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Household Food Insecurity, Nutritional Knowledge of Mothers on Nutritional Status among Children Under Five Years in Gili Iyang Island, Indonesia

Hubungan Kerawanan Pangan Rumah Tangga, Pengetahuan Gizi Ibu terhadap Status Gizi Balita di Pulau Gili Iyang, Indonesia

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ABSTRACT

Background: Food insecurity in the home and well-informed moms' nutritional understanding can shield children from circumstances that result in low height and body mass index (BMI) for their age.
Objectives: The purpose of this study is to ascertain the relationship between food insecurity in the home and mothers' nutritional awareness of the nutritional condition of children under five on Gili Iyang Island.
Methods: This study used a cross-sectional method. The nutritional status of the children was assessed using anthropometric measurements. Additionally, data on demographic characteristics, maternal nutrition knowledge, and food insecurity were collected using questionnaires. The study involved 39 mothers/caregivers of children as respondents.
Results: Mothers had a low degree of dietary awareness (84.62%). Stunting and wasting rates were 17.95% and 12.82%, respectively. The incidence of stunting decreased with increased nutritional knowledge of mothers (p-value=0.032, r=0.343), and there was a strong positive association between mothers' knowledge of nutrition and children's height-for-age. Nutritional status (HAZ) and household food security were significantly correlated (p-value<0.001).
Conclusions: The conclusion was that there was an association between the nutritional knowledge of mothers and the status of children's nutrition. There was a relationship between household food security and a child's nutritional status.

INTRODUCTION

Children under five years old require proper nutrition because it sets the stage for lifelong health, strength, intelligence, and energy. Stunting, wasting, underweight, and overweight are considered critical markers for monitoring children's health and nutritional status in a population[1]. In 2020, according to the data on food security and nutrition released by UNICEF, there were 96.8 million stunted, 32.7 million wasted, and 15.6 million overweight children under five years old who lived in the lower-middle-income countries[2]. According to the Indonesia Basic Health Research in 2018 indicate that 30.8% of children under the age of five are stunted, 10.2% fall into the wasting category, and 8% are overweight and obese[3]. Indonesia Nutrition Status Survey in 2022 showed that 21.6% of children are stunted while 7.7% are wasting[4].

The United Nations International Children's Emergency Fund (UNICEF) conceptual framework on the determinants of mother and child nutrition in 2020 recognizes that various variables contribute to childhood malnutrition, which is classed as enabling, underlying, and urgent[5]. These are inextricably tied to demographic and socioeconomic variables, as well as parental and household features. Notably, physical and economic access to nutritionally appropriate and safe food, often

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known as home food security, as well as nutritional knowledge that influences feeding habits, are underlying drivers of child malnutrition[6–10].

According to the targets set in Indonesia's Mid-Term Development Plan, the country's current food security score is 95.2. However, the real food security situation in 2022, as reflected by the Global Food Security Index, positions Indonesia 63rd out of 113 nations, with a score of 60.2[10,11]. Some studies have discovered a correlation between food insecurity and child development. In a study by Mahmudiono et al., children in urban Indonesian homes with mild food insecurity are 2.8 times more likely to be stunted[7,12–14]. The family's role extends to chores like food selection and preparation, and different parenting styles influence children's nutritional status. Research in Myanmar found a significant association between maternal nutritional knowledge, self-efficacy, and meal preparation behavior (p-value<0.001), emphasizing the importance of maternal education in reducing child malnutrition[15].

Gili Iyang Island, a small island in East Java, has emerged as a world-class tourist destination known for its high level of oxygen, which is around 21,5% more than the average amount of oxygen in other parts of Indonesia[16]. The island of Gili Iyang, located in the Dungkek sub-district, has an abundance of marine resources and a cattle population that accounts for 25.36% of the total livestock in the area. Despite its abundance of protein-rich foods, this island has received minimal studies on family food security, mother nutritional awareness, and the nutritional health of children under the age of five[17]. The study aimed to determine the correlation between household food insecurity and mothers' nutritional knowledge regarding the nutritional status of children under five years old living on Gili Iyang Island.

METHODS

Study Design, Study Location, and Respondent Recruitment

In Gili Iyang Island, East Java, Indonesia, nutritional knowledge among mothers as well as the nutritional status of the children were investigated using a community-based cross-sectional analytical study method. This research utilized a cross-sectional design to investigate the nutritional knowledge of the mother and the nutritional status of the children in Gili Iyang Island, East Java, Indonesia. The study was carried out over a span of two months, from September to November 2023, and was approved by the Health Research Ethics Commission from the Faculty of Dental Medicine Universitas Airlangga Number: 0006/HRECC.FODM/I/2024 on January 22, 2024. Anthropometric data was collected from the measurement of children's and mothers' body weight and height, head circumference (HC) for children, and upper arm circumference for mothers. In addition, this study also obtained socio-demographic characteristics data of children as well as the mothers during anthropometric measurement at the primary health care located in Bancamara and Banraas Subdistrict in Gili Iyang Island, East Java, Indonesia.

The calculated sample size was 35 using the Lemeshow formula. However, a total of 39 participants were recruited for the study. An additional 4 (10%) respondents were recruited to compensate for incomplete data. The sampling method in this study was a simple random sampling method to reflect the broader population of Gili Iyang Island. Inclusion criteria for the sample were mothers with children aged under five years. Participation in the study requires that mothers be the ones responsible for their child's feeding. Mothers also signed a consent form before taking part in this study. This study excluded mothers with dementia who did not consent.

Research Instrument

The Food Security/Hunger Survey Module from the United States was used to measure household food security. Households' responses were graded using a total of 18 questions, with each affirmative response scoring '1' and each negative response scoring '0'. The total scores varied from 0 to 18 and were classified into four levels of food security: food secure (0-2), food insecure without hunger (3-7), food insecure with moderate hunger (8-12), and food insecure with severe hunger (13-18)[18]. In the statistical analysis, the nutritional statuses of stunting and normal children were compared across these four food security levels.

Several key variables that were examined to address the research question consisted of knowledge of the mothers regarding nutritious and healthy food that is suitable for under 5-year-old children, the nutrition status of the children, and household food insecurity of the mothers. Assessing the mothers' understanding of nutritious and healthy food aimed to determine how well they applied this knowledge in daily meal preparation for the children. The children's body weight, height, and head circumference were measured to assess their nutritional status. This study also aimed to examine household food security to have a better understanding of the challenges families face in accessing sufficient and nutritious food.

Anthropometry

The children's weight was measured using a digital infant weighing scale, ensuring minimal clothing for accuracy, with weights recorded to the nearest 0.1 kg. For children under two years old, infantometres were used to measure the recumbent lengths, and both length and height measurements were recorded to the closest 0.1 cm. All anthropometric measurements were performed in accordance with the World Health Organization's recommended best practices[19].

Data Analysis

This study complied with the Strengthening Reporting of Observational Studies in Epidemiology (STROBE) guidelines for reporting observational studies. The data were imported into statistical and data (STATA) program version 18 and were cleaned prior to analysis. Socio-demographic characteristics of mothers and anthropometric data were analyzed using descriptive statistics, with results shown as frequencies and percentages. The nutritional knowledge of mothers was

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evaluated, and a comparison of household food insecurity with the nutritional status of stunted and normal children was conducted. The association between categorical variables was analyzed using Chi-square test to determine mothers' responses to the US Household Food Security Module question. The association between the mother's nutrition knowledge and their children's nutritional status was also determined using Spearman rank test analysis with statistical significance set at p-value<0.05.

RESULTS AND DISCUSSIONS

Characteristics of Mothers and Children in Gili Iyang

According to Table 1, over half of mothers (48.72%) were aged 25-34 years. All respondents were married and most of them had received at least an elementary education, but 7.69% did not finish their primary education. More than half the mothers (61.54%) were fishermen, earning an average monthly pay of more than IDR 2,500,000 (around US$160).

Table 1. Distribution of sociodemographic characteristics and score of mother's knowledge of child nutrition in Gili Iyang Island, East Java, Indonesia

Characteristic	n (%)	Mean±Standard Deviation
Age of mother		
<25 years	6 (15.38)	31.79±7.25
25-34 years	19 (48.72)	
35-44 years	11 (28.21)	
≥45 years	3 (7.69)	
Highest educational level achieved		
Did not complete primary school	3 (7.69)	
Primary school	14 (35.9)	
Junior high School	4 (10.26)	
Senior high School	13 (33.33)	
Diploma or University Degree	3 (7.69)	
Mother's occupation		
Civil Servant/Teacher	2 (5.13)	
Self-Employed	9 (23.08)	
Farmer	3 (7.69)	
Fisherman	24 (61.54)	
Others	1 (2.56)	
Father's highest educational level		
Did not complete primary school	11 (28.21)	
Primary school	5 (12.82)	
Junior high school	11 (28.21)	
Senior high school	9 (23.08)	
Diploma or University Degree	3 (7.69)	
Marital status of mother		
Married	39 (100.00)	
Number of family members in household		
Less than or equal to 5 persons	35 (89.74)	4.07±1.06
6-8 persons	4 (10.26)	
Father's occupation		
Civil servant/teacher	1 (2.56)	
Self-employed	6 (15.38)	
Farmer	16 (41.03)	
Fisherman	5 (12.82)	
Others	0 (0.0)	
Household income		
< IDR 2,500,000	14 (35.90)	
> IDR 2,500,000	25 (64.10)	
Mother's knowledge score		
Good (≥4 Points)	1 (2.56)	0.48± 0.96
Medium (2-3 Points)	5 (12.82)	
Poor (≤1 Points)	33 (84.62)	

The average age of mothers was 31.79±7.25 years. Almost half of the respondents (49%) were between the ages of 25 and 34. The educational level of mothers is critical for providing appropriate care for their children. According to this study, just 41.02% of respondents finished secondary school or higher education. This is similar to a survey in slum regions of Bahir Dar City, Ethiopia, which revealed that roughly 39.9% of respondents have at least secondary education[20]. Mothers with a poor level of education reported paying less attention to nutrition instruction because their priorities may have moved to acquiring daily bread for

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survival. Due to a lack of access and knowledge, they may be unaware of or unwilling to seek out nutritional information that is beneficial for their children, such as on television, radio, or in other media. In a prior study, education had a positive association with greater maternal nutrition knowledge[21,22].

Measurement of Body Weight, Height, and Body Mass Index on Children

The gender distribution of children that participated on this study was 48.72% (n=19) boys and 51.28% (n=20) girls. More than half of the children had normal height-for-age (66.67%). On the table 2 clearly showed that the children's body mass index (BMI) was normal according to their age (64.10%). Approximately 17.95% of children reported stunting, with 10.26% experiencing severe stunting. Meanwhile, 12.82% and 7.69% of children were wasted or severely wasted, respectively.

Table 2. Distribution of children's gender and nutritional status in Gili Iyang, East Java, Indonesia

Characteristic	Frequency n (%)	Mean±Standard deviation
Gender		
Boy	19 (48.72)	
Girl	20 (51.28)	
Height-for-age (z-score)		
Tall	2 (5.13)	-0.78±1.89
Normal	26 (66.67)	
Stunting	7 (17.95)	
Severe stunting	4 (10.26)	
BMI-for-age (z-score)		
Severely wasted	3 (7.69)	-0.68±1.7
Wasted	5 (12.82)	
Normal	25 (64.10)	
Possible risk of overweight	2 (5.13)	
Overweight	2 (5.13)	
Obese	2 (5.13)	

Nutritional Knowledge of Mothers

The results, as shown in Table 3, were showed that most of the mother had decent knowledge on nutritious food for children because they answered correctly each of the provided questions. Over three-quarters of the mothers for the five knowledge items did not know the correct answer. From five questions, most of the mothers (17.95%) correctly identified the factors contributing to child undernutrition, although this percentage is still less than 50%.

Table 3. Distribution of mother's child nutritional knowledge in Gili Iyang, East Java, Indonesia

No. of items	Knowledge of mother's child's nutrition	Knows n (%)	Does not know n (%)	Answered Correctly n (%)
1	What are the indicators or signs of undernutrition?	3 (7.69)	36 (92.31)	3 (7.69)
2	What factors contribute to children that undernourished?	7 (17.95)	32 (82.05)	7 (17.95)
	What are the causes of insufficient food access for children?	5 (12.82)	34 (87.18)	5 (12.82)
3	Who can help the mother in monitoring the baby's growth? Where can she seek help?	1 (2.56)	38 (97.44)	1 (2.56)
4	Families and health workers can determine whether children are well-nourished or not by regular weighing and tracking it on growth charts. If a baby is not gaining weight, what might that indicate?	2 (5.13)	37 (94.87)	2 (5.13)
5	How can we prevent undernutrition among children?	1 (2.56)	38 (97.44)	1 (2.56)

Dichotomous scoring: Knows = 1, Does not know = 0

Table 4. Relationship between mother's child's nutritional knowledge and child's nutritional status†

Component	BMI-for-age		Height-for-age	
	p-value	r-value	p-value	r-value
Knowledge	0.92	0.016	0.032*	0.343

†Spearman rank test. *Significant at p-value<0.05

Food Security Status

The basic module of the US Food Security/Hunger Measure, although it has not yet been used directly in Indonesia, provides useful information on household food security status. However, the US-FSSM (U.S. Household Food Security Survey Module) was proven in Hawaii with Asians and Pacific Islanders[23]. In the study areas, the majority of households were reported to be food-secured. Table 5 shows that 14 households (53.84%) had normal height-for-age and had food secure status.

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The results of the statistical test revealed a significant correlation (p-value<0.05) between household food security status and child's height-for-age.

As outlined in Table 4, this study's findings revealed a significant relationship between mothers' knowledge and children's height-for-age (p-value<0.05). On the other hand, no significant relationship was found between mothers' knowledge and children's BMI-for-age (p-value=0.92). Table 1 shows that 84.62% of mothers had poor knowledge, 12.82% had medium knowledge, and 2.56% had good knowledge regarding nutrition. This is consistent with findings from the United States Department of Agriculture's Economic Research Service (2018), which indicated that understanding nutrition helps mothers make healthier meals, especially for toddlers, resulting in an increase in their knowledge of food and nutrition[24]. The study's findings revealed that stunting was very common among Gili Iyang's youngsters. Ngui et al. (2012) found that as family household income declined, children's undernutrition concerns increased[25]. Previous studies discovered that mothers with a secondary school degree had a greater rate of wasted children, which supports this finding[26].

Mothers with good nutritional understanding play an important role in ensuring children receive proper nutrition and avoid malnutrition[27,28]. Studies showed a strong correlation between parental nutritional knowledge and their children's nutritional status. For example, a study in Pakistan discovered that children of mothers with strong nutritional and health awareness were less likely to encounter malnutrition[29]. Similarly, Fadare et al., (2019) found that mothers with higher education levels had better knowledge of nutrition, which was positively correlated to their children's height-for-age and weight-for-age[22].

The 18 US-FSSM questions were grouped into four categories: anxiety, quality, quantity adults, and quantity children. Responses from both urban and rural families were comparable for anxiety and quality categories, yet less response to the quantity-related aspects. Further research was conducted to evaluate differences in responses to the 18 questions of US household food security measures between mothers in households with normal versus stunted children (refer to Table 6). The results demonstrated that the number of positive responses was higher in stunting households (p<0.01). This study demonstrated that cutting children's meals was more often found in stunting children's households and that the percentage was seven times higher than that of normal children (3.85% and 28.57% in normal and stunting children's households). In line with previous studies which show that there is a relationship between food insecurity and the incidence of stunting [30].

Table 5. Categories of food security status in child's nutritional status in Gili Iyang, East Java, Indonesia

Food Security Status	Height-for-age				
4-degree category (p-value<0.001)	Tall n (%)	Normal n (%)	Stunting n (%)	Severe stunting n (%)	Total (n)
Food secure	2 (100.0)	14 (53.84)	2 (28.57)	4 (100.0)	22 (56.41)
Food insecure without hunger	0 (0.0)	7 (26.92)	3 (42.85)	0 (0.0)	10 (25.64)
Food insecure with moderate hunger	0 (0.0)	3 (11.53)	1 (14.28)	0 (0.0)	4 (10.25)
Food insecure with severe hunger	0 (0.0)	2 (7.69)	1 (14.28)	0 (0.0)	3 (7.69)

Table 6. Percentages of positive responses to the US Household Food Security Module question related to the child's nutritional status†

Question Code (Q)	Key Statements	Normal (%)	Stunting (%)
HH2	Worried of food shortages	65.38	28.57
HH3	Food purchased didn't last	50.0	28.57
HH4	Unable to afford balanced meals	42.31	28.57
AD1	Adult(s) cut or skipped meals	26.92	28.57
AD1.a	Adult(s) cut or skipped meals for 3 or more months	23.08	28.57
AD2	Ate less than desired	11.54	28.57
AD3	Felt hungry but didn't eat	3.85	14.29
AD4	Lost weight due to insufficient food	3.85	0.0
AD5	Adult(s) not consuming any food for an entire day	3.85	14.29
AD5.a	Adult(s) not consuming any food for whole day in 3 or more months	3.85	14.29
CH1	Limited variety of affordable food for children	46.15	71.43
CH2	Unable to provide balanced meals for children	15.38	14.29
CH3	Children were not eating enough	7.69	0.0
CH4	Reduced portion sizes of children's meals***	3.85	28.57
CH5	Children skipped meals	100.0	100.0
CH5.a	Children skipped meals for 3 or more months	100.0	100.0
CH6	Children experienced hungry	100.0	100.0
CH7	Children not eat for whole day	100.0	100.0

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†Chi-square test; ***Significant at p-value <0.05

Food insecurity in households has been linked to poor nutritional results. Research in Kenya found that children living in food-insecure households were more likely to be stunted[31,32]. However, scoping review research in the United States and Canada revealed that household food insecurity may not be connected with height differences among children in these countries[33]. Household food insecurity has the ability to reduce nutritional status by limiting food consumption, either in quality or quantity. Food instability can also have an impact on nutritional health by influencing stress, depression, parenting, and infant feeding[34].

Based on the US-FSSM guidelines, households classified as food secure should show minimal or no signs of food insecurity, whereas food insecure households showed noticeable indicators of food insecurity, particularly in terms of the adequacy of food supply and adjustment in household food management. According to this study, adults were more likely to experience food insecurity before enabling their children to do so, such as skipping meals, feeling hungry, and not eating for the entire day[35]. A limitation of this study was that it only examined two subdistricts on Gili Iyang Island. As a result, it does not include all of Gili Iyang's children under the age of 5. In all, most mothers of children migrate, and mothers may not appropriately characterize their children's dietary habits. The main strength of this study was the high response rate among mothers to the provided questionnaires. Further research is required to discover other key factors that may influence children's nutritional status.

CONCLUSIONS

This study revealed that most mothers in Gili Iyang had limited knowledge of child nutrition. However, the majority of children measured did not show any signs of abnormality in either BMI or height for their age. On Gili Iyang Island, there was an association between mothers' knowledge of child nutrition and their children's nutritional status. There was a significant correlation between household food insecurity and with child's height-for-age. In the study setting, household food insecurity was a major issue, as was children's nutritional status, stunting, and wasting. Increased household food security is essential to improve children's nutritional status under the age of five. Thus, due attention should be placed on the design and implementation of multi-sectoral community-based nutrition interventions, as well as the establishment of income-generating livelihoods for the community, in order to address undernutrition and food insecurity at the household level in the region.

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CONFLICT OF INTEREST AND FUNDING DISCLOSURE

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AUTHOR CONTRIBUTIONS

AAP, DAP, UA, and AMS contributed to the design and were involved in data collection and analysis, while TM provided supervision of the research. AAP, DAP, and TM participated in manuscript preparation, content refinement, and administration. AAP, DAP, TM, DIP, UA, and AMS discussed the results and contributed to the final manuscript.

REFERENCES

1. de Onis, M. *et al.* Prevalence thresholds for wasting, overweight and stunting in children under 5 years. *Public Health Nutr* **22**, 175–179 (2019). https://doi.org/10.1017/S1368980018002434.
2. UNICEF. The State of Food Security and Nutrition in the World 2022. Preprint at (2022).
3. Ministry of Health Indonesia Republic, D. Final Report of Indonesia Basic Health Research 2018 (RISKESDAS 2018). Preprint at (2018).
4. Ministry of Health Indonesia Republic. Final Report of Indonesian Nutritional Status Survey (SSGI 2022). Preprint at (2022).
5. UNICEF. *UNICEF Conceptual Framework on Maternal and Child Nutrition*. (2021).
6. Awasthi, S., Verma, T., Sanghvi, T. & Frongillo, E. A. Path to Severe Acute Malnutrition in Children Below 2 Years of Age: Findings of Qualitative Research in Uttar Pradesh, North India. *Clin Epidemiol Glob Health* **7**, 246–252 (2019). https://doi.org/10.1016/j.cegh.2018.11.001.
7. Chowdhury, M. R. K. *et al.* Risk Factors for Child Malnutrition in Bangladesh: A Multilevel Analysis of a Nationwide Population-Based Survey. *J Pediatr* **172**, 194-201.e1 (2016). https://doi.org/10.1016/j.jpeds.2016.01.023.
8. Khatun, W., Rasheed, S., Alam, A., Huda, T. M. & Dibley, M. J. Assessing the Intergenerational Linkage between Short Maternal Stature and Under-Five Stunting and Wasting in Bangladesh. *Nutrients* **11**, 1818 (2019). https://doi.org/10.3390/nu11081818.
9. de Groot, R., Palermo, T., Handa, S., Ragno, L. P. & Peterman, A. Cash Transfers and Child Nutrition: Pathways and Impacts. *Development Policy Review* **35**, 621–643 (2017). https://doi.org/10.1111/dpr.12255.

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10. BRIN. BRIN Emphasizes 5 Things to Realize National Food Security, Sovereignty and Self-Sufficiency. Preprint at (2022).
11. Impact, E. Global Food Security Index 2022. Preprint at (2022).
12. Burman, J. *et al.* Association Between Household Food Insecurity and Nutritional Status Among Children of Age ≪5 Years: A Community-Based Study in A Slum of Kolkata, Eastern India. *J Family Med Prim Care* **11**, 3885 (2022). https://doi.org/10.4103/jfmpc.jfmpc_635_21.
13. Mahmudiono, T., Nindya, T., Andrias, D., Megatsari, H. & Rosenkranz, R. Household Food Insecurity as a Predictor of Stunted Children and Overweight/Obese Mothers (SCOWT) in Urban Indonesia. *Nutrients* **10**, 535 (2018). https://doi.org/10.3390/nu10050535.
14. Sumarmi, S., Mahmudiono, T. & Melaniani, S. Household Food Insecurity and Undernutrition in Children Below 5 Years Living in Different Geographical Areas in East Java, Indonesia. *Malays J Nutr* **24**, 529–538 (2018).
15. Phyo, W. Y., Khin, O. K. & Aung, M. H. Mothers' Nutritional Knowledge, Self-efficacy, and Practice of Meal Preparation for School-age Children in Yangon, Myanmar. *Makara Journal of Health Research* **25**, 59–68 (2021). https://doi.org/10.7454/msk.v25i1.1262.
16. Musleh, M., Subianto, A. & Prasita, V. D. Stakeholder Interaction in The Development of Oxygen Ecotourism on Gili Iyang Island, Indonesia. *Journal of Government and Civil Society* **7**, 297 (2023). https://doi.org/10.31000/jgcs.v7i2.8251.
17. District, B. P. S. S. I. S. Dungkek subdistrict statistics 2021. Preprint at (2021).
18. Foster, J. S. *et al.* A Qualitative Investigation into the U.S. Department of Agriculture 18-item Household Food Security Survey Module: Variations in Interpretation, Understanding and Report by Gender. *J Public Aff* **19**, (2019). https://doi.org/10.1002/pa.1861.
19. WHO. Training Course on Child Assessment: WHO Child Growth Standards. *World Health Organization* **7**, (2008).
20. Demilew, Y. M. Factors Associated with Mothers' Knowledge on Infant and Young Child Feeding Recommendation in Slum Areas of Bahir Dar City, Ethiopia: cross sectional study. *BMC Res Notes* **10**, 1–7 (2017). https://doi.org/10.1186/s13104-017-2510-3.
21. Debela, B. L., Demmler, K. M., Rischke, R. & Qaim, M. Maternal Nutrition Knowledge and Child Nutritional Outcomes in Urban Kenya. *Appetite* **116**, 518–526 (2017). https://doi.org/10.1016/j.appet.2017.05.042
22. Fadare, O., Amare, M., Mavrotas, G., Akerele, D. & Ogunniyi, A. Mother's Nutrition-Related Knowledge and Child Nutrition Outcomes: Empirical Evidence from Nigeria. *PLoS One* **14**, 1–17 (2019). https://doi.org/10.1371/journal.pone.0212775.
23. Derrickson, J. P., Fisher, A. G. & Anderson, J. E. L. Community and International Nutrition the Core Food Security Module Scale Measure Is Valid and Reliable When Used with Asians and Pacific Islanders 1,2. *J. Nutr* **130**, 2666–2674 (2000). https://doi.org/10.1093/jn/130.11.2666.
24. Coleman-Jensen, A., Rabbitt, M. P., Gregory, C. & Singh, A. Household Food Security in the United States in 2018. Economic Research Report No. 270. *United States Department of Agriculture Economic* (2019).
25. Ngui, R., Lim, Y. A. L., Kin, L. C., Chuen, C. S. & Jaffar, S. Association Between Anaemia, Iron Deficiency Anaemia, Neglected Parasitic Infections and Socioeconomic Factors in Rural Children of West Malaysia. *PLoS Negl Trop Dis* **6**, 1–8 (2012). https://doi.org/10.1371/journal.pntd.0001550.
26. Adnan, N. & Muniandy, N. D. The relationship Between Mothers' Educational Level and Feeding Practices Among Children In Selected Kindergartens In Selangor, Malaysia: A Cross-Sectional Study. *Asian Journal of Clinical Nutrition* vol. 4 39–52 Preprint at https://doi.org/10.3923/ajcn.2012.39.52 (2012). https://doi.org/10.3923/ajcn.2012.39.52.
27. Ongosi, A. Nutrient Intake and Nutrition Knowledge of Lactating Women (0-6 months postpartum) in a Low Socio-Economic Area in Nairobi, Kenya by Anita Nyaboke Ongosi Submitted in Partial Fulfilment for The Requirement of Master of Science Degree in Human Nutrition in. *University of Prectoria* 1–198 (2010). http://hdl.handle.net/2263/25935.
28. Williams, L., Campbell, K., Abbott, G., Crawford, D. & Ball, K. Is Maternal Nutrition Knowledge More Strongly Associated with The Diets of Mothers or Their School-Aged Children? *Public Health Nutr* **15**, 1396–1401 (2012). https://doi.org/10.1017/S1368980011003430.
29. Shahid, M. *et al.* Does Mothers' Awareness of Health and Nutrition Matter? A Case Study of Child Malnutrition in Marginalized Rural Community of Punjab, Pakistan. *Front Public Health* **10**, 1–11 (2022). https://doi.org/10.3389/fpubh.2022.792164.
30. Drennen, C. R., Coleman, S. M., Ettinger de Cuba, S., Frank, D. A., Chilton, M., Cook, J. T., Cutts, D. B., Heeren, T., Casey, P. H., & Black, M. M. Food Insecurity, Health, and Development in Children Under Age Four Years. *Pediatrics* **144**, (2019). https://doi.org/10.1542/peds.2019-0824.
31. Mutisya, M., Kandala, N. B., Ngware, M. W. & Kabiru, C. W. Household Food (In)Security and Nutritional Status of Urban Poor Children Aged 6 to 23 Months in Kenya Global health. *BMC Public Health* **15**, 1–10 (2015). https://doi.org/10.1186/s12889-015-2403-0.
32. Dirghayu, K. C. Ulak, N., Poudyal, A., Shrestha, N., Gautam, N., Ghimire, L., & Paudel, U. Household Food Security Access and Nutritional Status among Early Adolescents in a Poor Neighborhood of Sinamangal, Nepal. *Curr Dev Nutr* **5**, 1–7 (2021). https://doi.org/10.1093/cdn/nzab127.

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33. Fafard St-Germain, A. A. & Siddiqi, A. The Relation between Household Food Insecurity and Children's Height in Canada and the United States: A Scoping Review. *Advances in Nutrition* **10**, 1126–1137 (2019). https://doi.org/10.1093/advances/nmz034.
34. Chaparro, C. FANTA-Guatemala-ENSMI-Report_March 2012. (2012).
35. Foster, J. S., Schwartz, M.B., Grenier, R.S., Burke, M.P., Taylor, E.A., Mobley, A.R. A Qualitative Investigation into The U.S. Department of Agriculture 18-Item Household Food Security Survey Module: Variations in Interpretation, Understanding and Report by Gender. *J Public Aff* **19**, 1–7 (2019). https://doi.org/10.1002/pa.1861.

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