

DIETARY DIVERSITY IS ASSOCIATED WITH FOOD SECURITY AMONG FARMER'S CHILDHOOD IN LOMBOK TENGAH

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ABSTRACT

Background: Nutrition at children under five-year stage is crucial for growth and development. Dietary choices are common determinants caused by a set of underlying factors such as household food insecurity and dietary diversity. This study aimed to determine the prevalence of food insecurity and dietary diversity among farmer's children from 6 to 59 months.

Method: Cross sectional study was conducted on 359 children aged 6-59 month. A multistage cluster sampling method was used to select the study participants. This study was carried out used data on food security and dietary diversity. A validated structured questionnaire was used to collect data on sociodemographic characteristics, food security and dietary diversity.

Result: The majority (97.4%) of children respondent had good dietary diversity. Subject's who are food secure tend to have good food diversity. Children under five years respondent had mean dietary diversity score of 5.3 food groups. In adjusted analysis, statistical correlation was found between several food groups and food security status, like meat, poultry and this product. The results revealed the household food security determine adequate food intake for children in the community.

Conclusion: Household food insecurity and dietary diversity was unacceptably less and good respectively among farmer's children. The food security that resides in highland and are involved in subsistence most vulnerable to food security and their produce consumed less varied diets as they had lowest dietary diversity score.

Keywords: Food security, Dietary diversity score, Farmer's children

INTRODUCTION

Food security is the state in which all people always have physical and financial access to adequate, wholesome food that meets their dietary requirements and preferences and allows them to lead active, healthy lives (Burchi & Muro, 2016). The three primary pillars of food security are usage, availability, and accessibility. Food can be domestically produced, commercially imported, or acquired through food assistance.

The quantity of foods ingested over time by various groups is known as dietary diversity. Utilization is the allocation of household food among household members according to each person's nutritional needs; it also includes biological usage, which is

connected to an individual's health. the idea that diversifying food types in the diet can aid in consuming more nutrients and advancing health (Singh et al., 2020). It was discovered that having a diverse diet positively correlated with household income, gender, education level, having a home garden, and owning animals (Nengovhela et al., 2022). Dietary diversity scores are becoming more and more popular because they have a positive correlation with children's nutritional status and nutrient intake and because dietary diversity is crucial for both nutrition and overall health (Hooshmand & Udiipi, 2013).

However, elements including food production, food taboos, knowledge, attitude, and eating behavior practices all have an impact on dietary diversity. Pregnant women were found to have decreased dietary

diversity and food taboos; about half of the respondents reported this (Angkasa, D., & Iswarawanti, D.N., 2021).

Malnutrition and the effects of a less varied diet have been documented in a number of studies. The effects of malnutrition include delayed physical and motor development, a lower intellectual quotient, increased behavioral issues, a lack of social skills, and an increased risk of illness. Adult chronic disease rates may be greater as a result (Darsene et al., 2017).

Urbanization, rising household incomes, and the expansion of supermarkets have all been linked to changes in dietary diversity and patterns of food consumption (Arifin et al., 2019). The purpose of this study was to investigate the relationship between dietary variety score and household food security.

METHODS

The households of farmers in Lombok Tengah, West Nusa Tenggara, Indonesia, were the subject of this study. A sample of 359 farmer households participated in the study after being randomly selected as study participants. The Health Polytechnic of Mataram's Institutional Ethics Committee gave its clearance for this study (LB.01.03/6/115/2023).

The Home Food Insecurity Access Scale (HFIAS), which allows for monitoring the effects of development food aid programs on the access component of household food insecurity, was used to measure the food security of farmers's children.

The HFIAS is a thorough nine-item scale designed to measure the prevalence of food security, taking into account factors such as inadequate consumption and quality of food, anxiety and uncertainty about the household food supply, and the resulting bodily effects. The questions further assess the number of times the respondent has experienced the situation (0 = never, 1 = rarely, 2 = sometimes, 3 = often). A score of less than

two indicated that the individual had access to food. The population's diet diversity was assessed using the Individual Dietary Diversity Score (IDDS), which counts the number of food groups that a particular target group consumed the day before or the night before. By gathering each respondent's 24-hour recall, the IDDS was conducted.

Twelve food groups—cereals, white tubers and roots, vegetables, fruits, meat, eggs, fish and other seafood, legumes, nuts and seeds, milk and milk products, oils and fats, sweets and spices, condiments, and beverages—were created based on the 24-hour recall. A score of one indicated group consumption, and 0 indicated non-consumption. A score below 8 meant that the person had low dietary diversity.

RESULTS AND DISCUSSION

The codes of answers to the occurrence questions were added together to determine each household's HFIAS score.

Also indicates that households in Kopang (highland) are the most food insecure among districts, with the highest average food insecurity score (6.17). Batu Jangkih households had the lowest levels of food insecurity (3.12). A report indicated that in the mountainous regions, where high food costs and the inability to buy nutritious food overlap, the inability to afford healthy diets is particularly high, notwithstanding the statistical insignificance of the differences across the districts.

Food secure, mildly insecure, moderately insecure, and severely insecure are the categories into which the scores have been divided. A statistical correlation between the categories of flesh meats, fish and shellfish, milk and milk products, and food security status was discovered in an unadjusted analysis.

Table 1. Participants responses to nine items of household food insecurity access scale (HFIAS)

Household Food Insecurity Access Scale (HFIAS) Items	Never	Rarely	Sometimes	Often
	n (%)	n (%)	n (%)	n (%)
1. In the past four weeks, did you worry that your household would not have enough food?	244 (68)	70 (49.1)	38 (27.9)	7 (4.26)
2. In the past four weeks, were you or any household member not able to eat the kinds of foods you preferred because of a lack of resources?	52 (21.3)	128 (40.5)	170 (61.2)	9 (2.8)
3. In the past four weeks, did you or any household member have to eat a limited variety of foods due to a lack of resources?	16 (8.7)	62 (27.2)	268 (72.9)	13 (8.1)
4. In the past four weeks, did you or any household member have to eat some foods that you really did not want to eat because of a lack of resources to obtain other types of food?	244 (78.9)	37 (38.1)	69 (57.2)	9 (8,2)
5. In the past four weeks, did you or any household member have to eat a smaller meal than you felt you needed because there was not enough food?	258 (75.4)	41 (62.1)	56 (36.3)	4 (5.9)
6. In the past four weeks, did you or any other household member have to eat fewer meals in a day because there was not enough food?	270 (79.2)	43 (61.7)	35 (41.8)	11 (13.5)
7. In the past four weeks, was there ever no food to eat of any kind in your household because lack of resources to get food?	281 (83.5)	41 (52.1)	37 (59.0)	0
8. In the past four weeks, did you or any household member go to sleep at night hungry because there was not enough food?	321 (93.4)	38 (100)	0	0
9. In the past four weeks, did you or any household member go a whole day and night without eating because there was not enough food?	359 (100)	0	0	0

While research on food security and dietary diversity among Lombok Tengah's farmer households has been sparse, a similar study among nursing women in Nepal revealed that over half of the moms had inadequate dietary diversity and were food insecure (Singh et al., 2020). In their 24-hour recollection, every respondent categorically stated that they had eaten cereal, with rice being the most popular type. According to other studies, 80% of all grains are still consumed as rice, despite a downward trend in consumption in both coastal and mountain areas (Sabu et al., 2019). In their study,

stressed that dietary diversity is directly correlated with income and reported that low-income groups in Kerala consumed more cereals (Retheesh et al., 2021).

Even though this does not provide sufficient daily nutritional diversity, having a variety of cuisines in the household is a big advantage that may be connected to agricultural production. The relationship between HDDS, HFIAS, and household income is quite robust. A household's food security declines as their monthly income rises.

Table 2. Food groups included in the dietary diversity score and the frequency by household food insecurity status

Food Groups included in dietary diversity score	N	Food Security Status				p-value
		Food secure	Mildly food insecure	Moderate food insecure	Severely food insecure	
Cereals	359 (100)	244 (100)	70 (100)	38 (100)	7 (100)	-
White roots and tubers	73 (39.8)	26 (32.3)	16 (21.5)	29 (35.7)	2 (31.6)	0,681
Vitamin A Rich vegetables and tubers	213 (67.9)	149 (59.4)	36 (48.2)	21 (57.1)	7 (60.4)	0,824
Dark green leafy vegetables	359 (89.6)	250 (73.2)	64 (59.1)	38 (83.9)	7 (100)	0,213
Other vegetables	321 (81.5)	216 (77.8)	70 (80.0)	30 (72.6)	5 (74.1)	0,419
Vitamin A rich fruits	54 (21.9)	32 (17.1)	11 (13.8)	8 (19.3)	3 (8.9)	0,119
Other fruits	139 (65.9)	81 (60.2)	58 (56.4)	0	0	0,415
Organ meat	75 (49.7)	42 (45.2)	29 (36.7)	3 (12.2)	1 (5.4)	0,890
Flesh meat	29 (39.2)	23 (37.2)	6 (29.1)	0	0	0,002**
Eggs	159 (82.5)	113 (79.2)	40 (78.3)	6 (44.7)	0	0,129
Fish and seafood	161 (68.1)	132 (66.9)	21 (67.5)	5 (48.4)	3 (49.3)	0,045**
Legumes, nuts and seeds	288 (69.3)	179 (67.1)	70 (68.9)	32 (59.3)	7 (60.6)	0,392
Milk and milk products	42 (49.2)	37 (48.2)	5 (49.1)	0	0	0,006**
Oils and fats	316 (97.9)	201 (95.4)	70 (100)	38 (100)	7 (27.0)	0,981
Sweets	359 (99.6)	244 (87.9)	70 (98.9)	38 (100)	7 (100)	0,837
Spices, condiments and beverages	359 (100)	245 (100)	69 (100)	38 (100)	7 (100)	0,491
Dietary diversity scores						
Low dietary diversity (≤4 food groups)	57 (15.9)	8 (3.3)	17 (24.3)	25 (65.8)	7 (100)	0,009**
High dietary diversity (>4 food groups)	302 (84.1)	236 (96.7)	53 (75.7)	13 (34.2)	0	

** value is statistically significant at $p < 0.05$

Higher earners tend to have less food insecurity in their households. The findings are consistent with past studies showing a positive relationship between household food security and the food security of female farmworkers.

CONCLUSION

The findings indicate a significant relationship between the dietary diversity score and food security. The HFIAS who

reside in highland locations (Kopang) and practice subsistence women's farming are particularly vulnerable to food insecurity since they have the lowest dietary diversity score. Their produce is therefore consumed in less varied diets.

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CONFLICT OF INTEREST

There was no conflict of interest in this article.

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