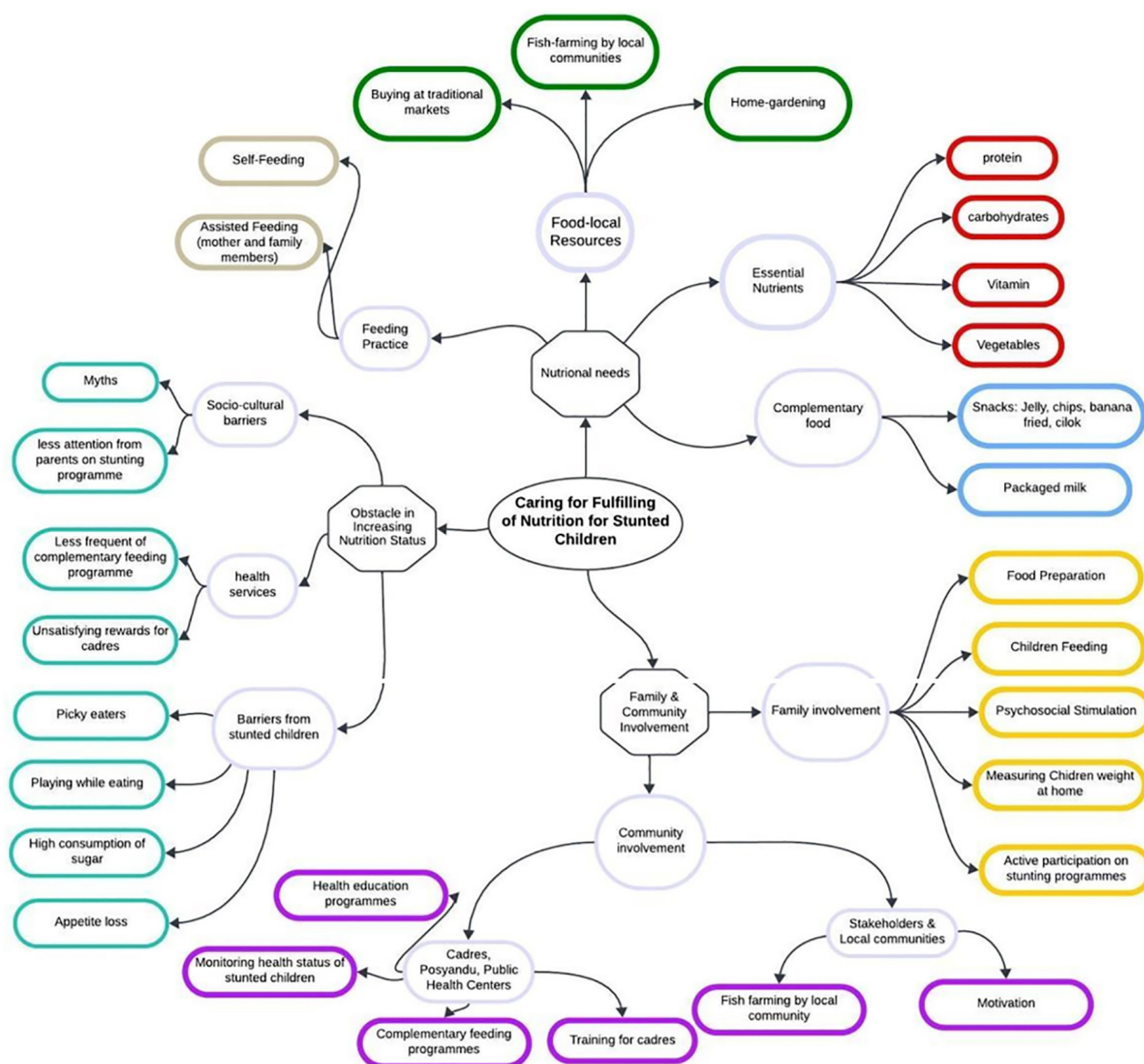


Figure 2: Framework thematic analyzing caring for fulfilling of nutrition for stunted children.

some respondents bought cooking ingredients. The majority of participants stated that they did not have limitations in obtaining daily nutritious food, and nutritional sources could be easily obtained through local traders.

There was diversity in local food types in community health centers in Jember Regency, based on informant statements. Some mothers stated that their children preferred vegetables like moringa, and sometimes refused other vegetables revealing that there was an awareness on importance of vegetables in the diet, and children's personal preferences could affect the nutritional intake. In terms of protein intake, some parents reported difficulties in meeting their children's dietary needs because the children were very selective about food. The children wanted to eat moringa leaves, but they were very picky with other vegetables and they did not want to consume much, and for proteins, they only wanted to eat eggs. When they did not request eating animal protein, they liked to have meatballs.

Several participants provided appetite-stimulating vitamins and also gave milk as an additional source of nutrition. When children were given appetite stimulant medicines, the child refused to take it, so they were forced for it. The children did not like to take much, even though they were given the most expensive vitamins and the child had to be supplemented with powdered milk. The parents stated that they often provided complementary foods in the form of ultra-processed snacks sold in minimarkets, such as crackers, snacks, and flour-based treats. Based on the interviews conducted, the majority of parents knew the definition and ways to stimulate development of children through daily activities using toys. Their toys were regular ones made from stones and painted in various colors or made from flour mixed with water and color. Some mothers stated that they often had different opinions with their parents regarding child-rearing practices. Some parents still faced challenges in providing breast milk, which delayed the provision of complementary foods alongside breast milk, and some mothers encountered problems with the daily nutritional intake consumed by their children.

Regarding the role of the community in addressing stunting, participants mentioned factors such as the existence of a house used by the local community to receive nutrition counselling services, village official announcement related to maternal and child health, the distribution of vitamins, and cooking demonstrations of nutritious foods. They shared them with mothers and children in need. In their villages, there was something called the 'healthy village house' which held counselling sessions

on nutrition, child and maternal health, and home environment. Each Posyandu tribe had a certain number of people who collaborated with midwives.

As cadres, they conducted visits or measurements for child development. There were programs to provide food for stunted toddlers, and every 15 days, they measured weight and height. The cadres often reminded mothers about the immunization schedule. The village head and the neighbourhood head were all enthusiastic about giving announcements like 'tomorrow there will be an activity'. It was broadcasted through a speaker to announce that tomorrow there will be a distribution of vitamins and polio immunization that made the mothers happy to come. Participants described several activities related to nurses and healthcare workers at community health centers in preventing and addressing stunting, including KIE (Communication, Information, and Education) programs, parenting and nutrition counselling, food provision, healthy eating education, and assistance for pregnant women with chronic energy deficiency. They educated about child development, how to provide food, how to process food, how to nurture through play, and what a good diet looked like.

The health worker provided education about the wrong feeding patterns. There was provision of supplementary food program from the health center. The parenting patterns was to be age-appropriate. After 6 months, they were advised to give soft and hard foods. If there were children with growth and development disorders or pregnant women with chronic energy deficiency at the Posyandu tribe, they were gathered and given counselling, education, Supplementary Feeding Program (PMT), and food creations focused on improving the nutritional status of children and pregnant women. There was a program called *ma'am* that was defined as "one egg one day" for one year. Cadres went through several trainings such as food creations by mixing foods to make nuggets, etc.

The cultural factors of stunting mainly focused on food, food taboos, and early complementary feeding or pre-lacteal feeding practices. Participants believed that feeding children and taking them for walk could cause nutrients to be poorly absorbed and prevent children from gaining weight. In addition, their grandmother also believed that eating eggs frequently caused boils. Some mothers mentioned that their children were very picky eaters, so they consumed protein and food in small amounts. Mothers turned the meat into other food types, such as meatballs to encourage kids who did not enjoy animal proteins. So some children preferred highly processed foods like sausages and nuggets.

Discussion

Nutritional needs during infancy and childhood are very important for growth and development, which require a balanced intake of essential nutrients that can be met through proper feeding practices (14, 15). Exclusive breastfeeding is recommended during the first 6 months, after which complementary foods should be introduced to meet the increased nutritional and energy needs. Essential nutrients such as proteins, vitamins, and minerals are very important during the period of complementary feeding (16, 17). A positive association was reported between linear growth and the consumption of dairy products, meat, fish, and eggs (18). Consuming more types of animal source foods (ASF) was shown to be associated with a lower incidence of stunting (19).

Our findings indicated that the types of food consumed, such as moringa, spinach, and carrots could demonstrate a diverse range of preferences for animal proteins. Some children only liked eggs and refused to eat chicken, some preferred processed protein forms like nuggets and rollades, and others liked fish such as catfish. This posed a challenge in improving the nutritional status of stunted children, as outlined in the thematic analysis, and necessitates fulfilling the nutritional needs for stunted children. Although there was awareness among parents about the importance of nutritional balance, children's personal preferences often determined the actual food intake. Picky eating behaviour that is characterized by refusal to try new foods and avoidance of certain nutrient-dense foods, has been shown to negatively affect nutrient intake and increase the risk of stunting (20). This highlights the challenge of introducing diverse animal protein sources into children's diets. Therefore, nutrition interventions should consider individual eating habits and preferences to be effective (21).

As an effort to increase children's appetite, parents reported providing appetite-enhancing supplements, vitamins, and formula milk. It was shown that micronutrient supplementation, particularly zinc and iron, can improve appetite and nutritional status (22). Nutritional supplementation has also proven effective in improving children's nutritional status, which has the potential to reduce the risk of stunting (23). Mothers play an important role as food providers, role models, and managers of children's eating habits (24). Most mothers provided packaged snacks due to convenience and children's preferences. However, ultra-processed foods are often high in sugar and salt, which may negatively affect children's health if consumed excessively. This creates challenges for parents in providing

nutritious yet appealing snacks (25).

The role of families is crucial in preventing and managing stunting through adequate nutrition, emotional support, and developmental stimulation (11, 26). Family members are responsible for providing an environment that supports the growth and development of children, including a balanced nutritional intake (27). Families also serve as a link for information on health and nutrition provided by health cadres or community health centers, enabling them to implement optimal care and nutrition practices. Thus, the active role of the family in providing nutrition and monitoring the growth and development of foster children contributes to the prevention of stunting (11, 26, 28).

Besides families, communities play an important role in preventing and addressing stunting. Community-based programs such as PMT and nutrition education among Posyandu tribes could improve children's nutritional status and reduce stunting prevalence. Therefore, the synergy between families and communities is a key component in comprehensive and sustainable stunting prevention efforts (29, 30). The results of the interviews with respondents indicated that cadres and nurses play an important role in preventing and addressing stunting, especially in the Puskesmas environment. Health cadres play a central role in providing education, conducting early detection, and offering support to the community (31). A previous research showed that empowering cadres through training and counselling can significantly increase their knowledge related to stunting (32). Additionally, trained cadres are able to identify stunting risks earlier, allowing for interventions and handling to be carried out as soon as possible (33).

Improving the nutritional status of stunted children faces multiple barriers, including socio-cultural beliefs, child-related factors, and limitations in healthcare services (34). Misconceptions regarding certain foods, picky eating behavior, and limited program sustainability can hinder optimal nutrition intake. Inadequate program continuity and limited motivation among health cadres can further reduce intervention effectiveness. Therefore, it is important to ensure that children's eating patterns align with the recommended nutritional standards (35, 36). Besides beliefs related to food, based on interviews with respondents, several habits and beliefs regarding nutritional patterns for children were identified, one of which is the child's attitude during meals that determines the amount of nutrients and food entering the body (37). Parents believe that eating while playing reduces children's focus during meals, leading to suboptimal nutrient intake. A research

illustrated that a lack of mealtime focus is associated with reduced interaction with food and inadequate nutritional consumption (21). Parents serve as important role models for children by shaping eating behaviors through daily practices, including modeling healthy eating patterns and encouraging the consumption of nutritious foods (37).

Children with stunting often exhibit specific eating behaviors, such as picky eating and a preference for sweet, high-sugar foods, which replace nutrient-dense foods like vegetables and animal protein. These behaviors can reduce dietary quality and may increase the risk of additional health problems. Moreover, loss of appetite due to infections or health conditions further limits adequate nutritional intake, hindering optimal growth and development (38). Limitations in healthcare services hinder efforts to improve nutrition among stunted children. Supplementary feeding programs are often irregular due to limited resources, logistical challenges, and low community participation (30, 39). Parents' limited awareness and competing economic priorities further reduce program effectiveness. In addition, insufficient recognition and incentives for health cadres decrease their motivation. Strengthening support and reward systems for health cadres is therefore essential to improve nutrition intervention outcomes (40).

This study had limitations because of using phenomenology, which is limited to participants' "experiences and descriptions based on the researcher's interpretation and explanation of the phenomena. Another drawback was that the study was only conducted in one place, Jember, East Java; therefore, the findings may not be generalizable or applicable in other parts of the world. Further researches should be undertaken to determine the use of mixed-method research, which includes a qualitative and quantitative approach to acquire a deeper knowledge of how families satisfy the nutrition for stunted children in rural areas of Indonesia.

Conclusion

This study highlighted three themes of families caring for children with stunting, including nutritional needs, family and community involvement, and obstacles in increasing nutrition status. Respondents reported that children consumed a variety of nutritional sources (protein, vitamins, and minerals) obtained from local food sources. Some challenges in improving nutritional status were picky eating, consumption of ultra-processed foods and snacks high in sugar and salt, as well as misconceptions related to

nutritional choices. Health cadres and community health center nurses played an important role in education, counselling, and supplementary feeding programs, thereby providing understanding and the application of correct nutritional practices within the community.

Acknowledgement

We kindly request a revision to the Acknowledgement section in the galley proof. Please replace the current text with the following revised version:

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Authors' Contribution

TS conceived the study, developed the research design, supervised data collection, and prepared the initial draft of the manuscript with subsequent revisions. AH contributed to the conceptual framework, assisted in methodological refinement, and provided scientific guidance throughout the research process. NR conducted data collection, performed qualitative data analysis, and supported the interpretation of findings. RAY contributed to data analysis, validation and assisted in drafting and refining the manuscript. IR participated in data collection, coding and contributed to the interpretation and contextualization of the results. SB facilitated field access, coordinated stakeholder

engagement, and helped verify the credibility of the data. NDM supported data management, assisted in thematic analysis, and critically reviewed the manuscript for important intellectual content. All authors reviewed and approved the final manuscript.

Conflict of Interest

There is no conflict of interest of this study.

References

- Huriah T, Nurjannah N. Risk Factors of Stunting in Developing Countries: A Scoping Review. *Open Access Maced J Med Sci*. 2020;8:155-60. DOI:10.3889/oamjms.2020.4466.
- Permatasari TAE, Chadirin Y, Elvira F, et al. The association of sociodemographic, nutrition, and sanitation on stunting in children under five in rural area of West Java Province in Indonesia. *J Public Health Res*. 2023;12:22799036231197170. DOI: 10.1177/22799036231197169. PMID: 37663311.
- Sari K, Sartika RAD. The Effect of the Physical Factors of Parents and Children on Stunting at Birth Among Newborns in Indonesia. *J Prev Med Public Health*. 2021;54:309-16. DOI: 10.3961/jpmph.21.120. PMID: 34649393.
- Aprilia D, Sulistijono E, Indrawan IWA. The Effect of Low Birth Weight Incidence toward Stunting and Developmental Disorders of Toddlers. *EAS J Nurs Midwifery*. 2022;4:58-64. DOI: 10.36349/easjnm.2022.v04i02.007.
- Laksono AD, Wulandari RD, Amaliah N, Wisnuwardani RW. Stunting among children under two years in Indonesia: Does maternal education matter? Sato MO, editor. *PLoS One*. 2022;17:e0271509. DOI: 10.1371/journal.pone.0271509. PMID: 35877770.
- Hasil Survey Status Gizi Indonesia (SSGI). 2022.
- Siramaneerat I, Astutik E, Agushyana F, et al. Examining determinants of stunting in Urban and Rural Indonesian: a multilevel analysis using the population-based Indonesian family life survey (IFLS). *BMC Public Health*. 2024;24:1371. DOI: 10.1186/s12889-024-18824-z. PMID: 38778326.
- Saputri RA, Anggraeni D, Sopamena N. Environmental Sanitation and Stunting (Study of the Role of Women in Stunting Intervention). *J Phys Conf Ser*. 2020;1655:012083. DOI:10.1088/1742-6596/1655/1/012083.
- Young MF, Nguyen PH, Gonzalez Casanova I, et al. Role of maternal preconception nutrition on offspring growth and risk of stunting across the first 1000 days in Vietnam: A prospective cohort study. *PLoS One*. 2018;13:e0203201. DOI: 10.1371/journal.pone.0203201. PMID: 30161206.
- Rachmawati PD, Triharini M, Suciningtyas PD. The contribution of family functions, knowledge and attitudes in children under five with stunting. *Enferm Clin*. 2021;31:S296-300. DOI: 10.1016/j.enfcli.2020.12.035.
- Faghih Sh, Ebrahimi N. Nutritional Status and Its Related Factors among 6-24 Month-Old Children Referring to Health Care Centers in Arsanjan City, Southern Iran. *Int J Nutr Sci*. 2016;1:11-15.
- Atamou L, Rahmadiyah DC, Hassan H, Setiawan A. Analysis of the Determinants of Stunting among Children Aged below Five Years in Stunting Locus Villages in Indonesia. *Healthcare*. 2023;11:810. DOI: 10.3390/healthcare11060810. PMID: 36981466.
- Susanto T, Hermiani A, Rohmawati N, et al. Determinants of Nutritional Status among Malnourished Children in Agricultural Areas. *J Keperawatan Soedirman*. 2024;19:171.
- Mehrabani D, Masoumi SJ, Masoumi AS, et al. Role of Diet in Mesenchymal Stem Cells' Function: A Review. *Int J Nutr Sci*. 2023;8:9-19. DOI: 10.30476/IJNS.2023.97788.1221.
- Homayoun M, Mehrabani D, Edalatmanesh MA, et al. The Role of Lithium Chloride in Nutrition and Stem Cell Growth Kinetics: A Review. *Int J Nutr Sci*. 2021;6:6-13. DOI: 10.30476/IJNS.2021.88801.1104.
- Soesanti I, Saptandari P, Adiningsih S, et al. The Practice of Complementary Feeding among Stunted Children under the Age of Two. *Infect Dis Rep*. 2020;12:8723. DOI: 10.4081/idr.2020.8723. PMID: 32874455.
- Kamsiah, Yulianti E, Maigoda TC, et al. The Efficacy of Fishbean Complementary Feeding and Community-Based Total Sanitation on Toddler Feeding Practices in Stunting Prevention. *Int J Nutr Sci*. 2025;10:1-8. DOI: 10.30476/ijns.2025.105817.1406.
- Zaharia S. Sustained intake of animal-sourced foods is associated with less stunting in young children. *Nat Food*. 2021;2:246-254.
- Krasevec J, An X, Kumapley R, Begin F, et al. Diet quality and risk of stunting among infants and young children in low- and middle-income countries. *Matern Child Nutr*. 2017;13:e12430. DOI: 10.1111/mcn.12430. PMID: 29032628.
- Taylor CM, Emmett PM. Picky eating in children: causes and consequences. *Proc Nutr Soc*. 2019;78:161-9. DOI: 10.1017/S0029665118002586. PMID: 30392488.
- Volger S, Sheng X, Tong LM, et al. Nutrient intake and dietary patterns in children 2.5-5 years of age with picky eating behaviours and low weight-for-height. *Asia Pac J Clin Nutr*. 2017;26:104-9. DOI:

- 10.6133/apjcn.102015.02. PMID: 28049269.
- 22 Moghdani Z, Rahmdel S, Abdollahzadeh SM, et al. Daily Dietary Intake of Micronutrients Using Duplicate Portion Sampling along with Food Composition Tables in Healthy Adult Population in Shiraz, Iran. *Int J Nutr Sci*. 2018;3:99-104.
 - 23 Faghih Sh, Ebrahimi N. Nutritional Status and Its Related Factors among 6-24 Month-Old Children Referring to Health Care Centers in Arsanjan City, Southern Iran. *Int J Nutr Sci*. 2016;1:11-15.
 - 24 Momeni M, Akhlaghi M, Ahmadi A, et al. Undesirable Knowledge and Practice of Mothers about Under 2 Years Old Children Nutrition are Related to Socio-Economic Factors in Shiraz, Southern Iran. *Int J Nutr Sci*. 2018;3:192-197.
 - 25 Oliveira PG De, Sousa JM De, Assunção DGF, et al. Impacts of Consumption of Ultra-Processed Foods on the Maternal-Child Health: A Systematic Review. *Front Nutr*. 2022;9:821657. DOI: 10.3389/fnut.2022.821657. PMID: 35634416.
 - 26 Fajar NA, Zulkarnain M, Taqwa R, et al. Family Roles and Support in Preventing Stunting: A Systematic Review. *J Promosi Kesehatan Indonesia*. 2023;19:50-7.
 - 27 Sari GM. Early Stunting Detection Education as an Effort to Increase Mother's Knowledge about Stunting Prevention. *Folia Medica Indonesiana*. 2021;57:70.
 - 28 Liu KSN, Chen JY, Ng MYC, et al. How Does the Family Influence Adolescent Eating Habits in Terms of Knowledge, Attitudes and Practices? A Global Systematic Review of Qualitative Studies. *Nutrients*. 2021;13:3717. DOI: 10.3390/nu13113717. PMID: 34835973.
 - 29 Setianingsih HP, Wahyuni ET, Lutfiah F. Implementation of Supplementary Feeding for Stunted Children. *Indonesian J Early Childhood*. 2024;13.
 - 30 Yusriadi Y, Sugiharti S, Ginting Y, et al. Preventing stunting in rural Indonesia: A community-based perspective. *Afr J Food, Agric Nutr Develop*. 2024;24:24470-91. DOI: 10.22004/ag.econ.348069.
 - 31 Shrestha P, Afsana K, Weerasinghe MC, et al. Strengthening primary health care through community health workers in South Asia. *Lancet Regional Health - Southeast Asia*. 2024;28:100463.
 - 32 Fristiwi P, Nugraheni SA, Kartini A. Effectiveness of Stunting Prevention Programs in Indonesia : A Systematic Review. *J Penelitian Pendidikan IPA*. 2023;9:1262-73.
 - 33 Juarez M, Dionicio C, Sacuj N, et al. Community-Based Interventions to Reduce Child Stunting in Rural Guatemala: A Quality Improvement Model. *Int J Environ Res Public Health*. 2021;18:773. DOI: 10.3390/ijerph18020773. PMID: 33477580.
 - 34 Van Tuijl CJW, Madjdian DS, Bras H, et al. Sociocultural and economic determinants of stunting and thinness among adolescent boys and girls in Nepal. *J Biosoc Sci*. 2021;53:531-56. DOI: 10.1017/S0021932020000358. PMID: 32638672.
 - 35 Scaglioni S, De Cosmi V, Ciappolino V, et al. Factors Influencing Children's Eating Behaviours. *Nutrients*. 2018;10:706. DOI: 10.3390/nu10060706. PMID: 29857549.
 - 36 Smith SL, Ramey E, Sisson SB, et al. The Family Meal Model: Influences on Family Mealtime Participation. *OTJR (Thorofare N J)*. 2020;4:138-46. DOI: 10.1177/1539449219876878. PMID: 31631755.
 - 37 Mahmood L, Flores-Barrantes P, Moreno LA, et al. The Influence of Parental Dietary Behaviors and Practices on Children's Eating Habits. *Nutrients*. 2021;13:1138. DOI: 10.3390/nu13041138. PMID: 33808337.
 - 38 Chilman L, Kennedy-Behr A, Frakking T, et al. Picky Eating in Children: A Scoping Review to Examine Its Intrinsic and Extrinsic Features and How They Relate to Identification. *Int J Environ Res Public Health*. 2021;18:9067. DOI: 10.3390/ijerph18179067. PMID: 34501656.
 - 39 Ball R, Duncanson K, Ashton L, et al. Engaging New Parents in the Development of a Peer Nutrition Education Model Using Participatory Action Research. *Int J Environ Res Public Health*. 2021;19:102. DOI: 10.3390/ijerph19010102. PMID: 35010363.
 - 40 Pandya S, Hamal M, Abuya T, et al. Understanding Factors That Support Community Health Worker Motivation, Job Satisfaction, and Performance in Three Ugandan Districts: Opportunities for Strengthening Uganda's Community Health Worker Program. *Int J Health Policy Manag*. 2022;11:2886-2894. DOI: 10.34172/ijhpm.2022.6219. PMID: 35461208.