

RESEARCH STUDY

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Health Concerns as the Fundamental Dietary Choices for Potential Stunting Preventions: a Qualitative Study

Kesehatan sebagai Dasar Pemilihan Pangan Berpotensi Mencegah Stunting: Studi Kualitatif

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ABSTRACT

Background: Pasongsongan Village lies in the Regency of Sumenep on the Island of Madura. It is a village bordered on the north by the Java Sea which is abundant of fish majorly consumed by adults. Whereas, children under two years old are scarcely served with fish in their diets.

Objectives: The study aims to observe any factors relevant to mothers' choices in serving meals for children under two years of age.

Methods: This study used a qualitative approach with an ethnographic design. The informants were eleven mothers and grandmothers whose children were under two years old. Data was collected by way of interviews and observations. Subsequent to the data collection, the triangulation was carried out. Data were analyzed using thematic analysis.

Results: The results showed that children under two years of age were provided with complementary foods prior to the age of 6 months old. Four children were barely fed with fish due to numerous myths regarding worm infestation in toddlers of below two years old if they consume fish or any types of animal food. Moreover, six children were served with fish and animal food due to health issues.

Conclusions: In conclusion, the mothers' choices for children's meals under two years of age in this village were highly influenced by cultural and health concerns. The implication of this study was that selecting food for toddlers under two years old should bring up a positive impact on their growth.

INTRODUCTION

Food, whether it is deemed edible or non-edible might be determined by socio-cultural aspects. For example, hamburgers are widely accepted as food in American society, while in India where the majority of Hindus live, beef is prohibited since cows are regarded as sacred animals in Hinduism. Food also carries cultural significance that shapes individuals' perspectives and influences their food choices. Food, when primarily perceived as something to satisfy hunger will impact how individuals select their meals. Food selection is the process of choosing food to be consumed. The selection of food is the result of the strengthening process. Factors that influence people for choosing food include health, taste, cost and social status³, sensory, food appearance, aroma, and texture, mood, comfort, content in food⁴, experience, and belief. These underlying reasons guide people to buy and consume food. The choice of food in a family is generally determined by the parents. Health,

nutrition, and taste are the main motivators for parents in food selection⁵.

Regarding Pasongsongan Village which is a coastal area and situated at the northern part of Sumenep Regency, it gains benefits from the Java Sea which is abundant in fish and other seafood, such as squid, shrimp, crab, and seaweed. Fisheries play a central role in the community's livelihood and fish is a common main dish in their daily meal. However, according to Soesanti's research, children under one year old, or before they start walking, are not given fish in their daily diets. This dietary restriction is likely influenced by the food choices made by their mothers. Mothers often hold specific reasons or motivations for selecting the foods served to their children. The aim of this study was to explore the factors that influence mothers' food choices for children under two years of age.

METHODS

Kurt Lewin stated that interviews in respect to food choice can hardly reveal the reasons for selecting food: in choosing food there are values that can unlikely be displayed explicitly or verbally³. Therefore, it is necessary to use participant observation techniques that can be seen from important information about foods that are selected eminently¹. Based on this, this study uses a qualitative approach with an ethnographic research design.

The informants were mothers and grandmothers whose children or grandchildren were under two years of age. The number of informants was 10, who were selected purposively. During the research, the researchers stayed in Pasongsongan Village until the entire information concerning mothers' and grandmothers' food choices provided for their children or grandchildren was gathered. The researchers employed interviews, participant observations, and documentation as data collection techniques to gain in-depth insights into the underlying reasons behind the informants' food choices. The instrument used in this study was an interview guide comprising questions about the types of food provided to children under two years old and the reasons for selecting those foods. The observation process covered the entire sequence, starting from the food purchase by the informants at markets or from food vendors, followed by the food preparation, and ended with the food service to the children. Triangulation was conducted during data collection to ensure the validity and reliability of the findings. This study used methodological triangulation, combining interviews, observations, and document analysis to gain a comprehensive understanding of the topic and minimize bias. Triangulation also involved cross-referencing data from multiple informants to confirm the accuracy of the information obtained.

The next stage involved thematic analysis. At this point, the data were coded, and all codes were reviewed to ensure consistency and whether codes within each group conveyed the same meaning. The process of identifying shared meanings led to the development of themes. Once the themes were identified, they provided deeper insights into the data. This study is part of a larger study from which data collection was conducted from

2018 to 2019, and data analysis was managed. In case of the lack of data, the researcher would return to the field for the data completion.

This research has undergone ethical review and approval by the Health Research Ethics Committee of the Faculty of Public Health, Airlangga University. The certificate of passing the ethical review includes the Description of passing the ethical review number 06-KEPK.

RESULTS AND DISCUSSIONS

The study revealed three themes: a. Give early complementary foods in addition to breast milk before 6 months of age. b. The provision of complementary foods for ages 9-11 months due to the fear of worm infestation in fish and dietary restrictions. c. Health considerations are the reasons for offering complementary foods with animal foods.

Giving early complementary feeding before 6 months of age.

Based on the data obtained, the informants fed their children before the age of 6 months as it was confirmed by informant H below:

"I feed my 4-month-old child. His grandmother asked him to eat. Given the baby brown rice porridge, just buy it and then add hot water to it. He said, it would be a pity if you didn't feed him immediately. It is time for 4 months old baby to be fed."

Informant A, a grandmother, also fed her grandchild before reaching the age of 6 months. This is stated below: *"When my grandson was 5 months, I asked my son to feed him since it was time to feed the baby with brown rice porridge mixed with hot water. The banana flavor is also bad."*

T informants also confirmed about the same thing yet, in different ways, as shown below:

"My child was fed at 6 months old. The midwife said, it was time for 6 months to be fed. My child was given breast milk in bottles. When my child was 2 months old my child cried when he was hungry so they gave him milk mixed with porridge through a bottle."

Table 1. Complementary feeding before 6 months of age

Name	Age (Months)	Food Type	Reason
H	4	Porridge	Culture/Tradition
A	5	Porridge	Hunger and Feeding Schedule
F	1,5	Egg + Coconut	No Significant Weight Gain
IM	1	Banana	Culture/Tradition
T	2	Porridge	Continuous Crying due to Insufficient Breastfeeding
R	5	Porridge	Culture/Tradition and Advice from Mother
AM	5	Porridge	Culture/Tradition and Advice from Mother

The provision of complementary foods for 9-11 months of age due to the fear of worm infestations in fish and food restrictions.

The data showed that complementary foods were served when babies were 9-11 months. The informants gave

steamed rice cake and soup. This was told by informant Y below:

"My child was given steamed rice cake and gravy. Don't consume fish. You can't walk, you can't give fish. Y said that the people here were infested with worms."

Information provided by informant IM whose husband is a fisherman and always carries fish.

"My husband is a fisherman. He always brings fish home. There are lots of fish in the house. My child, before the age of one year, was not given fish due to the fear of worms. The food served was lontong (steamed rice cake) and broth. Eggs were not given; their intestines could hardly accept it."

AM informant also did the same thing, not giving fish and other side dishes. The informant told the following:

"I didn't give my child fish. Eggs, chicken were also not given. His small intestines could not accept solid food. My child was given tajin (cooked rice water) in the morning

and in the afternoon. In the evening he was fed with lontong (steamed rice cake) and soup."

Informant H fed her son with lontong (steamed rice cake) and moringa leaves soup, and meatballs. She explained below:

"My son was served with porridge and immature chicken eggs at the age of 4 months. As a result, he suffered from an abdominal pain that made him hospitalized. After being discharged from the hospital, I fed him with porridge. At the age of 8 months, I served him steamed rice cake and gravy since I was worried that his intestines could hardly digest solid food."

Table 2. The provision of complementary foods for 9-11 months of age based on myth and food prohibition

Name	Food Type	Reason
H	Tajin Steamed Rice Cake + Meatball Stock + Soup	Cultural/Tradition
A	Tajin (rice water) Porridge Rice Cake + Soup/Moringa Leaves Soup	Hunger and Time for the Child to be Fed
R	Tajin (rice water) Steamed Rice Cake + Soup/Beef Stock	Culture/Tradition and Order from Her Mother
AM	Tajin (rice water) Porridge Steamed Rice Cake + Soup/Moringa Leaves Soup or Meatball Stock	Cultural/Tradition and Order from Her Mother

Health concerns are the underlying reasons for providing complementary foods with animal foods

R, the informant, fed quail eggs to her child.

"When my son was 6 months old, he was fed with only boiled quail eggs. My mother said that her grandson should eat quail eggs to be healthy. And I also made fishball."

Informant T also supplied fish to her child when the child was 6 months old.

"My son was given fish to eat at 6 months old. Lontong (steamed rice cake) was given with fish and Moringa sauce. T said "Fish is good for children. I know it from TV and the internet. My father is a fisherman, he has lots of fish at home. The child likes it. I am not afraid that my child has worms. If the children have worms, just give them worm medicine."

H informant provided different foods to her children, as described below:

"At 6 months my son was given fish. The child liked it. He disliked porridge. H said, "Fish is good for children and I continue to love them. Sometimes he was given eggs but the child liked fish. I often cooked tuna wrapped in scrambled eggs. The child liked it. Mother said, it would be good if your child wanted fish. The child had no worms. He was big and fat."

F informants provided different food from the previous informants.

"I feed my one and a half months old child. I give

immature eggs and rokkorok (young coconut meat). My brother said his son would grow up fast if he was given that. The child grew big and fat quickly. When he was 9 months old he didn't want to eat that, then he asked for fish every day."

The informant M gave the same food as the F informant. He explained below:

"My child was given immature eggs and rokkorok (young coconut meat) at 6 months of age in the afternoon and evening. When I asked embuk (Mother) about the food choice. She said that she was ordered by my brothers. They said, "To be healthy and the baby grows big fast". In the morning the baby was given brown rice porridge. Sometimes it tasted like mung beans."

AM had different story was told by the following informants:

"I gave my son lontong (steamed rice cake) and a half-boiled chicken egg and moringa leaves soup. Embuk (my mother) and Embah (my grandmother) said that their grandchildren are given half-boiled chicken eggs and moringa vegetable soup to stay healthy. At home there is plenty of fish, but the fish is not served to my child. Embuk and Embah prohibited their grandson from being fed with fish due to the fear of worm infestations in fish. Children infested with worms commonly have big bellies. People never serve fish to their children due to the fear that fish are infested with worms; thus, their children will be infested with worms as well."

Table 3. Health consideration is the reason for providing complementary foods with animal foods

Name	Food Type	Reason
IM	Egg + Steamed Rice Cake + Moringa Soup	She wants her child to be healthy. She knows from her mother and her school.
A	Quail Eggs + Steamed Rice Cake	She wants her child to be healthy. Her child has no considerable weight gain.
F	Pigeon Egg + Coconut (from Her Family)	She wants her child to gain weight quickly and get fat and grow up quickly.
M	Pigeon Egg + Coconuts (from Her Mother and Family)	She wants her child to be healthy and get fat.
R	Fish and Egg + Steamed Rice Cake + Moringa Soup	Fish and eggs are good. She wants her child to be healthy (school and TV).
T	Fish + Steamed Rice Cake + Moringa Soup	Fish is a good food for her child and she wants her child to be healthy (school, TV, google).
H	Rice + Fish	She wants her child to be healthy (her mother).

The data above shows that only one informant provided complementary feeding at the age of 6 months. Four informants supplied no fish in the child's diets due to the fear of worm infestation, yet they also served the children with no other types of side dishes such as eggs, chicken and beef since these types of foods are not easily digested by toddlers' intestines. Consequently, they only provided steamed rice cake and soup. Six informants gave fish, pigeon eggs, quail eggs, half-boiled chicken eggs with steamed rice cake or rice and moringa leaves soup. The pigeon eggs, quail eggs, chicken eggs and fish were opted for the children's diets because they were considered beneficial for the children's health in order to boost the children's growth.

These results are matched with existing nutritional status data showing that four informants who provided no animal food, nutritional status are <-2SD or stunting. Informants who supplied animal foods such as fish, chicken eggs, pigeon eggs and quail eggs, indicated that their nutritional status was >-2SD or not stunting. The results of observations on food preparation indicated that each informant prepared everything on their own: from determining the menu, purchasing materials at the market, cooking food, serving it at the table and feeding their children. Informants buy virgin eggs for their child's food. Even though the palm bird eggs are expensive but two informants still buy on the grounds for their children to be healthy and quickly grow.

The informants supplied complementary feedings for the infant before the age of 6 months. It is customary in the village that complementary feedings are supplied before infants reach 6 months of age. Early complementary feedings in addition to breastfeeding may result in intestinal problems such as abdominal pain, and diarrhea because the baby's digestive system is still developing and can hardly accept solid foods⁷. Before the age of 6 months the baby's intestines can only receive food in the form of liquids such as breast milk^{8,9}.

The informants did not give the children fish because of the fear of worm infestations in fish. Such fear has turned to a myth, namely the worm myth, which has been passed on from generation to generation. Consequently, it raised concerns and fear in the society. Since the myth has existed in the society's subconsciousness, undoubtedly, they keep a strong belief and resistance not to give fish to their babies. The prohibition for eating fish for children is contrary to

environmental conditions^{10,11}. The environment supports the availability of food containing protein, but dietary restrictions cause nutrient intake far from being fulfilled. So far, no single research has yet found that fish consumption can grow intestinal worms. More research results state that fish contains various nutrients such as protein, fat, calcium, magnesium, phosphorus. The nutritional content of fish is excellent for children aged 6 months to 24 months of age because of its high protein content which is good for growth. Fish also contains amino acid which are also advantageous for the growth of children under two years of age.

The informants who hardly provided fish, also served no other animal food side dishes such as eggs, chicken, and beef assuming that they were less easily digested foods. The child's intestine is considered unable to accept solid foods. Based on this, the informants merely fed their children with steamed rice cake and stock. *Lontong* (steamed rice cake) and broth contain more carbohydrates and water. The lack of nutrients in the food given to informants' children should bring up a negative impact on children's growth^{12,13}.

The worms and abstinence from animal foods results in restrictions on nutrients needed by children's bodies in the first two years of life since this period is critical in infants' growth^{14,15}. Children who are not given animal foods do not get animal protein. Animal foods contain protein and amino acids, and both of these nutrients are needed during the growth period, especially in the first two years of life. Children whose consumption of animal foods is low can have a hindrance to their growth¹⁶.

Thus, mothers choose food for their children based on myths and dietary restrictions. so that it can inhibit the growth of children. Pigeon eggs, quail eggs and chicken eggs are foods that contain various nutrients. Nutrients contained in eggs such as amino acids, protein, vitamin A^{24,25}. Children who do not eat fish and other animal foods based on available nutritional status data are included in stunted children. Low consumptions of animal foods can cause stunting¹⁷ and lead to low amino acid intake which can result in stunting¹⁸. Therefore, such food consumption the children get hardly supports their growth and can result in stunting. Children under two years old who are stunted must be treated before the age of two^{15,26}.

Unlike the informants who provided animal foods to their children they were motivated to choose animal foods so that their children stay healthy, grow up fast and gain weight quickly because the food is beneficial for their children. This shows that the selection of the informants' diet was based on health concerns should enable the growth and support the child's nutritional status. Consumption of animal foods increases IGF1^{20,21} and improves health^{22,23}.

Complementary foods in addition to breast milk for infants should contain rich protein and amino acids to help improve the condition of malnourished children and improve growth. A variety of foods is a good complementary food for inadequate breastfeeding²⁷. Health-based food choices can affect children's growth and health²⁸. Protein and amino acids have an effect on both. Both of these nutrients are excellent for children's growth. Hence, consuming them ensures stunting prevention. In other words, the correct choice of complementary foods should contain animal protein²⁴ and amino acids. It should be recommended to boost infants' growth and prevent stunting.

CONCLUSIONS

Complementary feeding for infants in addition to breastfeeding were served before the age of 6 months. In the village of Pasongsongan, the provision of complementary foods for toddlers of 9-11 months of age is influenced by the myth of worm infestations and food restrictions. The choice of complementary foods based on cultural factors may lead to a negative impact on the infants' growth because they lack nutrients. While complementary foods chosen based on health concerns should affect children's growth due to its nutrient contents that can boost children's growth and prevent stunting.

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CONFLICT OF INTEREST AND FUNDING DISCLOSURE

There is no conflict of interest.

AUTHOR CONTRIBUTIONS

IS: conceptualization, data curation, formal analysis; TT: funding acquisition, investigation; AI: methodology, project administration, resources; SH: writing-review and editing interview respondent.

REFERENCES

1. Draper, J. Ethnography: principles, practice and potential. *Nurs. Stand.* **29**, 36–41 (2015). <https://doi.org/10.7748/ns.29.36.36.e8937>.
2. Parikh, A. Holy cow! beef ban, political technologies, and brahmanical supremacy in Modi's India. *ACME* **18**, 835–874 (2019). <https://doi.org/10.14288/acme.v18i4.1758>.
3. Lewin, K. *Forces behind Food Habits and Methods of Change. In: The Problem of Changing Food Habits. Report of the Committee on Food Habits.* (Report of the Committee on Food Habits, 1943).
4. *The Psychology of Food Choice.* (CABI, UK, 2006). <https://doi.org/10.1079/9780851990323.0000>.
5. Russell, C. G., Worsley, A. & Liem, D. G. Parents' food choice motives and their associations with children's food preferences. *Public Health Nutr.* **18**, 1018–1027 (2015). <https://doi.org/10.1017/S1368980014001128>.
6. Soesanti, I., Saptandari, P., Adiningsih, S. & Qomaruddin, M. B. The Practice of Complementary Feeding among Stunted Children under the Age of Two. *Infect. Dis. Rep.* **12**, 8723 (2020). <https://doi.org/10.4081/idr.2020.8723>.
7. Teshome, B., Kogi-Makau, W., Getahun, Z. & Taye, G. Magnitude and determinants of stunting in children under five years of age in food surplus region of Ethiopia: The case of West Gojam Zone. *Ethiop. J. Heal. Dev.* **23**, (2010). <https://doi.org/10.4314/EJHD.V23I2.53223>.
8. Varghese, S. & Kandashamparambil Kamalakrababu, S. Study of Complementary Feeding Practices Among Mothers of Children Aged Six Months to Two Years. *J. Evol. Med. Dent. Sci.* **6**, 6872–6876 (2017). <https://doi.org/10.14260/jemds/2017/1489>.
9. Rao, S. Study of complementary feeding practices among mothers of children aged six months to two years – A study from coastal south India. *Australas. Med. J.* **4**, 252–257 (2011). <https://doi.org/10.4066/AMJ.2011.607>.
10. Zerfu, T. A., Umata, M. & Baye, K. Dietary habits, food taboos, and perceptions towards weight gain during pregnancy in Arsi, rural central Ethiopia: a qualitative cross-sectional study. *J. Heal. Popul. Nutr.* **35**, 22 (2016). <https://doi.org/10.1186/s41043-016-0059-8>.
11. Boutaud, J.-J., Becuț, A. & Marinescu, A. Food and culture. Cultural patterns and practices related to food in everyday life. Introduction. *Int. Rev. Soc. Res.* **6**, 1–3 (2016). <https://doi.org/10.1515/irs-2016-0001>.
12. Aguayo, V. M., Nair, R., Badgaiyan, N. & Krishna, V. Determinants of stunting and poor linear growth in children under 2 years of age in India: an in-depth analysis of Maharashtra's comprehensive nutrition survey. *Matern. Child Nutr.* **12**, 121–140 (2016). <https://doi.org/10.1111/mcn.12259>.
13. Ayana, D., Tariku, A., Feleke, A. & Woldie, H. Complementary feeding practices among children in Benishangul Gumuz Region, Ethiopia. *BMC Res. Notes* **10**, 1–8 (2017). <https://doi.org/10.1186/s13104-017-2663-0>.
14. Shrimpton, R. et al. Worldwide Timing of Growth Faltering: Implications for Nutritional Interventions. *Pediatrics* **107**, e75–e75 (2001). <https://doi.org/10.1542/peds.107.5.e75>.
15. Victora, C. G., de Onis, M., Hallal, P. C., Blössner, M. & Shrimpton, R. Worldwide Timing of Growth Faltering: Revisiting Implications for Interventions. *Pediatrics* **125**, e473–e480 (2010). <https://doi.org/10.1542/peds.2009-1519>.

16. Darapheak, C., Takano, T., Kizuki, M., Nakamura, K. & Seino, K. Consumption of animal source foods and dietary diversity reduce stunting in children in Cambodia. *Int. Arch. Med.* **6**, 29 (2013). <https://doi.org/10.1186/1755-7682-6-29>.
17. Headey, D., Hirvonen, K. & Hoddinott, J. Animal Sourced Foods and Child Stunting. *Am. J. Agric. Econ.* **100**, 1302–1319 (2018). <https://doi.org/10.1093/ajae/aay053>.
18. Semba, R. D. et al. Child Stunting is Associated with Low Circulating Essential Amino Acids. *EBioMedicine* **6**, 246–252 (2016). <https://doi.org/10.1016/j.ebiom.2016.02.030>.
19. de Onis, M. Timing of growth faltering: A critical window for healthy growth. *Indian Pediatr.* **48**, 851–852 (2011).
20. Hoppe, C. et al. Animal protein intake, serum insulin-like growth factor I, and growth in healthy 2.5-y-old Danish children. *Am. J. Clin. Nutr.* **80**, 447–452 (2004). <https://doi.org/10.1093/ajcn/80.2.447>.
21. Fazeli, P. K. & Klibanski, A. Determinants of GH resistance in malnutrition. *J. Endocrinol.* **220**, R57–R65 (2014). <https://doi.org/10.1530/JOE-13-0477>.
22. Wu, G. Dietary protein intake and human health. *Food Funct.* **7**, 1251–1265 (2016). <https://doi.org/10.1039/c5fo01530h>.
23. Ghosh, S. Protein Quality in the First Thousand Days of Life. *Food Nutr. Bull.* **37**, S14–S21 (2016). <https://doi.org/10.1177/0379572116629259>.
24. Thorisdottir, B., Gunnarsdottir, I., Palsson, G. I., Halldorsson, T. I. & Thorsdottir, I. Animal protein intake at 12 months is associated with growth factors at the age of six. *Acta Paediatr.* **103**, 512–517 (2014). <https://doi.org/10.1111/apa.12576>.
25. Zongo, U., Zoungrana, S. L., Savadogo, A. & Traoré, A. S. Nutritional and Clinical Rehabilitation of Severely Malnourished Children with *Moringa oleifera* Leaf Powder in Ouagadougou (Burkina Faso). *Food Nutr. Sci.* **04**, 991–997 (2013). <https://doi.org/10.4236/fns.2013.49128>.
26. de Onis, M. & Branca, F. Childhood stunting: a global perspective. *Matern. Child Nutr.* **12**, 12–26 (2016). <https://doi.org/10.1111/mcn.12231>.
27. Olatona, MBBS, MPH, FMCPh, F. A., Adenihun, MBBS, J. O., Aderibigbe, MBBS, MPH, FWACP, S. A. & Adeniyi, MBBS, FMCPaed, O. F. Complementary Feeding Knowledge, Practices, and Dietary Diversity among Mothers of Under-Five Children in an Urban Community in Lagos State, Nigeria. *Int. J. Matern. Child Heal. AIDS* **6**, 46–59 (2017). <https://doi.org/10.21106/ijma.203>.
28. Hardcastle, S., Thøgersen-Ntoumani, C. & Chatzisarantis, N. Food Choice and Nutrition: A Social Psychological Perspective. *Nutrients* **7**, 8712–8715 (2015). <https://doi.org/10.3390/nu7105424>.