nutrición clínica y Dietética Hospitalaria

Artículo Original

Nutr Clín Diet Hosp. 2026; 46(1):71-78
DOI: 10.12873/461dmade

Nutrition security, dietary habits and food taboos: Relationship with household food choice and nutrition in Lombok island

Sri Sulendri NI KETUT, Darawati MADE, Khairul Abdi LALU, Juntra Utama LALU, Pratama ZULFATEDY, Firmani Wahyusa AYUNDA

Department of Nutrition, Health Polytechnic of Mataram, Mataram City, Indonesia.

Recibido: 10/octubre/2025. Aceptado: 19/enero/2026.

ABSTRACT

Background: Household nutritional fulfillment is influenced by the interaction between food security and local knowledge, which is affected by various factors. These processes are actively influenced by political and economic systems in which imbalances exist at the local, national and global levels. Health beliefs and food taboos are two emerging outcomes that are divided into health outcomes that are beneficial, harmless or harmful health outcomes.

Methods: This study aimed to capture household food and nutrition security conditions, In addition to exploring the differences between regions, the differences between the urban and rural areas in the region were also explored. The 300 household samples were selected using clustered sampling. One district and one city from each region were selected based on the prevalence of stunting in the area. The subjects were households in each study site that was clustered according to their respective Integrated Healthcare Centre (Posyandu, furthermore will be addressed as post). The study was conducted for 12 months.

Results: Score of household food diversity in West Nusa Tenggara, 62.7%, is high. More households with high food diversity scores in urban areas than rural areas. Meanwhile, there are more households with moderate and low food diversity scores in rural areas than in urban areas. The average food diversity score in urban areas is higher than in rural areas. The variety of food consumed by households in rural and urban areas based on the level of food diversity. In households with a low level of diversity in food consumption (≤ 5 food groups), in rural areas, the food consumed is cereals (staple food), vegetables, fruits, and nuts, without the food group being a source of animal protein.

Conclusions:. This study found that pregnant women in the study area had high dietary quality scores (high DDS) and perceptions of food taboos related to health and cultural acceptance. Dietary diversity and food insecurity were associated with the prevalence of nutritional status, but food taboos and BMI malnutrition in mothers were not significant risk factors for the prevalence of nutritional status in toddlers.

KEYWORDS

Dietary diversity, household nutrition security, eating behavior, dietary status.

INTRODUCTION

The acknowledgement of adequate nutrition as a primary catalyst for persistent social, economic, and political advancement has precipitated global initiatives aimed at eradicating malnutrition[1]. The consumption of food to spatial and temporal variations, resulting in the manifestation of malnutrition at levels among specific groupings of the population[2]. Food insecurity is a persistent condition in many developing countries, including Indonesia. By 2020, Indonesia will be ranked 65 out of 113 countries in terms of food security[3]. The condition varies among regions, and eastern Indonesia tends to be more food insecure than its western counterparts. The condition also varies among geographical locations; an urban area is often more privileged than a rural area. In 2019, 17,1% of rural areas were food insecure, while

Correspondencia:
Darawati Made
juntra8686@gmail.com

only 5,1% of urban areas were food insecure[4]. This shows that the disparity of development caused by geographical location affects people's food security. At the household level, food security is determined by physical and economic access to food[5]. Household Sociodemographic and socioeconomic characteristics of individuals in the household affect the capability of a household to fulfill its members' food needs. For example, education level often affects the type of occupation and household income. The lower the income, the higher the proportion of income spent on food expenditure. When faced with shock, a household often reduces its food expenditure because other expenditures are uncompromisable. This condition makes a household more vulnerable to food insecurity[6]. A household headed by women is more vulnerable to food and nutrition insecurity[7].

Household size also affects household food security because, with limited income, the amount of food distributed to many family members will also be limited[6]. This condition is more complex in a patriarchal culture where husbands and sons are prioritized in food consumption, leaving wives and daughters with less amount and choice of food. In this culture, women also have less voice in decision-making and resource management[8]. A patriarchal culture that divides the roles between men and women in the family will also affect household food security. Women are obliged to carry out a reproductive/domestic role, namely household chores, providing family food, and managing food and cooking budgets. However, men's decision-making is often quite strong in determining the type of food and the value of consumption expenditure. On the other hand, in a patriarchal culture, when men are positioned as the head of the household, it is considered taboo when men do household chores. This division of labour is a dilemma for low-income families because there are demands for women to work outside to earn family income but still have to carry out their domestic role in taking care of household chores. However, studies showed that when women are involved in household resource management and decision-making, the family scores higher in household food security and nutritional assessment. Women allocate more resources for the family's well-being, making decisions that benefit all family members. The children of the household where the women are empowered have better nutritional status[8-9].

The empowerment should be accompanied by maternal nutritional knowledge to maximize the benefit. Ethnicity also takes part in the formation of eating habits, food culture in one region will deeply affect how the people in the region consume their food. It is influenced by available resources, beliefs and indigenous information sources, food-related technology, and the colonization history of the region. Some of the food cultures might also have a detrimental effect on the formation of healthy eating habits. For example, in a food taboo culture, women and children under five are prohibited from consuming certain foods with high nutritional value. Some of the existing taboos in Indonesian culture are the prohibition of eating fish for breastfeeding mothers because breast milk becomes fishy, also the prohibition on giving colostrum to new-born due to the assumption that colostrum is stale milk which will endanger the health of the baby. In addition, cultural habits in inappropriate feeding practices also endanger the health of babies, for example, giving coffee to babies on the presumption of preventing sickness or feeding rice or bananas to under 6 months babies on the grounds to nurture their digestive system, etc. In some Indonesian cultures, the social norms that regulate food consumption can vary, but most tend to be detrimental to women's health and the maximum growth of children. Thus, exploring all these aspects that affect household food habits and consumption is important. Ultimately, these variables will also determine household food and nutrition security.

In this article, the term 'vulnerable groups' is employed to denote those whose intersecting subjectivities convey an increased susceptibility to malnutrition and its consequences (e.g. diarrhea, stunting, wasting). These groups are also subject to the risk of long term health consequences. Malnutrition represents a significant challenge, particularly in low and middle income countries[10]. Children represent a particularly vulnerable demographic with regard to malnutrition. On average, 45% of deaths in children under the age of five years are attributable to undernutrition on a global scale[11]. The prevalence of nutritional problems among toddlers in Indonesia has reached epidemic proportions, representing a major public health concern. The Indonesian Nutritional Status Survey (2021) reported that 17% of toddlers were underweight, 7.1% were wasted, and 24.4% were stunted[12]. The results of the SSGI indicate that the prevalence of stunting in children under five years of age in West Nusa Tenggara Province was 32.7%, representing an increase of 1.3% compared to the previous year. This value has not yet reached the 20% threshold, nor the national target of 18.4%. This places Province in the fourth highest position in Indonesia. In 2022, the province attained the highest percentage in Indonesia for children under six months who received exclusive breastfeeding[12]. Based on the problems research's, this research aims to analyzing food security, food taboo, dietary habits and nutritional status of toddlers in West Nusa Tenggara.

MATERIAL AND METHOD

Design, Location, and Time

This study used a cross-sectional design with cluster sampling and selection by *Posyandu*. This study aimed to capture household food and nutrition security conditions in West Nusa Tenggara as the impact of covid-19. In addition to exploring the differences between regions, the differences between the urban and rural areas in the region were also explored. The study area selection was made purpo-

sively according to the Decree of the Minister of National Development Planning of the Republic of Indonesia, Number 42/M.PPN/HK/04/2020 about Determining the Expansion of Regency/City Focus Locations for Stunting Reduction Integrated Intervention in 2021.

Population and Sample

This research involved toddlers and fathers or mothers who take care of toddlers. The samples were selected using clustered sampling. One district and one city were selected based on the prevalence of stunting in the area. The subjects were households in each study site that was clustered according to their respective Integrated Healthcare Centre (Posyandu, furthermore will be addressed as post). The sample size is based on an assumption that α=5% (Zα=1.96), power of test=90% (Zβ=1.28). Food Security Agency reported that the percentage of food insecurity in rural area was 17.1% while in urban area the percentage was 5.1% on 2019 Food Security Index. After adjusting for the design effect, the minimum final sample was 300. The number of subjects was calculated using proportional allocation by considering the level/strata of food vulnerability of each health center. The number of subjects was 300, consisting of a caregiver father or mother and children. Subjects were taken at each community health center using a simple random method without substitution.

Data Types and Collection Methods

All primary data was collected through an interview process using a structured questionnaire and direct measurements. The child's nutritional status consists of 3 indices, namely Body weight for age; Height/body length, and Body weight for height. Nutritional status was measured by direct measurement of body weight using a digital step scale, while body height used a length board. Then analyzed using WHO Anthro Survey Analyzer Software (Windows, Mac). Then the measurement results are divided into 3 nutritional status indices, namely[6]: 1) Body weight for age (Overweight (z-score >2); Normal (z-score > -2.0 to +2.0); Deficient (z-score -3.0 to -2.0); Very deficient (z-score < -3.0). 2) Height for age (Normal (z-score ≥ -2.0); Stunting (z-score -3.0 to -2.0); Very Stunting (z-score < -3.0). 3) Body weight for height (Overweight (z-score > +2.0); Normal (z-score > -2.0 to +2.0); Malnutrition (z-score -3.0 to -2.0); Severe malnutrition (z-score < -3.0)).

The characteristics of household size are grouped into 3 groups, those are small size (<=4 people), medium size (<=5-6 people) and large size (<=7 people). The Food Insecurity Experience Scale (FIES) is measured using the FIES Survey Module (FIES-SM) consisting of 8 questions on access to food and the measurement results are categorized into 3 categories, namely: Moderate Food Insecurity, mild Food Insecurity, Food security[7].

Household Dietary Diversity Score (HDDS) is measured using a structured interview with 1 x 24-hour recall and the measurement results are categorized into 2 categories, namely: Medium (4-5 Types of Food); High (>6 Types of Food). Individual Dietary Diversity Score (IDDS) is measured using a structured interview with 1 x 24-hour recall and the measurement results are categorized into 2 categories, namely: Good (>/ 4 types/food groups); Less (< 4 types of food groups). In general, two levels of social organization were analyzed in this research: households and individuals/children. At the household level, the analyzed variables were all selected indicators of social, economic, and physical access. Level of statistical significance adopted $p < 0,05$

The daily nutrient intake of a child is assessed using multiple-passed 1 x 24-hour recall to the mother (Gibson 2005). The dietary diversity of a household is assessed using Household Dietary Diversity Score (HDDS). HDDS is calculated based on food eaten by any member of the household. The respondent is responsible for food preparation for the household on the previous day. At the same time, the target of interest is the household (all persons living under the same roof who share meals). There are 12 groups included in the HDDS: 1) cereals, 2) white tubers and roots, 3) vegetables, 4) fruits, 5) meat, 6) eggs, 7) fish and other seafood, 8) legumes, nuts and seeds, 9) milk and milk products, 10) oils and fats, 11) sweets, and 12) spices, condiments and beverages. Data collected include foods prepared in the home and consumed in the home or outside the home, foods purchased or gathered outside and consumed in the home, and excluding foods purchased outside the home and consumed outside (FAO 2010). Food security is measured using Food Insecurity Experience Scale/FIES (Ballard et al. 2013). There are eight questions asked of the mother over the past month. Using FIES, a household is classified at different levels of severity: "food secure" (household who answer "no" to all questions about food insecurity-related experiences) or "food insecure". Household with mild food insecurity worries about how to procure food, while moderately food insecure household compromises on quality and variety, reducing quantities and skipping meals. Severely food- insecure household is experiencing hunger. The coping strategy mechanism is measured using the reduced Coping Strategies Index (CSI) with a period of one last week/7 days (Maxwell et al. 2008). The five standard coping strategies and their severity weightings are: eating less preferred/expensive foods (1); borrowing food or relying on help from friends and relatives (2); limiting portion sizes at mealtimes (1); limiting adult intake so that small children can eat (3) and reducing the number of meals per day (1). Answers to the simple question "In the past 7 days, if there have been times when you did not have enough food or enough money to buy food, how many days has your household had to adopt a particular food-based coping strategy" were used to create the CSI? For each household, a score was given to each coping strategy. The score is calculated by multiplying the frequency with which the coping strategy is

used and the severity weight. The scores for each coping strategy are added to give each household a composite score. Higher values of the index indicate more severe food insecurity. Anthropometric measurements are applied to the under-five child and the mother in the household. The child is measured for their weight and height, while the mother is measured for her weight, height, mid-upper arm, waist, and hip circumference (Gibson 2005). The child's and the mother's weights are measured using digital scales with a precision of 0.1 kg. The length of the child under two years old is measured using a length board, while the height of the child is 24-59 months, and the mother is measured using a stadiometer with a precision of 0.1 cm. Two measurements are conducted on each subject and averaged. All equipment for the measurement is regularly checked and calibrated.

Data processing

The analysis process for all data types was carried out with the help of the SPSS for the Windows program. This research also applies a composite index score validation test through the Spearman correlation test against two standard benchmark indicators: the HDDS score and the proportion of food expenditure. Another relationship test was to examine the relationship between the index score and nutritional status, level of nutritional adequacy, and dietary diversity (IDDS) in children. The correlation test was applied using Spearman or Pearson, depending on the normality of the data.

Data on child's consumption was calculated using a comparison of intake to the food composition table. Further, daily nutrient intake was compared with the recommended dietary allowance (RDA) based on Ministry of Health 2019. The children's weight and height/length were analysed using WHO Anthro Analyzer, the online tool developed by WHO and UNICEF to analyse anthropometric survey data comprehensively. The software is available online through the link https://worldhealthorg.shinyapps.io/anthro/. Data on height-for-age z score (HAZ), weight-for- age z score (WAZ), and weight-for-height (WHZ) were obtained from the software. The mother's body mass index (BMI) was calculated by dividing weight in kilograms and squared height in meters. BMI was then categorized based on the recommended cut-points for BMI categories as follows: <18.5, 18.5-24.9, 25.0-29.9, 30.0-34.9, 35.0-39.9, and ≥40.0 for underweight, normal weight, overweight, obese class I, obese class II and obese class III, respectively (WHO 1998). An instrument with open questions was used as a qualitative approach to obtain data and information from respondents' perspectives on household food culture and gender empowerment in the family. Several variables that use a qualitative approach are food culture, food taboo, intra-household food allocation, decision-making and social norms of food consumption. Data were presented descriptively in tables, graphs, and pictures. Data are presented as means and SD for continuous variables and proportions for categorical data. All statistical analyses for quantitative data were carried out using SPSS Version 22.0 for windows. P-values of less than 0.05 will be considered significant.

RESULTS

Food Taboo

Food taboo is the activity of avoiding or limiting eating certain foods so that it has an impact on health and nutrition. The extent of the spread of the foods to avoid varies from community to community. However, food taboos are more common in rural communities with less education[13]. The reasons given by respondents regarding food taboos for children under the age of 5 can be grouped into 2, namely: religious reasons and the child's health.

The reasons given by respondents regarding food taboos for teenage girls were health during pregnancy or related to gastrointestinal disorders. The reasons given by respondents regarding food taboos for pregnant women varied, but all of them could be due to health reasons, which could make it difficult during pregnancy and later birth.

Almost more than one third of pregnant women had taboo in which fruit and animal protein groups were frequently reported. Some fruits such as pineapple, banana, jack fruit and durian were perceived to cause stillbirth, stomach burn, and made the delivery become difficult. Animal protein, particularly from fish, was also reported to be prohibited by family and perceived to cause some pregnancy problems (Table 1). The reasons given by respondents related to food taboos in breastfeeding mothers were concerns that breast milk given to babies was unsafe (causing the child to become sick, the mother was sick, and the wound was difficult to heal.

Dietary Diversity

Determining the HDDS (household dietary diversity score) is one method for assessing household-level food diversity. The higher the score, the more variety of food consumed by the household. To obtain optimal nutritional status in children under five years, it is recommended to consume a variety of foods with several servings in accordance with balanced nutrition guidelines.

The data shows that the score of household food diversity in West Nusa Tenggara, 62.7%, is high. More households with high food diversity scores in urban areas than rural areas. Meanwhile, there are more households with moderate and low food diversity scores in rural areas than in urban areas. The average food diversity score in urban areas is higher than in rural areas. The variety of food consumed by households in rural and urban areas based on the level of food diversity. In households with a low level of diversity in food consumption

Table 1. Food taboo based on food group during pregnancy and their perception (n = 300)

Responds	N	%	Reason
Present of food taboo	104	34,7	-
Number of food taboo (> 2 food items) from person present of food taboo	58	55,8	-
Food Groups			
Fruits	20	19,2	Slimy, stomach burn, pusillanimous face, sticky and prohibited by family, difficulties delivering baby, still birth, itchy, wounded baby, dry, baby feel hot
Vegetables	15	14,4	Slimy, prohibited by family, small baby, stillbirth, big baby, itchy, umbilical cord entangled, cardiovascular impairment baby, custom uncontrolled birth weight
Beverages	9	8,7	Prohibited by family
Animal protein	49	47,1	Stomach burn, dizzy, nausea after eating, stripped face, custom, difficulties delivering baby, prohibited by family, stillbirth, come in come out fetus.
Others	11	10,6	Prohibited by family

(≤ 5 food groups), in rural areas, the food consumed is cereals (staple food), vegetables, fruits, and nuts, without the food group being a source of animal protein. In contrast, in urban areas, there is a group of food sources of animal protein, but they do not consume vegetables, fruits, and nuts. Households with moderate levels of diversity in food consumption ((6-7 food groups) in rural areas consumed cereals (staple food), various types of vegetables, fruit sources of vitamin A, oils and fats, and no protein sources, while those in urban areas consumed are cereals, animal (meat) and vegetable (legumes) protein sources, oils, and fats. In households with a high food consumption diversity score (>7 food groups), in urban areas, the diversity of foods consumed includes sources of carbohydrates, animal & vegetable protein, fat, vitamins, and minerals. However, in rural areas, it was found that animal protein sources were not consumed. Lack of food sources for animal protein consumption can be one factor that affects optimal growth and maintenance of health.

Food Security and Coping Strategy

Most households in rural and urban areas are in the food insecure category (60% and 61,3%). Household food insecurity indicates inadequate availability, affordability, and diversity of food consumption for households. Food security can be identified from the ability of households to access food and the diversity of household food consumption. Survival strategies for families experiencing food insecurity in both rural and urban areas are carried out through: consuming less preferred and cheaper food, borrowing food or asking for help from friends or relatives, owing food, asking household members to look for food elsewhere, limiting food portions at mealtimes, limiting consumption by adults so that young children can eat more food, feeding working household members at the expense of non-working household members, and reducing the frequency of meals in a day. In addition, especially for households in rural areas, they also carry out survival strategies by gathering wild plants, hunting or harvesting early, consuming stored seed stock for planting in the following season, and asking household members to beg. In connection with the coping strategy of asking household members to beg: there is a tradition of Bedea (exchanging harvested materials in the form of vegetables for rice or other foodstuffs) in some rural regions in Lombok, West Nusa Tenggara. The results of this study indicate that the most common coping strategy used by food insecure families is to feed working members at the expense of non-working household members.

Nutritional Status

The mother's nutritional status indicator is body mass index (BMI). The results showed that the average mother's body mass index was 24.9. Mothers in urban areas have a higher BMI of 0.2 than mothers in rural areas. Table 2 shows that 60.0% of mothers are malnutrition. Mothers in urban areas have a higher proportion of malnutrition compared to those in rural areas. The proportion of malnutrition among women in urban areas is 60,0%, while the proportion of malnutrition in rural areas is 45.3%.

The children nutritional status indicator based on the weight-for-age index (WAZ), it was found that 26% of children were classified as malnutrition. The prevalence of malnutrition children in rural areas is 27,3% and in urban areas 24,7%.

Table 2. Characteristic of respondent in study area (n = 300)

Variables	Residential Area				Crude OR	95% CI	p-value
	Rural		Urban				
	n	%	n	%			
Dietary Diversity							
Low DD (≤ 7 Group)	70	46,6	42	28,0	1,910	1,049-3,479	0,037
High DD (> 7 Group)	80	53,4	108	72,0			
Food Allocation							
Yes	40	26,7	55	36,7	0,604	0,245-1,485	0,241
No	110	73,3	95	63,3			
Food Security							
Food Secure	60	40,0	58	38,7	0,229	0,101-0,520	0,001
Food Insecure	90	60,0	92	61,3			
Mothers Nutritional Status (BMI)							
Normal	82	54,7	60	40,0	2.434	1,125-5,268	0,042
Malnutrition	68	45,3	90	60,0			
Children Nutritional Status (WAZ)							
Normal	109	72,7	113	75,3	0,319	0,837-1,465	0,078
Malnutrition	41	27,3	37	24,7			

However, after adjustment, those mothers with DDS ≤ 7 were three times (odds risk (OR) = 2,824, 95% CI = 0,910-5,940) more likely to have higher risk of child with malnutrition than their counterpart. Household with food insecurity were four times (odds risk (OR) = 4,191, 95% CI = 1,621-6,804) more likely to have higher risk of child with malnutrition than their counterpart.

DISCUSSION

The present study has identified a number of food taboos in pregnant women, predominantly those who are not employed (i.e. housewives) and in the second trimester of pregnancy. These taboos were predominantly associated with the consumption of fruits, vegetables and animal protein. The inves-

Table 3. Multivariate analysis of Nutritional Status and its factors

Variables	B	S.E	P-value	OR	95% CI
Constant	-1,812	0,721	0,001	0,073	-
Dietary Diversity, ≤ 7	1,669	0,508	0,001	2,824	0,910 - 5,940
Food Taboo, yes	-0,310	0,473	0,237	0,618	0,379 - 1,573
Food Security, Insecurity	1,718	0,611	0,003	4,191	1,621 - 6,804
Mothers BMI, Malnutrition	0,293	0,427	0,621	1,027	0,303 - 1,428

tigation revealed that the majority of pregnant women exhibited low dietary diversity, with their dietary patterns consisting primarily of staple foods, meat, and fish, and exhibiting a paucity of fruit and vegetable food groups.

Education and knowledge are essential in reducing reliance on food taboos among pregnant women. However, a study conducted in the southern region of the country yielded contrasting results. The African news outlet reported that more than half of the female population were affected. The mean age of the subjects was between 18 and 90 years (n = 140). It is recommended that pregnant women incorporate leafy vegetables into their diet. The rationale behind this recommendation is health-related. It was also noted that vegetables have been shown to provide vitamins and contribute to bone tissue development[13]. According to the results of a study by Kristya et al, pregnant women tend to avoid meat (particularly chicken and red meat), fish, potatoes, and certain fruits (such as oranges, peaches, pineapple, and guava). They also tend to avoid nuts, eggs, butternut squash, and pumpkin. These taboo foods are all rich sources of micronutrients (nuts, eggs, offal, fruit, pumpkin and butternut squash), protein (fish, eggs, chicken, offal and nuts) and carbohydrates (potatoes), all of which are needed for the health of the mother and the development of the baby. Several factors, including knowledge and education about food, can influence food taboo behaviour[14].

Nevertheless, in contradistinction to the preponderance of literature addressing the detrimental consequences of food taboo on maternal health. The health and nutritional status of infants, as well as the subject of food taboo, are also discussed. The potential exists for this to result in the conservation of indigenous resources. In order to ensure the preservation of the individuality of the aforementioned population. The provision of protection against the consequences of an unhealthy diet is of particular significance in this area[15]. Nonetheless, in the absence of food taboo, this phenomenon is perceived by the mother and the mother's husband. This category encompasses spouses and grandparents (mother-in-laws). This condition may also be indicative of inadequate nutrition. The promotion of health within the designated geographical area constitutes a pivotal consideration in this study[16]. Study work provides a comprehensive overview of the educational programme[15]. A literature review was conducted by Handriyanti and Fitriani which revealed that toddlers from households with low food diversity have a higher tendency to experience stunting. The ingestion of a diet consisting of a limited variety of foods will have consequences for the quality of intake of nutrients that fail to satisfy the body's requirements. A deficiency in nutrient intake will have a detrimental effect on growth inhibition, which in turn will have a negative impact on opportunities for stunting[17].

Food insecurity affects food diversity. The results of this study show that the more severe the food insecurity experienced, the lower the diversity of food consumed. This research is similar to that conducted by Lalu Juntra et al. stating that there is a relationship between food availability and household food diversity, so it is necessary to increase food security for the creation of household food diversity[18]. In another study, it was reported that the low diversity of food consumption (4.63) was influenced by food insecurity[19]. Other results similar to this study reported that the diversity of food consumption in children was low (5.8) in 14 food groups. Children in households that experience food insecurity are three times more likely to have low diversity in food consumption[20]. Even though this research has limitation, this research make a significant contribution to the limitation of existing data and provides important insights into the current state of food insecurity and it's distribution based on nutritional status in cross sector population such as children under five years.

CONCLUSION AND RECOMMENDATIONS

This study found that pregnant women in the study area had high dietary quality scores (high DDS) and perceptions of food taboos related to health and cultural acceptance. Dietary diversity and food insecurity were associated with the prevalence of nutritional status, but food taboos and BMI malnutrition in mothers were not significant risk factors for the prevalence of nutritional status in toddlers. Health workers are encouraged to provide intensive and culturally specific health and nutrition education that promotes healthy lifestyles and addresses food taboos during pregnancy. In addition, public health workers should encourage regular prenatal care for working pregnant women. Health workers are advised to provide intensive and culturally specific health and nutrition education that promotes healthy lifestyles and addresses food taboos during pregnancy.

ACKNOWLEDGEMENTS

Our gratitude to all participants who took part in this research. Besides, the Neys-van Hongstraten Netherland foundation and the IPB University for the major funding of this research with the "Research grant proposal inter-university collaboration program in food and nutrition security". The author would like to thank the including Mataram City Health Department and North Lombok Regency Health Department for permission to conduct research and guidance. The authors also thank the study participants and their parents.

REFERENCE

1. FAO, IFAD, UNICEF, WFP and WHO. 2017. The State of Food Security and Nutrition in the World 2017. Building resilience for peace and food security. Rome, FAO.
2. Zerfu TA, Umeta M, Baye K. Dietary habits, food taboos, and perceptions towards weight gain during pregnancy in Arsi, rural cen-

tral Ethiopia: a qualitative cross-sectional study. Journal Health Population Nutrition. 2016;35 (1):22. https://doi.org/10.1186/s41043-016-0059-8

3. [UNDP] United Nations Development Programme. (2020). Human Development Indicator: Indonesia. http://www.hdr.undp.org/en/countries/profiles/IDN

4. [BKP] Food Security Agency. (2020). Food Security Index 2020. Available at:http://badanpangan.pertanian.go.id.

5. Pinstrup-Andersen, P. Food security: definition and measurement. *Food Sec.* 1, 5–7 (2009). https://doi.org/10.1007/s12571-008-0002-y

6. Amrullah, E. R., Ishida, A., Pullaila, A., & Rusyiana, A. Who suffers from food insecurity in Indonesia ?. International Journal of Social Economics. 2019; 46(10), 1186–1197. DOI:10.1108/IJSE-03-2019-0196

7. Zhou, D., Shah, T., Ali, S., Ahmad, W., Din, I. U., & Ilyas, A. Factors affecting household food security in rural northern hinterland of Pakistan. Journal of the Saudi Society of Agricultural Sciences. 2019; 18(2), 201–210. https://doi.org/10.1016/j.jssas.2017.05.003

8. Gitungwa H, Gustafson CR, Jimenez EY, Peterson EW, Mwanzalila M, Makweta A, Komba E, Kazwala RR, Mazet JAK, VanWormer E. Female and male-controlled livestock holdings impact pastoralist food security and women's dietary diversity. One Health Outlook. 2021 Jan 25;3:3. doi: 10.1186/s42522-020-00032-5

9. Harris-Fry, H., Azad, K., Kuddus, A. *et al.* Socio-economic determinants of household food security and women's dietary diversity in rural Bangladesh: a cross-sectional study. *J Health Popul Nutr* 33, 2 (2015). https://doi.org/10.1186/s41043-015-0022-0

10. Victora CG, Christian P, Vidaletti LP, Gatica-Domínguez G, Menon P, Black RE. Revisiting maternal and child undernutrition in low-income and middle-income countries: variable progress towards an unfinished agenda. The Lancet. 2021;397(10282):1388–99.

11. Dewi, P., Khomsan, A., & Cesilia Meti Dwiriani. The Household Food Security and Stunting of Under-Five Children in Indonesia: A Systematic Review. Media Gizi Indonesia. 2024; 19(1), 17–27. https://doi.org/10.20473/mgi.v19i1.17-27

12. [MoH] Ministry of Health of Republic Indonesia. (2023). Indonesia Nutrition Status Surveillance Report 2022. https://www.badankebijakan.kemkes.go.id/buku-saku-hasil-survei-status-gizi-indonesia-ssgi-tahun-2022/

13. Ramulondi M, de Wet H, Ntuli NR. Traditional food taboos and practices during pregnancy, postpartum recovery, and infant care of Zulu women in northern KwaZulu-Natal. J Ethnobiol Ethnomed. 2021 Mar 20;17(1):15. doi: 10.1186/s13002-021-00451-2

14. Kristya, A. M., Sitoayu, L., Nuzrina, R., Ronitawati, P., & Sa'pang, M. Perilaku Food Taboo Pada Ibu Hamil Dan Faktor Yang Mempengaruhinya Di Puskesmas Pamarayan Kabupaten Serang, Banten. Jurnal Ekologi Kesehatan. 2021; 20(2), 139–151. DOI:10.22435/jek.v20i2.4669

15. Iradukunda F. Food taboos during pregnancy. Health Care Women Int. 2020 Feb;41(2):159-168. doi: 10.1080/07399332.2019.1574799

16. Tsegaye D, Tamiru D, Belachew T. Food-related taboos and misconceptions during pregnancy among rural communities of Illu Aba Bor zone, Southwest Ethiopia. A community based qualitative cross-sectional study. BMC Pregnancy Childbirth. 2021 Apr 17;21(1):309. doi: 10.1186/s12884-021-03778-6.

17. Handriyanti, R. F., & Fitriani, A. Analisis keragaman pangan yang dikonsumsi balita terhadap risiko terjadinya stunting di indonesia. Muhammadiyah Journal of Nutrition and Food Science (MJNF). 2021; 2(1), 32–42. https://doi.org/10.24853/mjnf.2.1.32-42

18. Utama, L.J., Abdi, L.K., Yunita, L., Saudia, B.E.P., Kristiandi, K., Nur, A. (2024). Food security of farmer households in Central Lombok Regency. Nutrición Clínica y Dietética Hospitalaria. 44, 3 (Jul. 2024). DOI:https://doi.org/10.12873/443utama.

19. Roy D, Zulfiqar F, Tsusaka TW, Datta A. Household food insecurity and dietary diversity of women of reproductive age among smallholder farming households in northwest Bangladesh. Ecol Food Nutr. 2022 Jul-Aug;61(4):460-483. doi: 10.1080/03670244.2021.2024176.

20. Antwi J, Quaidoo E, Ohemeng A, Bannerman B. Household food insecurity is associated with child's dietary diversity score among primary school children in two districts in Ghana. Food Nutr Res. 2022 Jan 7;66. doi: 10.29219/fnr.v66.7715.