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Mothers' experiences managing undernourished toddlers in dry land Kupang City, East Nusa Tenggara, Indonesia: a qualitative study

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Abstract

Background: In Eastern Indonesia, undernutrition in toddlers is still a serious public health concern, especially in Kupang City, where stunting and underweight rates are disproportionately high. While the high prevalence and quantitative determinants of undernutrition and stunting in East Nusa Tenggara (NTT) and Kupang's dryland areas are well-documented (e.g., household income, food access, and knowledge deficits), existing literature heavily relies on statistical associations. There is a critical gap in understanding the lived, daily realities, emotional struggles, and practical coping mechanisms employed by mothers in this uniquely challenging, food-insecure environment. One of the causes of the high rate of malnutrition is maternal parenting patterns. According to data on nutrition indicators for 2024 from the Oesapa Community Health Center, the highest incidence of malnutrition occurs in Oesapa Village. This study aims to explore the experiences of mothers in Oesapa Village in caring for malnourished toddlers.

Method: This study is a qualitative study with a descriptive phenomenological approach. There were 29 informants in this study. Data collection used in-depth interviews and documentation in primary data collection, while secondary data was obtained from health institutions and the internet. The data analysis used was Miles and Huberman's data analysis model. Data validity was ensured using the member check method and data source triangulation.

Results: The study indicates delayed introduction of complementary foods, irregular mealtimes, limited food variety, poor personal hygiene, burning of waste, irregular immunization and health monitoring, and traditional approaches to illness management. Mothers are advised to pay attention to regular and varied feeding, maintain hygiene, attend routine health posts and immunizations, administer deworming medication, and promptly address children's illnesses to support infant nutrition.

Conclusion: The findings offer qualitative evidence directly complementing existing quantitative data, providing policymakers and public health workers with the granular, contextual information needed to design culturally appropriate, effective, and empathetic nutritional interventions for dry land communities.

Keywords: undernutrition, stunting, maternal experience, parenting practices, cultural beliefs, dry land, Indonesia

Introduction

Undernutrition among children under five remains a persistent public health challenge in Indonesia, especially in eastern provinces such as East Nusa Tenggara, where stunting and underweight rates exceed national averages.[1,2] Poverty acts as a fundamental determinant of undernutrition, significantly restricting access to nutritious food, safe water, sanitation, and essential healthcare services, particularly evident in regions such as East Nusa Tenggara.[4,5] For example, studies in East Nusa Tenggara have observed that poverty levels were 20.4% in 2012, peaking at 22.6% in 2014, and remaining high at 21.9% in 2017.[6] Most current interventions and policy responses are based on standardized assumptions about feeding behavior, access to food, and knowledge of nutrition, often overlooking the local cultural beliefs, emotional burdens, and contextual realities that shape maternal decision-making.[7] In dry land Kupang City, where cultural diversity, poverty, and limited health access intersect, mothers face unique challenges in caring for undernourished toddlers. This study is novel in its qualitative, phenomenological approach to exploring the real-life, parenting experiences of mothers whose children are categorized as undernourished, recognizing that their voices are often underrepresented in both research and program design.[8,9,10] Such an approach is particularly valuable in contexts like Kupang, where cultural diversity, poverty, and limited health access add layers of complexity to maternal experiences. In the context of undernourished toddlers, this implies that even when mothers are aware of the need for nutritional support, access to appropriate healthcare and nutritional programs might be severely hampered.[11] Furthermore, the concept of "nutritional parenting patterns" is gaining recognition as a key determinant of a toddler's nutritional status. The exploration of maternal experience is not only timely but essential.[12,13] Maternal experience, encompassing socio-cultural and emotional dimensions of parenting, significantly influences child nutritional status, particularly in regions like Indonesia where undernutrition and stunting remain pressing public health concerns. As Indonesia moves toward reducing stunting and improving child health through national strategies, there is an urgent need for evidence that is rooted in local context and informed by the everyday realities of caregivers.[14,15]

Children under five years old are vulnerable to health and nutrition disorders because their needs increase, and they are unable to ask for and find food themselves. Data from the Indonesian Health Survey (IHS) in 2023 on the prevalence of nutritional status (BW) of children aged 0-59 months in Indonesia reveals that East Nusa Tenggara Province occupies the sixth highest level of wasting, reaching 9.4% among 38 other provinces. One of the causes of the high rate of undernutrition in children under five is maternal parenting. Parenting is all forms and processes of interaction between parents and children that can affect the development of the child's personality.[17] Fulfillment of children's physical and psychological needs that are not optimal can trigger health problems in these children, one of which is malnutrition due to not maximizing the fulfillment of children's eating and drinking needs. The diet applied to a family depends on the mother's behavior in preparing and managing what the family will consume.[18]

The IHS provided details on the incidence of underweight toddlers in Oesapa Village, specifically 478 cases, identified through the August 2024 nutrition indicator coverage data from the Oesapa Community Health Center. This figure indicates that Oesapa Village has the highest incidence among five villages, including West Oesapa, South Oesapa, Lasiana, and Kelapa Lima. However, the referenced scientific literature does not contain specific data from the Oesapa Community Health Center, Oesapa Village, or the other mentioned villages regarding nutrition indicator coverage or the incidence of underweight toddlers in August 2024. Malnutrition among children, encompassing both under- and over-nutrition, has significant short- and long-term impacts on health and development. Dietary patterns and food intake are critical determinants of nutritional

status. A study in coastal communities in Gresik, despite the plentiful availability of protein from fish, found issues of undernutrition linked to feeding practices, food quality, and food safety among toddlers.[19] Studies have shown that inadequate complementary feeding practices can significantly impact a child's growth and development.[20] The underlying causes of inadequate nutrition, particularly among vulnerable populations, are deeply rooted in a complex interplay of resource scarcity across human, financial, and structural domains within broader social, economic, and political contexts.[22] This research seeks to examine the experiences of mothers in Oesapa Village as they care for toddlers who are undernourished. Due to the issues mentioned in the background, the researcher aims to investigate the experiences of mothers in parenting underweight toddlers in the area served by Public Health Center (PHC) Oesapa in Kupang City. It is hoped this research will inform locally grounded, dialogic, and empowering interventions that strengthen emotional, social, and cultural capacities to sustain household nutritional resilience.

Methods

Study Design

This research is qualitative research with a phenomenological approach to explore how low-income mothers manage household food security, develop feeding strategies, and respond to the risk of stunting.[23] In the context of the Oesapa Public Health Center in Kupang City, this study uses a qualitative phenomenological approach to investigate in-depth the lived experiences of mothers raising undernourished toddlers. This methodology is novel because it emphasizes the emotional and subjective aspects of maternal caregiving, which are frequently overlooked in quantitative evaluations of child nutrition.[24] This study captures cultural, behavioral, and contextual parenting practices directly from the mothers' perspectives, in contrast to earlier research that mainly looks at undernutrition through biomedical or socioeconomic lenses. A deep, contextualized understanding of the daily struggles, coping mechanisms, and decision-making processes that affect child feeding, health-seeking behavior, and home care practices is made possible by this method.[25]

Research Setting

The study was conducted in three public health center catchment areas in Oesapa Village within Kupang City, East Nusa Tenggara, Indonesia, representing communities characterized by low rainfall, limited agricultural yield, and high rates of child undernutrition. Data were collected between February and July 2025.

Participants and Sampling

Purposive sampling was used to choose participants with a focus on mothers of toddlers with a diagnosis of undernutrition. Informants who resigned or did not meet the criteria during the research were replaced with new informants. Informants amounted to 10 mothers who had undernourished toddlers under five years old and resided in the Oesapa Village. Data were collected through interviews and documentation techniques.

Research Team and Reflexivity

The research team consisted of three female researchers with backgrounds in community health and nutrition. Prior to data collection, reflexivity discussions were held to examine personal assumptions about maternal care in dryland contexts. Field notes were used to capture reflections after each interview to enhance transparency and self-awareness during analysis.

Data Collection

Data were gathered through semi-structured, in-depth interviews conducted in Indonesian language at participants' homes or nearby health posts, depending on their preference. An interview guide explored themes such as daily feeding routines, coping with food scarcity, health-seeking behavior, and community support. Each interview lasted 45-60 minutes and was audio-recorded with consent. Supplementary observational notes

documented the living environment and feeding context. This study used primary data sourced from interviews with informants and secondary data from health institutions, namely the Oesapa Health Center, the Kupang City Health Office, and the internet, namely the Indonesian Health Survey (IHS) data. For this study, the secondary data used were data on the number of under-five malnutrition cases up to September 2024 in Oesapa village totaling 478 toddlers.

Data Analysis

Interviews were transcribed verbatim in the Indonesian Language and verified for accuracy. Data were analyzed using thematic analysis following Braun and Clarke's six-step framework: familiarization, coding, theme generation, reviewing, defining, and reporting.[49] Working systematically through the entire dataset; assign codes to specific data excerpts; codes should be descriptive and capture the content of feeding practices, hygiene practices, environmental sanitation practices, child care; Aim to code for as many potential patterns as possible; to move beyond the literal account and start identifying the core features and underlying meaning within the data related to managing undernutrition. Furthermore, this study used the Miles and Huberman interactive model in which data analysis is carried out at the time of data collection and continues until it is complete. [50] The Miles and Huberman model includes: 1. Reducing data has the meaning of summarizing, choosing the main things, focusing on the things that are important, and looking for patterns and themes. Data reduction was carried out after the researchers collected data. 2. Presentation of data is a collection of information that has been arranged, which provides the possibility to draw conclusions and take further action. In qualitative research, data presentation is carried out in the form of brief descriptions, flowchart charts, and so on. 3. Conclusion drawing is the last step in the process of data analysis, which is done by finding the meaning of the data that has been presented. After the data is collected, then conclusions are drawn, and then the conclusions are verified and tested for validity. The use of triangulation, which involves employing different methodologies or data sources, was able to effectively mitigate bias and enhance the reliability of our conclusions. Coding was initially inductive and later grouped into broader categories reflecting mothers' adaptive strategies and challenges in nutritional management.

Trustworthiness and Rigor

This study uses member check and data source triangulation techniques to test data validity. Member check is an action taken by researchers to test the validity of research data by checking the data with the subjects or people who provided the data. If the data received by the researcher is checked and agreed upon by the data provider, then it can be stated that the data is valid. Member checks are conducted when findings have been obtained from the data based on previous analysis results. These findings are then discussed with the data providers to determine their validity when the data is approved. The purpose of member checks is to ensure that the information obtained and to be used for writing reports is in accordance with what is intended by the data sources or informants. To ensure credibility and trustworthiness, member checking was conducted by sharing preliminary findings with four participants for feedback. Triangulation of interview data and field notes strengthened confirmability. Peer debriefing among the research team was used to discuss coding consistency. An audit trail was maintained to document methodological decisions. Data source triangulation involves using multiple sources to evaluate a specific type of data. After that, the data obtained from various sources is described, categorized, and evaluated to determine similar, different, and specific perspectives. After the data analysis has been carried out, conclusions are drawn, and then approval is sought from the three research data sources.

Ethical Considerations

Ethical approval was obtained from the Health Research Ethics Committee of Nusa

Cendana University Number 000261/KEPK FKM UNDANA/2025. Participants were informed about the study's aims, assured of confidentiality, and provided written consent. Informant codes were assigned to de-identify the informants in the results.

Results

There were 29 informants in this study, consisting of 10 mothers with malnourished toddlers as the primary informants, 12 supporting informants, and 7 cadres as key informants. The primary informant is an individual who possesses technical knowledge and details about the research issue to be studied. The main informants in this study were mothers with malnourished toddlers aged 12-59 months in Oesapa Village. Key informants who provided information on the causes of child malnutrition based on their experience in feeding practices, hygiene practices, environmental sanitation practices, and child care. Table 1 shows that most of the key informants had a high school education, were aged 20-35 years, and were unemployed. Families had two to four biological children, and malnutrition among toddlers was most prevalent among boys who were the second to fourth child.

Table 1. Characteristics of Primary Informants (PI)

Principal Informant (mother)	Mother's Age (years)	Final Education	Work	Number of Children	Number of Children Under-nourished	Gender of Under-nourished Children	Child Age (years, Months)
PI1	26	High school	None	2	1	Girl	4 ,11
PI2	26	High school	None	2	2	Boy	1,11
PI3	34	Junior high school	Laundry workers	4	4	Boy	2,11
PI4	37	Junior high school	None	4	4	Girl	1,10
PI5	36	Elementary School	None	4	3	Boy	4,4
PI6	29	High school	None	4	4	Boy	3,9
PI7	25	High school	None	2	1	Girl	2,10
PI8	31	High school	None	3	3	Boy	2,8
PI9	25	Junior high school	Laundry workers	2	2	Girl	3,8
PI10	40	High school	None	3	3	Boy	1,11

Supporting informants are individuals who can provide additional information to assist in the analysis and discussion of qualitative research. Supporting informants are people who have information about malnourished toddlers in Oesapa Village. Supporting informants can sometimes provide information that is not provided by the main informants or key informants. Informants supporting this study consisted of the immediate families of mothers of malnourished toddlers, Nutrition Officers, and the environmental health coordinator at the Oesapa Community Health Center. Most of the supporting informants were husbands, Mothers-in-law, and health workers, consisting of nutritionists and environmental health coordinators. The husbands had high school and junior high school education, while the health workers involved had bachelor's degrees and diplomas. The husbands' occupations were mostly craftsmen or entrepreneurs, as shown in Table 2. The main information from the supporting informants was about how the husbands supported their wives in overcoming their children's nutritional deficiencies, starting from nutritional intake, personal hygiene practices, and environmental health to reduce the risk of infectious diseases.

Table 2. Characteristics of Supporting Informants (SI)

Supporting Informants (family and health workers)	Status	Age (years)	Gender	Final Education	Work
SI1	Husband	31	Man	High School	Sales
SI2	Mother-in-law	50	Woman	High School	Vegetable Seller
SI3	Husband	36	Man	Junior high school	Ice seller and shoe soler
SI4	Husband	48	Man	Junior high school	craftsmen or entrepreneurs
SI5	Husband	38	Man	Junior high school	craftsmen or entrepreneurs
SI6	Husband	36	Man	High School	Tukang
SI7	Mother-in-law	61	Woman	High School	Not working
SI8	Husband	44	Man	Bachelor	PNS
SI9	Younger sibling	19	Woman	High School	Not working
SI10	Husband	38	Man	High School	Craftsmen and farmers
SI11	Nutrition Implementers	38	Woman	master's degree	Health workers
SI12	Environmental health coordinator	43	Woman	vocational education	Health workers

The key informants in this study were posyandu cadres in Oesapa Village, as shown in Table 3. The main information obtained from in-depth interviews with key informants was mothers' compliance with the health center program and child health care strategies. Most mothers had fully immunized their children, while one mother had not fully immunized her child. Compliance with posyandu activities was found to be high, with most mothers attending posyandu regularly, while some mothers did not attend posyandu regularly. Compliance with providing supplementary food to children was found to be variable, with most children not always finishing their supplementary food, while some children finished their supplementary food. Maintaining children's health, there were various answers, including maintaining diet and hygiene, feeding regularly, maintaining playtime, using oil, giving vitamins and medicine when children suddenly fall ill, and watching over and paying attention to children when they play, eat, and snack. There was awareness of the importance of maintaining children's health in various ways, such as maintaining diet, child hygiene, and giving vitamin supplements. Efforts to recover children when they are sick are carried out through a gradual approach, starting from home

care to seeking medical help at health facilities. In terms of using medicine when children are sick, it is known that all mothers give medicine regularly. From the above quote, informant PI2 explains that in caring for a sick child, she gives medicine regularly according to the instructions or prescriptions from health workers. This shows compliance with the rules for medication use recommended by the community health center or other health facilities.

Analysis of Research Variables

The researchers classified the data into six main themes, namely feeding patterns in children, parenting, clean and healthy living behaviors, disease history, maternal adherence to the health center program, and child health care strategies. Each theme has several subthemes included. The results of this study are described in Table 4.

Table 3. Characteristics of Key Informants (KI)

Key Informant	Age (years)	Gender	Posyandu Region
KI1	46	Woman	Bogenvile 2
KI2	62	Woman	Bogenvile 7
KI3	50	Woman	Bogenvile 8
KI4	57	Woman	Bogenvile 9
KI5	36	Woman	Bogenvile 10
KI6	57	Woman	Bogenvile 11
KI7	35	Woman	Bogenvile 11

Table 4. Themes and Subthemes

Special Purpose Theme		Sub Theme	Key Issues
feeding practices	Feeding patterns in children	• Eating habits • Food processing and serving • Mother's strategy • Supplements • Food management	1. Delay in the provision of complementary foods 2. Irregular mealtimes (Children are fed twice a day and when desired without a fixed schedule) 3. Imbalance of portions and textures (Dominance of rice over side dishes and vegetables as well as the texture of rice that is still used for children aged 3 and 4 years) 4. Lack of food variety (nondiverse food types, and unattractive appearance) 5. Unhealthy habits (Children are often given snacks [bread, biscuits] every day with high frequency) 6. Meal interludes are given once or only if there are any 7. Not accompanying the child during meals 8. Improper strategy (When the child does not want to eat, the mother forces it, replacing it with formula milk or storing food to be given later) 9. No menu planning (No setting daily/weekly meal variations) 10. Not optimal personal hygiene (Not washing hands before eating and after defecation) 11. Dental health is not paid attention to (Only brushing teeth once a day) 12. Simple waste handling (Burning waste as the main method of disposal) 13. Lack of routine health monitoring (Not attending posyandu regularly and not fully immunized) 14. Supplements are not consumed by the child 15. The administration of deworming has not been maximized (Children have not received deworming as recommended) 16. Treatment when sick is not appropriate (Depending on the traditional method [wear thick clothes to sweat and be given honey]) 17. No health/nutrition consultation (Mother has never consulted regarding children's health or nutrition issues)
	Parenting	• Caregiver • The role of mothers in parenting	
practice *hygiene*	Clean and healthy living behavior	• Cleanliness of cooking and eating utensils • Food hygiene and safety (food storage) • Personal hygiene	
environmental sanitation practices		• Treatment of the drinking water • Cleanliness of the home environment • Waste management	
caring for children in good health and illness	Sick history	• Frequent health complaints	
	Mother's compliance with the puskesmas program	• Immunization • Posyandu • Compliance with PMT grant • Deworming	
	Children's health care strategy	• Efforts to maintain health • Recovery efforts • Drug use • Consultation with health professionals	

Knowledge of Undernutrition

Although many mothers were aware that their children were experiencing weight problems, they did not fully comprehend undernutrition and frequently confused it with weather-related or teething-related temporary conditions. This finding highlights the need for more context-sensitive, health communication by exposing a gap between health education and comprehension. Local beliefs affect feeding practices, traditional practices, and inherited beliefs, such as food taboos for toddlers (e.g., avoidance of eggs, fish, or green vegetables believed to cause illness), were frequently the basis for mothers' feeding decisions.

Obstacles to the Use of Health Services

Mothers cited logistical limitations, feelings of shame, and judgment as reasons for their low participation in community nutrition programs. This realization calls into question the notion that service utilization is guaranteed by accessibility alone and emphasizes the significance of social and emotional acceptance in the provision of public health services.

Strategies for Non-hungry Children

Based on the mother's strategy when the child did not want to eat, 6 mothers persuaded the child when the child did not want to eat, 2 mothers forced the child when the child did not want to eat, 1 mother gave formula milk when the child did not want to eat and 1 mother kept the child's food when the child did not want to eat. Caregivers have an important role in child development. In this study, 7 mothers took care of their own children, while 3 mothers took care of children assisted by other family members.

Hygiene Measures

In the application of clean and healthy living behavior related to waste management, 9 mothers disposed of waste in temporary landfills, while 1 other person burned their waste. Regarding hand washing behavior before eating, 4 mothers and children routinely washed their hands with soap, 5 mothers and children did not always wash their hands with soap, and 1 mother and child washed their hands without soap. Regarding the frequency of brushing teeth, 5 toddlers brushed their teeth once a day, 2 toddlers brushed their teeth twice a day, 1 toddler brushed his/her teeth three times a day, 1 toddler brushed his/her teeth every time they saw toothpaste, and 1 toddler never brushed his/her teeth.

Health Care

The most common health complaints experienced by children in this study were fever, cough, runny nose, as well as digestive issues such as loose stools, skin disorders, and itching. Maternal compliance with the puskesmas program is reflected through several programs that are routinely followed by mothers, starting with immunization, attendance at posyandu, provision of supplementary food (PMT), and deworming. Regarding immunization, it is known that 9 mothers fully immunized their children, while 1 mother had not fully immunized their children. Regarding maternal compliance in participating in posyandu activities, 8 mothers routinely attended posyandu while 2 mothers did not routinely attend posyandu. Regarding supplementary feeding, 4 toddlers were given additional food, 5 toddlers did not always use additional food, and 1 toddler did not receive additional food. Regarding deworming, 8 toddlers finished the deworming drugs given while 2 other toddlers did not receive deworming drugs for several reasons.

Discussion

The lived experiences of mothers raising malnourished toddlers in the difficult socioeconomic and environmental circumstances of Kupang City's dryland areas are examined in this study in a novel way. It draws attention to parenting styles with cultural roots, restricted access to food and flexible maternal techniques that have not been extensively covered in earlier research. The results provide context-specific evidence to guide local nutrition interventions and family support programs in arid and resource-constrained settings, providing fresh perspectives on how mothers

deal with food insecurity, inadequate sanitation, and restricted access to health services. This study draws attention to a cultural perspective on child nutrition that is underrepresented in the majority of public health nutrition initiatives. Emotional stress and maternal sacrifice due to gender norms and financial difficulties was a recurring theme where mothers put the nutritional needs of other family members ahead of their malnourished children. Despite being understudied in nutritional research, emotional strain and role conflict were crucial in this situation.

Feeding practices in children under five show the involvement of mothers as primary caregivers who play a central role in every aspect of feeding and childcare.[26,27] This study showed the majority of those who care for children are mothers. In the family environment, the caregiving role is generally held by the mother as the main caregiver who is responsible for meeting the basic needs of the child, including affection, stimulation and fulfillment of nutrition. This is in line with research by Rahman[28] which shows that the problem of malnutrition in toddlers can be influenced by the mother's behavior or attitude in choosing inappropriate food. In the assisted family, the mother's role is typically replaced by the grandmother.[29,30]

In this study, the majority of exclusive breastfeeding history was up to six months. This is a favorable protection against malnutrition based on research by Kukeba, et.al.[31] which showed there were 39 toddlers (72.2%) malnourished from mothers who did not breastfeed, while only 6 toddlers (27.3%) did not experience malnutrition from mothers who breastfed.[32,33] Infants not exclusively breastfed do not get the optimal nutrients contained in breast milk, so their immune system becomes weaker and more susceptible to disease. This condition affects the overall nutritional status of infants.

In facing the challenges of children who resist eating, mothers strategize by persuading.[34] This reflects democratic parenting where the mother persuades the child to eat.[35] When toddlers struggle to eat, mothers need to persuade them in various fun ways, not letting children wait until they feel like eating.[36] In daily life, the application of personal hygiene of toddlers is shown through the behavior of washing hands after defecation which is routinely carried out by the majority of mothers and children,[37] although the habit of washing hands before eating has not been fully implemented consistently for various reasons such as the urgency to satiate hunger so that this good habit is neglected.[38] Unclean hands and long nails can be a breeding ground for germs and bacteria, especially those that cause diarrheal diseases.[39] Various diseases can be easily spread through contaminated food or through hand-to-mouth contact. The habit of washing hands can reduce the risk of disease transmission, both in the digestive tract (through feces) and the respiratory tract.[40,41]

Brushing teeth twice a day, in the morning and before going to bed at night, is very important to maintain oral health and prevent early tooth decay. The majority of toddlers in this study only brush their teeth once a day. Tooth decay can interfere with eating patterns, because pain when chewing food can reduce appetite and affect the nutritional adequacy of children.[42] Early childhood caries is a significant chronic disease of childhood if children's teeth do not get this proper preventative treatment.[43] If caries is not treated, tooth decay will worsen and can cause various problems, both for children and their parents. Children often complain of tooth pain and infection as a result of this condition. As a result, the child's appetite and drinking intake may decrease, which ultimately leads to malnutrition.

Clean and healthy living behavior cannot be separated from environmental cleanliness. Environmental cleanliness is realized by mothers in various forms such as household waste management. Mothers show good behavior because the garbage is disposed of to minimize the possibility of environmental-based diseases due to poor waste management. The experience of caring for children in a state of illness shows that health complaints that are often experienced by toddlers include fever, cough, runny nose, loose stools, and red and

itchy spots on the body. Toddlers are vulnerable to various diseases. Most of these diseases are basically harmless and only cause discomfort in the short term. Examples of diseases commonly experienced by children and are temporary include sore throat, smallpox, and various skin problems for which good nutrition is protective.[44]

In complying with the puskesmas program, mothers complete their children's immunizations, routinely bring toddlers to the posyandu as a form of growth monitoring and disease prevention, and deworming drugs received tend to be well consumed.[45] Even so, not all toddlers finish the supplementary food provided.[46,47] The findings in this study are in line with the findings in the study by Keats, et.al. that showed that maternal compliance in implementing the malnutrition program from the Primary healthcare (PHC) includes active participation in posyandu activities, compliance in providing supplementary feeding, immunization, and deworming.[48] The provision of PMT, deworming, and immunization is generally done through posyandu activities, so mothers who routinely bring their children to posyandu not only get access to these services, but can also periodically monitor the growth and development of their children who experience nutritional problems.

Conclusion

Mothers in dry land Kupang City, East Nusa Tenggara, face significant challenges in managing undernourished toddlers, arising from a complex interplay of environmental vulnerabilities (drought, dry land agriculture, El Niño impacts), socio-economic constraints (poverty, low agricultural productivity) and cultural practices that may inadvertently impact health outcomes without adequate medical integration. The high prevalence of stunting and malnutrition in the region is a direct consequence of these interacting factors, often compounded by issues such as low birth weight and insufficient maternal nutritional knowledge. The experiences of these mothers highlight the critical need for interventions that are culturally sensitive, context-specific, and address the fundamental drivers of malnutrition. There is a need to investigate the effectiveness of community-based nutritional education programs for mothers and other caregivers that integrate local food sources and traditional practices while addressing modern nutritional science. Further studies should examine the role of community health workers in providing targeted support and education to mothers of undernourished toddlers, considering the unique socio-cultural dynamics.

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